The Effectiveness of Cognitive Behavioral Therapy on Social Phobia Based on Meta-Cognitive Variables

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Abstract *The present research was carried out to determine the effectiveness of group cognitive-behavioral therapy on social phobia of Shahed university students with regard to meta-cognitive beliefs. Being a clinical study, the present research used as sample 30 students of Shahed University suffering from social phobia. These students had received top scores on the SPIN social phobia test. The sample participants were also evaluated using scales of social phobia (SPIN) and meta-cognitive (MCQ30). Being homogenized, the participants were divided into experiment and control groups. The experimental group was taught cognitive-behavioral therapy during 20 sessions but control group was not included in any educational program. The obtained results were analyzed using descriptive statistics, correlation, and covariance analysis using SPSS. The experimental and control groups were found to be significantly different in terms of social phobia in all three stages: prior therapy, after therapy and 6 weeks later. This implied that cognitive behavioral therapy was effective in reducing social phobia. Findings indicated that there was a meaningful relationship between meta-cognitive beliefs and the corresponding effectiveness of cognitive behavioral therapy.*

Key words: *cognitive-behavioral therapy, social phobia, students, meta cognition.*

1. Preface

Living with others and communicating with them forms the essence of social. This sort of communication shapes the basis of human life (Fathi, 2005). Fear of criticism and being befooled by others exerts dramatic impact on man's social life (Halgin, Krauss Whitbourne, 2009). Social phobia in comparison to other types of anxiety disorders outbreaks at an early age. Its outbreak has been observed at an average age of 15 and is regarded as one of the most common mental disorders during teens (Hirschfeld, 1995). Those suffering from social phobia experience minimal success and at times job and educational failures. According to APA (2000/2009), Such people rarely get married, may flee school or drop out, or be left jobless during youth, or give up looking up for a job due to the difficulties they assume in job interviews.

Besides, research findings have indicated that social phobia doubles the chance of committing suicide. Combined with other disorders, social phobia can increase the risk of committing suicide to 4 times the rate observed in healthy people. This rate is so shocking and alarming (Hirschfeld, 1995).

Social phobia therapy is carried out in two ways: Pharmacologic and non-pharmacologic treatments. Pharmacologic treatment includes: Serotonin reabsorbing selective controllers, mono amino oxides controller (Figueira, 2002) and Benzodiazepines (Davidson, 2003). Non-pharmacologic treatment includes: Cognitive behavioral therapy, therapy based on acceptance and commitment, facing therapy and social skills training (Himberg, & Guilford, 2003). Cognition-based

therapy can easily be taught or described and is useful for all age groups and has a great impact on prevention of recurrence of the disorder (Blackburn, Mary, & Kate, 1987/2005). Research works have demonstrated that group or individual cognitive behavioral therapy impacts the treatment of social phobia. In fact, this method aims to change individuals patterns of thoughts and physical reactions in anxiety prone situations (Tang, Dragull, Lim, Efird, et al., 2007). Cognitive behavioral therapy used in this research is based on package of cognitive behavioral therapy for Labhi disorder of social phobia. This research was carried out during 20 sessions (Leahy, Holland2000/2006) .The efficiency of cognitive therapy on anxious patients has been studied abundantly (Beck & Hollon,1985; Blackburn et al., 1987/2005; Hollon, et al., 1983; Murphy et al., 1984; Rush, & Tisdale, 1977 all cited in Akbari, 2010). These studies have demonstrated that cognitive behavioral therapy is equally, or at times more, effective on anxiety and depression than pharmological treatment (Blackburn, Iry marie et al., 1987/2005; Simmons, & Murphy, 1986; Goldberg & Beck, 1988 all cited in Ghasemzadeh , bahari, narimani(2011)). Cognitive behavioral therapy usually uses an array of behavioral methods like muscle relaxation training and cognitive restructuring techniques with the objective of reducing distorted cognitions as well as biased information processing related to anxiety pervasive disorders. The therapy also includes catastrophic minor events (Sligman, 1984/2010).

Given the definitions of meta-cognitive beliefs (Janeck, Calamari, Riemenn, & Heffoliger, 2003) and following research findings demonstrating a relationship between meta-cognitive beliefs and a wide range of other mental disorders (i.e. pervasive anxiety and phobia (Cartwright-Hatton, & Wells, 1997; Wells, & Carter, 2001), symptoms of mental-practical obsession (Wells & Papageorgiou, 2001), hypochondriasis (Bouman, & Meijer, 1999), test anxiety (Spada, Hiou, & Nikcevic. 2006), psychosis (Morrison, Wells, & Nothard, 2002), depression (Wells, 2009), the authors decided to examine the role of meta-cognitive beliefs on efficiency of cognitive behavioral therapy of patients suffering from social phobia. Positive meta-cognitive beliefs well point to usefulness of perturbation ,obsessive rumination , threat monitoring and other similar strategies. In other words, inefficient beliefs may seem logical at the surface (Sa'ed, 2009). Negative meta-beliefs are grouped into (1) uncontrollable thoughts and (2) meaning, importance and hazards of thoughts. Because of such meta-beliefs, we may fail to control our thoughts, which may lead to negative, hazardous or misinterpretation of thoughts (Sa'ed, 2009). An overview of research works carried out in Iran and other countries indicated that the cognitive behavioral method was effective in reduction of social phobia (Gaffarzadeh, et al. 2005; Ghasemzadeh,et al. 2011; Foa, 2003); Wells, & et al. 2001; Heimberg, 2003, and Liebowitz, 1999).

In this study social phobia was dealt with and participants were selected from a university, namely Shahed University, due to the following reasons: (1) Social phobia can be harmful to individuals or societies and despite its high prevalence, it has not been taken seriously in our country; (2) Social phobia is most likely to be mistaken for other types of disorders such as depression; (3)This disorder spreads more among students since students need more social relationships and (4) State University students were assumed similar. Irrational thoughts form an important aspect of social phobia. They can, of course, be corrected partly through training the patient on ways to overcome anxiety. That was why the researchers decided to study the effectiveness of the behavioral cognitive therapy on the participants.

2. Methodology

2.1 Participants

All male and female students of Shahed University suffering from social phobia were considered to be the population of the study, from whom 30 were selected through randomization and on a voluntary basis. To this end, announcement was made within the university campus and students interested to participate and answer the questionnaires gathered on a particular day at the university and filled in the SPIN questionnaire of social phobia. Having checked the completed questionnaires, those students with high symptoms of social phobia were selected. Each student was assigned a number from 1 to 30 and was assigned randomly to the experimental and control groups. Each group comprised 15 students. The two groups filled in the SPIN and MQ30 meta-cognitive beliefs questionnaires (to study the effect of intrusion on them). The treatment was carried out on the experimental group for 20 weeks (two sessions per week) during which the control group was left untackled.

2.2 Instruments

2.2.1 SPIN Social phobia questionnaire

This scale was first introduced by Canure (2006) to assess social anxiety. It was a self-assessment scale comprising 17 items. The questionnaire contained 3 subscales namely, fear (6 items), avoidance (7 items) and physiological discomfort

(4 items) (Hasanvande Amozadeh, 2010). The questionnaire was based on a five-item Likert scale, including never= 0, a little= 1, partly= 2, very much= 3 and unlimited= 4. The reliability of the questionnaire computed using the test retest method, in groups with social phobia symptoms was 0.78 to 0.89 and the internal consistency in a normal group for the total scales was equal to 0.94. The internal consistency scores obtained for the minor scales were as follows: Fear (0.89), avoidance (0.91) and physiological discomfort (0.8) (Connor, Davidson, & Churchill, 2006). Hasanvande Amoozadeh (2010) attained the reliabiity and validity of this scale on a non-clinical sample in Iran. The questionnaire's coefficient of alpha for pre-test was 0.84 and that for the post-test was 0.76. Further, the split-half reliability was computed to be 0.84 and the Spearman-Brown index was 0.91. Also, Cronbach's alpha related to the whole tests in subscales of social phobia was 0.75 (for avoidance), 0.74 (for fear) and %75 (for discomfort). The results indicated that the calculated reliability was satisfactory.

The SPIN questionnaire's convergent validity was computed y= 0.35, p= 0.001(with Lef and Baror's Cognitive Error Questionnaire (CEQ)), y= 0.58, p= 0.001 (with self-esteem scores, and y= 0.7, p= 0.001 (with phobic anxiety SCL-90-R Drogatis and Limen). The results indicated that the test was acceptable (Hasanvandeamuzadeh, 2010). Tahmasebi Moradi (2008) tested the reliability of this scale on 123 students of Shahid Beheshti University the result of which was reported to be 0.82 using test re-test method. The Cronbach alpha reliability was 0.86 (Zanjani, 2009 as cited in Mahmoodi, 2010). Discriminant validity resulting from the comparison of the test results, in the two groups, with people diagnosed with social phobia and those patients not diagnosed as such was found to be high indicating a meaningful difference between the variables.

2.2.2 Meta-cognitive Questionnaire (MCQ-30)

This scale is the shortened form of the original meta-cognitive questionnaire (containing 65 items and introduced by Cartwright-Hatton, & Wells, 1997). This questionnaire studies meta-cognitive aspects using five subscales including: (1) Positive meta-cognitive beliefs on anxiety, (2) negative meta-cognitive beliefs on uncontrollability and danger, (3) low cognitive confidence, (4) the need to control thoughts and (5) cognitive self-consciousness. This questionnaire was made to assess individual differences on positive and negative beliefs on intrusive thought, anxiety, meta-cognitive supervision and judgment of cognitive efficiency. The reliability and validity of this scale was tested on 182 students. The internal consistency was reported 0.93 for the whole scales and 0.93, 0.92, 0.90, 0.91 and 0.72 for subscales of cognitive trust, positive beliefs, cognitive self-consciousness, negative beliefs and the need for thoughts control respectively (Wells, & Cart Wright-Hatton, 2004). In Shirinzadeh's (2008) research, the correlation between the meta-cognitive scale and the anxiety questionnaire of Spielberger trait was 0.45 - the coefficient of internal consistency for the whole scales was 0.91 but for subscales was between 0.71 and 0.87; the reliability of the whole scales was 0.73 and for subscales of uncontrollability and danger, positive beliefs and cognitive self-consciousness, low cognition trust and the need for thought control was 0.59, 0.83, 0.81 and 0.64 and 0.65 respectively.

2.3 Execution of research method

In this article, pre-test, post-test method with control group was used as the research design. The statistical population included all male and female students of Shahed University, all suffering from social phobia. The sample participants were selected through randomization and on a voluntary basis. Two questionnaires (Questionnaire of social phobia (SPIN) and meta-cognitive questionnaire) were used as research tools. To describe the data, mean scores and standard deviations were used. To analyze the data, analysis of covariance (ANCOVA) and correlation were used. After selecting the questionnaire of social phobia, the participants (30 students) were divided into control and experimental groups. Then, the experimental group underwent 20 sessions of cognitive–behavioral therapy (2 times per week, each time 2 to 2.5 hours). The control group was left untackled during this time. During the initial sessions, the participants got familiar with sources of stress, the way to respond to stress, consequence of stress and relaxation, imaging and role playing. The following sessions were based on cognitive-behavioral therapy. They further got familiar with the relationships among thought, emotion, behavior, how to identify thought, distorted self talk, replacing and restructuring more rational thoughts and finally the identification of schemata. At the end of the sessions, the control and experimental groups were evaluated again by social phobia questionnaire and because the meta-cognitive was moderating, it was omitted from the follow up evaluation.

3. A summary of sessions

3.1. The first session

- The current social phobia symptoms were traced in patients.
- Consulting the diagnosis results with the students and giving them information about social phobia.
- Stressing on the commonality of the disorder and the availability of various short-term treatments.

3.2 The second session

- Relaxation practice.
- Discussing avoidance strategies and safe behaviors.
- Discussing the impact of this disorder on social, job and educational performance and making relevant assessments.

3.3 The 3rd and 4th sessions

- The identification of negative unconscious automatic thoughts
- Learning rational reactions to these thoughts.

3.4 The 5th and 6th sessions

- classification of unconscious automatic thoughts.
- To study evidence confirming or rejecting such unconscious automatic thoughts.
- More cognitive restructuring.
- Beginning of conceptive exposure, role playing, direct exposure based on a hierarchy of exposure levels.
- Training the required social skills through modeling and role playing.

3.5 The 14th to 16th sessions

- Identifying and challenging the incompatible assumptions of automatic thoughts and basic schemata.

3.6 The 17th to 20th sessions

- Continuous focus on assumptions and schemata.
- Encouraging patients to design their own exposure model (Leihi 2000/2006).

4. Results

4.1 Descriptive statistics

Table 1: Descriptive statistics of social phobia scores in experimental and control groups in pre-test, post-test and follow up:

scores	Experimental group		Control group	
	mean	SD	mean	SD
Pre-test	57	3.09	53.60	2.69
Post-test	9.40	5.51	54.67	4.03
Follow up (6 weeks later)	13.47	7.30	54.40	4.33

As shown in Table 1, during the pre-test, there is not much differences in the mean scores of social phobia between the experimental and control groups. During the post-test, however, the social phobia scores of the experimental participants who underwent cognitive behavioral therapy, were lower than those obtained for the control group. In addition, the mean

follow up scores of the experimental group were lower than those in the control group. This finding proves the positive effectiveness of cognitive behavioral therapy on social phobia.

4.2 Inferential statistics

Table 2: Results of covariance analysis for social phobia in both experimental and control groups:

Sources of change	Sum of squares	df	Mean of squares	F	Sig.
Pre-test	1.48	1	1.48	0.06	0.01
Group	11217.00	1	11217.00	464.89	0
Error	651.45	27	24.12		
Total	46805.00	30			

Based on the above table, the post-test scores of social phobia in experimental and control groups (while keeping constant the effects of pre-test social phobia scores) were found to be significantly different ($F(1.27)=464.89$, $p<0.01$). This finding reiterates the efficiency of cognitive-behavioral therapy.

Table 3: The correlation between meta-cognitive beliefs and efficiency of cognitive-behavioral therapy.

Variables	N	r	Sig.
Positive meta-cognitive beliefs on anxiety	15	-0.44	0.09
Negative meta-cognitive beliefs on anxiety	15	0.51	0.04
Meta-cognitive beliefs about low cognitive confidence	15	0.62	0.01
Meta-cognitive beliefs about a need for thoughts control	15	0.61	0.01
Meta-cognitive beliefs about cognitive self-awareness	15	0.64	0.01

Based on Table 3, there is a correlation between the positive and negative meta-cognitive beliefs, on the one hand, and the efficiency of cognitive-behavioral therapy of social phobia, on the other. Negative correlation obtained for positive meta-cognitive beliefs on anxiety indicated the negative impact of such beliefs on acceptance of therapy. The other four variables were found to have a positive impact on social phobia therapy.

5. Discussion

Based on the above table, the post-test scores of social phobia in experimental and control groups (while keeping constant the effects of pre-test social phobia scores) were found to be significantly different ($F(1.27)=464.89$, $p<0.01$). A comparison of the two groups' adjusted mean scores revealed that the experimental group's social phobia mean score (influenced by cognitive behavioral therapy was lower ($\overline{X}$=9.40, SD= 5.51) than that of the control group ($\overline{X}$=54.67, SD=4.03. Also, the experimental group's follow up mean score ($\overline{X}$=13.04, SD= 7.30) was lower than that of the control group ($\overline{X}$=54.40, SD=4.33). This result proved the positive effect of cognitive-behavioral therapy on social phobia. In fact, cognitive-behavioral therapy helped to reduce social phobia in the participants. This finding is in line with the finding of Ghafarzadeh,mahmoudi,azimi, heidari. (2005) who studied the impact of group cognitive therapy on social phobia. Our findings are also in agreement with those of a number of foreign researchers including Foa, et al. (2003) who studied the effectiveness of cognitive-behavioral therapy on social phobia. Their results suggested that cognitive-behavioral therapy was more effective than other treatments, and of course more durable in the long run. Zargar, Kalantari, Molavi, & Nesatdoust (2006), in their study showed that group behavioral therapy was more effective in reducing students' social phobia and assertiveness.

As another piece of Iranian research, Mosabbebi Chenariyan, Esma'ili, & Falsafinejad (2010) suggested the effectiveness of cognitive therapy, based on self-talk technique, on reduction of social phobia and stipulation of the individual's and others' interpretations. Applying techniques such as cognitive distortions, irrational self-talk and cognitive restructuring, the method used in the present research also corrects the individual's self-talk and thoughts. Wells, & Carter (2001) studied the effectiveness of cognitive therapy on social phobia and concluded that non-pharmacological treatments, including cognitive therapy, are more effective than pharmacological ones and will lead to more noticeable improvement. Conducting research to examine the effectiveness of group cognitive therapy on social phobia sufferers,

Heimberg (2003) referred to group cognitive therapy as one of the most effective treatments available. Having examined the effects of group cognitive-behavioral therapy on social phobia, Liebowitz (1999) also found that this type of therapy was one of the most effective treatments of social phobia. As the results indicated, the correlation between positive meta-cognitive beliefs related to anxiety and effectiveness of cognitive-behavioral therapy was -0.44 ($P<0.05$). There was found to be a negative significant relationship between positive meta-cognitive beliefs and the anxiety and uncertainty over the effectiveness of cognitive-behavioral therapy. In other words, positive meta-cognitive beliefs on anxiety and on effectiveness of cognitive-behavioral therapy could reduce the effectiveness of this method on social phobia. Positive meta-cognitive beliefs imply that such patients consider their anxieties and obsessive ruminations useful, and hence make no effort to change themselves. They, in fact, see no need to do so. This is an important reason why cognitive-behavioral therapy has the least effect on them. Wells, & Carter (2001) pointed to a cognitive-attentional syndrome in social phobia sufferers. This syndrome appears in the form of repetitive thought and is hard to control. It will ultimately lead to anxiety, obsessive rumination and self-monitoring behavior. The syndrome's activity and durability in response to tension depends on unadjusted meta-cognitive beliefs. Although no comprehensive study on the relationship between meta-cognitive beliefs and social phobia has been carried out, Mahmoudi, Goudarzi, Taghavi, & Rahimi (2010) in their study on the effectiveness of brief psychotherapy focused on meta-cognition in social phobia. They came to the conclusion that brief meta-cognition psychotherapy was effective. They reported that the correlation between negative meta-cognitive beliefs on anxiety and the effectiveness of cognitive-behavioral therapy was 0.51 ($P<0.05$). In other words, there was a significant relationship between negative meta-cognitive beliefs on anxiety and the effectiveness of cognitive-behavioral therapy. This finding implied that cognitive-behavioral therapy was more effective on social phobia. In simple terms, negative cognitive beliefs imply that thoughts and anxiety are dangerous and harmful, which ultimately increases the effectiveness of therapy. The correlation between meta-cognitive beliefs on low cognitive confidence and effectiveness of cognitive-behavioral therapy was found to be 0.62 ($P<0.05$). In other words, there is a significant relationship between meta-cognitive beliefs on low cognitive confidence and effectiveness of cognitive behavioral therapy. This relationship could lead to efficient cognitive behavioral therapy on social phobia. As the results show, the correlation between meta-cognitive beliefs on need for thought control and effectiveness of cognitive behavioral therapy was 0.61 ($P<0.05$). That is, there was a significant relationship between meta-cognitive beliefs on need for thought control and effectiveness of cognitive behavioral therapy. This meant that meta-cognitive beliefs on need for thought control could lead to the effectiveness of cognitive behavioral therapy on social phobia. Since the patients constantly controlled their minds, it is concluded that such beliefs could increase the effectiveness of cognitive behavioral therapy.

Based on the results, the correlation between meta-cognitive beliefs, on cognitive self-awareness, and the effectiveness of cognitive behavioral therapy was 0.64 ($P<0.05$). In other words, there was a significant relationship between meta-cognitive beliefs on cognitive self-awareness and effectiveness of cognitive behavioral therapy. That is, meta-cognitive beliefs on cognitive self-awareness together with effectiveness of cognitive behavioral therapy lead to the effectiveness of cognitive behavioral therapy on social phobia. It can be argued that cognitive self-awareness is, in fact, sort of thought monitoring and continuous awareness. So, cognitive self-awareness can be useful in cognitive behavioral therapy and increase its effectiveness. No study has been done on this issue.

Social phobia disorder is accompanied with cognitive emotional involvement of the sufferer. A therapeutic planning, which first stops the emotional process and then tackles cognitive challenge, could be of great help. Social phobia sufferers often before encountering social panic-inductive situations, during the encounter and even after it, do obsessive rumination over their failure and on how they were judged by others. These obsessive ruminations lead to continuation of their anxiety. Meanwhile, avoidance of frightening social situations in anxiety disorders leads to failure in discovering non-dangerous items. Also, subtler forms of protective behaviors in social phobia sufferers including avoidance of self-disclosure before others cause their biased reaction. This issue results in a negative series of social reactions. This means that meta-cognitive therapy is effective on anxiety disorders treatment (Mahmoudi et al., 2010). However, no research has been found to undertake the issue of meta-cognitive beliefs relationship among social phobia sufferers. The present article is hoped to pave the way for research literature on meta-cognitive beliefs and cognitive behavioral therapy in patients with social phobia. In brief, it was concluded that by adding meta-cognitive variables, we can anticipate the results of cognitive behavioral therapy, and through using special interventions, we can even bolster the therapeutic achievements. For example, regarding individuals with positive meta-cognitive beliefs on perturbation, despite having a negative effect on the treatment, we can focus more on the identification of self-generated thoughts and cognitive restructuring or take other measures. For instance, in order to accelerate the healing process and increase its generalization power to a larger population, and given the individuals' meta-cognitive status, we can form homogeneous groups in terms of the mentioned variables.

6. Limitations of the study

The present research, however, like other conducted interventions, has its own limitations. This research was carried out on students and in the university setting. So, many factors including tiredness and educational environment may have influenced the therapeutic results. Extension of the results to non-student population suffering from social phobia should be done cautiously.

7. Concluding remarks

Cognitive perspective emphasizes the important role of thinking in etiology and in continuation of clinical problems. Cognitive therapy seeks to make correction by changing the thinking patterns involved in patients' problems. Cognitive theorists believe that anxiety disorders originate in the extreme and negative judgment of situations and feelings as dangerous; therefore, cognitive behavioral therapies can play a remarkable role in treatment of anxiety disorders (Mosabbebi Chenarin, 2010). Results obtained from other Iranian and foreign studies indicated that cognitive behavioral therapies for anxiety disorders and, in particular, social phobia, are among well-known and effective therapies. These therapies are recommended since they can easily be taught and the obtained results are durable.

In this article, the effectiveness of cognitive behavioral therapy in reduction of social phobia in students and its durability was proved. The therapy was found to be effective and reliable. Iranian and foreign research proved the effectiveness and even superiority of cognitive behavioral therapy in comparison to pharmacological treatments. Further, social phobia was found to have undeniable effects on function and success of students and individuals suffering from this disease. In all, this method of treatment, as a reliable and efficacious treatment for social phobia sufferers, is recommended to be used in universities as well as medical centers. Enjoying follow up and durability of medical achievements after 6 months is one of the main achievements in this research.

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