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THE EFFECTIVENESS OF GROUP ACCEPTANCE AND COMMITMENT THERAPY ON THE SOCIAL ANXIETY DISORDER AND THE ROLE OF COGNITIVE ABILITIES

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ABSTRACT

The present study has evaluated the effectiveness of group acceptance and commitment therapy on social anxiety and the role of cognitive abilities as a predictor factor. The sample group was 44 students with social phobia in two experimental and control groups of Tehran's high school students. The sampling method was available and the research tools were the questionnaires of cognitive abilities and social phobia. After 6 sessions of 90-minute therapies and implementing the statistical method of repeated measurements analysis; the results showed that group acceptance and commitment therapy has a significant impact on reducing social anxiety and those who had greater cognitive abilities had a better response to the intervention. Therefore, it can be concluded that group acceptance and commitment therapy can be used to treat social anxiety, and cognitive abilities of people can be assessed before treatment as a predictor factor of response to treatment.

Keywords: social anxiety disorder, acceptance and commitment therapy, cognitive abilities

INTRODUCTION

Anxiety is one of the natural performances of the mind which has evolved in animals over time to be vigilant in dangerous situations. Usually, anxiety is not considered pathological, but also it is an adaptive response to avoid risk situations. But it can be problematic when the anxiety levels reach such an extent that it leads to disorder in the

performance and this disorder in the performance include avoidance and immune behaviors of the part that the person performs chronic and recurrent. Social Anxiety Disorder (Social phobia) is an intense anxiety that occurs when the person is in a group or performance position and the person is situated in front of unfamiliar people and in such a situation, he\she fears to behave with anxiety symptoms that humiliates or embarrasses him\her (Psychiatric Association of America, 2013). On the other hand, cognitive defect becomes apparent in the person's interaction with the environment and the environment is as a context, in which individual cognitive abilities is manifested in it and hence, it seems that there is a relationship between the social anxiety (caused by the interaction with the environment) and cognitive abilities and people who have higher cognitive abilities more responsive to therapy than those who have lower cognitive abilities. Cognitive abilities are nervous processes involved in the acquisition, processing, storage, and information application (Dukas, 2004; Shettelworth, 2010) which is the link between behavior and brain structure and includes a wide range of abilities (planning, attention, response inhibition, problem solving, conducting assignments and cognitive flexibility) (Madrigal, 2008).

In relation with the performed therapies for social anxiety, most studies are based on cognitive behavior therapy and the group therapy method in this approach is studied more (Himberg, 1991; Himberg and Becker, 2002; Herbert, Godyano, Ringold, Meyers et al., 2005). Also, the effectiveness of social skills training has been studied in this population (Hope and Norton, 2001) and the reports indicate the effectiveness of this method, especially when dealing with or without cognitive restructuring exercises (Herbert et al., 2005; Herbert, Ringold, and Goldestein, 2002). In recent years, acceptance and commitment therapy (ACT) is used as a new therapy of the third wave of therapies in the treatment of disorders. The objectives of this therapy includes the two main goals of increasing the receptivity of problem making's thoughts and feelings that does not help at all and also, the second objective is increasing accountability, taking action and identifying personal values and also, moving toward achieving them. For this reason, this therapy method refers to acceptance and change in order to improve the situation at the same time (Hayes, Pistorello, Levin, 2012). Acceptance and commitment therapy

along with mindfulness is a cognitive intervention based on experience which applies strategies based on knowledge and acceptance with commitment strategies and behavior change in order to increase psychological flexibility.

A few researches have evaluated the effectiveness of acceptance and commitment therapy on the social anxiety and the role of cognitive abilities inside Iran. Especially, the role of response predictors to treatment in the researches has been regarded very little. According to social anxiety disorder comorbidity with other disorders, especially in adolescence and its importance in social and academic performance of people in this age; conducting researches in this area seems to be necessary. Several researches have evaluated the effectiveness of acceptance and commitment therapy with similar variables. For example, Pourfaraj Omran (2009) has evaluated groupacceptance and commitment therapy on the social anxiety of students in a study. This study was an interventional study. 24 students suffering from social panic disorder were selected based on clinical interview and panic and social anxiety questionnaire among the students of Shomal higher education institution in Amol and they were randomly assigned to two experimental and control groups. Groupacceptance and commitment therapy were done in 10 sessions in the intervention group and the control group did not receive treatment. One-month follow-up, pre-test, and post-test after treatment in both groups were analyzed by t-test. The results showed that at the end of treatment, the social anxiety scores in the intervention group have significantly decreased than the control group and it had no significant change in the one month follow-up. Therefore, acceptance and commitment therapy is effective on the treatment of social anxiety disorder among students. Further research was carried out in Iran such as the effectiveness of mindfulness and relaxation exercises during 12 sessions over 225 children 5 to 8 years who have had high levels of anxiety. Children showed a significant reduction in anxiety and hyperactivity behaviors and also, they showed a considerable increase (Napoli, Kerch and Holly, 2005). Some researches have showed the effectiveness of it on the chronic pain (Vowles, McCracken, OBrein, 2011), anxiety (Ifert, Forsyth, Keller, 2009), mental and practical obsession (Twohig, Hayes, Pruitt, Pruet, 2010), Post-traumatic stress disorder (Orsay Lou and Boton, 2005), generalized anxiety disorder (Orsay Lou, Roemer, Barlo, 2004). This study sought to examine the hypothesis that acceptance and

commitment therapy is effective on the level of social anxiety (fear, avoidance and physiological sadness) of high school female students and there is a relationship between the social anxiety (fear, avoidance and physiological sadness) and social recognition (memory, inhibitory control, decision making, planning, sustained attention, flexibility and overall cognitive ability).

METHODOLOGY

The present study is a semi-experimental study. In this plan, people with social anxiety are characterized using social phobia questionnaires and they are placed in two different locations, including the intervention and control groups. In the first situation, the intervention group has received acceptance and commitment therapy for six 90-minute group sessions and the second situation which was the control group did not receive any intervention. Cognitive ability of them before intervention, their self-esteem before and after the intervention, and their social anxiety in both situations were evaluated and compared in the mentioned four stages. 1. Pretest 2. It was after the end of the first stage after the second session 3. It was after the end of the second stage after the fourth session 4. After the test which was after the third stage and after the sixth session.

The statistical population consists of the high school girl students in Tehran.

According to the estimated scores of the social anxiety of students at one of the girls' high school in Tehran who were selected in the available population, the sample was 44 persons. The entry criteria were as follows:

1. The social anxiety score higher than 20 based on the social anxiety scale SPIN
2. The age between 14 to 17
3. High school girl student

Exclusion criteria were as follows:

1. Simultaneous starting to receive medication or other treatments
2. Lack of consent of the person for participation

Sampling was in the form of simple replacement. In this way that the people who have the entry criteria that included 44 patients were randomly assigned to either the intervention and control groups. In this way, the number of subjects in the experimental group was 22 persons who were divided into two groups of seven and one group of eight. Grouping people with intervention was done based on the school circumstances and considering the break time and study hours of the students so that each of the groups participates at different times in the intervention session and repeating sessions in a specific time in three weeks do not damage

a specified course. Then, each group received intervention for six sessions that each session was 90 minutes. Also, if a person could not be present at the session, she was allowed to participate in a session, similar to one of the other two groups. 22 persons also were considered as a control group that received no intervention.

Research tools were the cognitive abilities and social anxiety scale. Social anxiety scale was prepared by (Connor, Davidson, Churchill, and Sherwoods et al., 2000) in order to assess social anxiety or social phobia. This questionnaire consists of 17 clauses of self-assessment scale which has three sub-scale of fear (6 clauses), avoidance (7 clauses), and physiological sadness (4 clauses). Its total score is in the range of 0 to 68. Also, this questionnaire can distinguish the group with social anxiety disorder from those who are not infected. The cognitive ability questionnaire includes 30 questions which are saturated by seven factors and each factor has at least three items for its own. First factor is memory; second factor is inhibitory control and selective attention, the third factor is decision making, the fourth factor is planning, the fifth factor is the stable attention, the sixth factor is social cognition, and the seventh factor is cognitive flexibility (Nejati, 2013).

The outline of the sessions' contents in this research consisted of a 6 session period with three combined stages.

The first stage which was two sessions included providing the condition to accept anxiety-provoking thoughts and feelings and create creative disappointment of previous attempts to solve the problem. At this stage, the context was prepared for the next stages. Using necessary exercises and metaphors, authorities were faced with their futile efforts in the past to control and avoid the anxiety and distress and in the following, authorities learned some skills so that they could cope with pain and fear and also, the last 15 minutes of each session was devoted to the mindfulness practices.

The second stage which was the third and fourth sessions was concentrating on the goals and the pleasant values and the skills that were taught to her to apply the appropriate behavior using more flexible patterns despite the negative thoughts and feelings. At this stage, the authorities still did mindfulness exercises. Mindfulness was an important part of the sessions; because it makes the applied avoidance ineffective and neutral and, therefore, the person acts in order to achieve her goals and values (making social communication). The third stage was the two final sessions. More focus

was done on the involving the authorities with their goals and values to consider themselves responsible and be committed to achieve their values despite the obstacles and limitations. Authorities and therapist specified the achievable and actual goals which pulled out of the second stage and they were faced with negative thoughts to achieve the values and objectives that in this stage, it was tried to neutralize their effect with the help of mindfulness exercises.

RESULTS

The repeated measures analysis of variance test was used in order to investigate the influence of the independent variable (model of acceptance and commitment therapy) on the dependent variable of social anxiety in repeated measurements and multivariate regression was used to compare the social anxiety and cognitive abilities. In Table 1, central tendency and dispersion indicators of the total score of cognitive ability in two groups are given and in Table 2, the average and standard deviation of social anxiety scores in 22 persons of intervention group before the intervention, after the end of the second session, the fourth and after intervention are given.

Mauchly's test was used before the analysis of variance to investigate the naturalness of the hypothesis of multivariate distribution of the research's data. Given that the calculated $\chi 2$ (116.379) is greater than the critical $\chi 2$ by considering 5 percent error and 5 degrees of freedom. Therefore, with the confidence level of 95 percent, the null hypothesis based on the naturalness of the multivariate distribution of the data is confirmed and based on this result in the analysis of variance of the data; there is no need to modify the internal degrees of freedom. The results of analysis of variance with repeated measurements are summarized in Table 3.

Given that the calculated F index (209.005) is greater than 0.01 F with degrees of freedom of 3 and 4, therefore, the null hypothesis based on the equality of the subjects' average in four times running the test with one percent error is rejected. The average test of two correlated groups was used to compare each two averages (in four times running) that its results are presented in Table 4.

According to the results of the two correlated groups test, homogeneous subgroups are shown in Table 5.

According to the extracted subgroup, we conclude that the average scores of the test in four times test (pre-test, after session 2, after session 4, and post-test of acceptance and commitment therapy) have no statistically significant difference, but, the average of

four times running have a statistically significant difference with the average post-test scores. In other words, the average scores of the pre-test, after session 2, and after session 4 are significantly higher than the scores of post-test. Thus, we can conclude that acceptance and commitment therapy is effective on the social anxiety of high school girl students.

To investigate the hypothesis that there is a relationship between the social anxiety (fear, avoidance and physiological sadness) and social recognition (memory, inhibitory control, decision making, planning, sustained attention, flexibility and overall cognitive ability), the correlation between the social anxiety and cognitive ability are shown in Table 6.

According to the results obtained from the table, it can be expressed that 1. Inhibitory control subscale of cognitive ability scale is correlated with the total social anxiety and its subscales. 2. Decision making subscale of cognitive ability scale is correlated with the subscales of fear and avoidance of social anxiety. 3. Planning subscale of cognitive ability scale is correlated with the subscales of fear and avoidance and social anxiety. 4. Flexibility subscale of cognitive ability scale is correlated with the subscales of fear of social anxiety scale. 5. And finally, total cognitive ability has a correlated relationship with the total social anxiety and its subscales.

Also, we classified the intervention group from the pre-test scores of cognitive ability into two groups of high cognitive ability and low cognitive ability in order to assess the cognitive ability as a predictor factor. The effectiveness of therapy was compared by t-test from post-test scores of total social anxiety. According to the calculated F= 4.17 with 95% confidence level, it can be said that there is a significant difference between the two groups of high cognitive ability and low cognitive ability. This difference reflects this issue that people with social anxiety with higher cognitive ability give a better respond to ACT therapy compared with people with low cognitive ability.

Table 1: Central tendency and dispersion indicators of the total score of the cognitive ability

Cognitive ability		Average	Median	Mode	Standard deviation	Minimum	Maximum
Group	Running time						
Intervention (n=22)	Pre-test	107.27	103.50	129.00	18.01	60.00	131.00
	Post-test	106.32	105.00	105.00	18.58	60.00	131.00
Intervention (n=22)	Pre-test	107.27	103.50	129.00	18.01	60.00	131.00
	Post-test	107.66	105.00	105.00	18.58	60.00	131.00

Table 2: The average and standard deviation of the social anxiety scores in the intervention group

	Pre-test		After session 2		After session 4		Post-test	
	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation	Average	Standard deviation
Total	35.90	13.05	35.54	11.30	29.03	11.30	33.09	11.88

Fear	**10.63**	**4.92**	**11.63**	**6.07**	**6.90**	**3.89**	**8.30**	**4.26**
Avoidance	**11.04**	**5.58**	**10.54**	**7.72**	**9.98**	**5.43**	**7.86**	**4.26**
Physiological sadness	**7.36**	**3.72**	**7.65**	**3.77**	**6.83**	**3.64**	**5.90**	**3.72**

Table 3: Summary of the analysis of variance with repeated measures [total social anxiety]

Change resource	Total of squares	Degree of freedom	Average of squares	F	The effect of partial squares
Between Subjects	**12887.198**	**21**	**1358.654**		
Inside Subjects	**4382.352**	**44**	**146.271**		
Intervention (Pre-test, after session 2, after session 4, and post-test)	**2895.362**	**3**	**1697.167**	****604.149**	**0.667**
Residual	**10534.684**	**41**	**263.372**		
Total	**19620.419**	**87**			

P<0.01**

Table 4: Comparison of each two averages (in four times running) of the two correlated groups test

Running time of test (A)	Running time of test (B)	Average of differences	Standard deviation	The average standard error	T (df=10)
Pre-test	**Post-test**	**-31.000**	**19.761**	**5.396**	****-5.457**
Pre-test	**After session 2**	**-23.000**	**16.201**	**4.094**	****-7.723**
Pre-test	**After session 4**	**9.000**	**11.348**	**3.854**	**2.396**

P<0.01**

Table 5

Test running time	Number	Subgroup	
		1	1
Pre-test	**22**	**224.87**	
After session 2	**22**	**220.43**	
After session 4	**22**	**214.53**	
Post-test	**22**		**198.53**

Table 6: Correlation between the social anxiety and cognitive abilities

		Social anxiety (total)	Social anxiety (fear)	Social anxiety (avoidance)	Social anxiety (physiological sadness)
Memory	**Correlation Sig**	**-0.256** **0.093**	**-0.195** **0.204**	**-0.249** **0.103**	**-0.108** **0.487**
Inhibitory control	**Correlation Sig**	**-509** **0.000**	**-0.345** **0.022**	**-0.390** **0.009**	**-0.248** **0.104**
Decision making	**Correlation Sig**	**-0.260** **0.088**	**-0.454** **0.002**	**-0.456** **0.002**	**0.197** **0.200**
planning	**Correlation Sig**	**-0.504** **0.000**	**-0.475** **0.001**	**-0.417** **0.005**	**-0.148** **0.337**
Sustained attention	**Correlation Sig**	**-0.019** **0.904**	**-0.138** **0.370**	**-0.282** **0.0364**	**0.042** **0.785**
social recognition	**Correlation Sig**	**-0.099** **0.524**	**-0.141** **0.864**	**-0.319** **0.700**	**-0.144** **0.635**
flexibility	**Correlation Sig**	**-0.144** **0.350**	**-0.0319** **0.035**	**-0.141** **0.360**	**0.022** **0.887**
cognitive ability (total	**Correlation Sig**	**-0.462** **0.002**	**-0.425** **0.004**	**-0.396** **0.008**	**-0.350** **0.20**

DISCUSSION

In the present study, the effectiveness of acceptance and commitment therapy on the social anxiety of high school girl student was evaluated. In the following, cognitive abilities of these people which include the subscales of memory, inhibitory control, and selective attention, decision-making, planning, sustained attention, social cognitive and cognitive flexibility and their relationship with social anxiety were investigated as a predictor factor in therapy. The results showed that acceptance and commitment therapy has created a significant

difference in the social anxiety compared to the control group and it has improved the performance of students. Also, the results showed a significant relationship between the cognitive ability and the social anxiety and the people with higher cognitive ability have a greater response to therapy.

These findings are in line with the studies of Majid Pourfaraj Omran (2009), Osman, Wilson, Storaasli, and Neill (2006), Ifert, Forsyth (2009), and also, Cad et al. (2011). By comparing the scores of the three subscales of fear, avoidance and physiological sadness of intervention group before and after intervention, it seems that the score of avoidance had a greater decline compared to the scores of the two other subscales i.e. fear and physiological sadness. The proposed decline in the avoidance that seems to be associated with an increase in the tendency and intention to have more social participation is one of the main goals of acceptance and commitment therapy which has been achieved in this research. On the one hand, a slight increase was observed in the total score and subscales in the that can be caused by approaching the exam season. Since, a part of the exams is held orally and it needs to be presented in the class, it itself increases the level of anxiety in students.

About the results of investigating the relationship between cognitive abilities and social anxiety, this study is in line with the research of Fujii et al. (2013) who have compared the amount of executive performance as a predictor factor in patients with social anxiety compared to healthy subjects. They have compared the executive performance of 30 men and women with social phobia and 30 healthy men and women. The results indicated that the executive performance of the people with social anxiety is lower compared to healthy subjects and also, the amount of low performance has a relationship with the severity of social anxiety symptoms (Fujii, Kitagawa, Shizu, Mitsui, Hashimoto et al., 2013). Ferreri, Lapp, Peretti (2011) have evaluated and compared the conducted researches on the performance disorder of different areas of cognitive ability in anxiety disorders. These researches report disorders in various areas of cognitive ability performance in anxiety disorders. The studied areas include executive performance (more attention process), work memory, cognitive dysfunction (thoughts and beliefs) and meta-cognitive processes (ideas about the thoughts and beliefs). Disorder in these areas will maintain or exacerbate anxiety disorders. In fact, cognitive ability defect is

one of the symptoms of anxiety disorder that causes anxiety and it is also the consequence of anxiety.

The present study had limitations that the most important of which is the lack of pursuing to evaluate the sustainability of the intervention effect. Also, due to the time limit of holding intervention sessions which took place before the students' exams, the test anxiety of students was even more pronounced in sessions and also, all participants were women in the present study.

REFERENCES

[1] Pourfaraj Omran, M. (2011). The effectiveness of group acceptance and commitment therapy on the social phobia of students. Knowledge and wellbeing, 6 (2), 1-5.

[2] Nejati, V. (2013). Cognitive abilities questionnaire: Design and evaluation of psychometric characteristics. New Journal of Cognitive Science, 15 (2).

[3] Codd, R.T., Twohig, M.P., Crosby, J.M., & Enno, A. (2011). Treatment of three anxiety disorder cases with acceptance and commitment therapy and cognitive therapy in a private practice. Journal of Cognitive Behavior Therapy, doi:10.1891/0889-8391.25.3.203

[4] Connor, K.M., Davidson, J.R.T., Churchill, L.E., Sherwoods, A., Foa, E. and Weisler, R.H. (2000). Psychometric Properties of the Social Phobia Inventory (SPIN). British Journal of Psychiatry, (2007), 176, 379-386

[5] Dukas, R. (2004). Evolutionary biology of animals' cognition. Annual Review of Ecology, Evolution, and Systematics, 35, 347-374

[6] Eifert, G.H. and Forsyth, J.P. (2009): Acceptance and Commitment Therapy for anxiety disorders: Three case studies exemplifying a unified treatment protocol. Cognitive and Behavioral Practice, 16, 368-385

[7] Ferreri, F., Lapp, LK. & Peretti, CS. (2011). Current research on cognitive aspects of anxiety disorders. Curr Opin Psychiatry, 24(1), 49-54

[8] Fujii, Y., Kitagawa, N., Shimizu, Y., Mitsui, N., Toyomaki, A., Hashimoto, N. et al. (2013). Severity of general social anxiety disorder correlates with low executive functioning, Neurosciene Lett., 543, 42-46, doi: 10.1016

[9] Hayes, S. C., Pistorello, J., Levin, M. (2012). Acceptance and Commitment Therapy as a unified model of

behavior change, The Counseling Psychologist

[10] Twohig M. P, Hayes S. C, Plumb J. C, Pruitt L. D. , Collins A. B، Hazlett-Stevens H. et al. (2010). A randomized clinical trial of acceptance and commitment therapy versus progressive relaxation training for obsessive-compulsive disorder. Journal of Consulting Clinical Psychology 78(5), 705-16

[11] Heimberg, R.G., Becker, R.E. (2002). Cognitive-behavioral group therapy for social phobia: Basic mechanisms and clinical strategies. New York: Guilford.

[12] Heimberg, R.G. (1991). Cognitive-behavioral group therapy for social phobia: A treatment manual. Unpublished manuscript, The University at Albany, State University of New York.

[13] Herbert, J.D., Gaudiano, B.A., Reingold, A.A., Myers, V.H., Dalrymple, K., and Nolan, B.M., (2005). Social skills training augments the effectiveness of cognitive behavioral group therapy for social anxiety disorders. Behavior Therapy, 36, 125-138

[14] Herbert, J.D., Reingold, A.A., and Goldstein, S.G. (2002). Cognitive-behavioral group therapy for social anxiety disorder. Cognitive and Behavioral Practice.9, 1-8.

[15] Madrigal R. (2008). Hot vs. cold cognitions and consumers reactions to sportind event outcomes. Journal of Consumer Psychology; 18(4), 304-19

[16] Napoli, M., Krech, P.R., & Holley, L.C. (2005). Mindfulness training for elementary school students. Journal of Applied School Psychology, 21(1), 99-125

[17] Norton, P.J., and Hope, D.A. (2001). Kernels of truth or distorted perceptions: Self and observer ratings of social anxiety and performance. Behavior Therapy, 32, 765-786

[18] Orsillo, S., Romeor, L., Block, J., LeJeune, C., & Herbert, J.D., (2004). ACT with anxiety disorders. In S.C. Hayes & K. Strosahl (Eds.). A practical Guide to Acceptance and Commitment Therapy (pp.103-132) Norwell, MA: Plenum Press

[19] Ossman WA, Wilson KG, Storaasli RD, & Neill JW. (2006). A preliminary investigation of the use

of acceptance and commitment therapy in group treatment for social phobia. International Journal of Psychology and Psychological therapy. 6(3), 397-416

[20] Shettleworth, SJ. (2010). Cognition, Evolution, and Behavior. 2nd Ed. New York, Oxford University Press

[21] Vowles, k., McCracken, L, M., O'Brien, J. O. (2011). Acceptance and values-based action in chronic pain: A three-year follow-up analysis of treatment effectiveness and process. Behavior Research and Therapy. 49, 748-755.