The Effects of Cognitive-Behavioral Training on Social Phobia in Nursing Students: with one-step follow-up

Roghayeh Esmaeil Darjani 1, Nahid Ramak 2, Elham Rafiei 3, Alireza Sangani 3*

1 Department of Psychology, Ayatollah Amoli Branch, Islamic Azad University, Amol, Iran.
2 Health and Social Development Research Center, Golestan University of Medical Sciences, Gorgan, Iran.
3 Department of Cultural Psychopathology, Farabi Psychological Sciences Research Center, Mazandaran, Iran.

Background & Objective: Phobia disorders are affected by cognitive and behavioral inefficiencies. The present study aimed to investigate the effects of cognitive-behavioral training on social phobia in nursing students: with one-step follow-up.

Materials and Methods: This quasi-experimental study was conducted with a pretest-posttest design, a control group, and follow-up after one month. The sample population included all the nursing students of Babol University of Medical Sciences in Babol, Iran in 2019. In total, 60 students were selected via simple random sampling and diagnosed with social phobia. The groups were assessed at three intervals before and after the intervention, and the follow-up was performed using the Liebowitz Social Phobia scale. The experimental group received 12 sessions (60 minutes each) of cognitive-behavioral therapy based on social phobia, and the control group received no training. Data analysis was performed in SPSS version 18 using repeated measures ANOVA.

Results: The results of covariance analysis indicated that social phobia significantly decreased in the experimental group at the posttest and follow-up compared to the control group (P≤0.05). The mean difference was 38.48±8.21 in the experimental group and 37.96±7.96 in the control group before the intervention and 26.06±7.74 in the experimental group and 36.48±6.08 in the control group after the intervention.

Conclusion: According to the results, cognitive-behavioral group intervention could be used as an effective approach to the reduction of social phobia in students.

Introduction

Students undergo major changes due to their young age and concurrency of their education period with youth, which is a highly-sensitive period. These changes are largely due to the fear of social situations, such as social interactions, being observed, and performance in the presence of others. These issues often arise at the early stages of youth and are referred to as social phobia (1).

Social phobia is a common anxiety disorder (2) and the third most common psychiatric disorder after major depression and alcoholism (3). This disorder is more common in women (4) and mostly affects the youth aged 18-29 years (5), with the prevalence reported to be 13% in the lifetime (6). In the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), the disorder has been referred to as socio-phobia with the subsidiary name 'social phobia'. In the fifth edition, the disorder has been generally referred to as social disorder (7).

The social phobia disorder is the definite and constant fear of being ashamed or evaluated negatively in social situations or while performing an activity in the presence of others (8). Recent epidemiological studies have indicated the prevalence of the disorder to be higher in the young population (9). The individuals with social phobia have a strong fear of being judged by others and interpersonal evaluations and are also ashamed of their own actions (10). Social phobia could lead to isolation and clear separation from the community. This disorder is a common cause of delinquency in children and adolescents which leads to
severe school absenteeism and disrupts the social relations of adolescents (11). Such phobia is the only disorder among the phobia disorders that is definitely associated with an early drop in education and reduction of individual academic performance due to separation from the community and fear of being negatively evaluated by the peers (12).

Previous findings have indicated that as an uncomfortable experience, social phobia is one of the factors that hinders the development and social evolution trend of the youth, thereby preventing the flourishing of their talents (13). Some studies have indicated that the social phobia disorder in the youth is associated with extreme issues such as physiological arousals and cardiovascular system responses, the biased interpretation of obscure social situations (14), social function deficiencies (15), poor social activation, and negative perceptions (16). The disorder has a high comorbidity with other ethical phobia disorders (17).

According to the literature, 84% of the individuals with the social phobia disorder have other concomitant disorders (18). Several treatments are available for the social phobia disorder, such as medication use, group behavioral therapy, group cognitive therapy, and mindfulness. Cognitive-behavioral therapy is one of the most effective patterns for the treatment of phobia disorders (19). Some studies suggest that the concurrent use of psychotherapy and medication in the treatment of the social phobia disorder yields better outcomes than isolated treatments (20). Although current evidence suggests that several factors (e.g., genetic factors, environmental factors, past learning, social skill deficiency) could be the underlying factors in the incidence and development of social phobia, the cognitive-behavioral models of the social phobia disorder indicate that the disorder and damage caused to the process of social information processing have a significant impact on the persistence of phobia disorders (21).

The cognitive-behavioral approaches used for the treatment of social phobia are based on various cognitive models of the etiology of this disorder, and the two techniques of facing and cognitive repair have been further emphasized by experts compared to the other methods (22). The cognitive-behavioral models that are used to explain and discover the causes of various phobia disorders have common features (23). First, it is assumed that individuals become anxious in response to special stimuli; secondly, unrealistic changes persist because patients resort to a series of safety behaviors to prevent horrible events, and these behaviors hinder the change of their negative beliefs (24). Thirdly, in many phobia disorders, the phobia symptoms are the actual sources of risk perception and cause a series of defective cycles, which majority contribute to the persistence of phobia disorders (25).

According to the literature, 85% of the individuals with social phobia experience a decline in their educational performance (26). The social phobia disorder is highly pervasive and debilitating and emerges at the peak of the independence-seeking period; therefore, in case of delayed treatment or if it is accompanied by other disorders, it causes more damages and complications in the affected youth (27, 28).

Evidence attests to the proficient effects of cognitive-behavioral therapies on social phobia disorders (29, 30). Cognitive-behavioral therapies have been used and investigated more than other psychological treatments for the reduction of the symptoms of social phobia (31, 32). Furthermore, the studies confirming the effectiveness of group cognitive-behavioral training for the reduction of social phobia symptoms have indicated that the subjects could maintain the treatment outcomes for up to 3-5 years after the trainings (33).

Recently, there has been remarkable psychological advancement in the treatment of social phobia, and the greatest emphasis in this regard has been placed on assessing the effectiveness of cognitive-behavioral training alone or in combination with medication therapy (34, 35). In general, the nursing profession
requires individuals to be prepared to ensure physical and mental health. Nurses need to have strong spirits in the face of damaged clients and may often experience emotional frustration due to death or interaction with severely ill patients, which in turn causes obsessive-compulsive rumination in their area of responsibility.

Although the studies in this regard have increased the knowledge of the nature and treatment of social phobia, further investigations are still required to cement the status of more effective treatments. The present study aimed to determine whether group cognitive-behavioral training could be effective in the reduction of social phobia in nursing students.

Materials and Methods

This quasi-experimental study was conducted with a pretest-posttest design, a control group, and a one-month follow-up period for the groups. The sample population included 287 female students at Babol University of Medical Sciences in Babol, Iran in the academic year 2019. Initially, 186 questionnaires were distributed that 60 person contained the criterion for the cutoff point of 34 social phobia questionnaires, that among them 30 individuals were selected via simple random sampling.

The sample size was determined based on the sample population size using the following equation, as well as the obtained values from the study (35) and values of 1.50, d2=5.282, α=1.50, test power=0.90, and equivalent value of 12.56. The sample size was estimated to be 15.

\[
\text{n} = \frac{2\sigma^2(Z_{1-\alpha/2} + Z_{1-\beta})^2}{d^2} = \frac{2(1.50)^2(1.96 + 1.88)^2}{5.281} = 12.56
\]

The participants were divided into two groups of experimental (n=15) and control (n=15). The study protocol was approved by the Ethics Committee of Tehran University of Science and Research (code: IR.IAU.SRB.REC.1398.184).

Implementation Method

The inclusion criteria of the study were as follows: 1) students of the nursing school; 2) female gender; 3) age of 20-24 years; 4) single students and 5) First to fourth semester students. The exclusion criterion was absence in two consecutive sessions and the participants were allowed to withdraw from the study at any given time.

Procedures

Before sampling in the implementation process, the research objectives were explained to the participants, maintaining the confidentiality of the materials to the subjects. In addition, written informed consent was obtained from the students for enrollment. The questionnaires were received from the two groups for the pretest, and the control group received no intervention.

The intervention was performed by a clinical psychologist. Only the experimental group received a 12-session intervention (60 minute each) two sessions per week during May 2019 using the package of McCullough (36). The posttest was also performed on both groups after the completion of the sessions. In addition, a one-month follow-up was implemented with the aim of investigating the stability of the intervention.

Data analysis was performed in SPSS version 18 using repeated measures ANOVA.

Liebowitz Social Phobia Scale (1987)

The Social Phobia scale was developed by Liebowitz in 1987 and has 24 phrases, which are scored within the range of 0-3, yielding the general phobia score of 0-72. The convergent and structure validity of the scale have been confirmed by Liebowitz (35), and the reliability has been estimated at the Cronbach’s alpha of 0.95. In Iran, Meliani et al. (32) confirmed the validity of the structure and entire questionnaire, and the reliability coefficient of the questionnaire has been calculated at 0.83 using the retest method. In the present study, the reliability of the scale was estimated at the Cronbach’s alpha of 0.81.
Table 1: General guidelines of sessions for cognitive-behavioral group training in social phobia disorder (36)

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>At first, the mentioned questionnaire gets implemented on the students. People with social phobia will be randomly selected. And it was told to the control group individuals to complete the questionnaire again about three months later. The therapist and members briefly introduce themselves. If some questionnaires are not completed, then they get completed by the members.</td>
</tr>
<tr>
<td>Second</td>
<td>The members will be informed about the evaluation carried out in the previous session. The group individuals will get familiar with the logic of treatment and social phobia cognitive-behavioral model. The therapy treaty was concluded.</td>
</tr>
<tr>
<td>Third</td>
<td>Initially, if a particular form or questionnaire is required to be completed, it will be done. Housework related to the last week will be checked. During the remainder of the treatment session, three exposures will be held at the session and the details will be as follows: The therapist chooses a member of the group and describes the general lines of exposure briefly. The patient’s automatic thoughts will be identified in relation to the situation described.</td>
</tr>
<tr>
<td>Fourth</td>
<td>One or two counts of the identified automatic thoughts will be selected for further work and written on a whiteboard at a separate location. Using challenging questions, the selected automatic thoughts will be challenged and analyzed logically [patients must answer questions].</td>
</tr>
<tr>
<td>Fifth</td>
<td>The cognitive error about the automatic thoughts will be selected, specified, named and written on the whiteboard.</td>
</tr>
<tr>
<td>Sixth</td>
<td>One or two logical answers arise and will be written on the whiteboard separately- the logical response should be in the patient’s sight to read them aloud when necessary [exposure]. Using challenging questions, the selected automatic thoughts will be challenged and analyzed logically [patients must answer questions].</td>
</tr>
<tr>
<td>Seventh</td>
<td>The therapist will design and discuss the details of the exposure position. The therapist specifies the behavioral goals with the help of the patient himself/herself and writes on the whiteboard under the logical answers so that the patient could look at them when they are needed. The behavioral goals should be reasonable, not perfectionist or irrational.</td>
</tr>
<tr>
<td>Eighth</td>
<td>The patient plays the target role as the agent and the group members do it as the audiences.</td>
</tr>
<tr>
<td>Ninth</td>
<td>Other appropriate activities will be performed finishing the exposure [including the group members’ appreciation of the patient since she has been able to face his fear] Homework will be designed.</td>
</tr>
</tbody>
</table>

Results
Initially, the data normalization presumption was confirmed using the Shapiro-Wilk test, and the presumptions of the multivariate covariance analysis (Box’s and Levine’s homogeneity) were also confirmed. In compliance with the other assumptions (slopes homogeneity and linear assumptions), the covariance analysis was employed for data analysis. Table 2 shows the obtained values from the mean and standard deviation of the social phobia variable in the intervention and control groups at three time intervals.
Table 2: Descriptive statistics results in social phobia variable in pre-test, post-test and follow-up in two groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>Pre-test</th>
<th></th>
<th></th>
<th>Post-test</th>
<th></th>
<th></th>
<th>Follow-up</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Social phobia</td>
<td>experimental</td>
<td>36.214</td>
<td>7.227</td>
<td>27.06</td>
<td>6.563</td>
<td>25.91</td>
<td>6.205</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>37.065</td>
<td>6.774</td>
<td>36.48</td>
<td>5.452</td>
<td>36.75</td>
<td>6.125</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the information in Table 3, group training using cognitive-behavioral had a significant effect on the reduction of the social phobia of the nursing students (F=9.127; P=0.001; P<0.05).

Table 3: The results of repeated measurements of the effects of group Cognitive Behavioral training on reducing students' social phobia

<table>
<thead>
<tr>
<th>Indicator variable</th>
<th>SS (Sum of squares)</th>
<th>df degree of freedom</th>
<th>MS Mean squares</th>
<th>F coefficient</th>
<th>Significance</th>
<th>observed power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students social phobia pre-test</td>
<td>3241.085</td>
<td>1</td>
<td>3241.085</td>
<td>5.285</td>
<td>.003</td>
<td>.921</td>
</tr>
<tr>
<td>Group</td>
<td>6274.524</td>
<td>1</td>
<td>6274.524</td>
<td>9.127</td>
<td>.001</td>
<td>.943</td>
</tr>
<tr>
<td>Error</td>
<td>42871.362</td>
<td>27</td>
<td>1587.814</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>369074.000</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the information in Table 4 and based on the t-test statistic, the t value of social phobia (1.211) was smaller than the value in the critical table with the degree of freedom of 29. The difference in the mean scores of social phobia in the experimental group was not considered significant in the follow-up compared to the posttest phase. Therefore, it could be concluded that group cognitive-behavioral training had proper sustainability in the reduction of social phobia in the nursing students over time.

Table 4: The result of dependent t test for comparing the mean changes in students’ social phobia in the experimental group in the post-test and follow-up steps

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Post-test</th>
<th>Follow-up</th>
<th>t dependent test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Experimental group</td>
<td>Experimental group</td>
<td>Degree of freedom</td>
</tr>
<tr>
<td>Social phobia</td>
<td>Mean difference</td>
<td>9.421</td>
<td>0.081</td>
<td>1.211</td>
</tr>
</tbody>
</table>

According to the information in Table 5, significant differences were observed between the pretest and posttest in the study groups, while no significant difference was observed in the follow-up, indicating the consistency of the training intervention.

Table 5: Tukey’s post hoc test results to determine differences among pre-test, post-test and follow-up in the groups

<table>
<thead>
<tr>
<th>Social phobia</th>
<th>Steps</th>
<th>Mean Differences</th>
<th>Standard Error</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>Post-test</td>
<td>8.421</td>
<td>0.152</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>follow-up</td>
<td>8.761</td>
<td>0.207</td>
<td>0.001</td>
</tr>
<tr>
<td>Post-test</td>
<td>follow-up</td>
<td>0.214</td>
<td>0.087</td>
<td>0.685</td>
</tr>
</tbody>
</table>
Discussion

The present study aimed to assess the effects of cognitive-behavioral training on social phobia in nursing students with one-step follow-up. The results of covariance analysis indicated that social phobia in the experimental group significantly reduced at the posttest and follow-up phases compared to the control group, which is consistent with the findings of Caetano et al. (24) and Huppert et al. (25). On the other hand, O'Toole et al. (26) reported that group cognitive-behavioral therapy was effective in the alleviation of the social phobia disorder in female students and could follow-up and maintain the treatment outcomes for up to one month. In addition, the results obtained by Herbert et al. (28) confirmed the positive impact of group behavioral cognitive therapy on social phobia, and the method was also reported to maintain the treatment outcomes for one month. In a similar study, Suveg et al. (30) claimed that cognitive-behavioral training could effectively decrease the communication fear and quality and quantity of communications in the individuals with social phobia. This could be due to the fact that cognitive processes in social phobia could be expressed during the actual exposure. Marker and Norton (31) have described the phenomenon as the reason behind the preservation of group cognitive-behavioral therapies for the treatment of social phobia. While the group members support each other during the course of the treatment, they are reassured by each other, and as a result, most of the patients experience the indicators that may not be received from a therapist by listening to the other group members.

Social phobia is the most common disorder in youth and has deterrent effects on the efficiency and dynamity of the youth. Social phobia causes poor social performance due to its many effects on different areas of people's lives (32).

The youth with social phobia are mostly affected by their negative beliefs. The disorder differs from temporary social gaucheries, which is experienced by many youths in new environments (27). Peers relationships, academic performance, attention, and family relations may be adversely affected by the social phobia of the young population. Evidently, when therapy targets both the behavior and cognition aspects, the success rate tangibly increases compared to the therapies targeting only one aspect of the patient. The possible explanation for the effectiveness of such interventions in the treatment of social phobia is that with the avoidance of social situations, the individuals and clients with social phobia reduce the severity of their condition, avoid the emergence of the symptoms, and assume the disorder as the consequence of avoiding presence in various situations (23). As a result, the social phobia persists and becomes sustainable in the individual, and the defective cycle of phobia continues. It seems that the requisite to participating in social situations rather than their avoidance is to attain sufficient skills to manage various situations properly and understand the position and lack of belief distortion (21). Indeed, the social phobia disorder results from the ineffective beliefs of individuals regarding the potential risks of social situations, negative prediction of the positional consequences, and biased processing of obscure social symptoms. In cognitive-behavioral approaches, the behavioral avoidance of the patients is corrected, while their ineffective beliefs are also challenges (24).

The fundamental assumption of cognitive-behavioral therapy is that our thoughts and feelings play a key role in behaviors (29). The individuals who are constantly preoccupied with the perceptions of others tend to gradually avoid social situations. The goal of the cognitive-behavioral therapy is to teach the patients that although they may not be able to control all the aspects of the world around, they can still control how to interpret and address the issues that exist in the environment. There may be two reasons for expecting a negative evaluation, especially in functional situations; one reason is that individuals expect to make mistakes, and the second reason is that they expect to have visible physical signs that reveal their phobia. In other words, exposure to the evaluation of
others automatically leads to negative assessment, which is often due to the beliefs of the patient regarding the incompleteness or distortion of some aspects of their behavior, which may emerge in the form of feeling unsafe, low self-esteem, and low self-confidence (31).

In the cognitive-behavioral approach, the therapeutic strategies emphasize on the changing of anxious thoughts, attitudes, and perceptions and their replacement with rational thoughts (35). The underlying assumption of this method is that the correction of nonconforming cognitions changes anxious behaviors. Furthermore, self-management training could help individuals with phobia to change their thoughts and attitudes. Self-supervision exercises, training on the skills to reduce phobia, training on cognitive repair techniques, and replacement of irrational thoughts with rational beliefs are among the most effective methods in such therapies.

One of the limitations of the present study was that it was conducted in only one location (Babol city, Iran). Among the other limitations were the special time, female nursing students only, and evaluation of social phobia based on a self-report questionnaire.

Conclusion
According to the results, group cognitive-behavioral training could effectively reduce the social phobia of the nursing students showing sustainability over time. In addition, the students in the experimental group were able to maintain their efficiency and the therapeutic outcomes of the group sessions after the one-month follow-up. This is consistent with the previous studies in this regard, which indicated that cognitive-behavioral therapy maintains and even improves its efficiency over time. In general, the implementation of group cognitive-behavioral intervention by counselors and therapists is highly recommended as an effective therapeutic approach for the reduction of social phobia in students.

All ethical principles were observed in this article. The participants were informed of the research objectives and its implementation stages and provided written informed consent prior to participation. Moreover, they were assured of the confidentiality of their information and were allowed to withdraw from the study at any given time. The results of the research would be available to the participants on request.

Acknowledgements
Hereby, we extend our gratitude to Babol University of Medical Sciences for collaboration in the selection and enrollment of proper samples in this research project.

References
8. Sadock BJ. Delusional disorder and shared psychotic disorder In: Kaplan and Sadock’s Synopsis of psychiatry, Philadelphia, Lippincott, Williams &Wilkins, 2007, 10, 598-604.
10. Kupper N, Denollet J. Social anxiety in the general


