Original Paper

Effect of Group Cognitive-Behavioral Techniques Training on Social Anxiety in Nursing Students

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ABSTRACT

Introduction: Anxiety disorders are induced by cognitive and behavioral inefficiencies.

Objective: The present study aimed to investigate the effect of group cognitive-behavioral training techniques on social anxiety in nursing students.

Materials and Methods: This was a quasi-experimental study with a pretest-posttest follow-up (one month) and a control group design. The statistical population comprised all nursing students of Babol City, Iran. Fifty-four individuals diagnosed with social anxiety were selected using a simple random sampling method. The study groups were tested in three stages; before and after the intervention and follow-up, using the Liebowitz Social Anxiety questionnaire. The experimental group was subjected to 12 sessions of 60-minute under the group intervention of cognitive-behavioral therapy based on social anxiety. However, the control group received no training.

Results: The obtained results suggested that cognitive-behavioral techniques training was effective on social anxiety. The mean social anxiety scores of the experimental and control groups were significantly different (P=0.004).

Conclusion: Group training of cognitive-behavioral techniques significantly affected the social anxiety of studied students. Moreover, this study suggests the use of cognitive-behavioral group therapy to reduce the social anxiety of nursing students.

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Highlights

● Social anxiety is among the most common anxiety disorders.

● Cognitive-behavioral techniques can be used by counselors and therapists to reduce social anxiety in clients.

● This study suggests the use of group cognitive-behavioral therapy to reduce social anxiety in nursing students.

Plain Language Summary

This study investigated group cognitive-behavioral training techniques on social anxiety in nursing students. Social anxiety is among the most common anxiety disorders. Its highest prevalence among the youth is between 18-29 years of age. Social anxiety could lead to isolation and clear separation from the community. Social anxiety, as an uncomfortable experience, could hinder the development and social evolution trend of young people and prevent the flourishing of talents and the proof of the individuals' existence. Study results indicated that group training by cognitive-behavioral techniques has good sustainability in reducing the students' social anxiety over time. Cognitive-behavioral techniques teach clients to identify their anxiety-related thoughts and to test them objectively. The therapist tries to give the patient some new information that has been previously overlooked. Techniques that target the physiological component of anxiety include diaphragmatic breathing training and relaxation training. These techniques target the physical and physiological components of anxiety. By understanding these techniques, people learn to appropriately respond to the symptoms and triggers of anxiety to reduce the baseline level of physical stress.

Introduction

Students undergo major changes due to the concurrence of education and entering the youth age, as a high-sensitive period. A large part of these changes is due to the fears of one or more social situations, such as social interactions, being observed, and performing in the presence of others. This usually begins at the early youth and is called social anxiety [1]. Social anxiety is among the most prevalent anxiety disorders [2].

Moreover, it is the third most frequent psychiatric disorder after major depression and alcoholism [3]. This disorder is more prevalent in females [4]. Its highest prevalence rate among the youth is between 18-29 years of age [5]. Furthermore, its lifetime prevalence is reported to be 13% [6]. The fifth edition of the statistical and diagnostic guide of psychological disorders has considered the primary name of this disorder as the "social disorder" [7].

Social anxiety disorder is a definite and constant fear of being ashamed or being evaluated negatively in social situations or when performing an activity in the presence of others [8]. Epidemiological studies revealed that its prevalence is higher in the young population [9]. Individuals with social anxiety have an intense fear of being judged by others as well as interpersonal evaluations [10]. This disorder is a common cause of escape

from school in children and adolescents, leading to frequent school absenteeism [11]. This anxiety is the only disorder among the anxiety disorders associated with an early drop in education and the reduction of individual academic performance. This occurs due to separation from society and the fear of being negatively evaluated by peers [12]. In addition, social anxiety, as an uncomfortable experience, hinders the development [13].

Some studies have suggested that social anxiety disorder in young people is related to extreme complications, such as physiological arousals and cardiovascular system responses, social function deficiencies, weak social activation, and negative perceptions [14-16]. This disorder highly comorbid with other ethical anxiety disorders [17]. According to researches, 84% of people with social anxiety disorder have another disorder [18]. There are several treatments for social anxiety disorder, such as pharmacotherapy, group behavior-therapy, group cognitive-therapy, mindfulness, and so on [19].

Some studies suggested that the concurrent use of medication and psychotherapy in social anxiety disorder provides better results compared to a single treatment method [20]. Cognitive-behavioral models of social anxiety disorder indicate that the disorder and damage to the process of social information processing significantly affect the maintenance of anxiety disorder [21]. Cognitive-behavioral approaches for social anxiety are based on different

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cognitive models in the etiology of this disorder, and the two techniques of facing and cognitive repair are emphasized more than the other methods by the experts [22]. Cognitive-behavioral models used to explain and discover the etiology of various anxiety disorders have common features [23]. First, it is assumed that people get anxious in reaction to special stimuli; second, unrealistic changes persist because patients resort to a series of safety behaviors to prevent horrible events [24]. Third, in many anxiety disorders, the anxiety symptoms are the sources of risk perception and create a series of faulty loops, as major contributors to the continuation of anxiety disorder [25].

Researches have argued that 85% of people with social anxiety have experienced decreased academic performance [26]. This disorder is highly pervasive and disabling [27, 28]. Research studies indicated the proficient effect of cognitive-behavioral therapies on social anxiety disorder [29, 30]. Cognitive-behavioral therapies have been used and studied more than other psychological treatments to reduce the symptoms of social anxiety [31, 32]. Researchers investigated the long-term effectiveness of group cognitive-behavioral training in reducing social anxiety symptoms. The concluded that subjects could maintain the achieved treatment resulted for up to 3 to 5 years [33].

In recent years, much psychological advancement has been made in the treatment of social anxiety. Furthermore, there is a great emphasis on studying the effectiveness of cognitive-behavioral training, either alone or in combination with medication [34, 35]. Additionally, studying psychological problems in nursing students is essential; this is because of its impact on their future career. Moreover, many students visit consultants to examine their anxiety problems; however, they complain about not acquiring the desired result. It is necessary to improve social anxiety in nursing students through various methods. Therefore, the present study investigated the effects of group cognitive-behavioral training techniques on nursing students' social anxiety.

Materials and Methods

This was a quasi-experimental study with a pretest-posttest and a control group, as well as and a one-month follow-up design. The research population comprised all 287 female students of Babol University of Medical Sciences in the academic year of 2018-2019. The Mean±SD scores of social anxiety was calculated as 48.05±16.09 by Jazaieri et al. [7]. They also found a power=0.90 and α=0.95. Thus, considering the relevant sample size determination formula, their number of samples was equal to 30 individuals. In this study, sample size for each group was equal to 15 individuals. Initially, 186 questionnaires were distributed among the study subjects, with 54 participants present as the cut-off point of 34 social anxiety questionnaires. Thirty people were selected by random sampling technique and were randomly assigned into two equal groups of 15.

The inclusion criteria included developing social anxiety disorder, female gender, being single, studying at least at the fourth semester or the second year of education. Exclusion criteria included discontinuing the research at any time (as they were allowed to do so). The questionnaire consisted of two parts; demographic information form and social anxiety questionnaire. Social Anxiety questionnaire was designed by Liebowitz [35]. It has 24 phrases, with scores ranging from zero to three, and this test yields a general anxiety score of 0 to 72. Its reliability was calculated to be 0.81 by Cronbach's alpha method in the present study.

The social anxiety level in the two groups was assessed at pretest, posttest, and one month post-intervention. Before starting the sampling in the implementation process, some explanations were provided about the purpose of the study and data confidentiality to the subjects. Concurrently, informed consent was received from the students. Then, the questionnaires were received from the two groups for pretest phase. The control group received no intervention. The experimental group received a 12-session 60-minute intervention (Table 1) for two sessions per week in May 2019. Next, the posttest was conducted on both groups after the intervention sessions' completion. Intervention sessions and pretest and posttest data were obtained in the clinic. There was no intervention during one month post-intervention. Then, one-month follow-up data were received. After the study completion, the control group received cognitive-behavioral training sessions to observe the ethical principles. The obtained data were analyzed by ANOVA and Dependent Samples t-test in SPSS V. 24. The significance level was set at $P<0.05$.

Results

The mean age of the experimental and control groups were 21.8±0.82 and 21.6±0.91 years, respectively. Four people were not employed, and 11 were employed in the experiment group; six people were not employed, and 9 were employed in the control group.

Table 2 indicates the mean scores of social anxiety in the two groups at three-time intervals. The data normalization presumption was confirmed by the Shapiro-Wilks test. Then, the presumptions of the Univariate Analysis of Covariance (ANCOVA), including homogeneity of data,

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Table 1. Sessions outlines for group cognitive-behavioral training in social anxiety disorder

Sessions	Goal	Content
First sessions	Introduction and communication	The questionnaire was received from the students, communication, the expression of expectations at the treatment process, increased awareness of anxiety disorder symptoms.
Second	Aims of behavioral-cognitive treatment	Explaining treatment logic and training the behavioral-cognitive treatment principles, conducting the treatment contract.
Third	Increased awareness	Increasing awareness regarding present and future events and training them with problem-solving strategies.
Fourth	Training the problem-solving strategies and encounter	Training them with the problem-solving strategy and identifying the vague situations. The therapist selects a member of group members and explains the entire lines of encountering situations.
Fifth	Automatic thoughts introduction	Participant's automatic thoughts were identified concerning the described situation. One or two cases of the identified thoughts were selected for more research and were written separately.
Sixth	Cognitive distortions, recognition of positive and negative beliefs	Selecting cognitive errors about automatic thoughts, introducing cognitive distortions and inefficient assumptions, using downward arrow technique, recognition of positive and negative beliefs about the concerns, and criticizing the beliefs.
Seventh	Relaxation training	Muscle relaxation training along with mental imagination and concurrent performance.
Eighth	Using visual methods	Applying the method of desirable reminiscences and thoughts mental replacement when reminding the disturbing reminiscences and automatic thoughts concerning anxious situations, using appropriate methods to face disturbing thoughts or through stopping.
Ninth	Using techniques to avoid reminiscences' review	Using techniques to avoid dissatisfactory reminiscences and events, including gradual desensitizing.
Tenth	Training to play roles	Performing the role-play method where they experience anxiety in their relationships instead of others and express their thoughts, desires, and emotions and complete unfinished sentences.
Eleventh	An investigation into submitted plans and assignments	The therapist reviews the assignments along with the group members and performs the related techniques.
Twelfth	Conclusion and finalizing	Other appropriate activities are performed to finalize exposure (encounter) (including the group members' appreciation of the patient since he/she has been able to face his/her fear). Concluding the materials presented in all meetings.

were assessed by Levene's test in terms of the social variable. Meanwhile, concerning complying with other assumptions (slopes homogeneity and linear assumptions), ANCOVA was used to analyze the obtained data.

Based on Table 3, group cognitive-behavioral techniques training significantly reduced the social anxiety of studied students (P=0.004). Furthermore, the t-test results revealed no significant difference in the follow-up mean scores of social anxiety, compared to the posttest ones in the test group.

Discussion

The collected results demonstrated that the mean score of social anxiety significantly decreased in the experimental group after the intervention, compared to the controls.

Additionally, the follow-up data indicated the consistency of cognitive-behavioral techniques.

These findings are consistent with those of Seeger et al. and Huppert et al. in terms of the effectiveness of group cognitive-behavioral training on the reduction of social anxiety among the students [16, 25]. Herbert et al. documented the effect of group cognitive-behavioral training on social anxiety [28]; the subjects were also able to maintain the treatment outcomes for a month. Suveg et al. [30] found that cognitive-behavioral training is effective in reducing communication fear and improving the quality and quantity of communication in people with social anxiety. O'Toole et al. documented that group cognitive-behavioral therapy was effective on social anxiety disorder in female students [26]. Their follow-up data revealed the maintenance of the treatment achievements for up to one month.

Table 2. Descriptive statistics results regarding social anxiety at pretest, posttest and follow-up stages

Variable		Mean±SD		
	Group	Group	Post-test	Follow-up
Social anxiety	Test	38.48±8.21	26.06±7.74	25.91±7.36
	Control	37.96±7.96	36.48±6.08	36.75±6.07

Table 3. The effects of group cognitive-behavioral techniques training on students' social anxiety

Indicator Variable	Sum of Squares	df	Mean Squares	F Coefficient	Sig.*	Square	Statistical Power
Students' social anxiety pre-test score	1207.399	1	1207.399	2.172	0.146	0.037	0.305
Group	4898.691	1	4898.691	8.813	0.004	0.134	0.831
Error	31683.568	27	1173.465				
Total	247069.000	30					

* ANCOVA

In other words, after-occurrence processes, like cognitive processes in social anxiety, could be expressed during the actual exposure. Marker and Norton described it as the reason behind preserving group cognitive-behavioral therapy in social anxiety [31]. While the group members support each other during the treatment course, they reassure each other. Moreover, they suggested that due to this reason, most patients experience the indicators, which fail to receive from the therapist, by listening to other group members. Young people with social anxiety are mostly affected by their negative beliefs. This disorder is different from temporary social gaucheries, which is experienced by many youths in new environments [27].

Peer relationships, academic performance and attention, and family interactions could be affected by social anxiety in youth. Therapies that target behavioral and cognitive aspects could be more successful than the one that only considers one of these aspects. The possible explanation for the effectiveness of such intervention on social anxiety is that by avoiding social situations, individuals with social anxiety reduce their anxiety and avoid the emergence of the social anxiety symptoms; they assume it as the consequence of presence avoidance in these situations [23]. As a result, the individual's social anxiety persists, and the anxiety's faulty loop continues. Participating in social situations (the lack of avoidance) requires sufficient skills. Such skills are beneficial to cope with such situations well and to properly understand the position and lead to a lack of beliefs' distortion [21].

Social anxiety disorder results from the individuals' ineffective beliefs about the potential risks of social situations, negative prediction of the position's consequences, and biased processing of obscure social symptoms. In cognitive-behavioral approaches, the patients' behavioral avoidances are eliminated while challenging these ineffective beliefs [24]. Thus, individuals' cognitive processing style changes using group cognitive-behavioral therapy; consequently, new strategies are presented through rational analysis methods for solving the patients' problems [32].

In addition, techniques targeting the physiological component of anxiety help people to learn appropriately respond to the symptoms and triggers of anxiety; thus, they reduce the baseline physical stress level. These strategies can be considered as necessary cognitive adjustment skills that patients with pervasive anxiety disorder usually lack [27]. Cognitive-behavioral techniques teach clients to identify their anxiety-related thoughts and to test them objectively. The therapist assists the patient in considering the new information that has been overlooked. This group cognitive-behavioral therapy helps clients to modify their misinterpretations and perceptions of environmental events and to create new perspectives. The clients learn to tolerate ambiguity and uncertainty and to be more cognitively flexible in visualization [24]. Finally, patients use these new cognitive perspectives as a different coping response to anxious events.

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Moreover, techniques targeting the behavioral component of anxiety include identifying the safe behaviors of concern, identifying and eliminating avoidant behaviors, mental exposure, and coping practice [26]. Another possible explanation for the effectiveness of this intervention on social anxiety is that individuals with social anxiety reduce their anxiety by avoiding social situations as well as the emergence of social anxiety symptoms; thus, they consider it as the consequence of their presence avoidance in such situations. Consequently, the person's social anxiety becomes consistent and the faulty loop of fear persists. Participating in social situations and not avoiding them requires sufficient skills for appropriately coping with such situations. Additionally, they need to have a proper understanding of the situation and not to distort the beliefs [23].

Social anxiety disorder is caused by people's dysfunctional beliefs about the potential threats of social situations, negative prediction of the situation consequences, and biased processing of ambiguous social symptoms. Patients' behavioral avoidances are also modified while challenging the dysfunctional beliefs in cognitive-behavioral approaches [21]. Group cognitive-behavioral intervention can be used by therapists to effectively reduce the students' social anxiety.

This research was limited to the students of the University of Medical Science in Babol City. Moreover, specific research duration, considering female gender only, as well as measuring social anxiety level based on a self-report questionnaire were among other limitations of this study. Group cognitive-behavioral therapy significantly reduced social anxiety in students. Therefore, this therapy could reduce social anxiety in nursing students.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles were considered in this article. The study participants were informed about the purpose of the research and its implementation stages and signed an informed consent form; they were also assured about the confidentiality of their information. Moreover, they were allowed to leave the study whenever they wished, and if desired, the results of the research would be available to them. This research has been registered by IR.IAU.SRB. REC.1398.184 code of ethics at Tehran University of Medical Science.

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