J Cogn Behav Psychother Res 2025;14(3):192-201

Effect of an Online Group Programme based on Cognitive Behavioural Therapy Combined with Self-Compassion on Social Anxiety and Self-Compassion: A Pilot Study

D Zohra Safarova, D Gülfem Çakır Çelebi

¹Akdeniz University, Institute of Educational Sciences, Guidance and Counseling Program, Antalya, Türkiye

²Department of Guidance and Counseling, Akdeniz University, Faculty of Education, Antalya, Türkiye

ABSTRACT

This pilot study examined the impact of an online psychoeducation group based on cognitive behavioural therapy (CBT) combined with self-compassion on social anxiety, automatic thoughts and self-compassion among university students. In line with the study's goal, a randomised control group pre-test, post-test and follow-up test design were used. The study group consisted of 18 university students from a public university in Türkiye (nine participants in each group). The experimental group underwent a six-session online programme combining CBT and self-compassion-based psychoeducation to reduce social anxiety, whereas the control group did not receive any treatment. The Liebowitz Social Anxiety Scale, Automatic Thoughts Scale and Self-Compassion Scale were used for data collection. The results showed that the levels of social anxiety and automatic thoughts of the students in the experimental group decreased, and their self-compassion levels increased. These findings suggest that the integrated approach used in this study is an effective online intervention for treating social anxiety.

Keywords: Automatic thoughts, cognitive behavioural therapy, self-compassion, social anxiety, psychoeducation.

ÖZ

Öz-Şefkat ile Birleştirilmiş Bilişsel Davranışçı Terapiye Dayalı Çevrim İçi Grup Programının Sosyal Anksiyete ve Öz-Şefkat Üzerindeki Etkisi: Bir Pilot Çalışma

Bu pilot çalışma, bilişsel davranışçı terapi ile öz-şefkati birleştiren çevrim içi psikoeğitim grup uygulamasının üniversite öğrencilerinin sosyal kaygı, otomatik düşünceler ve öz-şefkat düzeyleri üzerindeki etkisini inceledi. Çalışmanın amacı doğrultusunda, randomize kontrol gruplu ön-test, son-test ve izleme testi deseni kullanıldı. Çalışma grubu, Türkiye'deki bir devlet üniversitesine devam etmekte olan 18 üniversite öğrencisinden (her grupta dokuz katılımcı) oluşmaktadır. Deney grubuna sosyal kaygıyı azaltmak için bilişsel davranışçı terapi ve öz-şefkat temelli psikoeğitimi birleştiren altı seanslık çevrim içi bir program uygulanırken, kontrol grubu herhangi bir uygulamaya katılmadı. Veri toplama araçları olarak Liebowitz Sosyal Kaygı Ölçeği, Otomatik Düşünceler Ölçeği ve Öz-Şefkat Ölçeği kullanıldı. Sonuçlar, deney grubundaki öğrencilerin sosyal kaygı ve otomatik düşünce düzeylerinin azaldığını, öz-şefkat düzeylerinin ise arttığını gösterdi. Bu bulgular, bilişsel davranışçı terapi ile öz-şefkati birleştiren bir psikoeğitim grubunun sosyal kaygıyı azaltmaya yönelik etkili bir çevrim içi müdahale olabileceğini göstermektedir.

Anahtar Kelimeler: Otomatik düşünceler, bilişsel davranışçı terapi, öz-şefkat, sosyal kaygı, psikoeğitim.



Cite this article as:

Safarova Z, Çakır Çelebi G. Effect of an Online Group Programme based on Cognitive Behavioural Therapy Combined with Self-Compassion on Social Anxiety and Self-Compassion: A Pilot Study. J Cogn Behav Psychother Res 2025; 14(3): 192–201.

Address for correspondence:

Gülfem Çakır Çelebi. Akdeniz Üniversitesi, Eğitim Fakültesi, Rehberlik ve Psikolojik Danışmanlık Bölümü, Antalya, Türkiye

Phone: +90 532 480 37 98 **E-mail:**

sgcakir@akdeniz.edu.tr

Submitted: 20.03.2025 **Revised:** 19.04.2025 **Accepted:** 30.05.2025 **Available Online:** 25.08.2025

JCBPR, Available online at http://www.jcbpr.org/



This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

INTRODUCTION

Social anxiety is a common issue that significantly affects individuals' daily lives, characterised by a strong desire to make a positive impression, combined with insecurity about one's ability to do so (Rachman et al, 2000). It often arises in performance situations, where those with higher anxiety tend to limit self-disclosure to avoid negative evaluation (Cuming & Rapee, 2010). Social anxiety is prevalent among young people and disrupts social interactions, particularly in university settings, where it negatively correlates with communication with instructors and peers (Jefferies & Ungar, 2020; Morrison & Heimberg, 2013; Archbell & Coplan, 2022).

The prevalence of social anxiety disorder among university students varies depending on the population and assessment method (Schneier et al, 1992). Estimates range from 9.8% to 22% (Izgiç et al, 2000), whereas other studies have reported rates between 7.8% and 80% (Desalegn et al, 2019). Many students experience social anxiety without meeting the diagnostic criteria, making it essential to distinguish between normal nervousness and clinical social anxiety disorder (Schneier et al, 1992). Social anxiety is often under-recognised in higher education due to low self-reporting rates (Russell & Shaw, 2009). Affected individuals fear negative judgements before, during and after social interaction (Hope et al, 2010). Social anxiety has been linked to loneliness, problematic social media use and maladaptive cognitive patterns (O'Day & Heimberg, 2021), highlighting the need for university students to receive targeted treatment interventions.

Cognitive behavioural therapy (CBT) is an effective evidence-based treatment for social anxiety. This suggests that irrational beliefs triggered during stressful events contribute to anxiety and avoidance behaviours (Beck, 2010; Clark & Wells, 1995; Özdel, 2021). Reducing social anxiety requires identifying and challenging negative automatic thoughts (lancu et al, 2015) as they shape self-perception and responses to social cues (Glashouwer et al, 2013). CBT techniques, such as exposure, behavioural experiments and cognitive restructuring, help counter irrational thoughts and reduce avoidance (Niles et al, 2021). Psychoeducational CBT interventions effectively provide coping skills and reduce social anxiety symptoms (Brown et al, 2018).

The coronavirus disease 2019 (COVID-19) pandemic has significantly increased the demand for online mental health services as many countries have turned to digital platforms to reduce infection risks. However, rising anxiety levels led individuals to prefer face-to-face interactions over online treatments. This shift highlights the need for e-mental health applications (Bentley et al, 2022; Wind et al, 2020). Online interventions can effectively reduce depression, anxiety and

social phobia (Harrer et al, 2021; Titov et al, 2008). For social anxiety, online therapies can achieve effectiveness and satisfaction similar to face-to-face treatments (Jain et al, 2021).

Although research on Internet-based cognitive behavioural therapy (ICBT) for social anxiety is limited, studies suggest that it is effective (Niles et al, 2021; Nordmo et al, 2015; Riboldi et al, 2023). A meta-analysis found that online CBT is superior to other interventions (Harrer et al, 2019). ICBT allows individuals to engage in social assessment at their own pace and in a safe space, thereby reducing the anxiety associated with social assessment (Dryman et al, 2017). Based on the same principles as face-to-face CBT, ICBT offers greater flexibility in time and space, making it a valuable alternative for the treatment of social anxiety (Niles et al, 2021).

Research on social anxiety has increasingly highlighted the importance of self-compassion (Gill et al, 2018). Self-compassion alleviates social anxiety and addresses severe shyness in individuals with social anxiety disorder (Candea & Szentagotai-Tatar, 2018). Werner et al. (2012) found that individuals with SAD had significantly lower self-compassion scores, even after controlling for depression and anxiety. High self-compassion levels positively affect social anxiety symptoms (Gill et al, 2018). Self-compassion, a teachable skill for responding to personal pain with kindness, is invaluable (Neff & Toth-Kiraly, 2017, Neff & Toth-Kiraly, 2022). Studies, including those by Teale Sapach et al. (2023) and Stevenson et al. (2019), support the potential of self-compassion training in reducing social anxiety, particularly when added to CBT-based interventions.

This study contributes to the existing literature by developing an online psychoeducation programme that integrates CBT and self-compassion techniques to mitigate social anxiety. This study combined these approaches within a single programme and evaluates their combined efficacy. Additionally, it offers an accessible online format that is crucial for reaching a broader audience. The programme encompassed both informational content and practical exercises to assist participants in comprehending and managing their social anxiety symptoms more effectively. This pilot study aimed to explore the effects of an online CBT with a self-compassion programme on social anxiety. The first hypothesis predicted a significant decrease in anxiety and avoidance scores from the pre-test to the posttest, with continued improvement at the 3-month follow-up. The second hypothesis suggested a significant reduction in automatic thoughts, and the third predicted an increase in self-compassion scores in the experimental group. The fourth hypothesis anticipated significant differences between the post-test scores of the experimental and control groups, with the experimental group showing more favourable outcomes in anxiety, avoidance, automatic thoughts and self-compassion.

METHODS

This was an experimental study involving a RC group pretest, post-test and follow-up design. Figure 1 shows the flow diagram of this study.

Participants

This study recruited 18 volunteer undergraduates (mean age=20.3 years, SD=1.5) from a public university in Türkiye, southern Anatolia. Figure 1 shows the flow of the study. Convenience sampling was used because of the limited number of eligible volunteers. Furthermore, the number of participants was deemed appropriate for the content and exercises of the online environment (Brown, 2018). To be eligible, participants had to score at or above the clinical cutoff (≥31) on the Social Interaction Anxiety Scale (SIAS) based on Turkish normative data; no formal DSM-5 diagnosis was required. Nine students (five females and four males) were randomly assigned to the experimental group and nine (seven females and two males) to the control group. The academic disciplines represented by the participants in the experimental group included gerontology, food engineering, nursing (n=2), English language teaching, cinema and television, sociology, city and regional planning and justice. Participants in the control group were from the fields of nutrition and dietetics, mechanical engineering, horticulture, psychology (n=3), medicine, tourism guidance and international relations.

Data Collection Instruments

Primary Outcomes

The primary outcomes were the anxiety and avoidance subdimensions of social anxiety, which were measured using the Liebowitz Social Anxiety Scale (LSAS). Liebowitz (1987) developed this scale to assess the level of anxiety and avoidance experienced by individuals in their social interactions. The measure has 24 items and two subscales: anxiety and avoidance. The items were measured using a 4-point Likert scale, with higher scores indicating higher levels of social anxiety. Soykan et al. (2003) adapted the Turkish scale. Higher LSAS scores indicate higher levels of social anxiety. Cronbach's alpha coefficients for the Turkish version of the scale were 0.98 for the total scale, 0.96 for the anxiety subscale and 0.95 For the avoidance subscale. The Beck Anxiety Inventory was significantly correlated with the anxiety subscales, avoidance subscales and the whole scale (rsrr=0.26, 0.21 and 0.25, respectively, p<0.05).

Secondary Outcomes

The secondary outcomes included automatic thoughts and self-compassion. Automatic thoughts were measured using the ATS developed by Hollon and Kendall (1980) to assess negative self-directed thoughts. The scale comprises 30 items

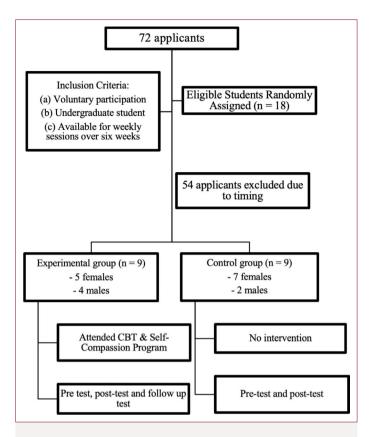


Figure 1. Study flow.

and five subscales. The items were measured on a 5-point Likert scale, with higher scores indicating a higher frequency of automatic thoughts. The Turkish adaptation of the ATS was carried out by Aydın and Aydın (1990), and the Cronbach's alpha coefficient for the Turkish version of the scale was reported as 0.93. Exploratory and confirmatory factor analyses of the Automatic Thoughts Questionnaire identified five factors that together accounted for 61% of the total variance, demonstrating construct validity.

Self-compassion was measured using the Self-Compassion Scale. The SCS developed by Raes et al. (2011) has 12 items and two subscales, with a 5-point Likert scale, with higher scores indicating higher levels of self-compassion. The Turkish adaptation study of the scale was carried out by Yıldırım and Sarı (2018), and the Cronbach's alpha coefficient was reported as 0.75. Confirmatory factor analyses of the 12-item Self-Compassion Scale–Short Form support its two-factor structure (RMSEA=0.06, GFI=0.96, NFI=0.91, CFI=0.95, NNFI=0.94).

Intervention and Procedure

This study followed the 1964 Declaration of Helsinki and was approved by the Scientific Research and Publication Ethics Committee for Social and Human Sciences of Akdeniz

University (approval date: 10.06.2022; approval number: 10-232). Participants provided electronic informed consent and completed the baseline questionnaires after receiving an email invitation. The first author delivered six weekly online sessions via a secure platform. Each 90-min session included a 5–15 min opening check-in and 30 min of psychoeducation, followed by practical activities and a brief 5-min closing meditation. Mid-week reminder emails and 5–10 min check-ins were sent to maintain engagement. Both groups completed the same pre-test (Week 0), post-test (Week 7) and follow-up (Week 19) assessments. The control group received no intervention during the study but was offered the programme afterwards. Recruiting students from several faculties and using an online format helped improve generalizability.

Online CBT with the Self-Compassion Programme

An online 6-week psychoeducational programme was designed to reduce social anxiety through a combination of CBT and self-compassion. The content was developed by reviewing various sources (Boersma et al, 2015; Gharraee et al, 2018; Gilbert, 2010; Heimberg, 2002; Niles et al, 2021; Sokol & Fox, 2019; Titov et al, 2008; Werner et al, 2012; Whitfield, 2010). The programme's structure, including the session content, goals, interventions and homework, was carefully planned. Each weekly session incorporated CBT-based exercises with self-compassion techniques. The brief content of the programme is provided in the Appendix.

The 6-week online programme began with a 90-min orientation in which the facilitator introduced herself, explained the CBT and self-compassion framework and worked with the participants to define social anxiety and self-compassion. The ground rules—confidentiality, punctuality, active sharing and homework completion—were co-created, and an icebreaker exercise ('What makes you different?') fostered group cohesion. The visual tools (the 4D model, Plutchik's Wheel) illustrated how thoughts, bodily sensations and behaviours interact in the context of social anxiety.

In Week 2, the participants learned to identify and challenge their negative automatic thoughts. The session covered cognitive distortions, evidence-based versus alternative thinking and self-compassion (self-kindness, common humanity and mindfulness). An externalisation exercise invited the participants to draw their 'anxiety character' and generate compassionate counter-thoughts; homework included daily thought records and guided diaphragmatic breathing practice. Week 3 focused on avoidance and safety behaviours. After reviewing the homework, the group mapped common escape tactics and discussed how self-compassionate confrontation could replace avoidance. In a creative 'compassionate strengths' activity, members sculpted

and shared personal symbols of inner kindness. The session concludes with a brief self-compassion meditation. In the fourth session, the concepts of compassionate communication and self-awareness were introduced. Participants explored non-violent communication (observe-feel-need-request) and the Johari window model to broaden their 'open area'. Through subgroup brainstorming and role-play, members practiced observing without judgement, clearly expressing needs and giving and receiving feedback. A short breathing exercise reinforced a mindful presence. Week 5 addressed assertiveness ('secure assertion'), distinguishing refusal, praise and request rights. After reviewing Plutchik's Wheel to deepen emotional literacy, the participants contrasted 'I-language' with 'you-language' and applied their skills to real-life vignettes, generating aggressive, submissive and assertive responses. At the end of the session, meditation helped integrate assertive self-expression with self-compassion. In the final session, the facilitator guided a comprehensive review of all skills and led the participants to evaluate their progress against the initial goals ('Where I Was/Where I Am'). A metaphorical exercise invited participants to describe the programme as an object or living thing, underscoring personal growth. Following selfcompassion meditation and post-test measures, certificates were awarded and farewells were exchanged.

Statistical Analysis

Preliminary analyses were conducted before the JASP main analyses. The normality assumption of the data was tested using histograms, Kolmogorov-Smirnov (p values ranged between 0.065 and 0.200) and Shapiro-Wilk tests (p values ranged between 0.082 and 0.952), which showed that the data followed a normal distribution. In addition, the kurtosis and skewness values of the data were examined, and it was determined that these values were between -2 and +2 (George & Mallery, 2010). Therefore, a t-test was used to compare the pre- and post-test scores of the experimental and control groups. ANOVA was used to compare the pre-test, post-test and follow-up test scores of the participants in the experimental group. The pre-test scores of the experimental and control groups did not differ significantly in total automatic thoughts (t(16)=1.386, p=0.185) or self-compassion (t(16)=-0.030, p=0.976). However, significant differences were found between the groups' pre-test scores in terms of anxiety (t(16)=3.239, p=0.005) and avoidance (t(16)=2.351, p=0.032). According to these results, the anxiety and avoidance scores of the participants in the experimental group were significantly higher than those in the control group. Therefore, an ANCOVA was used to compare the anxiety and avoidance post-test scores. In this study, post-hoc power analyses were conducted for tests at α =0.05 (1- β error probe) using G*Power version 3.1.9.7 (Faul et al, 2007).

Table 1. Means and standard deviations for the study groups

Measurement	Expe		mental	Control	
	n	Mean	SD	Mean	SD
Pre-test					
Anxiety	9	40.11	11.90	24.00	9.00
Avoidance	9	36.56	11.14	24.56	10.51
Automatic thoughts	9	99.67	40.87	77.89	23.48
Self-compassion	9	27.00	10.07	27.11	4.34
Post-test					
Anxiety	9	20.89	11.45	27.22	10.16
Avoidance	9	19.67	9.01	26.22	9.38
Automatic thoughts	9	62.00	27.96	76.00	18.24
Self-compassion	9	35.11	6.11	27.00	5.57
Follow-up					
Anxiety	9	26.00	9.54		
Avoidance	9	23.56	10.68		
Automatic thoughts	9	60.78	27.06		
Self-compassion	9	34.22	6.418		
CD C: 1 11 :::					

SD: Standard deviation.

RESULTS

Differences Between the Experimental Group Scores

Table 1 provides descriptive statistics for the pre-test, post-test and follow-up scores of the experimental and control groups.

ANOVA was used to examine whether there was a significant difference between the experimental group's pre-test, post-test and follow-up test scores in terms of social anxiety, automatic thoughts and self-compassion. Table 2 presents the results.

The results for the experimental group presented in Table 2 indicate significant differences among the participants' pretest, post-test and follow-up scores in anxiety (F=15.452, p=0.001) and avoidance (F=13.009, p=0.001) as primary outcomes and automatic thoughts (F=9.779, p=0.002) and self-compassion (F=3.642, p=0.050) as secondary outcomes. Post-hoc tests with Bonferroni correction were conducted for the social anxiety and automatic thoughts scores, and the results are shown in Table 3.

The results in Table 3 showed a significant difference between the pre- and post-test scores for anxiety (t=5.366, p=0.001) and avoidance (t=4.870, p=0.001) in favour of the post-test scores. Moreover, a significant difference was found between the pre- and post-test scores for automatic thoughts (t=3.767, p=0.005) and self-compassion (t=-2.938, p=0.019). No statistically

Table 2. Differences among the experimental group scores

Measurements	n	df	F	р	η²
Anxiety			15.452	0.001*	0.659
Pre-test	9	2			
Post-test	9	2			
Follow-up	9	2			
Avoidance			13.009	0.001*	0.619
Pre-test	9	2			
Post-test	9	2			
Follow-up	9	2			
Automatic thoughts			9.779	0.002*	0.550
Pre-test	9	2			
Post-test	9	2			
Follow-up	9	2			
Self-compassion			3.642	0.050	0.313
Pre-test	9	2			
Post-test	9	2			
Follow-up	9	2			

*: P<0.05; df: Degrees of freedom.

Table 3. Differences between the pre- and post-test scores of the experimental group

	n	MD	SE	t	\mathbf{p}_{bonf}	η²
Anxiety	9	19.222	3.582	5.366	0.001*	0.783
Avoidance	9	16.889	3.468	4.870	0.001*	0.748
Automatic thoughts	9	37.667	9.998	3.767	0.005*	0.639
Self-compassion	9	8.111	2.761	-2.938	0.019*	0.519

*: P<0.025; MD: Mean difference; SE: Standart error.

significant differences were found between the post-test and follow-up test scores for anxiety (t=1.427, p=0.518), avoidance (t=1.121, p=0.836), automatic thoughts (t=-0.122, p=1.000) and self-compassion (t=0.270, p=0.791). These results suggest that the levels of anxiety and the avoidance sub-dimensions of social anxiety, as well as the levels of automatic thoughts and self-compassion, underwent significant changes from the pre-test to the post-test with large effect sizes and that these changes continued after three months.

Differences Between the Post-Test Scores of the Two Groups

The pre-test social anxiety scores were significantly different between the experimental and control groups. ANCOVA was performed to test for a significant difference in the post-test scores of social anxiety, while controlling for pre-test scores (Table 4).

Table 4. ANCOVA results for anxiety and avoidance scores

Post-test	MS	F	df	р	η²
Anxiety	585.998	6.297	1	0.024*	0.296
Avoidance	502.003	8.089	1	0.012*	0.350

*: P<0.001; ANCOVA: Analysis of Covariance; MS: Mean square; df: Degrees of freedom.

The ANCOVA results in Table 4 revealed that the mean anxiety post-test scores of the participants in the experimental group (X=20.88) were significantly lower than the mean anxiety post-test scores of the participants in the control group (X=27.22) with a large effect size (F(1,17)=6.297, p=0.024, η^2 =0.353). Furthermore, the mean avoidance post-test scores in the experimental group (X=19.66) were significantly lower than those in the control group (X=26.22), with a large effect size (F(1,17)=8.089, p=0.012, η^2 =0.350).

The independent samples t-test was used to test the difference between the mean self-compassion and automatic thoughts post-test scores of the experimental and control groups. Table 5 presents the results.

The post-test scores showed a significant improvement in self-compassion in the experimental group compared to the control group, with a large effect size (Cohen's d=1.387, p=0.010). Conversely, no significant difference was found between the groups in terms of automatic thoughts (p=0.226). This suggests that the intervention effectively enhanced self-compassion but did not significantly impact automatic thoughts.

DISCUSSION

This study examined the effectiveness of an online CBT programme integrated with self-compassion techniques to reduce social anxiety and automatic thoughts and enhance self-compassion among university students. These findings support the first hypothesis, which predicted a reduction in the anxiety and avoidance subscales of social anxiety. After completing the CBT programme with selfcompassion, the experimental group showed significant decreases in both anxiety and avoidance levels, with large effect sizes. This reduction in social anxiety was maintained at the 3-month follow-up, suggesting the intervention's long-term effectiveness. In contrast, no significant changes in social anxiety were observed in the control group. These findings contribute to prior research showing that CBT-based psychoeducation can reduce social anxiety (Dryman et al, 2017; Nowakowski et al, 2016) and that self-compassionfocused interventions are effective in treating social anxiety (Gill et al, 2018). Face-to-face and online CBT interventions have similar efficacy in reducing social anxiety symptoms (Dryman et al, 2017).

Table 5. Differences between self-compassion and automatic thoughts post-test scores of the groups

	n	t	df	р	Cohen's d
Self-compassion	9	2.943	16	0.010*	1.387
Automatic thoughts	9	-1.258	16	0.226	-0.593

*: P<0.05; df: Degrees of freedom.

The programme design, which adapted CBT techniques to incorporate self-compassion, may have influenced the reduction in social anxiety scores among participants in the experimental group. This integration may have allowed participants to engage with their thoughts and emotions in a more forgiving, non-judgemental manner, thereby reducing the negative automatic thoughts that perpetuate social anxiety. Self-compassion can be a valuable tool for reducing social anxiety and promoting emotional regulation (Pauley & McPherson, 2010).

The second hypothesis was also supported as the experimental group showed a significant reduction in the number of automatic thoughts. Follow-up analyses confirmed that this reduction was maintained. In contrast, no significant changes in automatic thoughts were observed in the control group. These results suggest that CBT with the self-compassion programme helped participants become more aware of their automatic thoughts and provided them with tools to challenge these thoughts. The inclusion of self-compassionate alternatives to negative automatic thoughts likely plays a key role in these positive outcomes. Self-compassion can effectively and automatically reduce negative thoughts (Arimitsu & Hofmann, 2015).

The third outcome of this study was the increase in selfcompassion levels in the experimental group. Post-test comparisons between the experimental and control groups revealed significant differences from the experimental group, demonstrating increased self-compassion. Considering the content of the programme, the inclusion of self-compassion exercises in CBT may have contributed to the increase in self-compassion. Previous research has shown that selfcompassion-based interventions reduce the symptoms of social anxiety and depression (Wilson et al, 2019), and CBTbased group therapy increases self-compassion (Hamedani et al, 2023). Thus, a higher level of self-compassion can be a channel for decreasing social anxiety (Candea & Szentagotai-Tatar, 2018) and can serve a regulatory function to reduce social anxiety. The findings of this study provide evidence that developing self-compassion and reducing negative thoughts can reduce the severity of anxiety symptoms (Arimitsu & Hofmann, 2015).

CONCLUSION

The findings of this study indicate that a six-session online CBT with a self-compassion programme can effectively reduce social anxiety and automatic thoughts and increase self-compassion. This study has several limitations. First, the small sample size (18 participants) may not fully represent the diversity of responses in a larger population. Post-hoc power analyses indicated adequate statistical power to detect significant effects. However, a larger sample size would enhance the generalizability of the results. Second, the follow-up period was relatively short (3) months). A long-term follow-up would provide more insights into the intervention's sustained effects. Notwithstanding these limitations, the findings of this study suggest that online group interventions incorporating CBT techniques together with self-compassion exercises may be recommended to mitigate social anxiety and automatic thoughts while enhancing selfcompassion among university students.

Ethics Committee Approval: Social and Human Sciences of Akdeniz University Ethics Committee granted approval for this study (date: 10.06.2022, number: 10-232).

Informed Consent: Participants provided electronic informed consent and completed the baseline questionnaires after receiving an email invitation.

Conflict of Interest: The authors declare that there is no conflict of interest.

Financial Disclosure: The authors received no financial support for the research, authorship, and/or publication of this article.

Use of AI for Writing Assistance: Not declared.

Author Contributions: Concept – ZS, GÇÇ; Design – ZS, GÇÇ; Supervision – GÇÇ; Resource – ZS, GÇÇ; Data Collection and/or Processing – ZS; Analysis and/or Interpretation – ZS, GÇÇ; Literature Review – ZS; Writing – ZS, GÇÇ; Critical Review – GÇÇ.

Peer-review: Externally peer-reviewed.

REFERENCES

- Archbell, K. A., & Coplan, R. J. (2022). Too anxious to talk: Social anxiety, academic communication, and students' experiences in higher education. *J Emot Behav Disord*, 30(4), 273–286.
- Arimitsu, K., & Hofmann, S. G. (2015). Cognitions as mediators in the relationship between self-compassion and affect. *Pers Individ Dif, 74*, 41–48.
- Aydın, G., & Aydın, O. (1990). The validity and reliability of the Automatic Thoughts Questionnaire. *Turk J Psychol*, 7, 51–57.
- Beck, J. S. (2010). Cognitive therapy. In I. B. Weiner & W. E. Craighead (Eds.), *The Corsini Encyclopedia of Psychology* (4th ed.). Hoboken, NJ: John Wiley & Sons.

- Bentley, S. V., Haslam, C., Haslam, S. A., Jetten, J., Larwood, J., & La Rue, C. J. (2022). Groups 2 Connect: An online activity to maintain social connection and well-being during COVID-19. *Appl Psychol Health Well Being, 14*(4), 1189–1210.
- Boersma, K., Håkanson, A., Salomonsson, E., & Johansson, I. (2015). Compassion focused therapy to counteract shame, self-criticism and isolation: A replicated single case experimental study for individuals with social anxiety. *J Contemp Psychother*, 45, 89–98.
- Brown, L. A., Gallagher, T., Petersen, J., Benhamou, K., Foa, E. B., & Asnaani, A. (2018). Does CBT for anxiety-related disorders alter suicidal ideation? Findings from a naturalistic sample. *J Anxiety Disord*, *59*, 10–16.
- Brown, N. W. (2018). *Psychoeducational groups: Process and practice*. Routledge.
- C□ndea, D. M., & Szentágotai-Tătar, A. (2018). The impact of self-compassion on shame-proneness in social anxiety. *Mindfulness*, *9*(6), 1816–1824.
- Clark, D. M. & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), Social phobia: Diagnosis, assessment and treatment (pp. 69–93). Guilford Press.
- Cuming, S., & Rapee, R. M. (2010). Social anxiety and self-protective communication style in close relationships. *Behav Res Ther*, 48(2), 87–96.
- Desalegn, G. T., Getinet, W., & Tadie, G. (2019). The prevalence and correlates of social phobia among undergraduate health science students in Gondar, Gondar Ethiopia. *BMC Res Notes, 12*, 1–6.
- Dryman, M. T., McTeague, L. M., Olino, T. M., & Heimberg, R. G. (2017). Evaluation of an open-access CBT-based Internet program for social anxiety: Patterns of use, retention, and outcomes. *J Consult Clin Psychol*, 85(10), 988–997.
- Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods*, 39(2), 175–191.
- George, D, Mallery, P. (2010). SPSS for Windows step by step: A simple study guide and reference, 17.0 update (10th ed.). Pearson Education India.
- Gharraee, B., Tajrishi, K. Z., Farani, A. R., Bolhari, J., & Farahani, H. (2018). A randomized controlled trial of compassion focused therapy for social anxiety disorder. *Iran J Psychiatry Behav Sci*, 12(4), e80945.
- Gilbert, P. (2010). An introduction to compassion focused therapy in cognitive behavior therapy. *Int J Cogn Ther, 3*(2), 97–112.

- Gill, C., Watson, L., Williams, C., & Chan, S. W. (2018). Social anxiety and self-compassion in adolescents. *J Adolesc*, 69, 163–174.
- Glashouwer, K. A., Vroling, M. S., de Jong, P. J., Lange, W. G., & de Keijser, J. (2013). Low implicit self-esteem and dysfunctional automatic associations in social anxiety disorder. *J Behav Ther Exp Psychiatry*, 44(2), 262–270.
- Hamedani, K. H., Amani, R., & Vasel, M. Y. (2023). The effectiveness of enhanced cognitive-behavioral group therapy on negative perfectionism, self-criticism, and self-compassion. *Int J Cogn Ther*, *16*(3), 375–389.
- Harrer, M., Adam, S. H., Baumeister, H., Cuijpers, P., Karyotaki, E., Auerbach, R. P., Kessler, R. C., Bruffaerts, R., Berking, M., & Ebert, D. D. (2019). Internet interventions for mental health in university students: A systematic review and meta-analysis. *Int J Methods Psychiatr Res, 28*(2), e1759.
- Harrer, M., Apolinário-Hagen, J., Fritsche, L., Salewski, C., Zarski, A. C., Lehr, D., Baumeister, H., Cuijpers, P., & Ebert, D. D. (2021). Effect of an internet- and app-based stress intervention compared to online psychoeducation in university students with depressive symptoms: Results of a randomized controlled trial. *Internet Interv*, 24, 100374.
- Heimberg, R. G. (2002). Cognitive-behavioral therapy for social anxiety disorder: Current status and future directions. *Biol Psychiatry*, *51*(1), 101–108.
- Hollon, S. D., & Kendall, P. C. (1980). Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. *Cogn Ther Res, 4*, 383–395.
- Hope, D. A., Heimberg, R. G., & Turk, C. L. (2010). *Managing social anxiety: A cognitive-behavioral therapy approach: Therapist quide*. Oxford University Press.
- lancu, I., Lupinsky, Y., & Barenboim, D. (2015). Negative and positive automatic thoughts in social anxiety disorder. *Isr J Psychiatry*, *52*(2), 129.
- İzgiç, F., Akyüz, G., Doğan, O., & Kugu, N. (2000). Üniversite öğrencilerinde sosyal fobi yaygınlığı. *Anadolu Psikiyatri Derg*, 1(4), 207. [Article in Turkish]
- Jain, N., Stech, E., Grierson, A. B., Sharrock, M. J., Li, I., Mahoney, A. E., & Newby, J. M. (2021). A pilot study of intensive 7-day internet-based cognitive behavioral therapy for social anxiety disorder. J Anxiety Disord, 84, 102473.
- Jefferies, P., & Ungar, M. (2020). Social anxiety in young people: A prevalence study in seven countries. *PLoS One, 15*(9), e0239133.
- Liebowitz, M. R. (1987). Social phobia. In D. F. Klein & S. M. Goldfinger (Eds.), *Anxiety* (Vol. 22, pp. 141–173). Karger.
- Morrison, A. S., & Heimberg, R. G. (2013). Social anxiety and social anxiety disorder. *Annu Rev Clin Psychol*, *9*(1), 249–274.

- Neff, K. D., & Knox, M. C. (2017). Self-compassion. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *Encyclopedia of personality and individual differences* (pp. 1–8). Springer, Cham.
- Neff, K. D., & Tóth-Király, I. (2022). Self-Compassion Scale (SCS). In R. G. del Rosario, N. N. P. Lagat, & E. Garcia (Eds.), *Handbook of assessment in mindfulness research* (pp. 1–22). Springer International Publishing.
- Niles, A. N., Axelsson, E., Andersson, E., Hedman-Lagerlöf, E., Carlbring, P., Andersson, G., Johansson, R., Widén, S., Driessen, J., Santoft, F., & Ljótsson, B. (2021). Internet-based cognitive behavior therapy for depression, social anxiety disorder, and panic disorder: Effectiveness and predictors of response in a teaching clinic. *Behav Res Ther*, 136, 103767.
- Nordmo, M., Sinding, A. I., Carlbring, P., Andersson, G., Havik, O. E., & Nordgreen, T. (2015). Internet-delivered cognitive behavioural therapy with and without an initial face-to-face psychoeducation session for social anxiety disorder: A pilot randomized controlled trial. *Internet Interv, 2*(4), 429–436.
- Nowakowski, M. E., Rowa, K., Antony, M. M., & McCabe, R. (2016). Changes in anxiety sensitivity following group cognitive-behavior therapy for social anxiety disorder and panic disorder. *Cogn Ther Res, 40*, 468–478.
- O'Day, E. B., & Heimberg, R. G. (2021). Social media use, social anxiety, and loneliness: A systematic review. *Comput Human Behav Rep, 3*, 100070.
- Özdel, K. (2021). *Sosyal fobiden hayata yolculuk*. İstanbul: Epsilon Yayınları. [In Turkish]
- Pauley, G., & McPherson, S. (2010). The experience and meaning of compassion and self-compassion for individuals with depression or anxiety. *Psychol Psychother*, 83(2), 129–143.
- Rachman, S., Grüter-Andrew, J., & Shafran, R. (2000). Post-event processing in social anxiety. *Behav Res Ther*, *38*(6), 611–617.
- Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the Self-Compassion Scale. *Clin Psychol Psychother*, 18(3), 250–255.
- Riboldi, I., Cavaleri, D., Calabrese, A., Capogrosso, C. A., Piacenti, S., Bartoli, F., Crocamo, C., & Carrà, G. (2023). Digital mental health interventions for anxiety and depressive symptoms in university students during the COVID-19 pandemic: A systematic review of randomized controlled trials. *Rev Psiquiatr Salud Ment*, *16*, 47–58.
- Russell, G., & Shaw, S. (2009). A study to investigate the prevalence of social anxiety in a sample of higher education students in the United Kingdom. *J Ment Health*, *18*(3), 198–206.

- Schneier, F. R., Johnson, J., Hornig, C. D., Liebowitz, M. R., & Weissman, M. M. (1992). Social phobia: Comorbidity and morbidity in an epidemiologic sample. *Arch Gen Psychiatry*, 49(4), 282–288.
- Sokol, L., & Fox, M. G. (2019). The comprehensive clinician's guide to cognitive behavioral therapy. PESI.
- Soykan, Ç., Özgüven, H. D., & Gençöz, T. (2003). Liebowitz Social Anxiety Scale: The Turkish version. *Psychol Rep, 93*(3 Suppl), 1059–1069.
- Stevenson, J., Mattiske, J. K., & Nixon, R. D. (2019). The effect of a brief online self-compassion versus cognitive restructuring intervention on trait social anxiety. *Behav Res Ther*, 123, 103492.
- Teale Sapach, M. J., & Carleton, R. N. (2023). Self-compassion training for individuals with social anxiety disorder: A preliminary randomized controlled trial. *Cogn Behav Ther,* 52(1), 18–37.
- Titov, N., Andrews, G., Choi, I., Schwencke, G., & Mahoney, A. (2008). Shyness 3: Randomized controlled trial of guided

- versus unguided Internet-based CBT for social phobia. *Aust N Z J Psychiatry, 42*(12), 1030–1040.
- Werner, K. H., Jazaieri, H., Goldin, P. R., Ziv, M., Heimberg, R. G., & Gross, J. J. (2012). Self-compassion and social anxiety disorder. *Anxiety Stress Coping*, *25*(5), 543–558.
- Whitfield, G. (2010). Group cognitive—behavioural therapy for anxiety and depression. *Adv Psychiatr Treat*, 16(3), 219–227.
- Wilson, A. C., Mackintosh, K., Power, K., & Chan, S. W. (2019). Effectiveness of self-compassion related therapies: A systematic review and meta-analysis. *Mindfulness*, 10, 979–995.
- Wind, T. R., Rijkeboer, M., Andersson, G., & Riper, H. (2020). The COVID-19 pandemic: The 'black swan' for mental health care and a turning point for e-health. *Internet Interv, 20,* 100317.
- Yıldırım, M., & Sarı, T. (2018). Öz-Şefkat Ölçeği Kısa Formu'nun Türkçe uyarlaması: Geçerlik ve güvenirlik çalışması. *Abant İzzet Baysal Univ Egit Fak Derg*, *18*(4), 2502–2517. [Article in Turkish]

Appendix

Session 1: Introduction, Goals and Rules

Information on the group process was provided.

Group rules were established.

Expectations and personal goals regarding the group process were stated.

The concepts of CBT, social anxiety and self-compassion were explained to the participants through the 4D cycle.

Activities: 'Meeting and warm-up activity' and 'Features I want to improve'.

Session 2: Automatic Thoughts and Self-Compassion

Automatic thoughts and concepts of self-compassion were explained to the participants.

The leader explained the formulation of social anxiety.

Generating a compassionate alternative to negative thoughts was explained.

Activities: 'Externalisation of thought and compassion alternative generation' and 'Breathing exercise'.

Homework: 'Thought recording exercise'

Session 3: Avoidance and Safety Behaviours

Information on escaping, avoiding and safety behaviours was provided.

The members' experiences of these behaviours were asked, and their common experiences were recorded.

The experience of compassionate confrontation versus avoidance was described.

Activities: 'My compassionate powers' and 'Self-compassion meditation'.

Session 4: Compassionate Communication

The importance of compassionate communication in improving interpersonal interactions was emphasised.

The participants learned empathy and understanding, which can effectively reduce social anxiety and improve relationships with others.

The concept of compassionate communication was explained.

Information on the Johari window was provided.

In-session and out-of-session experiments were designed.

Activities: 'Typical and compassionate communication', 'Self-awareness in compassionate communication' and 'Compassionate breathing exercise'.

Homework: 'Compassionate communication practice'.

Section 5: Assertiveness

This session was a continuation of compassionate communication.

The concept of assertiveness in interpersonal communication was introduced.

The assertiveness rights in interpersonal relationships were explained.

The ABC model is explained as an assertiveness framework.

The role of emotions in communication was introduced.

Activities: 'My aggressive and compassionate responses' and 'A brief meditation'

Session 6: Compassionate Conclusion

The entire group process was evaluated.

The participants' personal goals and expectations regarding the group process were revisited, and they were asked to evaluate their progress: 'What did I learn in the programme?'

Feelings and thoughts about the group process were reflected: 'What object or creature does this psychoeducation process resemble for you?'

Activities: 'What have I been, what have I become?' and 'Self-compassion meditation'.