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RESEARCH ARTICLE

Impact of Group Flash Technique on Reducing Exam Anxiety in Students

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ABSTRACT

Background: This study explores the impact of the Group Flash Technique on reducing test anxiety among university students. Test anxiety, a prevalent issue in academic settings, negatively affects cognitive functions and academic performance. The Flash Technique, incorporates bilateral stimulation and positive imagery to address distressing memories without direct focus on the trauma.

Methods: A single-session intervention was conducted with 35 undergraduate psychology students from Istanbul Gelişim University and Istanbul Bilgi University. Participants were assessed for test anxiety levels before and after the intervention using the Test Anxiety Inventory (TAI), Adverse Childhood Experiences Scale (ACE) and Impact of Events Scale (IES). During the session, participants engaged in a structured protocol combining eye movements, tapping, and positive memory recall to reduce Subjective Units of Distress (SUD) scores related to test anxiety.

Results: The mean age of the participants included in the study was 26.71 (9.43) years and 85.7% (n=30) were female. The change in IES-R; Hyperarousal ($F=6.238$, $p=0.018$, $\eta^2=0.155$), TAI; Anxiety ($F=7.494$, $p=0.010$, $\eta^2=0.181$), Affectivity ($F=5.347$, $p=0.027$, $\eta^2=0.136$), Total ($F=7.111$, $p=0.012$, $\eta^2=0.173$), scores were determined to be statistically significantly lower compared to the before the application.

Conclusion: This pilot study highlights the Flash Technique's feasibility as an effective, safe, group-based intervention for managing test anxiety. Future research should examine its application with clinical populations and assess long-term effects through multi-session protocols.

Keywords: Exam anxiety, test anxiety, flash technique, group-based intervention

Introduction

Test anxiety is a type of academic anxiety specific to certain contexts, where an individual responds to evaluative events with feelings of anxiety, fear, or nervousness.[1] Zeidner describes test anxiety as a collection of emotional, psychological, and behavioral responses triggered by the fear of negative outcomes or failure in exams or similar evaluative contexts.[2] In any given test situation, individuals experiencing test anxiety may exhibit these reactions to varying extents.[2] Students with test anxiety experience intrusive thoughts, negative emotions, or engage in off-task behaviors during testing situations that they perceive as personally significant.[3]

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Test anxiety has been observed to emerge as early as age 7 and it is a significant issue for many students. [4] It has been negatively linked to test performance, degree attainment, and career choices.[5] High test anxiety has been reported to be associated with poor performance on tests.[6] Wine asserts that worry consistently has a negative impact on task performance because it demands attention and consequently distracts focus from the task at hand.[7] In a recent meta-analysis, Von der Embse et al. observed a clear pattern where increased test anxiety is consistently associated with reduced performance across various testing formats.[8] Multiple studies have demonstrated that test anxiety can lead to reduced academic performance.[6,9,10,11] Worry and anxiety, particularly in the context of academic performance, can significantly hinder one's ability to focus and perform effectively. Given the detrimental effects of anxiety on cognitive functions, addressing these concerns is crucial for improving overall well-being and performance. In this regard, Eye Movement Desensitization and Reprocessing (EMDR) offers a promising therapeutic intervention. EMDR is an empirically validated, integrative psychotherapeutic approach initially established for the treatment of Post-Traumatic Stress Disorder (PTSD) and is now broadly utilized as a successful treatment for trauma and associated conditions.[12]

EMDR is founded on the Adaptive Information Processing (AIP) theory, which proposes that inadequately processed stressful or traumatic experiences result in diminished coping abilities and heightened vulnerability to future stressors.[12] The application of EMDR in treating anxiety disorders is grounded in the AIP-based assumption that processing distressing memories through EMDR will alleviate or eliminate the emotional, somatic, cognitive, and behavioral symptoms associated with anxiety.[12] When the literature is examined, many studies have shown that EMDR is effective in the treatment of anxiety-related disorders.[13,14,15,16] The EMDR model suggests that incomplete or dysfunctional processing of traumatic events can lead to psychopathology because these experiences are not adaptively integrated into one's memory network.[17] EMDR allows the reprocessing of memories that the brain cannot functionally resolve in situations such as test anxiety.[18] With this method, the person develops a level of adaptation that is not disturbed by the characteristics of the exam and approaches the exam with sufficient motivation and anxiety to benefit.[19]

The Flash Technique, introduces an additional strategy that involves rapid eye blinking without focusing on the traumatic memory during dual stimulation sets.[20] This method minimizes exposure to the distressing event by preventing free association with the traumatic memories, using continuous relaxing imagery instead. The technique is efficient, allowing practitioners to address multiple memories in a single session, often working through about five memories per session.[21] Flash Technique aligns with EMDR Theory, utilizing BLS to reduce the subjective units of distress (SUD). This is a measure of how disturbing a memory feels, rated on a scale from 0 (no distress) to 10 (maximum distress). The Flash Technique also allows for group application, offering a versatile approach to trauma treatment.[22] Based on the literature, we tested the following hypothesis in our current study: H1: “There will be a decrease in the level of test anxiety after the Group Flash Technique application.”

Method

Participants and Procedure

The study was conducted with 35 volunteer psychology undergraduate students over the age of 18 studying at Istanbul Gelişim

University and Istanbul Bilgi University. The study was announced to students studying in the psychology departments of Istanbul Gelişim University and Istanbul Bilgi University, and the participants were included in the study voluntarily. All participants signed informed consent forms. Participants were pre-registered by measuring their test anxiety levels using the Test Anxiety Inventory, Adverse Childhood Experiences Scale and Impact of Events Scale before the intervention, and their test anxiety levels were measured again using the Test Anxiety Inventory and Impact of Events Scale after the intervention.

The inclusion criteria were as follows: (a) being over 18 years of age, (b) not having a mental disability, (c) the absence of a psychotic disorder such as schizophrenia or bipolar disorder, (d) not having experienced severe head trauma, and (e) volunteering to take part in the research. These questions were included in the sociodemographic information form to see the distribution of the inclusion and exclusion criteria in the study sample.

Research Design: Volunteers were asked to provide their contact information and complete the required data collection tools through a Google Form. The test anxiety levels of the participants were measured with a pre-test during enrollment and a post-test was administered 1 week after the Group Flash Technique application.

Group Flash Technique Protocol: In each group, following a 15–20-minute acquaintance period, a 90-minute Flash Technique session was carried out. The Group Flash Technique to reduce test anxiety was created and implemented based on the revision of the protocol established by Yaşar and colleagues.[22] Participants are requested to find a positive memory (verifying each participant's chosen memory and ensuring its suitability; for those unable to recall one, a calming image is displayed on the screen). Participants can share their positive memories out loud to assist other participants who may have difficulty finding one.

Each participant is asked to select the memory they wish to work with. They are then asked to rate their current level of discomfort, or Subjective Units of Distress (SUD), associated with that memory or scene on a scale from 0 to 10. Then, they are asked to note it down. Then, they are instructed to perform tapping while imagining their positive memory. During each of the six sets, they are told “flash” and expected to blink their eyes three times. After each set of six, they pause and revisit the traumatic memory, noting any changes in the memory itself and rating their current level of distress on a scale from 0 to 10. They then return to the positive memory, and bidirectional stimulation is resumed. This process is repeated until the SUD score reaches zero. At the end of the session, participants were asked to report their SUD scores again, recording them on paper each time. Finally, they read their SUD scores from before and after the session. The collected scales were analyzed according to their respective instructions.

Measures

Sociodemographic Data Form: It is a semi-structured form designed by researchers based on literature, which collects demographic data such as participants' age, gender, and whether they are in the psychological/psychiatric treatment process.

Test Anxiety Inventory (TAI): The Test Anxiety Inventory, developed by Spielberger et al.[23], was translated into Turkish and adapted to Turkish culture by Öner and Albayrak-Kaymak.[24,25] The scale assesses negative emotions and thoughts related to tests and exams. It applies to individuals from the fourth grade of primary school onward. The

scale comprises 20 items and is divided into two factors: anxiety, with 8 items, and affectivity, with 12 items. In this study, the measurements yielded a Cronbach's Alpha value of 0.83.[24,25]

Table 1. Baseline characteristics of the online single-session EMDR Flash Technique Group.

	EMDR Flash Technique (n=35)
Age; year, Mean (SD)	26.71 (9.43)
Gender (Female); n (%)	30 (85.7%)
Relationship Status (Single); n (%)	23 (65.7%)
Income; n (%)	
Income less than expenses	18 (51.4%)
Income equals expenses	3 (8.6%)
Income more than expenses	14 (40.0%)
Physical Illness (Yes); n (%)	1 (2.9%)
Mental Disorder (Yes); n (%)	3 (8.6%)
Neurologic Illness (Yes); n (%)	0
Suicide Attempt (Yes); n (%)	1 (2.9%)
Smoking (Yes); n (%)	11 (31.4%)
Alcohol; n (%)	
None	21 (60.0%)
Little	4 (11.4%)
Moderate	8 (22.9%)
A lot	2 (5.7%)
Substance (Yes); n (%)	1 (2.9%)
Years of University; Mean (SD)	3.94 (0.90)
Adverse Childhood Event; Mean (SD)	1.97 (2.29)

SD: Standard deviation.

Adverse Childhood Experiences Scale (ACE): ACE was originally developed by the CDC and Permanente in 1997 and subsequently translated into Turkish and employed by Ulukal and colleagues in 2013, [26] The validity and reliability study of the Adverse Childhood Experiences Scale was conducted by Gündüz, Yaşar, Gündoğmuş, Savran, and Konuk in 2018. This self-report scale was developed to identify traumatic events experienced during childhood and comprises 10 items that assess childhood traumas. Each question offers only a 'yes' response option, with other responses left unmarked. The total ACE score ranges from 0 to 10, with no established cut-off value. The Cronbach's Alpha value of the scale is 0.74. [26]

Impact of Events Scale (IES-R): This scale is used to assess the effects of traumatic events on participants. Developed by Horowitz et al.[27], the IES was translated into Turkish and validated by Çorapçıoğlu and colleagues.[28] It consists of 22 items scored from 0 to 3. The scale includes three subscales: Re-experiencing, Avoidance, and Hyperarousal. The overall Cronbach's Alpha coefficient of the scale is 0.93.[28]

Statistical Analysis

All statistical analyses were performed using the SPSS 22 and JAMOVI software. The sociodemographic data of the participants were summarized as means, standard deviations, and percentages. To compare the participants' TAI and IES-R scores before the Flash Technique, after the first day, and after the first week, repeated measures ANOVA was employed. The results are presented in the Tables. A p-value of ≤0.05 was deemed statistically significant in all analyses.

Results

The mean age of the participants included in the study was 26.71 (9.43) years and 85.7% (n=30) were female. 65.7% (n=23) were in a relationship. The mean number of years of university was 3.94 years and the mean ACE score was 1.97. The sociodemographic information of the participants is presented in Table 1.

The change in IES-R; Hyperarousal ($F=6.238$, $p=0.018$, $\eta^2=0.155$), TAI; Anxiety ($F=7.494$, $p=0.010$, $\eta^2=0.181$), Affectivity ($F=5.347$, $p=0.027$, $\eta^2=0.136$), Total ($F=7.111$, $p=0.012$, $\eta^2=0.173$), scores were determined to be

Table 2. Effect of the Online Single-Session EMDR Flash Technique on Measurement Variables

	Pre-measurement	Post-measurement	Between Time p value and Effect Size (η^2)
Impact of Events Scale-Revised; Mean (SD)			
Intrusion	7.51 (7.93)	5.82 (5.97)	F=2.286, p=0.140, η^2=0.063
Avoidance	8.68 (7.32)	8.20 (6.48)	F=0.131, p=0.720, η^2=0.004
Hyperarousal	8.94 (4.86)	6.91 (5.32)	**F=6.238, p=0.018, η^2=0.155**
Total	25.14 (18.04)	20.94 (16.27)	F=2.258, p=0.142, η^2=0.062
Test Anxiety Inventory; Mean (SD)			
Anxiety	14.28 (4.57)	12.45 (3.16)	**F=7.494, p=0.010, η^2=0.181**
Affectivity	24.37 (8.36)	21.94 (7.71)	**F=5.347, p=0.027, η^2=0.136**
Total	38.65 (12.32)	34.40 (10.22)	**F=7.111, p=0.012, η^2=0.173**

SD: Standard deviation, F: Repeated Measures ANOVA, p<0.05 indicates statistical significance, η^2: Eta-squared

statistically significantly lower compared to the before application. However, no statistically significant differences were found in IES-R Intrusion, Avoidance and Total scores. Effect of the single-session Flash Technique on Measurement Variables presented Table-2.

Discussion

In the present study, it was aimed to examine and compare the single-session effect of the Flash Technique with group applications in reducing the test anxiety of university students. According to the data obtained from the study, it was observed that the Flash Technique group application was significantly effective in reducing test anxiety. When the literature is examined, there are studies showing that the Flash Technique has a great effect on reducing the discomfort caused by the traumatic memory.[20,21,29] Moreover, while EMDR-based interventions often span 3 to 12 sessions, the current results support growing evidence that even a short, single-session protocol (in this case, Flash Technique) may yield meaningful reductions in anxiety. Students carry numerous responsibilities throughout their academic life, which can lead to heightened levels of stress. Test anxiety can include a traumatic component, particularly for individuals who have had distressing or negative exam experiences in the past. [30] These earlier stressful encounters can lead to persistent maladaptive beliefs and heightened anxiety in subsequent testing situations. In line with findings from previous studies, the Flash Technique effectively targets and reprocesses such anxiety-laden memories, thereby reducing test-related distress. [22] Furthermore, prior research has demonstrated that EMDR interventions can improve both quality of life and individuals' perceptions of stress[31], underscoring the potential of EMDR-based methods like the Flash Technique to alleviate test anxiety grounded in earlier traumatic experiences.

In line with previous literature reporting the effectiveness of the Flash Technique in alleviating anxiety and stress symptoms. [22,32], the results of the present study also showed significant improvements in certain dimensions of test anxiety (TAI Anxiety, TAI Affectivity, and TAI Total) and a reduction in

hyperarousal symptoms (IES-R Hyperarousal). These findings are consistent with earlier studies indicating that even a single-session Flash Technique application can yield clinically meaningful outcomes. Although no significant differences were found in IES-R Intrusion, Avoidance, and Total scores, this pattern may reflect the limited scope of a one-session intervention rather than the absence of therapeutic potential. Overall, our results underscore that brief EMDR-based techniques such as the Flash Technique can be beneficial for test anxiety and related stress responses, supporting the broader body of research on short-term, targeted interventions in academic and clinical contexts.

Despite the promising findings regarding the effectiveness of the Flash Technique in reducing test anxiety, several limitations warrant consideration. First, it would be beneficial for future studies to replicate this research with participants who have a clear traumatic exam-related memory or who belong to a clinical population, as these groups may exhibit more pronounced anxiety. Additionally, structuring the Flash Technique over at least three sessions could provide a more in-depth assessment of its longer-term efficacy, especially since the present study only conducted a post-test one week after the intervention. This relatively short follow-up period may have constrained the ability to detect sustained improvements; therefore, future research should incorporate extended post-testing intervals (e.g., at one and three months) to evaluate durability of the intervention's effects.

Finally, this pilot study revealed that the Flash Technique is a method that can be safely applied to individuals with test anxiety. Our study shows that this technique does not carry any risk that may increase test anxiety and that more effective results can be obtained with more sessions. The findings suggest that the Flash Technique is a reliable intervention and can be a useful tool especially for individuals with test anxiety. Moreover, the fact that this technique can be applied in groups and yield results in a short time makes its use practical and accessible. This study indicates that examining the Flash Technique with different groups and longer-term applications may be an important step for new research.

Conclusion

As a result, in the current study, it was observed that the Flash Technique had a statistically significant effect on reducing test anxiety. Considering the benefit and applicability of the Flash Technique in a short time, it is thought that similar studies can be conducted in the future with different groups and more sessions structured by taking into account the limitations of the current study.

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