Current Research

In Education

Editor: Prof. Dr. Gizem SAYGILI



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PREFACE

The rapid social and technological transformations experienced in the age of information bring about profound changes in the field of education as well. New needs and problems emerging at every level of education have increased both the number and the diversity of research conducted in this field. In this dynamic environment, it is more important than ever for the discipline of educational sciences to follow current developments, interpret them, and offer solutions.

This book titled *Current Research in Education* has been compiled by bringing together original academic studies conducted in different subfields. Our aim is to contribute to the production of up-to-date, high-quality knowledge that can be transformed into practice for both academic circles and practitioners. The chapters included in the book address, from a scientific perspective, the issues faced by today's education systems across a wide range of areas, from instructional technologies to measurement and evaluation, from educational administration to curriculum development, and from special education to teacher education.

I would like to express my sincere thanks to our esteemed authors who contributed to the preparation of this book, to our reviewers who carried out the evaluation process with scientific rigor, and to the publishing house team who provided support at every stage of the process. At the same time, I hope that this work will inspire new research in the field of education and serve as a reference source for teachers, administrators, academics, and graduate students.

With the wish that it will be a resource capable of illuminating the path of everyone who contributes to education…

PROF. DR. GİZEM SAYGILI

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CHAPTER 11

FREEDOM THROUGH EDUCATION: OVERCOMING PERFORMANCE ANXIETY IN MUSIC HIGH SCHOOL STUDENTS*

Çağrı ÇALIŞIR,[1]
Hatice ONURAY EĞİLMEZ[2]

1. INTRODUCTION

People often feel anxious during activities like giving speeches or taking tests. Engaging in sports competitions or performing in stage arts like dancing, acting or playing music can also trigger this anxiety. This anxiety that may be experienced during musical performances is often called "music performance anxiety- MPA" (Aydın & İşgörür, 2018; Jelen, 2017; Kenny, 2011; Onuray Eğilmez, 2021; Osorio et al., 2017; Özevin Tokinan, 2014).

All musicians spend years dedicating time and effort to practicing their instruments in order to improve their skills and build a strong connection with their instruments. However, despite such extensive preparation and commitment, performers may still encounter errors during public performances or may be unable to fully convey the extent of their technical and expressive capabilities. While there are many factors that cause MPA, self-confidence, optimism, age, ethnicity, experience, personality, achievements and perfectionism are listed among the factors that affect an individual's performance (Goodman & Kaufman, 2014). Memorized performances can also induce substantial stress in musicians and contribute to factors that exacerbate performance anxiety (Nordin-Bates, 2012). The

*Çalışma birinci yazar tarafından ikinci yazarın danışmanlığındaki yüksek lisans tezinden üretilmiştir.

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expectation of flawless technique and performance among performing musicians can foster perfectionism, leading to a potentially unhealthy performance cycle (Hays, 2002). Researches show that soloists have higher levels of MPA than those playing in orchestras. Furthermore, MPA is more prevalent among women than men and affects individuals of all ages (Bascomb, 2019; Wesner et al., 1990).

Anxiety-induced physiological responses and the accompanying discomforts can impair an individual's ability to perform as expected on stage (Jelen, 2017; Wilson & Roland, 2002). Therefore, it is crucial for individuals to learn how to manage their anxiety in order to maintain control over their bodies and minds. In a study, it was reported that students used medication (16%), meditation (4.5%), breathing and relaxation exercises (36%), prayer (27%), and alcohol consumption (4.5%) to reduce the anxiety they experienced during performance (Onuray Eğilmez, 2012). It has been seen that many methods are used to cope with MPA. Hypnotherapy (Bilgin, 2023), Alexander Technique (Özgür, 2019; Wilson & Roland, 2002), biological feedback method (Niemann et al., 1993), Feldenkrais method (Urbanski, 2012) are among the methods of coping with anxiety. In addition, it is known that activities such as breathing, stretching and relaxation techniques reduce the stress level and anger of the individual, make him/her calmer, improve focus and attention, and consequently reduce the stress level and increase the level of learning (Thomas, 2014). As a matter of fact, in studies conducted with music teaching department students, it was concluded that regular yoga (Ünalan, 2023) and pilates exercises (Öztürk, 2023) were effective in reducing students' MPA. Various strategies, including the video feedback method (Sarıcan Gündüz, 2013), breathing therapy exercises (Hüzmeli, 2023), breathing and relaxation techniques (Onuray Eğilmez et al., 2013), and increased study time (Osorio et al., 2017), have been tested and shown to be effective in managing MPA. In addition to the methods of coping with MPA listed above, methods such as systematic desensitization, cognitive restructuring, stress inoculation training, mental imagery, and beta-blocker medication have been used. Research shows that meditation increases the relaxation level of individuals, decreases heart rate, reduces muscle tension and all of these enable individuals to relax (Lazar et al., 2000; Stein, 2001). With this feature, it is thought that BSFR exercises, which constitute the cornerstones of meditation and meditation and are the subject of the research,

are among the methods that can be used to cope with MPA. In the literature, it is seen that a method that can be effective in reducing the MPA of fine arts high school students has been addressed in only Doğan's (2013) study. In this study, the effect of psychoeducation programme on reducing MPA of fine arts high school students was examined (Doğan, 2013).

Students enrolled in fine arts high school music programs are frequently required to perform on stage, and performance-related excitement and anxiety are commonly observed in such settings. Therefore, implementing appropriate educational strategies to reduce MPA and enhance performance quality is considered essential. From an educational perspective, reducing MPA is not only a matter of improving performance outcomes, but also of enabling students to experience greater freedom on stage. When students are equipped with effective strategies through education, they may perform with increased confidence, autonomy, and authentic musical expression. In this context, both the prevalence of MPA among fine arts high school students during stage performances and the relative scarcity of research focusing on this age group were identified as key gaps in the literature, which provided the rationale for the present study. These considerations form the basis for the objectives of the present study, which are outlined in the following section.

1.1. Objective

This study aimed to investigate the effects of BSFR (breathing–stretching–focusing–relaxation) exercises on MPA among music students at Ayvalık Sebahat-Cihan Şişman Fine Arts High School. It was grounded in the assumption that the consistent and systematic implementation of BSFR exercises—previously recognized for their benefits in Turkish psychological research—could contribute to the reduction of MPA in fine arts high school music students. Accordingly, the study sought to address the following research questions:

1) Is there a significant difference between the pretest and posttest MPA scores of music students in the experimental group who participated in the BSFR exercises?
2) Is there a significant difference between the pretest and posttest MPA scores of music students in the control group who did not participate in the BSFR exercises?

3) Is there a significant difference in posttest MPA scores between music students in the experimental and control groups following the intervention?

This research is important as it highlights the effect of BSFR exercises on reducing the perceived MPA in fine arts high school music students. The findings further suggest that structured educational interventions, such as the exercises addressed in this study may foster greater freedom and confidence in stage performance, while also providing valuable insights for future research in this field.

2. METHOD

2.1. Research Model

Pretest-posttest control group model, which is one of the quantitative research methods, was used in the study. The model in which the subjects are divided into two as experimental and control groups and are subjected to measurement before and after the study is the pretest-posttest control group model (Karasar, 2005). With this feature, the model is considered to be compatible with the research.

2.2. Study Group

The study group of the research consist of 50 music students enrolled in the 9th, 10th, 11th and 12th grades of Ayvalık Sebahat-Cihan Şişman Fine Arts High School during the spring semester of the 2022-2023 academic year. The students were selected by using convenience sampling method and were randomly assigned to two groups: a control group (n=25) and an experimental group (n=25). Convenience sampling refers to obtaining data from a sample that is easily accessible to the researcher (Büyüköztürk et al., 2017).

This particular school was selected because its educational structure requires students to participate frequently in solo and ensemble stage performances throughout the academic year. Such continuous and unsupported performance demands are considered likely to contribute to elevated levels of music MPA among students, making this population especially relevant for examining anxiety reduction interventions. In addition, the researcher's professional role at the school as a violin and orchestra teacher facilitated continuous access to the students and ensured the consistent

implementation of the intervention. This accessibility supported reliable data collection and procedural consistency throughout the study.

In experimental research, studies conducted with a carefully and appropriately determined small sample may yield more meaningful results than those conducted with larger populations (Karasar, 2005). For this reason, the present study is considered valuable not only for understanding MPA within this specific context but also serving as a potential reference for other fine arts high schools with similar performance-oriented educational structures.

In addition, baseline equivalence between the experimental and control groups in terms of MPA levels was examined. An independent-samples t-test was conducted to compare the pretest MPA scores of students in the experimental and control groups, and the results are presented in Table 1.

Table 1. T-Test Results Regarding the Differentiation of Students' Pretest Scores According to Groups

Category	N	Mean	S.D.	T	p
Control Group	25	54.12	16.54	-0.968	0.338
Experimental Group	25	58.32	14.03		

*p<0.05, **p<0.01, S.D.: Standart Deviation, t: Independent Sample T-Test

Table 1 indicates that there was no statistically significant difference ($p > .05$) between the pretest MPA scores of students in the experimental and control groups. Accordingly, the two groups can be considered comparable in terms of baseline MPA levels prior to the intervention.

2.3. Data Collection Tools

Data were collected using a questionnaire consisting of two sections. The first section included items related to students' demographic characteristics. The second section comprised the *Music Performance Anxiety Scale for Adolescents (MPASA)*, originally developed by Kenny and Osborne in 2008 and subsequently adapted into Turkish by Yurdabakan and Aydın Almaç (2017). Permission to use the scale in the present study was obtained from the authors. The scale is a 15-item, 7-point Likert-type scale designed to assess MPA among music students. It consists of. It aims to measure the MPA of music students. In the Turkish adaptation study, translation validity was examined through a pilot application conducted with 378 students enrolled in

conservatory and fine arts high school music departments. Based on the pilot data, construct validity was tested using exploratory factor analysis, and internal consistency reliability coefficients were calculated, confirming the psychometric adequacy of the scale (Yurdabakan & Aydın Almaç, 2017).

In this study, reliability analyses were conducted for the pretest and posttest MPASA scores, and the corresponding Cronbach's alpha coefficients are presented in Table 2. Cronbach's alpha values above .70 are generally considered acceptable indicators of internal consistency (Pallant, 2020). Accordingly, the results indicate that the MPASA demonstrated sufficient reliability for use in the present study.

Table 2. Cronbach's Alpha Values of MPASA

Scale	Cronbach's Alpha	N
MPASA Pretest	0.861	15
MPASA Posttest	0.912	15

2.4. Data Collection and Analyses

Prior to the intervention, the necessary permissions to administer the scale and conduct the exercises were obtained from the Bursa Uludağ University Research and Publication Ethics Board (decision date: 28 April 2023, no. 53) and the Balıkesir Governorship Provincial Directorate of National Education (decision date: 22 May 2023, no. 76552327).

Before the intervention all students were informed about the study procedure. To assess baseline levels of MPA, both the experimental and control groups completed a pretest assessment. Following this assessment, the experimental group participated in an 8-week BSFR training program consisting of 10 sessions. Sessions were conducted for one hour per week during the first six weeks and for two hours per week during the remaining two weeks. The control group did not participate in any of these activities and continued with their regular school curriculum. Each BSFR session followed a structured sequence, beginning with breathing exercises, followed by stretching movements, and concluding with focusing and relaxation techniques. A detailed description of all stages of BSFR sessions is provided below.

2.4.1. Stages of the experimental intervention

2.4.1.1. Breathing exercises

Breathing exercises were designed to help students use their lung capacity more effectively, enhance oxygen intake, and regulate physiological responses such as heart rate. Within the scope of the breathing component, students practiced diaphragmatic (abdominal) breathing, chest breathing, shoulder breathing, full breathing, and rhythmic full breathing exercises.

2.4.1.2. Stretching exercises

Stretching exercises were intended to develop body awareness by engaging the five sensory modalities through posture-based practices, promote mental and emotional balance, and, when practiced consistently, contribute to the development of healthier, more conscious, and more self-aware individuals with reduced anxiety in the long term. Within the scope of this component, students practiced pillar posture (*Stambhasana*), strong posture (*Utkatasana*), palm posture (*Talasana*), hands-up posture (*Urdhva Hastottanasana*), rotating hands-up posture (*Parivritta Urdhva Hastottanasana*), movement posture (*Karmasana*), standing one-handed bellows posture (*Urdhva Ekahasta Bhastrikasana*), and the purifying breathing technique (*Nadi Shodhana*).

2.4.1.3. Focusing exercises

Immediately following the stretching exercises in the experimental process, students were seated in an upright position on a chair, and the focusing component was initiated. Students were instructed to close their eyes and were guided to focus their attention on an imagined yellow sphere positioned in front of them, either by visualizing it or by mentally sensing its presence. Subsequently, students were instructed to bring the imagined yellow sphere toward themselves and to visualize that they were seated within it. After maintaining this imagery for approximately one minute, they were guided to shift their attention to their breathing and to observe each inhalation and exhalation without judgment. This focusing practice was designed to support mental balance, facilitate learning processes, and enhance attentional control. It was intended to increase students' levels of focus prior to performance situations and to support the maintenance of sustained concentration during concerts. In addition, the exercise aimed to promote a

temporary state of mental stillness and reduced cognitive activity, facilitating entry into a meditative state.

2.4.1.4. Relaxation exercises

The relaxation exercises, which were pre-recorded by the Turkish Psychological Association, were played via loudspeaker for the students in the experimental group. These exercises were implemented in accordance with the provided guidelines. During the approximately 30-minute sessions, efforts were made to maintain a quiet environment and to ensure that students' attention remained focused solely on the audio recording. All sessions were conducted on predetermined days, with voluntary student participation, under the supervision of a certified yoga instructor. Throughout the sessions, students' observable physiological responses were monitored, and the process was carefully supervised to ensure adherence to the intervention protocol and participants' well-being. The BSFR intervention was carried out over a period of eight weeks, comprising a total of 10 sessions conducted after school hours on weekdays, scheduled according to students' availability. At the conclusion of the intervention, posttest data were collected from both the experimental and control groups using the same scale administered during the pretest. This procedure enabled the assessment of the effects of the BSFR exercises on students' MPA. All stages of the intervention process and the time allocated to each activity are presented in Table 3.

Table 3. Structure and Duration of the BSFR Sessions

Breathing Exercises	**Stretching Exercises**	**Focusing Exercises**	**Relaxation Exercises**
• Diaphragmatic (abdominal) breathing (5 min) • Chest breathing (3 min) • Shoulder breathing (3 min) • Full breathing (3 min) • Rhythmic Full Breathing Exercise (3 min)	• Pillar posture (Stambhasana) (2 min) • Strong posture (Utkatasana) (2 min) • Palm posture (Talasana) (2 min) • Hands-up posture (Urdhva Hastottasana) (2 min) • Rotating hands-up posture (Parivritta Urdhva Hastottasana) (2 min) • Movement posture (Karmasana) (2 min) • Standing one-handed bellows posture (Urdhva Ekahasta Bhastirikasana) (2 min) • Purifying breathing technique (Nadi Shodana) (2 min)	• Brief guided exercise focusing attention on a specific point (3 min)	• Guided relaxation audio recording published by the Turkish Psychological Association (27 min)
Total: 17 min	**Total: 16 min**	**Total: 3 min**	**Total: 27 min**

The BSFR exercise plan mentioned above was performed in 10 sessions and each session was completed in 63 minutes.

2.4.2. Data assessment

The data were analyzed using SPSS Statistics, version 26. Categorical variables were reported as frequencies and percentages. The normality of numerical variables was assessed by examining skewness and kurtosis values, as presented in Table 4. According to established guidelines, skewness and kurtosis values within ±1.5 indicate an approximately normal distribution (Tabachnick & Fidell, 2013). Based on these criteria, all numerical variables presented in Table 4 were found to be approximately normally distributed.

Table 4. Dexterity and Kurtosis Values

Test Statistic	Skewness	Std. Error	Kurtosis	Std. Error
Pretest	-0.550	0.337	-0.321	0.662
Posttest	0.062	0.337	-0.952	0.662

Since the pretest and posttest MPASA scores were found to be normally distributed, parametric statistical tests were employed. Paired-samples t-tests were conducted to compare pretest and posttest scores within the experimental and control groups, while an independent-samples t-test was used to compare posttest MPA scores between the experimental and control groups (Büyüköztürk, 2020). Throughout the study, the level of statistical significance was set at .05 and .01.

As a preliminary step to the inferential analyses, descriptive statistics were calculated to summarize the distribution of students' MPASA scores.

Descriptive statistics for students' MPASA pretest and posttest scores are presented in Table 5. The mean pretest MPASA score was 56.22 (SD = 15.33), while the mean posttest score was 44.76 (SD = 17.76). MPASA scores ranged from 13 to 84.

Table 5. Findings of Students' Numerical Values

Variables	Mean	S.D.	Minimum	Maximum
Pretest	56.22	15.33	20.00	84.00
Posttest	44.76	17.76	13.00	84.00

Based on the analytical procedures described above, the findings addressing the research questions are presented in the following section.

3. FINDINGS

3.1 Comparison of MPA Pretest and Posttest Scores of the Experimental Group

The results of the paired-samples t-test comparing the pretest and posttest MPA scores of students in the experimental group are presented in Table 6.

Table 6. Comparison of MPA Pretest and Posttest Scores of the Experimental Group

Category	N	Mean	S.D.	T	P
Pretest	25	58.32	14.02	8.468	0,00**
Posttest	25	35.12	14.46		

*p<0.05, **p<0,01, S.D.: Standard Deviation, t: Paired Sample T-Test

Table 6 shows that there was a statistically significant difference between the pretest mean scores (M = 58.32) and posttest mean scores (M = 35.12) of students in the experimental group ($p < .05$). This finding indicates that the BSFR intervention was effective in reducing MPA among music students in the experimental group.

3.2. Comparison of MPA Pretest and Posttest Scores of the Control Group

The results of the paired sample t-test for the comparing the pretest and posttest MPA scores of students in the control group are shown in Table 7.

Table 7. Comparison of MPA Pretest and Posttest Scores of the Control Group

Category	N	Mean	S.D.	T	P
Pretest	25	54.12	16.54	-0.663	0.514
Posttest	25	54.40	15.51		

*p<0.05, **p<0.01, S.D.: Standard Deviation, t: Paired Sample T-Test

Table 7 shows that there was no statistically significant difference between the pretest scores (M=54.12) and posttest (M =54.40) MPA scores of students in the control group (p>0.05).

3.3. Comparison of Posttest MPA Scores Between the Experimental and Control Groups

The results of the independent-samples t-test comparing posttest MPA scores between the experimental and control groups are presented in Table 8.

Table 8. Comparison of Posttest MPA Scores Between the Experimental and Control Groups

Category	N	Mean	S.D.	T	P
Control Group	25	54.40	15.52	4.544	**0.00****
Experimental Group	25	35.12	14.46		

*p<0,05, **p<0,01, S.D.: Standard Deviation, t: Independent Sample T-Test

Table 8 shows that there was a statistically significant difference between the posttest MPA scores of the experimental and control groups (p<0.05). Consistent with this finding, no significant difference was observed between the pretest and posttest MPA scores of the control group (Table 7). In contrast, students in the experimental group, who participated in the BSFR intervention, demonstrated a significant reduction in MPA scores. The pretest and posttest MPA scores of both the experimental and control groups are illustrated in Figure 1.

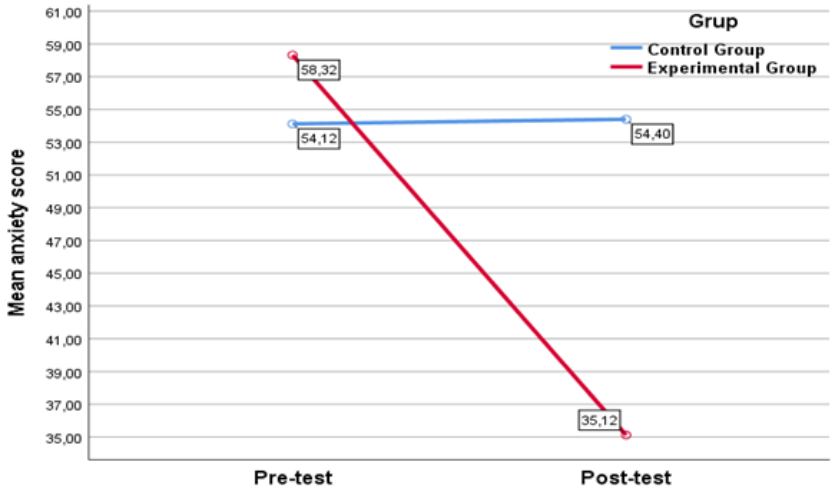

Figure 1. Comparison of Experimental and Control Groups Pretest - Posttest MPA Scores

Taken together, the results indicate that participation in the BSFR exercise program was associated with a significant reduction in MPA levels among students in the experimental group.

4. CONCLUSION, DISCUSSION AND RECOMMENDATIONS

4.1. Conclusion and Discussion

The present study examined the effects of a structured breathing–stretching–focusing–relaxation (BSFR) exercise program on music performance anxiety (MPA) among fine arts high school students. The findings demonstrated that students in the experimental group who participated in the BSFR intervention showed a significant reduction in MPA from pretest to posttest, whereas no significant change was observed in the control group. In addition, posttest MPA scores differed significantly between the experimental and control groups, indicating that the observed reduction in anxiety was associated with participation in the BSFR program rather than with external or developmental factors.

The significant decrease in MPA observed in the experimental group may be explained by the combined physiological and cognitive mechanisms targeted by the BSFR exercises. Breathing and relaxation components are known to regulate autonomic nervous system activity, reduce physiological arousal, and support heart rate control, all of which are closely associated with performance-related anxiety (Osorio et al., 2017; Su et al., 2010). In parallel, the focusing component of the intervention may have enhanced attentional control and reduced intrusive performance-related thoughts, thereby facilitating a calmer and more regulated performance state.

In contrast, the absence of a significant change in MPA levels in the control group suggests that participation in regular music education alone was not sufficient to reduce performance anxiety during the study period. This finding is consistent with previous research indicating that MPA does not typically decrease spontaneously without targeted psychological or somatic interventions (Kenny, 2011). The inclusion of a control group in the present study therefore strengthens the internal validity of the findings by demonstrating that the reduction in anxiety was not attributable to repeated testing, maturation, or performance experience alone.

The results of this study are in line with previous research reporting the effectiveness of breathing-based, relaxation-oriented, and body–mind interventions in reducing MPA and related forms of performance anxiety. Moreover, the findings align with studies conducted in other performance and educational contexts, which have shown that structured physical and mindfulness-based practices -such as Pilates, aerobic exercise, and meditation- can significantly reduce anxiety and improve performance-related outcomes (Bilgin, 2023; Hüzmeli, 2023; Kaplan-Rakowski, 2021; Onuray Eğilmez et al., 2013; Öztürk, 2023; Page, 2017; Ünalan, 2023).

An important contribution of the present study lies in its focus on fine arts high school students, a population that is frequently required to perform publicly during a critical developmental period. Unlike many previous studies conducted with university students or professional musicians, this research demonstrates that a relatively brief, school-based BSFR program can be feasibly implemented and may provide meaningful benefits in reducing MPA at the secondary education level. In this sense, BSFR exercises may serve not only as an anxiety-reduction strategy but also as an educational tool that supports students' ability to perform more freely and confidently on stage.

Taken together, the findings of this study suggest that integrating BSFR exercises into music education may offer a practical and educationally grounded approach to reducing music performance anxiety among adolescent musicians. Beyond anxiety reduction, such interventions can be understood as fostering freedom through education by equipping students with self-regulation strategies that enable them to manage physiological arousal, sustain attentional focus, and engage with performance situations more confidently. By learning how to regulate their bodies and minds through structured educational practices, students may gain greater autonomy in performance contexts, allowing for more authentic musical expression and a sense of freedom on stage. In this respect, BSFR exercises may contribute not only to improved emotional well-being but also to the broader educational aim of empowering students to perform freely, confidently, and self-directedly. Future research may further explore how such educationally embedded interventions support long-term performance freedom, artistic agency, and resilience across different levels of music education.

Despite the promising findings, this study has certain limitations. The relatively small sample size and the use of a single fine arts high school may limit the generalizability of the results. In addition, reliance on self-report measures may have introduced response bias. Future studies employing larger, multi-site samples and objective performance-based measures are recommended.

In light of these limitations, the following recommendations are offered to inform future research and educational practice.

4.2. Recommendations

The findings of the present study indicate that participation in the BSFR exercise program was associated with a meaningful reduction in MPA among fine arts high school students. These results suggest that structured, education-based interventions targeting physiological regulation, attentional focus, and relaxation may play an important role in supporting students' psychological well-being and performance readiness. In line with the overarching theme of freedom through education, the following implications and recommendations are proposed to inform educational practice and guide future research:

- Courses or instructional modules addressing music performance anxiety should be incorporated into the curricula of music institutions that provide professional music education. Systematic education on MPA may help students develop strategies that enable them to approach performance situations with greater confidence and autonomy.

- Although the present study was conducted at Ayvalık Sebahat-Cihan Şişman Fine Arts High School, future studies should be extended to music education institutions across different regions to enhance the generalizability of the findings.

- Within the framework of a strategic plan developed collaboratively by school administrations and guidance and counselling services, student-oriented psychoeducational seminars focusing on anxiety and performance-related stress should be organized to increase students' awareness and understanding of anxiety.

- Professional development programs specifically designed for instrument instructors should be implemented to provide training on coping strategies

for MPA and to support the systematic integration of anxiety-management practices into instructional processes.

• To facilitate the internalization of effective coping strategies, simplified BSFR exercises that are easily applicable should be periodically incorporated into music lessons and physical education classes.

• Educational activities should be planned to ensure that students have frequent, structured, and pedagogically supported opportunities to perform on stage, as guided and progressively structured exposure to performance situations may strengthen students' ability to cope with MPA, in contrast to unstructured or unsupported performance demands.

• Future studies may benefit from larger sample sizes, the inclusion of students playing different instrument types, and the use of longitudinal designs to examine the long-term effects of BSFR interventions on MPA and performance-related freedom.

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