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## Improvisational Therapy Methods May Help Alleviate Music Performance Anxiety Symptoms in College Musicians

Shaina Rush

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**Abstract:** Musical performance anxiety (MPA) is a prominent disorder among musicians (Kirchner, 2004/2005). Music therapy is one of the most effective forms of therapy for anxiety in non-musicians; however, it has been overlooked as a coping method for anxious musicians (Martinez, 2009). This study included five sessions of improvisational exercises with college wind musicians. As a result, MPA symptoms subsided, and self-awareness of the body was improved during performances. Anxiety levels were measured via self-reported surveys and personal journals of progress from participants. Research in improvisational practice techniques provided performing artist with a form of self-therapy that may lead to more successful performances and careers.

**Keywords:** *improvisation, music, music therapy, performance anxiety*

Musical performance anxiety (MPA) is a prominent disorder among musicians and has affected the careers of amateurs and professionals alike (Wilson & Roland, 2002). Bruges (2011) describes performance anxiety as, “The experience of marked and persistent anxious apprehension that relates to musical performance that has arisen through specific anxiety-conditioning experiences and which is manifested through combinations of affective, cognitive, somatic, and behavioral symptoms.” As a result of severe MPA, careers have been hindered, juries<sup>1</sup> failed, and competitions lost. When the body is overtaken with adrenaline, motor skills decline and it can be physically impossible for a performer to play at his full capacity (Whitcomb, 2008).

There are two types of anxiety. State anxiety is common among those who have a fear of performing, because this type refers to anxiety during a certain situation and an emotional state (Hamann & Sobaje, 1983). Some researchers have linked extreme levels of state anxiety in musicians with their natural tendency to have an increased level of everyday anxiety (Merchant-Haycox & Wilson, 1992). This natural apprehension is trait anxiety. Everyone has a healthy level of trait anxiety and it can be heightened under certain circumstances (Hamann & Sobaje, 1983).

Musicians have a higher trait anxiety than any other performing artists, such as dancers and actors, and are generally more introverted (Kemp, 1981). Some researchers suggest that the presence of trait anxiety is essential for a successful performance. Adrenaline from the excitement of performance can help with focus and spontaneity, but once the sensation passes a certain level, it turns into panic (Birk, 2004).

Anxiety-coping strategies include pharmacological treatment, yoga, and cognitive behavioral therapy. Interestingly, although MPA pertains to musicians, music therapy is generally overlooked as a possible treatment for MPA. Music is one of the most effective forms of therapy for stress, depression, and psychological disorders; three factors which can trigger MPA (Martinez, 2009). Music therapy is a form of self-therapy that could have more long-term effects for musicians because it is very personal.

Personality traits are the primary determining factors of different types of anxiety disorders (Reitman, 2001). During the journaling portion, when participants reflected on what they felt during their performances, certain symptoms were often paired with specific personality types. This allowed participants to take time to write about their tendencies and become aware of toxic personality traits.

<sup>1</sup> Music major final playing exam

Every performance must be viewed as an opportunity for positive growth, whether the performance was satisfactory or not (Mitchell, 2011). Most people have difficulty maintaining a positive attitude in every circumstance, but for some, this comes easier for them than it does for others. Those with unreasonably high expectations are defined as perfectionists, and they struggle the most. When someone feels a need for a perfect performance, they create unreasonable expectations, the goal becomes unattainable, and it is seen as a failure when something unexpected happens (Mor, Day, Flett, & Hewitt, 1995). Rather than learning from a failed performance, perfectionists tend to dwell on the mistakes and fear that “failure” may come again. In order to grow from past failures, performers must not be afraid of failure itself.

For example, a study was conducted on personality traits of perfectionism. When the researchers found that perfectionists normally dwell on the negative, they offered therapy to help them to see the benefits of a failed performance (Mor, Day, Flett, & Hewitt, 1995). Performers learned to cope with failure, lower expectations in performances, and see music performances as a privileged experience rather than an intimidating obligation. From this perspective, MPA was reduced because the fear of failure was no longer a symptom, and musicians looked forward to the spontaneity of a life, adrenaline-filled performance.

Perfectionism is one example of personality-induced anxiety. This factor creates more complications when overcoming MPA because it often stems from personal life experience, and is a trait that is not easily altered. As an alternative, researchers have chosen to focus on improving attitudes and perspective, rather than on altering personality traits (Yondem, 2007).

Similar to the Perfectionist study, cognitive behavioral therapy (CBT) is a method in which musicians focus on improving their attitudes toward performance in order to reduce state anxiety (Rodebaugh & Chambless, 2004). CBT is helpful for those who struggle with high trait

anxiety that is closely related to social phobia, as well. CBT includes visualization, which regulates the sensation of anxiety and desensitizes the brain from creating negative connotations in response to nerves (Rodebaugh & Chambless, 2004). Researchers found that somatic symptoms decreased significantly after participants participated in exercises intended to help identify the sensation of performance anxiety, and gain a sense of control over these symptoms (LeBlanc, Young, Obert, & Siivola, 1997). This therapy shows that performers have the ability to prepare the body as well as the music being played for a performance.

Natural remedies, such as yoga, have also been suggested. Researchers found that musicians became much more aware of the body after practicing yoga. Deep breathing exercises were helpful with calming nerves and getting the mind to focus in on the performance (Khalsa, Shorter, Cope, Wyshak, & Sklar, 2009). Orman tested desensitization and visualization; she suggested meditation and calming of the mind and body for a successful performance. This type of therapy involves issues related to state anxiety and aims to control the body’s response to the sensation of performance-related fear. At this point, the mind is reset and learns a positive, new approach to the performance setting. (Orman, 2003)

In Brugués’ (2011) study of literature, he found that all age groups of performers experience MPA. Children ages 3-7 reported higher state MPA during major performances because of their pre-existing trait anxiety (Ryan, 2005). A group of 12-year-old musicians experienced higher MPA for fear of making mistakes in front of an audience (Ryan, 1998). As students move into high school, the root cause of MPA has evolved to reasons related to social anxiety. The factors that vary between these age groups are the severity of anxiety and the underlying causes of anxiety.

Dianna Kenny’s (2006) research suggests that musicians between the ages of 15 and 19 experience MPA because of their need for social acceptance. The pressure to succeed is much greater when approval from parents, teachers, and

peers is at stake (Kenny, 2006). For example, when a wind player has cottonmouth and cannot properly articulate notes, or begins hyperventilating and is unable to make phrases, it reflects poorly on the performer.

Professionals do not “outgrow” MPA. Professional pianist Adolf Henselt reportedly suffered from anxiety to the extent that he became physically ill during performances. Due to his tremendous fear of performing, he gave only three performances over a span of 33 years (LeBlanc, Young, Obert, & Siivola, 1997). Famous cellist Pablo Casals, said, “the thought of a public concert always gives me nightmares (Deri, 1962). Younger, amateur musicians have shown symptoms very similar to those of more experienced, professional orchestral musicians (Shoup, 1995). They tend to be just as stressed and self-conscious about performances as professionals.

Young adults also begin to exhibit physical limitations, such as back and arm muscle pains, arthritis, and tendonitis. These contribute to the physical handicaps associated with MPA. Physical limitations cause a decrease in accuracy and a fear of the unknown during a performance, which leads to a lack of confidence. As musicians age, these physical limitations can feel similar to a lack of preparation, regardless of how well they have prepared the performance. (Fishbein, Middlestadt, Ottai, Straus, & Ellis, 1988).

Certain experiences had at a young age can lead to greater MPA as a musician reaches adulthood. Sometimes, the musician does not remember the specific events that might be causing MPA. Performing artists, in general, look to their art as a way to create an identity, often one that they lacked during their childhood (Merchant-Haycox & Wilson, 1992).

MPA originates in the mind (Whitcomb, 2008), which has the power to overtake the body. Trait anxiety often leads to greater state anxiety. Cognitive symptoms can trigger somatic

disabilities. MPA is a severe disorder because of the cycle of anxiety issues that are constantly triggering one another (Wolfe, 1989). Wolfe stated that cognitive anxiety symptoms trigger somatic reactions, such as dry mouth and hyperventilation. These responses intensify cognitive symptoms and the cycle begins again.

Childhood events can also lead to greater MPA as a musician reaches adulthood. Performing artists generally look to their art as a way to create an identity, often one that they lacked during their childhood (Merchant-Haycox & Wilson, 1992). Musicians who suffer from high to severe performance anxiety also struggle at an emotional level, which is usually accompanied by self-doubt, memory blocks, and irrational thinking (Mor, Day, Flett, & Hewitt, 1995). These emotions lead to mental symptoms, which set off worse physical symptoms like trembling, sweating, hyperventilation, dry mouth, and mechanical debilitation. Hyperventilation is a serious symptom that is much more debilitating for wind musicians than pianists because of the nature of wind instruments (Stephenson & Quarrier, 2005). The presence of a symptom such as this often leads to one or more other symptoms (Rodebaugh & Chambless, 2004).

Desensitization helps to alleviate the fear of performance, thereby calming the mind and relieving somatic debilitation (Kim, 2005). As shown in Dr. Youngshin Kim’s study on female pianists, cognitive therapy yields better, more abiding results than pharmacotherapeutic treatment<sup>2</sup>. However, this method was tested on a small population of college musicians and did not represent the music students as a whole.

The cause and effect factor with MPA creates implications that cognitive treatment will naturally relieve somatic symptoms. Somatic treatment ideally lowers trait anxiety, ultimately reducing state MPA. The purpose of this study is to report another way to cope with anxiety for wind musicians. I also expect participants to treat themselves with music therapy even after therapy

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<sup>2</sup> Pharmacotherapeutic treatment involves drugs such as beta-blockers.

sessions are over (Martinez, 2009). As musicians gain an understanding of the disorder, as it affects them personally, they will gain more knowledge so they can help themselves and help others.

## METHOD

### Participants

There were five sessions of improvisational treatment over the course of six weeks. Participants were recruited from the university at which this study was completed. I specified that they must be wind instrumental music majors who have completed at least three semesters of both theory and aural skills, and have experienced some form of MPA.

Participants attended a brief introductory session, explaining MPA and what procedures will be used throughout the five sessions. Subject identification numbers were distributed at that time so that names were never used in the context of this project and confidentiality was maintained. Throughout the sessions, participants were asked to complete a total of three surveys and questionnaires to track their progress, as well as give three brief performances of prepared work so that progress reports were based on recent performances.

### Procedures

This study consisted of five basic sessions. Many of the activities required for the study were repeated and became familiar to participants over time. Therapy sessions were held at the university school of music in classrooms and involved deep breathing, visualization, and improvisation with and without soundscapes.<sup>3</sup> Kim's original study on female pianists was observed and used as a framework for music therapy sessions (Kim, 2005).

The Rush Modified Anxiety Scale (RMAS) was a combination of Wolfe's (1989) Adaptive Anxiety Scale (AAS)-Maladaptive Anxiety Scale

(MAS) and the Nagel, Himle, and Papsdorf (1989) Performance Anxiety Inventory (PAI). Five factors were observed on a scale of one through four; one being almost never, and four being almost always. The RMAS was used to measure anxiety symptoms throughout the study. A pretest was administered during Session 0 (Introductory Session) and a second inventory, containing the exact questions from before, was completed during the third session after in-class performances. Each session was 40-50 minutes in duration. Composite measurements were obtained three times over the course of the study. The exercises used in each session are as follows:

#### *Introductory Session*

1. Introduction (10 minutes): This session included (1) brief descriptions of how performance anxiety can affect one's performance and life. (2) Participants' written responses to questions related to their personal and musical background, and performance-related stress or anxiety experiences were distributed.

#### *Session 1*

1. Rhythmic breathing exercise (5 minutes): Each subject inhales on beat 1 and exhales on beats 2 and 3, designed to help reverse the effects of chronic sympathetic nervous system overdrive, and to allow an individual to function at peak levels of performance.
2. Free [instrumental] improvisation and conversation (5 to 7 minutes): There are no guidelines or rules for improvisation. After improvising on the primary instrument, each subject shares his/her experiences verbally with the researcher.
3. Homework assignment and closing conversation (5 minutes): The researcher reviews the session and assigns homework to each subject. Homework includes: 5-minute free [instrumental] improvisation

<sup>3</sup> Natural sound recordings (rainforest, ocean waves, thunderstorm, etc.) often used to aid with relaxation and sleep.

and a 3-minute rhythmic breathing exercise during normal daily practice time. The researcher verbally confirmed compliance with the homework assignment prior to each subsequent session.

### *Session 2*

1. Opening conversation (3 minutes): The researcher reviews homework and discusses any difficulties that might have arisen during the homework. Notes from interviews were hand recorded in a researcher journal, using participant identification number.
2. Group Improvisation and conversation (10 minutes): This portion of the session consists of the following tasks: (1) each subject improvised a relaxing piece of music of his or her choice with two or three other participants; and (2) the subject analyzed what kind of musical elements (i.e., melody, harmony, dynamics, phrases, rhythms, and keys) relax him or her.
3. Journaling and group conversation (15 minutes): The researcher implemented the journaling section, which facilitates writing about his/her feelings during the improvisation session and answered these questions: What did you learn about yourself? Did you express a certain mood? Did you explore particular emotions? Did you become aware of internal conflicts? What did you learn about the music you like to create instinctively?
4. Homework assignment and closing conversation (3 minutes): The researcher reviewed the session and assigned the same homework as in session 1. (5-minute free [instrumental] improvisation and a 3-minute rhythmic breathing exercise during normal daily practice time.) The researcher also assigned participants to prepare a short etude or excerpt (that the musician is already familiar with), up to one minute in length, to perform for next week's session.

### *Session 3*

1. Opening conversation (3 minutes): This portion is the same as that for Session 2, step 1. (Researcher reviews homework and discusses any difficulties that might have arisen during the homework.)
2. Rhythmic breathing exercise (3 minutes): This section is the same as Session 1, step 2. (Rhythmic breathing exercise (5 minutes): Each subject inhales on beat 1 and exhales on beats 2 and 3)
3. Desensitization training (15 minutes): This portion consisted of the following tasks: (1) Each subject developed a relaxing image or scene. The subject was encouraged to focus on the relaxing scene while his/her body was relaxed. The subject imagined this scene in as much vivid detail as possible for brief periods of time (e.g., 10–15 seconds) in order to verify clarity and relaxing potential. (2) Each subject shared his/her relaxing scene. (3) Each subject improvised a relaxing piece of music of his/her choice to match his/her relaxing imagery.
4. Performance of pieces prepared by all participants (10-15 minutes)
5. Homework assignment and closing conversation (4 minutes): The researcher reviewed the session and hands out MPA questionnaire for the week (questions were obtained from MPA Inventory sheet). Homework included a rhythmic breathing exercise (2 minutes), a daily free-improvisation warm-up (2–3 minutes), and desensitization training was demonstrated in step 3 (3 minutes) during daily practice time.

### *Session 4*

1. Opening conversation (3 minutes): This portion was the same as that for Session 2, step 1. (Researcher reviewed homework and discusses any difficulties that might have arisen during the homework.)
2. Rhythmic breathing exercise (3 minutes): This section was the same as that for

- Session 1, step 2. (Rhythmic breathing exercise (5 minutes): Each subject inhaled on beat 1 and exhales on beats 2 and 3)
3. Development of hierarchy (6 minutes): Each participant rated the Basic Anxiety Scale (BAS), a 15-item music performance-related hierarchy to determine the level of anxiety when involved in a performance on stage.
  4. Desensitization training (17 minutes): The training consisted of the following tasks: (1) each subject imagined a relaxing image, which is created during session 3. (2) The researcher instructed the subject to “allow your mind’s eye to turn off your relaxing image and turn on the image of the first scene in your hierarchy.” This was repeated at least twice to allow for the shift in imagery to take place. (3) The subject imagined each event that he/she identified via the performance-related hierarchy while the researcher verbally described each event. This procedure was to begin with the event of lowest distress and progress gradually upward on the hierarchy. (4) After the subject imagined each successive scene, he/she returned to his/her personally relaxing image. The researcher provided instructions at least twice for each subject to shift his/her imagery in order for a complete change of scene to take place. While imagining a relaxing scene, the subject was encouraged to employ a rhythmic breathing exercise, and to stay within that image until he/she was completely able to forget the anxious scene and feel comfortable. (5) Once the subject felt comfortable and relaxed, he/she improvised to match and reflect his/her relaxing image.
  5. Homework and closing conversation (3 minutes): The researcher reviewed the session and distributed the copy of each participant’s BAS. Homework included a rhythmic breathing exercise (2 minutes), a daily free-improvisation warm-up (2–3 minutes), and desensitization training as demonstrated in step 4 (5–10 minutes)

three times a week. The researcher also assigned participants to prepare a short etude or excerpt (that the musician is already familiar with), up to one minute in length, to perform for next week’s session.

#### *Session 5*

1. Opening conversation (3 minutes): This portion was the same as that for session 2 step 1. (Researcher reviews homework and discusses any difficulties that might have arisen during the homework.)
2. Rhythmic breathing exercise (3 minutes): This section was the same as that for session 1, step 2. (Rhythmic breathing exercise (5 minutes): Each subject inhales on beat 1 and exhales on beats 2 and 3)
3. Continued desensitization training (20 minutes): Every subject proceeded through all hierarchies until he/she finished the most anxious scene. At this point, the researcher mentioned that in the near future, music should be gradually faded from the subject’s home training. Thus, the subject could eventually control his/her music performance anxiety by imagining a relaxing image without matching improvised music.
4. Performance of pieces prepared by all participants (10-15 minutes)
5. Homework assignment and closing conversation (3 minutes): The researcher reviewed the session and handed out the RMAS. Homework included a rhythmic breathing exercise (2 minutes), a daily free-improvisation warm-up (2–3 minutes), and desensitization training as demonstrated in step 3 (5–10 minutes) three times a week.

## **RESULTS**

Table 1 presents each factor and the average anxiety symptom score reported during the first, second, and third distributions of the RMAS.

Participants’ journal responses were collected and analyzed for themes related to awareness of MPA symptoms, mindsets during performances,

confidence levels, and positive attitudes toward upcoming performances. During Session 1, some participants reported feeling uncomfortable with the idea of improvisation as a group. However, these participants expressed that they became more comfortable participating in improvisation exercises over time. One example of a positive response to treatment from participants was the following:

It doesn't take a lot of effort to become relaxed, but it does take awareness. If I am aware of my breath and my muscles (especially upper back/ arm muscles) I can become relaxed a lot faster than if I just tell myself, 'okay, relax now'.

**Table 1**  
**Average Anxiety Scores reported on the RMAS\***

	Session 1	Session 2	Session 3
Factor 1: Nervousness/Apprehension	1.89	1.87	1.86
Factor 2: Confidence/Competence	2.36	2.28	2.53
Factor 3: Self-consciousness/Distractibility	2.23	2.00	2.05
Factor 4: Arousal/Intensity	2.72	2.64	2.87
Factor 5: General Anxiety Levels (PAI scores)	1.87	1.78	1.59

\*Scale: 1=almost never; 4=almost always

When he became aware of symptoms and could remind himself how to react, he gained control over his anxiety levels by setting his mind to a familiar, relaxing state. This participant also recognized physical symptoms that arose, so when the symptoms arose, he could pinpoint what parts of his body needed to be relaxed.

There was a noticeable trend of a sad emotion being portrayed during group improvisation while soundscapes were used, as well as a fear of what others might think of their musicianship. One participant noted, "I became aware that I was worried about what, if anything, I should do while also being aware that there weren't supposed to be any constraints." Since all musicians are classically trained, it was common for them to be apprehensive when playing familiar pieces and fear judgment on interpretation. Completing the sessions with familiar colleagues helped to alleviate discomfort during group improvisation.

Repetition of the exercises made it easier to practice improvisation.

## DISCUSSION

Musicians had a positive response to visualizations and felt that this exercise could help them gain more control of thoughts and emotions during performances. After Session 4, during the desensitization exercises, one participant said, "It was nice to have a 'happy place' to go back to because I knew that bad moment would not last long." Over time, participants developed the ability to turn anxiety-producing thoughts on and off, like a light switch.

Music therapy exercises can help to reduce MPA, but can also be helpful in situations not related to music. At the end of the study, one participant noted that he visits the doctor often and has high blood pressure due to the anxiety of having his blood pressure checked. Before doctor



visits, he began practicing rhythmic breathing and visualized his place of relaxation during the checkups. Almost immediately, his blood pressure readings dropped down to a normal level and he now performs his music therapy routine before every doctor visit. Overall, participants expressed that visualization was the most prominent exercise in helping them see positive results.

During group improvisation, the group expressed interest in improvising over soundscape recordings. Participants found the sounds to be helpful in keeping them relaxed and focused on the exercise. The soundscapes were utilized throughout the sessions to aid with focus during visualization as well. Despite the fact that soundscapes made the participants more comfortable and relaxed during improvisation, they admitted that their emotional state was influenced by the moods portrayed in the soundscapes. Similarly, group improvisation manipulated the mood of each individual because they fed off of each other's musical ideas, so they all experienced similar emotional states.

Artists who suffer from MPA have trouble recognizing anxiety as a disorder and are reluctant to admit that steps must be taken to overcome it. They often feel ashamed of MPA and are uncomfortable confronting anxiety (Brugues, 2011), so a group setting helped participants feel more comfortable with improvisation. When the musicians were informed that MPA is common, they allowed themselves to become more comfortable and susceptible to improvement throughout the study. They showed that they could be more honest with themselves and less afraid to confront feelings during improvisation. One participant stated, "Even though I am always trying to hide my emotions, they seemed to come out in my improvisations."

There was not a notable difference in MPA levels between the first and second RMAS's. The time it takes to adapt to the study might have delayed the response to treatment, so as participants practiced the techniques longer, results became more apparent. This study lasted for only five weeks. If the study had been longer,

the results may have been more distinct. Participants were asked to complete exercises that were unfamiliar, and as classical, the idea of improvising may have made them feel uneasy and nervous about playing music without written or verbal guidelines.

The table displays the fluctuation of anxiety levels from one session to the next. Confidence/Competence and Arousal/Intensity increased while Nervousness/Apprehension, Self-consciousness/Apprehension and General Anxiety Levels decreased. These results are not surprising because the decreasing factors were related to trait anxiety and personality types. The increase in these factors can be explained with the assumption that participants learned more about their own tendencies and reported based on their new personal discoveries over time. For example, one statement for Confidence/Competence on the inventory read, "In performances for which I have had only one rehearsal, I seem to do worse than other performers." Perhaps participants were confident in their lack of preparation at the start of the study, but later realized that lack of preparation was the very thing that hindered their performances.

The decreasing factors, Confidence/Competence and Arousal/Intensity, were only designed to evaluate state anxiety, which is related to the performance itself. These factors support the original hypothesis that improvisation and desensitization help to alleviate musical performance anxiety in college wind musicians. All three factors are directly related to the apprehension that musicians feel during performances. In the short span of six weeks, this study yielded slight, yet auspicious results.

## REFERENCES

- Birk, L. (2004). Pharmacotherapy for performance anxiety disorders: occasionally useful but typically contraindicated. *International Journal of Clinical Psychology*, 60, 867-879.
- Brugues, A. O. (2011). Music performance anxiety—part 1. a review of its epidemiology.

- Medical Problems of Performing Artists*, 26, 102-105.
- Deri, O. (1962). Stage fright. *Music Journal*, 1(3), 114-115.
- Fishbein, M., Middlestadt, S., Ottai, V., Straus, S., & Ellis, A. (1988). Medical problems among ICSOM musicians: Overview of a national survey. *Medical Problems of Performing Artists*, 1(3), 1-8.
- Hamann, D. L., & Sobaje, M. (1983). Anxiety and the college musician: a study of performance conditions and subject variables. *Psychology of Music*, 11(1), 37-50.
- Kenny, D. (2005). Performance anxiety: multiple phenotypes, one genotype? Introduction to the special edition on performance anxiety. *International Journal of Stress Management*, 12(4), 307-311.
- Kenny, D. T. (2006). Music performance anxiety: new insights for young musicians. *Advances in Cognitive Psychology*, 2(2-3), 103-112.
- Khalsa, S. S., Shorter, S. M., Cope, S., Wyshak, G., & Sklar, E. (2009). Yoga ameliorates performance anxiety and mood disturbance in young professional musicians. *Applied Psychophysiol Biofeedback*, 34(4), 279-289.
- Kim, Y. (2005, March). Combined treatment of improvisational and desensitization to alleviate music performance anxiety in female college pianists: a pilot study. *Medical Problems of Performing Artists*, 20(1), 17-24.
- Kirchner, J. (2004/2005). Managing musical performance anxiety. *The American Music Teacher*, 54(3), 31-33.
- LeBlanc, A., Young, C. J., Obert, M., & Siivola, C. (1997). Effect of audience on music performance anxiety. *Journal of Research in Music Education*, 45(3), 480-496.
- Martinez, J. (2009). Is music therapy? *Nephrology Nursing Journal*, 36, 329-330.
- Merchant-Haycox, S. E., & Wilson, D. G. (1992). Personality and stress in performing artists. *Personality and Individual Differences*, 13(10), 1061-1068.
- Mitchell, N. (2011). Evaluation and performance anxiety in music study. *Canadian Music Educator*, 53(1), 32-34.
- Mor, S., Day, H. I., Flett, G. L., & Hewitt, P. L. (1995). Perfectionism, control, and components of performance anxiety in professional artists. *Cognitive Therapy and Research*, 19(2), 207-225.
- Nagel, J. F., Himle, D. P., & Papsdorf, J. D. (1989). Cognitive behavioral treatment of music performance anxiety. *Psychology of Music*, 1(17), 12-21.
- Orman, E. K. (2003). Effect of virtual reality graded exposure on heart rate and self-reported anxiety levels of performing saxophonists. *Journal of Research in Music Education*, 51(4), 302-315.
- Packer, C. D., & Packer, D. M. (2005). Beta blockers, stage fright, and vibrato. *Medical Problems of Performing Artists*, 20(3), 126-130.
- Reitman, A. D. (2001, September). The Effects of music-assisted coping systematic desensitization on music performance anxiety. *Medical Problems of Performing Artists*, 16(3), 115-125.
- Rodebaugh, T. L., & Chambless, D. L. (2004). Cognitive therapy for performance anxiety. *Journal of Clinical Psychology*, 60(8), 810-820.
- Ryan, C. (2005). Experience of musical performance anxiety in elementary school children. *International Journal of Stress Management*, 12(4), 331-342.
- Ryan, C. (1998). Exploring music performance anxiety in children. *Medical Problems of Performing Artists*, 12(4), 83-88.
- Shoup, D. (1995). Survey of performance-related problems among high school and junior high school musicians. *Medical Problems of Performing Artists*, 10(3), 100-105.

- Stephenson, H., & Quarrier, N. F. (2005). Anxiety sensitivity and performance anxiety in college music students. *Medical Problems of Performing Artists*, 20(3), 119-125.
- Kemenade, J. F., Son, M. J., & Heesch, N. C. (1995). Performance anxiety among professional musicians in symphonic orchestras: a self-report study. *Psychological Reports*, 77(2), 555-562.
- Whitcomb, B. (2008). Overcoming performance anxiety. *American String Teacher Association*, 58(4), 36-39.
- Wilson, G. D., & Roland, D. (2002). *The science and psychology of music performance: creative strategies for teaching and learning*. New York, NY: Oxford University Press.
- Wolfe, M. L. (1989). Correlates of adaptive and maladaptive performance anxiety. *Medical Problems of Performing Artists*, 4(1), 49-56.
- Yondem, Y. D. (2007). Performance anxiety, dysfunctional attitudes and gender in university music students. *Social Behavior and Personality*, 35(10), 1415-1426.