Music Performance Anxiety

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Abstract

Music performance anxiety is one of the main factors that influence the artistic level of classical music performers. Its significant incidence among amateur and professional musicians and its special impact on one's developing music career interested the international scientific community. As a result, during the last years, a series of important studies discovered a large area of information related to the associated factors of music performance anxiety and to therapeutic approaches. The present research is a review of the main findings.

Key words: *music performance anxiety, associated factors, strategies of control and reduction of music performance anxiety*

1. Conceptual delimitation

Music performance anxiety can be analyzed as a psychological state as well as a personality trait (Kenny et al, 2004; Osborne & Kenny, 2008; Ryan, 2005). In literature it is defined as "an exaggerated, often incapacitating, fear of performing in public" (Wilson & Roland, 2002, p. 47). Furthermore, Wilson (1999 *apud* Yondem, 2007, p. 1415) describes it as "an exaggerated fear that an individual has with regard to exhibition of performance in front on others". Salmon (1990 *apud* McGinnis & Milling, 2005, p. 358) defines music performance anxiety as "the experience of persisting, distressful apprehension about and or actual impairment of, performance skills in a public context, to a degree unwarranted given the individual's aptitude, training, and level of preparation". Regarding this phenomenon, Pablo Casals, the famous cello player, said "the thought of a public concert always gives me nightmares" (Sweeney & Horan, 1982, p. 486), and the pianist Ignace Paderewski described his experience of performance anxiety as "that terrible pain… that anguish that is not to be described" (*ibidem*).

Music performance anxiety is explained through psychological theories which describe the general mechanisms of anxiety (the cognitive and behavioral perspective, psychoanalysis, emotional processing theory, neuro-physiological theories) and also through specific theoretical models (for example, the conceptual model of Papageorgi, Hallam & Welch, or Wilson's three-dimensional extension of the Yerkes-Dodson Law).

There are three main components that describe music performance anxiety (Osborne & Kenny, 2008; Ely, 1991):

1. **the physiological arousal** – that includes disturbance in breathing rate, increased heart rate, sweating, shaking, inhibition of saliva, digestive symptoms;
2. **the behavioral component** – that includes difficulty in maintaining posture, failures of technique, trembling;

3. **the psychological component** – including dysfunctional cognitions regarding one's success in music performance and also emotional states (of fear, shame, sadness, anger, guilt) that appear during the performance.

The interaction between these three components may manifest itself in different ways, starting with powerful interdependence (where one component highly influences the reactions of the other two) and ending with partially independent reactions. For example, cognitive anxiety may appear in the lack of somatic responses but it may produce strong behavioral reactions during music performance.

Sweeney & Horan (1982) identified three types of music performance anxiety:

- **reactive anxiety** – that results from insufficient training; in this case instrumental or vocal individual training and the development of music analysis abilities are indicated;
- **adaptive anxiety** – that generates high levels of music performance by accumulating an optimal level of motivation, tension, concentration and energy; there are studies (Steptoe & Fidler, 1987 *apud* Osborne & Kenny, 2008) which demonstrated that international level performers with many years of training actually find intimidating conditions to be rather stimulating than overwhelming;
- **maladaptive anxiety** – that lowers music performance level and weakens performer's opportunities to express his musical abilities;

The incidence of maladaptive music performance anxiety is significant among professional performers. Wesner, Noyes & Davis's study (1990 *apud* Wilson & Roland, 2002) has discovered that 21% of music faculty students experience music performance anxiety in such high levels that it endangers significantly their performing abilities. Most of the common symptoms included: lack of concentration, hands and voice trembling, dizziness, nausea, mouth dryness, perspiration, shortness of breath. Nine percents of the subjects said they often avoided performance opportunities because of anxiety, and 13% had interrupted and actual performance on at least one occasion.

One research made on 2200 professional musicians from 48 orchestras has showed that performance anxiety represents a debilitating problem for 19% of females and 14% male performers (Fishbein & Middlestadt, 1988 *apud* McGinnis & Milling, 2005). Another study investigated anxiety levels of performers from professional orchestras in Netherlands and found that 59% of them suffer from performance anxiety, and 10% of them suffer anticipatory anxiety for weeks before important recitals or concerts.

The incidence of music performance anxiety can be extended up to 25% of professional musicians (Kenny, 2004; Steptoe, 2001 *apud* McGinnis & Milling, 2005) and it affects performers of all ages and variable levels of instrumental or vocal training (McGinnis & Milling, 2005).

In some cases (Orman, 2003; Gorges, Alpers & Pauli, 2007; McGinnis & Milling, 2005) music performance anxiety was considered to be a form of social phobia. The main characteristic of social phobia is constituted by the powerful desire of the subject to produce a good impression on the others and this desire is associated with the fear that he or she will not be able to succeed in this. Once included in a social situation, the subject tends to evaluate it as being dangerous. Consequently, the subject is convinced that he or she will react in a stupid and unacceptable manner and this will have catastrophic consequences such as: loosing social status, rejection and humiliation from others (Holdevici, 2005). According to DSM-IV (American Psychiatric Association, 2000), the main criteria for social phobia are:

a) an intense and persistent fear of one or many social situations where the person is exposed to non-familiar people or to social scrutiny that may lead to humiliating or embarrassing situations;
b) the anxiety is inevitable produced by the described social situation that can be either real or anticipated;
c) the persona admits that his/her fear is excessive and unjustified;
d) the described social situations are avoided or experienced with high levels of anxiety;
e) the avoidance, the anxious anticipation and the anxiety interfere significantly with the normal routine, the professional status, the educational development or with the social activities in general.

Although music performance anxiety may share some common elements with social phobia, the studies focused on the correlation between these two have found contradictory results. On one hand, Steptoe & Fidler's research (1987 apud McGinnis & Milling, 2005) has identified low correlations between music performance anxiety and social phobia, and has explained this result by the fact that performers' fear is not unjustified, but determined by extremely high standards that classical music performers are exposed to. Furthermore, the way a music performer is perceived by the others is relevant for the development of his public image and consequently his career. On the other hand, Gorges, Alpers & Pauli (2007) have discovered high correlations between performance anxiety and social phobia. Even so, regression calculations revealed that music performance anxiety is a partial predictor for social phobia. They discovered other factors that could better explain music performance anxiety such as: perfectionism, focusing on the public self-image, gender and professional status. In conclusion, performance anxiety and social phobia may be connected but also partially independent.

2. Factors that influence music performance anxiety

A growing body of research has revealed, in different experimental contexts, the fact that a series of factors correlate significantly with music performance anxiety. These factors give information about the performer's attributes, and the context where he or she performs in front of the public.

2.1. Performers' gender

Most studies have discovered a prevalence of music performance anxiety among females (Yondem, 2007; Ryan, 2004; Rae & McCambridge, 2004; Osborne & Kenny, 2008; Kenny, Davis & Oates, 2004). The gender differences may be observed in adults, teenagers and children also. Ryan's study (2004) has showed that, in a group of sixth grade students, the girls' heart rates rose through each recital stage (before playing and during playing). Boy's heart rates rose minimally prior to performing but exceeded the girls' while performing.

A transversal study (Ryan, 2005) realized on 349 students with ages between 5 and 13 years old has discovered insignificant anxiety differences between girls and boys in the case of early ages. The fifth grade boys experience higher levels of anxiety than girls of the same age do. In the sixth grade the results are opposite, and in the seventh grade, in the day of the concert, boys are again more anxious than girls. These contradictory results are difficult to interpret but they open a research direction to a new demographic area less studied.

2.2. Performers' musical experience

Wilson & Roland (2002) stipulate a general reduction of music performance anxiety with experience but they also remind that a significant percentage of professional performers have to deal with this problem all their live. Other studies failed to discover relevant correlations between the years of musical training and music performance anxiety.

2.3. Performers' musical area of expertise

A research realized by Ryan & Andrews (2009) has showed that instrumental ensembles induced greater anxiety than choral ensembles. Also, in both categories, the conductor seemed to be one of main the factors to generate anxiety. These were the conductor's behaviors more prone to induce anxiety among performers: conductors' anxious behavior (75% of total participants), his negative mood (31%), weak conducting and rehearsal skills (17%), disrespectful attitude (17%), poor preparation (13%), negative body language (12%), perfectionist behavior (7%), not enough attention to musical details (6%) and arrogant attitude (2%).

The same research indicated that solo performances were reported to be more anxiety inducing than ensemble performances. This result confirms previous findings (Wilson & Roland, 2002) which showed that the number of

performers on stage has a great influence on music performance anxiety level. Accordingly, solo performances induce more anxiety than duo performances. Also, duets are more anxious that trio or quartet performances. After a certain number of performances, the level of music performance anxiety doesn't drop significantly anymore.

Interviews made on 201 choir members (Ryan & Andrews, 2009) regarding the factors that generate anxiety on stage mentioned: music difficulty (72%), performing from memory (64%), the importance of performance (57%), the conductor's behavior (50%), performer's physical health (24%), the stature of audience (19%), performer's mental health (16%), performer's mood (11%), and the size of audience (10%).

The study of Kenny, Davis & Oates (2004) explored the anxiety levels of opera chorus artists and has showed that in their case anxiety correlates with occupational stress. Also, the chorus performers reported higher trait anxiety, higher occupational role concerns and higher occupational personal strain than controls. In order to cope with this problem, these artists have higher self-care and recreation than other professional groups. As a group, they were more likely to engage in regular exercise, have sufficient sleep, be careful with their diet, avoid harmful substances such as alcohol and drugs, and practice relaxation techniques. The researchers underlined that this is not surprising in a group of singers, as the vocal instrument is delicate and requires special care to maintain it at optimal performance.

2.4. Performers' personality traits

Perhaps the most studied aspect in relation to the state of performance anxiety is trait anxiety, as many researches (Kenny et al, 2004; Osborne & Kenny, 2008; Ryan, 2005) have discovered significant correlations between the two. The reason for the existing relation is obvious.

Other analysis suggest important connections between music performance anxiety and the need for approval from others (Yondem, 2007), neuroticism (Rae & McCambridge, 2004), and negative cognitions (Osborne & Kenny, 2008; Gorges et al, 2007).

A negative correlation between performance anxiety and extraversion was observed by Rae & McCambridge (2004) but, in the end, this correlation was not significant. The finding confirms previous results (Graydon & Murphy, 1995 *apud* Wilson & Roland, 2002) which suggest that introvert performers are more prone to experience anxiety on the stage, whereas the presence of the public can be especially comfortable for performers with higher levels of sociability and communication.

Perfectionism creates a special situation. It is defined (Wilson & Roland, 2002) as the tendency to have high, unrealistic expectations from him and from others. The perfectionist person is exaggeratingly preoccupied by defects and mistakes, and tends to concentrate more on what went wrong and not to take

into consideration the positive aspects. Perfectionists frequently criticize themselves and have a low self-esteem. The relationship between perfectionism and performance anxiety has bee confirmed in some researches (Gorges et al, 2007, Bourne, 1995 *apud* Wilson & Roland, 2002) and infirmed in others (Yondem, 2007). Mor, Day & Flett (1995 *apud* Wilson & Roland, 2002) have analyzed the link between perfectionism, self-control and performance anxiety in musicians, actors and dancers and made a clear distinction between self-perfectionism (self imposed high standards) and social perfectionism (high standards imposed by others). The results have shown that social perfectionism correlates better with performance anxiety than self-perfectionism. Also, the connection between perfectionism (of both types) and low self-control generates excessively high levels of anxiety.

2.5. Public's characteristics

Wilson & Roland (2002) have noticed than public performances are usually more anxious than private performances, although there isn't a direct relationship between the number of spectators and music performance anxiety levels. The researchers said that, although it is expected for televised performances (which may include more than 10 million viewers) to produce high levels of anxiety, this thing doesn't mandatory happen. They suggest that rather the proximity with the public (for example, the possibility of seeing the audience faces) and the relationship with the public are more important for the appearance of performance anxiety.

Most musicians reported that auditions are the most anxious performances, as they imply the assessment from others, as well as the experience of an inferior social status. Also, they always keep in mind that auditions have a direct and determined effect on their career ascension. Therefore, competitive performances induce more anxiety than divertissement performances. The latter are not completely devoid of anxiety, the anxiety level depending on the audience status and relationship with the performer.

3. Strategies of control and reduction of music performance anxiety

When the music performance anxiety level is so high it disrupts significantly the performer's professional activity, it is recommended to attempt a series of therapeutic strategies of control and reduction of performance anxiety. Although many musicians use beta-blockers to control their anxiety, the side effects of these drugs may sometimes be dangerous.

Bet-blockers operate to inhibit peripheral autonomic symptoms by reducing body's physiological responses such as trembling, abdominal discomfort and by inducing a general state of indifference. In the same time, the possible side effects (Wilson & Roland, 2002) include loss of sexual potency, nausea, tiredness and blunting of affect. In asthmatics these drugs are particularly dangerous as they sometimes precipitate heart failure. In many

countries the use of beta-blockers for performance anxiety is not sanctioned by medical authorities, and this may be one reason for the fact that almost one-quarter of professional performers (Wilson & Roland, 2002) use them regularly.

Nevertheless, the most efficient strategies meant to control performance anxiety are the ones which don't create the situation for the performer to depend on an external factor, but the ones which make him develop his own resources to the maximum. For doing this, the performers may choose from: cognitive and behavioral therapy (Sweeney & Horan, 1982; Orman, 2003, 2004), hypnosis (Stanton, 1994), music therapy (McGinnis & Milling, 2005), Alexander technique (Wilson & Roland, 2002), bio-feed-back (McGinnis & Milling, 2005) or Zen meditation (Lin et al, 2008).

3.1. Cognitive and behavioral therapy

The cognitive-behavioral psychotherapy of music performance anxiety follows the same steps as any other anxiety by using a series of techniques such as positive enforcement, progressive desensitizing, modeling instruction (Holdevici, 2005), in addition to self-instructional cognitive training where the performer is taught the constructive skills of becoming aware of negative thoughts and substituting positive and task-oriented self-statements of them.

The pioneering study for behavior therapy of music performance anxiety belongs to Appel (1976 *apud* McGinnis & Milling, 2005) who compared the effect of exposure-based behavior with traditional music analysis, on 30 volunteer graduate music students who had previously experienced anxiety in solo performances. The exposure-based therapy included exposure to performance situations and involved techniques such as in vivo desensitization, progressive muscle relaxation and counter-conditioning. The music analysis treatment included intellectual mastery of the structural and stylistic aspects the musical piece to be performed. The subject received 8 one hour sessions. The control group received no therapy treatment. The results have shown that both exposure-based therapy and music analysis reduced significantly the piano errors. Furthermore those receiving systematic desensitization reduced anxiety more than music analysis group or than control group.

A latter study (Kendrick et al, 1982) demonstrated the importance of negative cognitions for the growing of music performance anxiety, and compared the effects of two therapeutic strategies (behavior rehearsal and attentional training) in reducing the anxiety levels of 53 pianists. Behavior rehearsal included progressive exposure to a friendly public during rehearsals and home assignment to perform for family members. Attentional training used one technique of challenging negative thoughts followed by substituting and attending only to task-oriented and positive thoughts. Four types of positive self-statements were described: comforting, task focusing, technique oriented and self-rewarding. The control group didn't get any kind of therapy. After 5 weeks, both therapies reduced significantly the performance anxiety. Nonetheless,

cognitive therapy was more effective than the behavioral-rehearsal program on several measures

A similar research (Sweeney & Horan, 1982) investigated cue-controlled relaxation and cognitive restructuring, separately and in combination in comparison with a standard treatment control condition (musical analysis training). The latter was then compared with a waiting-list control group. Forty-nine pianists participated in the study and their anxiety levels were measured before and after 6 weeks of therapy. Results have shown that cognitive, behavioral and cognitive-behavioral strategies were each equally effective in reducing the state anxiety.

A particular form of cognitive reconstruction is called "stress inoculation" and it was tested as a therapy strategy for music performance anxiety (Salmon, 1990 *apud* Wilson & Roland, 2002). The main idea supports the fact that it is important to familiarize the performer with realistic expectations regarding his reactions during public performances and to promote positive cognitions about his musical activity. The performers are taught to anticipate the symptoms that usually appear before performing in public and to interpret them as less threatening reactions, and maybe sometime desirable. For example, the reactions produce by adrenaline growing (palpitations, shortness of breath) may be seen as normal emotional responses which give energy to the performer and contribute to a more passionate performance.

An analysis of interviews realized on successful professional performers (Roland, 1994 *apud* Wilson & Roland, 2002) has shown that they anxiety as a normal, even benefic aspect of music performance. They describe this phenomenon as a feeling of enthusiasm, a rising of mental concentration and sometimes a state of inspiration.

Other more recent studies (Orman, 2003, 2004) have investigated the effect of virtual graded-exposure on the development of music performance anxiety. The results have shown that virtual exposure to anxious situations (a big public) determined physiological and psychological reactions of anxiety, by generating the feeling of public presence, in a group of 3 saxophone players. Nevertheless, the therapeutic implications of this technique are far from being completely elucidated, as the statistical results offered contradictory findings regarding the use of virtual desensitization for the therapy of performance anxiety.

3.2. Psychoanalysis

A series of psychoanalytic interpretations on music performance anxiety have been described in literature (Nagel, 1993; Gabbard, 1979 *apud* Wilson & Roland, 2002). They attribute the evolution of this kind of anxiety to early childhood experiences that include conflicts related to genital exhibition and fear of parental punishment for masturbation. Although there are some successfully treated case studies, it is difficult to scientifically generalize this method.

3.3. Hypnosis

There is only one research in the scientific literature (Stanton, 1994) which investigated the therapeutic effect of hypnosis in reducing music performance anxiety. The research was performed on 40 music students who got two therapeutic sessions of 50 minutes each, one session per week. The hypnotic treatment included relaxation suggestions, suggestions of pleasant visual images (a lake and clouds) and suggestions for rising mental control, performance abilities and self-esteem. The assessment of the therapeutic effect was accomplished after the two weeks of sessions and after 6 months from the intervention. The results have shown the reduction of performance anxiety in both moments and induced the idea that hypnosis could be used in order to reduce music performance anxiety.

3.4. Music therapy

The idea of using music as a tool for anxiety therapy in the case of musicians started from the premise that this particular category already showed specific physiologic and psychological reactions towards music, when compared to non-musicians, due to their long-live relationship with musical training (Kim, 2008). The meaningful and special connection that musicians have with music allows them to involve in therapy more responsibly, more comfortably and more efficiently.

The main reasons for using music therapy in the treatment of music performance anxiety reveal the following ideas:

- music itself induces a state of relaxation when the listener is focused towards auditory stimulus and therefore reduce catastrophic thinking;
- music is a powerful emotional and cognitive tool for musicians and this may generate intense physiological and psychological reactions;
- music itself may generate mental imagery and the performers have already been taught how to do this during their previous musical training;

The first music therapy approaches involved a passive attitude from the subject, as he had been asked only to listen to certain musical fragments that were previous carefully selected. Latter, music therapy techniques developed the use of improvisation as a relaxation tool and for reducing music performance anxiety. When musicians are clearly told that there are no right or wrong improvisations, this technique become more and more therapeutic.

Montello and collaborators were the pioneers in using music therapy as a tool for the reductions of music performance anxiety (Montello et al, 1990 *apud* Kenny, 2004). They conducted two studies where 17 professional performers with high levels of performance anxiety were given 12 weekly one hour and a half sessions of music therapy. These sessions combined cognitive-behavioral strategies (breathing control, progressive muscle relaxation, guided imagery) with musical techniques (musical role play, improvisation). The control group didn’t get any therapy. The results have shown significant anxiety reduction

levels, although there are important question to either the results might have been generated only by the cognitive-behavioral techniques.

Other similar experimental efforts (Brodsky & Sloboda, 1997 *apud* McGinnis & Milling, 2005) have failed in revealing the specific role music therapy techniques on the reduction of music performance anxiety.

A recent study (Kim, 2008) compared two different music therapy techniques (desensitization based on improvisation and progressive muscle relaxation based on music audition) and observed no significant differences between them regarding the reduction on music performance anxiety.

The research area of music therapy is still in preliminary results, but this approach is far from being unnecessary for the therapy of music performance anxiety.

3.5. Alexander technique

Alexander technique got its name from Fred Alexander, the Australian actor who discovered it. Although it is not dedicated particularly for musicians, almost 43% of British professional performers from big orchestras use it as as form of alternative medical technique in order to reduce music performance anxiety (Wilson & Roland, 2002).

This technique involves a process of kinesthetic reeducation that uses verbal instructions and demonstrations to correct certain postures. The purpose of the method is to cultivate a natural line of the head, neck and spine, and this alignment brings more equilibrium, straight and coordination. Through Alexander technique the performers learn conscious and voluntary posture and movement control in order to eliminate involuntary muscle tension or useful habits that interfere with coherent production of complex movements. For the performers, this method contributes to consciousness organization by using kinesthetic stimulus, tension sensations, effort sensations and space positions.

Despite the enthusiasm this method is used by the performers, only one scientific study (Valentine et al, 1995 *apud* Kenny, 2004) investigated its effect on reducing music performance anxiety. In this study, 25 performers got 15 therapeutic sessions, while the control group include a waiting-list group. The results have shown a decrease in music performance anxiety in the experimental group. Future studies will be able to offer more information about the generalization of these results on different age, gender or musical experience categories.

3.6. Meditation

The tendency to innovate the therapeutic space regarding the performance anxiety management strategies determined a series of Asian researchers (Chang, 2001 *apud* Kenny, 2004; Lin et al, 2008) to try the scientific validation of ancient meditation techniques. There are only two studies related to this attempt. Although they reveal important information regarding concrete ways to bring

the mental processes to a higher voluntary mental control, they failed to demonstrate a significant impact in reducing music performance anxiety.

4. Conclusion

The scientific research on music performance anxiety has revealed that it manifests according to three components: the physiological one, the behavioral one and the psychological one. The study of each component generated correspondent explanative theories according to each of the three perspectives.

The main associated factors of music performance anxiety are: performers' gender, musical experience, musical area of expertise and personality traits, as well as public characteristics.

The therapeutic strategies for music performance anxiety include: cognitive and behavioral therapy, psychoanalysis, hypnosis, music therapy, Alexander technique and meditation. These strategies vary considerably regarding the success rate in reducing and controlling performance anxiety.

Music psychology literature has showed, in new and diverse experimental contexts, that the performers' psychological states, especially the performance anxiety state, may have significant effects on the artistic level of music performance.

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