

Music performance anxiety and pre-performance emotions in the light of psychology of emotion and emotion regulation

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Abstract

The aim of this review article is to show the benefits of broadening the understanding of the mechanism and treatment of music performance anxiety (MPA) using the knowledge of psychology of emotion and emotional regulation. A review of research literature on the emotional state of the musician during public performances and emotion regulation techniques fosters integration of various approaches: clinical psychology, performance psychology, positive psychology, and psychology of emotion and emotional regulation. Different ways of defining the phenomenon (MPA, optimal arousal, positive emotions, and mixed emotions) imply different directions of psychological intervention. The process model of emotion regulation developed by James J. Gross has been chosen because it is a clear-cut theoretical framework, enabling the integration of a number of theories and the development of comprehensive practical interventions. The benefit of the article is presenting the assumptions of the model, as well as knowledge of emotions and emotional regulation, to the context of musician's psychological training and the performance preparation process.

Keywords

emotion, emotion regulation, music performance anxiety, musicians, pre-performance emotions

Performing in a public eye quite often leads to changes in emotional well-being, not always predictable at the stage of preparation with no audience. According to the distraction-conflict theory (Baron, 1986), the presence of spectators becomes an additional stimulus which needs to be monitored while playing the music. It leads to changes in the level of arousal and

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attention focus, which may increase (*social facilitation*, Allport, 1924) or decrease (*social inhibition*, Pessin, 1933) performance quality (see also Aiello & Douthitt, 2001; Uziel, 2007).

Appraisal theories of emotions (Lazarus, 1991; Schachter & Singer, 1962; see also Moors, Ellsworth, Scherer, & Frijda, 2013) emphasize the importance of cognitive interpretation of symptoms of increased arousal (heart rate acceleration, tremor) and contextual cues (complexity of the task, audience rank, the performer's self-evaluation) in the process of labeling the emotional state as anxiety, curiosity, or excitation. The accuracy of identification and description of emotions with discrete emotion words and the perception of their complexity indicates a high level of emotional development (Lane & Garfield, 2005; Lane & Schwartz, 1987) and enables effective emotional regulation (Barrett & Gross, 2001; Kuppens & Verduyn, 2015).

The ability to effectively regulate emotions is crucial for the professional musician due to the variety of emotions arising from different sources: tasks in hand (emotions evoked by music), the setting (the audience, social exposure), and specificity of the artist's work (self-awareness). The author's personal experiences in providing psychological counseling for musicians show their tendency to label pre-performance emotion regulation problems as music performance anxiety (MPA) or stage fright. Research results on MPA indicate that 20% to 50% of professional musicians experience negative emotions related to public performance (Kenny, Davis, & Oates, 2004; Kenny, Driscoll, & Ackermann, 2012; Paliuikiene, Kazlauskas, Eimontas, & Skeryte-Kazlauskienė, 2018). This phenomenon is therefore worth analyzing from a number of perspectives to suggest appropriate preventive and therapeutic strategies.

MPA: Explanatory viewpoints and directions of psychological intervention

Literature review on emotions felt by musicians in a public performance situation shows the prevalence of articles on negative emotions. From a clinical perspective, MPA is described as an excessively intense, persistent anxiety reaction which occurs when performing in front of an audience, and which hinders satisfactory performance on stage, accompanied by specific physiological, cognitive, and behavioral symptoms (Cox & Kenardy, 1993; Craske & Craig, 1984; Kenny, 2011). Analyzing definitions and clinical cases, Kenny (2011) even proposed three types of MPA, determined on the basis of the comorbidity of MPA with other affective disorders: (1) focal MPA, triggered by the situational factors; (2) MPA as social anxiety disorder; and (3) MPA as panic disorder with or without depression. Results provided by Kenny's team confirmed the assumptions of the theoretical model: social anxiety disorder, post-traumatic stress disorders, and depression were main predictors of susceptibility to stage fright (Kenny et al., 2012; Dobos, Piko, & Kenny, 2019). Reduction of unpleasant symptoms and restoration of psychological well-being is carried out in the course of therapeutic work in keeping with a given methodology, taking into account the specifics of musical performance (Kenny, 2011; LeBlanc, 1994; Papageorgi, Hallam, & Welch, 2007).

At the other extreme, there are few studies on adaptive MPA (vs. maladaptive MPA; Wolfe, 1989, 1990). Similarly to sport psychology, positive effects of increased arousal for performance quality are highlighted: adaptive anxiety may enhance performance by stimulating musician's alertness and concentration on the task at hand, instead of focusing on the self (Gates & Montalbo, 1987; Hamann, 1982; Mor, Day, Flett, & Hewitt, 1995). Research results indicate that teaching people how to reinterpret the perceived physiological symptoms in terms of the body's mobilization or excitation helps to improve their well-being and facilitates accepting or even reducing unpleasant physiological symptoms (Brooks, 2014; McGonigal, 2015).

Equally rare are studies on positive emotions accompanying qualitatively good performances (*peak experience*, Gabrielsson & Lindström Wik, 2003)—excitement, inspiration, performance boost (Simoens, Puttonen, & Tervaniemi, 2015), and self-confidence (Lamont, 2012; Marin & Bhattacharya, 2013; Woody & McPherson, 2010). Perdomo-Guevara (2017) made an attempt to go beyond anxiety paradigm. She investigated the presence of seven emotions (elation, joy, positive arousal, confidence, feeling unmotivated, worry, and fear) in musicians' daily life, musical practice, and music performance. The findings suggest the prevalence of positive emotions of joy, positive arousal, and confidence over feelings of worry and fear in music performance context. Students compared to more experienced musicians (professionals and amateurs) felt worry and fear more often than joy and confidence. In the group of professional musicians, soloists felt elation, worry, and fear more often than orchestra or chamber musicians. The described study shows a variety of performance emotions and their relations to the level of experience (student/experienced musician) and music specialization (soloist/chamber or orchestra musicians, related to the degree of being exposed on stage and perceived level of social support). The author's short intervention aimed at musicians' well-being based on positive psychology assumptions succeeded in increasing the meaningfulness of the performers' narratives, reducing musicians' anxiety and rendering their experience more enjoyable.

A look at pre-performance emotions from positive psychology perspective may help complete the clinical picture of MPA and provide guidance for developing the musician psychological well-being. Teaching people how to find courage founded on their values and goals (Putman, 1997), and develop curiosity (Kashdan & Silvia, 2009) may help them cope with anxiety.

Due to the large number of sources of emotions in a public performance situation, it is reasonable to look at MPA as a complex emotional phenomenon consisting of different emotional states. From this theoretical perspective, mixed emotional experiences are defined as "co-occurrence of any two or more same-valence or opposite-valence emotions" (Larsen & McGraw, 2014, p. 263). They appear in significant, subjectively engaging, difficult situations, ambiguous in terms of profit and loss (Larsen, McGraw, & Cacioppo, 2001). In such an experience, emotions may mix in different ways: sequentially, one after another; in an inverse way; or simultaneously with one emotion of moderate or high intensity and the other of very low intensity (prevalence) or with both emotions of moderate or high intensity (including ambivalent emotions) (Carrera & Oceja, 2007; Oceja & Carrera, 2009). Different stimuli related to performance conditions (physical conditions, objects, audience, thoughts) may evoke automatically raised, primary emotions and/or reflective, self-conscious emotions, based on conscious cognitive appraisal (Ekman, 1984, 1999; Izard, 1992; Jarymowicz & Imbir, 2010, 2015; Lewis, 1992, 2008). Research results showed the relationship between ability of being aware of emotions and understanding them as a distinct state (*emotional granularity*, Barrett, Gross, Christensen, & Benvenuto, 2001) and effective emotion regulation (Barrett & Gross, 2001; Kuppens & Verduyn, 2015).

The results of quite a few research on the structure of emotions felt by young musicians in a public performance situation (Kaleńska-Rodzaj, 2018, 2019) demonstrate a continuum of pre-concert emotions: from univalent negative emotional states of anxiety and sadness (High MPA profiles), through mixed emotional states of anxiety and courage, or uncertainty and curiosity, or joy and fatigue (Moderate MPA profiles, Mixed Emotions profiles), to univalent positive emotional states of composure, self-confidence, or excitation (Positive Emotions profiles). Figure 1 shows the results of both studies conducted in different age groups.

The cited studies show that when describing their pre-performance emotional state, musicians most often use several emotional labels with the same (extreme profiles) or different valence (mixed emotion profiles). Therefore, individuals characterized by High MPA, Moderate

Figure 1. Continuum of Pre-Performance Emotions in a Summary of Research Involving Music School and Music College Students (Kaleńska-Rodzaj, 2018, 2019).

9-12 y. o., N=222 (Kaleńska- Rodzaj, 2019)	<i>High MPA (21%)</i>	<i>Moderate MPA (24%)</i>	<i>Hesitation (29%)</i>		<i>Ambivalent Emotions (5%)</i>	<i>Composure- Confidence (21%)</i>
	negative valence	mixed valence				positive valence
16-19 y. o., N=94 (Kaleńska- Rodzaj, 2018)	<i>High MPA – exhaustion (8%)</i>	<i>Moderate MPA (24%)</i>	<i>Calm (23%)</i>	<i>Impatience, mixed emotions (19%)</i>	<i>Joy with back- ground fatigue (14%)</i>	<i>Excitement (12%)</i>

MPA, and Mixed Emotions profiles may use the terms “stage fright” or “music performance anxiety” for labeling different emotional experiences. Therefore, it is important to develop the ability of recognizing one’s emotions and labeling them accurately to discover individual components of pre-performance emotional state, and find the presence of positive feelings of hope, joy, or relief in the shadow of the dominant anxiety. In terms of Lane and Schwartz (1987) theory, describing the emotional experience only as the arousal change indicates a low level of emotional awareness (awareness of bodily sensations), while describing a one-dimension emotion of anxiety indicates a moderate level of emotional awareness (awareness of a single emotion), and recognizing a secondary emotion, such as pride, or a mixed emotional state of anxiety and hope indicates a high level of emotional awareness and plays a crucial role in enhancing the coping resources (Folkman, 1997; Folkman & Moskowitz, 2000; Lazarus & Folkman, 1984; Tugade & Fredrickson, 2004).

The quoted research results add to a rather ambivalent account of pre-performance emotions emerging from the literature review. Reaching beyond psychopathological explanations toward psychology of emotion and emotion regulation opens wider horizons for explanation of foundations of pre-performance emotional process and development of psychological interventions for musicians based on wider range of psychological techniques. Then, we can teach musicians how to regulate their pre-performance emotions instead of teaching them how to cope with MPA.

Gross theory as a framework to explain the process of pre-performance emotions formation and their regulation

There are multifactor explanatory models of MPA in the psychology of music (e.g., Kenny, 2011; LeBlanc, 1994; Papageorgi et al., 2007) in their majority capturing MPA as a process which goes far beyond the stage of performing a piece on stage, including pre- and post-performance conditions. They explain susceptibility to MPA by referring to a wide range of factors: from the performer’s dispositional traits to situational characteristics, and show dynamic connection of both groups of factors in the process of consolidating anxiety reaction (e.g., in the form of panic, Kenny, 2011). Those models involve a strong educational accent, because they pay considerable attention to ways of working on the piece of music and focus on attentive,

purposeful preparation for the performance. In this context, they emphasize a need to create the positive experiences related to rehearsal and performance from the very beginning of the learning process.

Although these kinds of models make musicians aware of holistic connections between various aspects of their work, they introduce a large scale of activities requiring not only time, but pedagogical and psychological support in a systematic pursuit of change. Macro-level models will not answer the question how to keep the course of positive emotions facing the sudden situational changes. The micro-perspective of emotional information processing based on psychological theories of emotions leads to some solutions.

The formation of pre-performance emotions

Gross's process model of emotion regulation (Gross, 1998; Gross & Thompson, 2007) is one of the best known and empirically verified emotion regulation models. It describes key stages of emotional process and, at the same time, the ways of regulating emotions with relation to each of these stages. The model is based on the cognitive assumptions of the theory of emotions, according to which emotional response arises as a result of appraising the quality of the person–environment relationship (Arnold, 1960; Frijda, 1994; Lazarus, 1991; Lazarus & Folkman, 1984; Moors et al., 2013). The process of emotion formation includes the processes of attention and cognitive appraisal (Ellsworth & Scherer, 2003; Ortony, Clore, & Collins, 1988). The emotional process is triggered by a situation which may be real, physical, and beyond personal control, as well as imagined, mental, based on cognitive representations. Being in a specific situation, people monitor it and analyze those aspects of the situation which are somehow relevant to their goals (e.g., to what extent the situation is familiar, safe, consistent with values, Lazarus, 1991). An emotional response arises as a result of that appraisal, including its physiological, behavioral, and cognitive components (Sander, Grandjean, & Scherer, 2005; Scherer, 1984, 2001). The emotional reaction creates a new psychological situation: this dynamic process may repeat a number of circles, generating different emotions depending on the performer's focus of attention (Gross & Thompson, 2007). A description of the process of generating an emotion, and an example of a case of MPA is shown in Table 1.

The chart, based on the observations from psychological counseling for musicians, shows the emergence of a rather characteristic sequence of emotional reactions: from anxiety and uncertainty, through fear and horror to shame and sadness. All that in a situation of an important, demanding task to be performed in front of others, as a result of focusing attention on specific aspects of the situation, and then a cognitive analysis of those aspects.

Excessively intense emotions hamper the regulation process by putting a person in the “refractory state” (Ekman, 2003, p. 56), and closing the path of reflection: information processing is dominated by overpowering emotion (Jarymowicz & Imbir, 2010, 2015; LeDoux, 2000; LeDoux & Brown, 2017). When anxiety is present, the scope of attention narrows, there is an automatic tendency to pick up potentially threatening stimuli from the environment (*attentional bias*, Mathews & MacLeod, 2005). The perception of the situation also changes—anxious musicians tend to be more self-focused rather than music-focused (Wolverton & Salmon, 1991), a strategy which significantly hampers their cognitive processes. The goal of anxiety (fear) is to avoid danger (Oatley & Johnson-Laird, 1996), which is why at the end of the sequence we face emotions which “withdraw” action, that is, shame and sadness. It is worth adding that positive emotional experiences develop in a similar way—they largely depend on the ability to focus on positive or neutral aspects of the situation, and on interpreting the cognitive situation in terms conducive to performing the task (Quoidbach, Mikolajczak, & Gross, 2015).

Table 1. Stages of the emotional process: an example of a musician's performance during an audition in terms of Gross's process model of emotion regulation (Gross, 1998; Gross & Thompson, 2007).

Gross's stages	The 1st circle	The 2nd circle	The 3rd circle	The 4th circle
1. <i>Situation</i>	Entering the stage	Emotional reaction (anxiety, uncertainty)	Emotional reaction (anxiety, terror)	Emotional reaction (shame, sadness)
2. <i>Attention focus</i>	Members of the examination board	Bodily sensations	Bodily sensations + the experts' facial expressions	The past (ruminations) or the future (worrying)
3. <i>Cognitive appraisal</i>	They are experts	What is happening to me?	What is happening to me? Have they noticed?	I'm not going to make it
4. <i>Emotional response</i>	Physiological reaction: faster heartbeat, shortness of breath Behavioural: muscular tension, limited freedom of movement Cognitive: "They are going to judge me"	Intensification of physiological and behavioural symptoms Cognitive: "I'm not going to be able to play well when I'm feeling like that"	Intensification of physiological and behavioural symptoms Cognitive: "They are going to think I'm not a professional"	Decrease in physiological and behavioural symptoms, exhaustion cognitive: "It is too much for me. I am not made for it"

Pre-performance emotion regulation strategies

In addition to the descriptive layer, there is also a functional layer in Gross's model in which the author lists emotion regulation techniques dedicated to every stage of emotional response, here supplemented with research results on pre-performance emotion regulation strategies in the area of performance psychology.

Situation selection and modification. When selecting a situation, the performer decides in which competition to take part, chooses to perform before the audience amiable to play for, and avoids potentially harmful situations. This strategy has its limitations: often the performer is unable to choose the performance situation (e.g., exam), a musician overcome by anxiety may strive to avoid performing or withdraw from performing in public. In such cases, the behavioral *systematic graded exposure technique* may be helpful (Rachman, 1967; Wolpe, 1958), ranking performances from the viewpoint of the level of induced negative emotions, and then rehearsing live, beginning from the least stressful venue. In this way, the performer gradually learns to deal with the symptoms of increased levels of arousal and, based on positive experiences of self-efficacy, the alarm response is diminished gradually. Such training can also initially take place in the performer's imagination, in virtual reality, and then in situations of real performances (Orman, 2004; Williamon, Aufegger, & Eiholzer, 2014).

Situation modification is possible in pre-performance phase (*forethought phase* in terms of self-regulated learning, Bandura, 1997; Zimmerman, 2011): it may involve task analysis with strategic planning, including the selection of the repertoire for the upcoming performance,

arranging the pieces in the proper order (e.g., technical requirements, mood), planning the right way to enter the stage, and to start playing. There is much evidence in sport, but only some in music, that such *performance routine* (Moran, 1996) enchases performance, allowing to adapt to any environmental triggers and in that way regulate pre-performance emotions (T. Clark, Williamon, & Lisboa, 2007; Geeves, McIlwain, & Sutton, 2014). It incorporates physical actions and provides the opportunity for psychological preparations such as visualization, mindful breathing, or positive self-talk.

Visualization as a form of the performer's mental training is an effective way to modify the situation. Imagery, like real events, arouses emotions and can influence decisions and behaviors (Zatorre & Halpern, 2005). Moreover, imagining movement activates the same areas of the cerebral cortex and nerve pathways leading to the appropriate effectors (muscles) as the actual performance (Lotze & Halsband, 2006). This information provides the basis for using visualization technique for both performance planning and supporting real instrument rehearsal mental exercises (Bernardi, De Buglio, Trimarchi, Chielli, & Bricolo, 2013; T. Clark & Williamon, 2011; Smith, Wright, & Cantwell, 2008; C. J. Wright & Smith, 2009).

The detailed conditions for successful visualization are determined by the PETTLEP model developed by sports psychologists (Holmes & Collins, 2001). To bring the imaginary situation closer to the real conditions, it is worth to summon into mind the following: *physical* sensations related to playing a given instrument in a given venue, properties of this particular hall (*environment*); to imagine performing a particular piece of music (*task*) over time (*timing*) at the level of one's own current capability (*learning*); and to remember emotions actually felt in this situation or, for example, those that the person rehearsing would like to feel in this situation (*emotions*). Looking at the performance from the perspective of needs and expectations of the audience helps reduce the symptoms of fear of making an error, and opens up to the listeners. A meta-analysis of the results of 129 studies on practical visualization exercises based on this model indicates training effectiveness at the level exceeding 90% (Schuster et al., 2011). In addition, repeated imagination-based training in extreme situations (imagining mistakes, self-presentation disasters) helps to strengthen the sense of control over events by increasing tolerance to uncertainty, and learning how to be creative in dealing with problems in a public performance situation (T. Clark, Williamon, & Aksentijevic, 2011; Gregg, Clark, & Hall, 2008; D. J. Wright, Wakefield, & Smith, 2014).

Attentional deployment. Attention is selective, so we tend to notice only few aspects to each situation, ignoring the others. It is therefore important *what* will engage the performer's field of attention, and how well he or she will be able to manage the distractors and focus on performance instead of diverting attention to the audience or his or her own worries.

It is possible to increase the attentional skills using mindfulness techniques. A special kind of awareness is trained here: conscious, non-judgmental, and geared toward the here and now (Kabat-Zinn, 1990). *Mindfulness meditation* helps develop the ability to freely and flexibly control the focus of attention. It may change the habit of constantly comparing oneself with the standard (neurotic perfectionism) which increases fear of failure, narrows the attention field, and may interfere with retrieving information from memory (Moran, 1996). Reducing the focus on self intensifies the flow experience (Jackson, 1995) and positive feelings come from self-efficacy (Silvia, 2002). Systematic mindfulness exercises, apart from boosting concentration, increase the ability to focus on the task instead of on oneself (decentration) and foster the skill of accepting one's own mistakes and current artistic level. Such acceptance is the result of learning how one's mind and body function and developing self-compassion (Neff, 2003).

Those skills may reduce stage fright and increase the performer's effectiveness (Farnsworth-Grodd, 2012; Juncos & Markman, 2015; Shaw, Juncos, & Winter, 2020).

The ability to notice a *variety of emotional states* accompanying the performance and treat fear as a background emotion is another important feature of mindfulness-based techniques. Redirecting attention from fear to curiosity or pride, even at low intensity, can change the way of interpreting the situation and intensify the musicians' self-efficacy beliefs (Kashdan & Silvia, 2009; Perdomo-Guevara, 2017). The neuroimaging studies on mindfulness training effectiveness in regulating emotions have demonstrated training-related changes in brain plasticity: mindfulness exercises reduce the activity of the dorsolateral prefrontal cortex (DLPFC) areas, responsible for self-censorship and constant criticism of one's own actions; reduces the activity of the amygdala and, as a result, the level of emotional reactivity decreases; activity in the areas responsible for attention processes increases, for example, middle temporal gyrus (MTG) involved in the analysis of complex musical structures (see meta-analysis by Boccia, Piccardi, & Guariglia, 2015, as well as Goldin & Gross, 2010). Positive impact of such training on achievement quality has been noticed and appreciated in sports (Gardner & Moor, 2007) and also in music (Chang, Midlarsky, & Lin, 2003; Lin, Chang, Zemon, & Midlarsky, 2008; Shaw et al., 2020).

Cognitive change. This is the stage at which the perceived aspects of the situation are recognized and interpreted in terms of the performer's knowledge and experience. The meaning given to them evokes a specific emotional response. For example, the thought "They are already here" can cause fear or excitement, depending on the subjective interpretation given to this assertion by the musician.

The *cognitive reinterpretation technique* allows modifying the appraisal of the situation and one's ability to deal with it. It helps to re-think the causes and consequences of experiencing emotions, to recognize habitual ways of interpreting individual aspects of a situation in the form of certain cognitive patterns and interpretation errors (Beck, Rush, Shaw, & Emery, 1979). This recognition is an opportunity to modify the way one approaches performance and oneself, the audience, and to develop more adaptive interpretations conducive to being more effective on stage. Meta-analysis of research on psychological interventions for MPA indicates high effectiveness of psychological techniques derived from the cognitive-behavioral therapy (Burin & Osorio, 2016). For example, they outweigh pharmacotherapy in treatment of depression and anxiety disorders: under the influence of cognitive therapy, the activity of the amygdala, as well as the anterior cingulate cortex (ACC) and the insular cortex decreases, there are changes in the activation of particular areas of the prefrontal cortex which facilitates the regulation of emotions (D. A. Clark & Beck, 2010; Linden, 2006).

Research conducted on the basis of musical performance indicates that the focus of the performer's attention and the way of thinking are of key importance for mental well-being and effectiveness on stage. Focusing on the emotional aspects of the piece being performed (orientation toward interpretation) or playing for the audience (orientation toward communication) helps the most, while focusing only on the technique of playing or on the notes results in a less expressive, "dry" performance, and is perceived by the performer as less comfortable and limiting freedom on stage (Van Zijl & Luck, 2013; Van Zijl, Toiviainen, Lartillot, & Luck, 2014). A study of the musicians' self-talk content before the performance (Step toe & Fidler, 1987; Tokarz & Kaleńska, 2005) indicates that stage fright is associated with the catastrophic style of thinking ("I'm almost sure to make a dreadful mistake, and that will ruin everything"¹), while positive thinking strategies may reduce stage fright ("I know I'm good and have prepared well for this; I'll go on and make them sit up and notice me"), in the same way as strategies of realistic

thinking (“I’m bound to make a few mistakes, but so does everyone”). Focusing on the playing music, and a development-oriented, self-accepting attitude promotes well-being on stage.

For the performer, it is also important to set real, achievable *performance goals*—if the situation is given a specific meaning, the artist is able to better and longer concentrate on the task (Miksza & Tan, 2015). Personal performance standards and goals, established on the basis of analyzing the current level of skills, foster the opportunity to succeed and help derive satisfaction from the performance (McPherson, Osborne, Evans, & Miksza, 2019; Miksza, 2015). It is a trait of healthy perfectionism when one is aware of the need for continuous development, implemented by the method of “small steps,” according to the principle “it will get better every time” (Schuler, 2000). Developing self-confidence by recognizing one’s own strengths and weaknesses, needs, emotions, and ways of thinking helps musicians become effective learners and approach the performance situation as a challenge, not a threat (McPherson & Zimmerman, 2011).

Emotional response modulation. This stage appears quite late and involves regulation of physiological, behavioral, and cognitive symptoms of the currently experienced emotional response. The previous stages are preventive, that is, the performer can prepare for the event to increase the chances of the desired emotional response. However, if no preparatory techniques have been used, then the emotional response develops automatically. Poor knowledge of emotion regulation techniques and methods of psychological preparation for a public performance results in many musicians’ attempts to begin controlling emotions at a time difficult from the regulatory viewpoint, when the performer is overwhelmed by emotions which can no longer be ignored.

The following relaxation techniques are effective in regulating the stimulation level of the autonomic nervous system: *progressive muscle relaxation* (Jacobson, 1929; Sisterhen, 2005), *autogenic training* (Schultz & Luthe, 1959), and *slow breathing* (Wells, Outhred, Heathers, Quintana, & Kemp, 2012), including the basic *mindful breathing exercise* which is part of the mindfulness approach (Segal, Williams, & Teasdale, 2013). A 10-year systematic review with meta-analysis confirms the effectiveness of progressive relaxation, meditation, and autogenic training in anxiety treatment (Manzoni, Pagnini, Castelnuovo, & Molinari, 2008). Musician’s self-report survey indicates that 50% of professionals use breathing techniques to regulate pre-performance emotions, and 78% of them confirm the effectiveness of these techniques (Kenny et al., 2012). In the short time before going on stage, only some elements of the mentioned techniques can be used, nonetheless, they require regular exercise every day.

The use of pharmaceuticals can help control physiological symptoms, but requires consultation with a physician, because some drugs can quickly lead to addiction (e.g., benzodiazepines). In addition, drugs which reduce physiological symptoms do not reduce cognitive anxiety—they reduce neither the fear nor negative thoughts related to self-esteem (Patston & Loughlan, 2014). As such, they may become an anxiety-causing factor because leading to external attributions they lower musician’s sense of self-efficacy. The evidence presented in the previous paragraph indicates that cognitive techniques are equally effective in regulating physiological symptoms and produce a long-lasting effect in the form of a change in thinking and an increase in self-efficacy and self-confidence (see Osborne, Greene, & Immel, 2014).

At behavioral levels, *suppressing emotions* does not work very well as a strategy: contrary to expectations, the level of arousal does not decrease, and cardiovascular symptoms may increase (Demaree, Robinson, Pu, & Allen, 2006). In addition, it is a very expensive strategy: it requires much more cognitive control geared to monitoring the symptoms of emotions and, in effect, less cognitive resources are available to monitor the performance of the task. This, in turn, creates problems with focusing attention and memory (Goldin, McRae, Ramel, & Gross, 2008; Richards

Table 2. Stages of emotional regulation and examples of effective psychological techniques.

Gross's stages	Effective psychological techniques	Type of psychological support
1. <i>Situation</i>	Gradual exposure Visualization	Prevention
2. <i>Attention focus</i>	Mindfulness meditation Decentration techniques	
3. <i>Cognitive appraisal</i>	Cognitive reinterpretation Goal setting	
4. <i>Emotional response</i>	Physiological: Relaxation Breathing techniques Behavioural: Expression of emotions Cognitive: Changing meta-emotional beliefs	Intervention

& Gross, 2000), and affects the quality of social interactions (expressiveness, communicative skills)—such people are perceived as less authentic and less warm (Butler et al., 2003).

Releasing the emotions is a more favorable strategy: the performer can use the level of arousal as the basis of expressing emotions contained in the piece being performed, thus enriching the musical narrative (Van Zijl & Luck, 2013; Van Zijl et al., 2014). In turn, arousing emotions coherent with the mood of the piece will be a strategy directed at controlling also the cognitive symptoms of felt emotions. Proper insight in the piece performed, feeling its mood helps divert attention from the self and channel it to the task. It allows automatic regulation of physiological and behavioral symptoms of emotions.

On the cognitive side, it is extremely important how musicians appraise the experienced emotional state: is it good or bad for current performance, can I manage my emotions or not, what truth about me does the emotion reveal? These patterns of appraisal acquired in the course of socialization (*meta-emotional beliefs*, Gottman, Katz, & Hooven, 1996) lead to the formation of meta-emotions. For example, the belief that “symptoms of anxiety may ruin a performance” can increase anxiety itself, “stage fright means a lack of professionalism” may cause shame and sadness, while “there is a need for full control over emotions during a performance” can cause self-anger because full control is a skill yet unaccomplished. Activating these beliefs in a performance situation can increase the intensity of emotions experienced, as well as cause further negative emotions regarding the self (Mitmannsgruber, Beck, Höfer, & Schßler, 2009).

Research conducted on young musicians (Kaleńska-Rodzaj, 2019) provide evidence that meta-emotional beliefs about stage fright and the way of perceiving the audience are related to the emotional state of the performer during a public performance. Musicians with anxiety profile were characterized by a high intensity of beliefs about the negative effect of stage fright on performance, and by inability to deal with stage fright or hostile attitude of the audience toward the performer. On the contrary, positive beliefs about these three factors were characteristic of musicians who felt confident or had mixed emotions in the performance situation.

It is therefore important to expand one's own knowledge about emotions, learning to treat the perceived increase in arousal as a natural symptom of readiness and mobilization of the body in view of a demanding task to be performed in front of the audience (e.g., changing the meta-emotional belief “The performance will be successful only if I am completely calm”)

which helps decrease physiological symptoms, focusing attention and building a positive attitude toward the performance. Understanding how the mechanisms of body and mind work helps regain a sense of control and focus on building a musical narrative.

The above-described stages and effective emotion regulation techniques are presented in Table 2.

Depending on experience, beliefs, knowledge, and skills, musicians use various strategies of regulation, striving to intensify or quench emotions. Awareness of many types of emotion regulation strategies, and flexibility in adapting them to the situation and one's own goals are features of effective emotion regulation (Barrett & Gross, 2001; Kuppens & Verduyn, 2015). Attentiveness, cognitive appraisal, and action can be automatic and habitual or reflective and purposeful. Analysis of the stages of the emergence of one's pre-concert emotions and the techniques used to regulate them provides an opportunity to understand one's own behavior and introduce appropriate modifications.

On the empirical grounds, among very few programs focused on comprehensive performance psychology skills training for musicians, there is currently only one containing all the components described above, both at the level of prevention and regulatory intervention (Osborne et al., 2014). The comparison of pre- and post-program rate results indicates an increase in participants' skills in the areas of preparation and learning how to reach optimal performance; focusing and concentration of attention during performance; positive reappraisal through improving self-talk and developing positive self-talk habits; energy regulation, acceptance of somatic symptoms, and building courage and confidence. Gross's model, describing key stages of emotion regulation process, can provide a clear-cut framework for future psychological intervention programs tailored to the musician's training, therapy, and performance preparation process.

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Note

1. Items most characteristic of a given style of thinking were drawn from the Self-Statement Scale (Stepotie & Fidler, 1987).

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