

ROLE OF MUSIC IN EVOKING EMOTIONAL RESPONSES IN SPORTS

Dr Nitin Sehgal
Assistant Professor
S D College Ambala Cantt

Abstract

Music is universal at least partly because it expresses emotion and regulates affect.

Music is present in many sport and exercise situations, but empirical investigations on the motives for listening to music in sports remain scarce. In some of studies elite athletes answered a questionnaire that focused on the emotional and motivational uses of music in sports and exercise. The questionnaire contained both quantitative items that assessed the prevalence of various uses of music, and open-ended items that targeted specific emotional episodes in relation to music in sports. Results showed that the athletes most often reported listening to music during pre-event preparations, warm-up, and training sessions; and the most common motives for listening to music were to increase pre-event activation, positive affect, motivation, performance levels and to experience flow. The athletes further reported that they mainly experienced positive affective states (e.g., happiness, alertness, confidence, relaxation) in relation to music in sports, and also reported on their beliefs about the causes of the musical emotion episodes in sports. In general, the results suggest that the athletes used music in purposeful ways in order to facilitate their training and performance.

Introduction

Ever wondered why some songs continue to haunt us for days and affect us so deeply? According to researchers, listening to sounds such as music and noise has a significant effect on our moods and emotions because of brain dopamine regulation — a neurotransmitter strongly involved in emotional behaviour and mood regulation.

However, the differences in dopamine receptors may drive the differences between individuals, the researchers said. study revealed

that a functional variation in dopamine D2 receptor (DRD2) gene modulates the impact of music as opposed to noise on mood states and emotion-related prefrontal and striatal brain activity.

Music And Sports

A new study finds that listening to motivational music during sport activities and exercise increases risk-taking behavior but does not improve overall performance. The effect was more noticeable among men and participants who selected their own playlist. The study, published in *Frontiers in Psychology*, also found that self-selected music had the power to enhance self-esteem among those who were already performing well, but not among participants who were performing poorly.

Listening to motivational music has become a popular way of enhancing mood, motivation and positive self-evaluation during sports and exercise. There is an abundance of anecdotal evidence of music being used in this way, such as the famous Maori “Haka” performed by New Zealand's national rugby team to get into the right mindset before games. However, the psychological processes and mechanisms that explain the motivational power of music are poorly understood.

“While the role of music in evoking emotional responses and its use for mood regulation have been a subject of considerable scientific interest, the question of how listening to music relates to changes in self-evaluative cognitions has rarely been discussed,” says Dr. Paul Elvers of the Max Planck Institute for Empirical Aesthetics and one of the study's authors. “This is surprising, given that self-evaluative cognitions and attitudes such as self-esteem, self-confidence and self-efficacy are considered to be sensitive to external stimuli such as music.”

The research team investigated whether listening to motivational music can boost performance in a ball game, enhance self-evaluative cognition and/or lead to riskier behavior. The study divided 150 participants into three groups that performed a ball-throwing task from fixed distances and filled in questionnaires while listening to either participant-selected music, experimenter-selected music or no music at all. To assess risk-taking behavior, the participants were also allowed to choose the distances to the basket themselves. The participants received monetarily incentivized points for each successful trial.

The data show that listening to music did not have any positive or negative impact on overall performance or on self-evaluative cognitions, trait self-esteem or sport-related anxiety. However, it did

increase the sense of self-esteem in participants who were performing well and also increased risk-taking behavior — particularly in male participants and participants who could choose their own motivational music. Moreover, the researchers also found that those who made riskier choices earned higher monetary rewards.

“The results suggest that psychological processes linked to motivation and emotion play an important role for understanding the functions and effects of music in sports and exercise,” says Dr. Elvers. “The gender differences in risk-taking behavior that we found in our study align with what previous studies have documented.”

However, more research is required to fully understand the impact of motivational music on the intricate phenomena of self-enhancement, performance and risky behavior during sports and exercise.

“We gathered evidence of the ability of music to increase risk-taking behavior, but more research is needed to improve the robustness of this finding. Additional research is also needed to address the potential mechanisms that may account for the finding. We believe that music's ability to induce pleasure as well as its function with respect to self-enhancement serve as promising candidates for future investigations .

Music and Risk Behavior

Another behavioral aspect that has received considerably less attention but is linked to both sport performance and self-evaluative cognition is risk behavior. Certain aspects of self-enhancement, such as a greater sense of power, may lead to riskier behavior and overconfident decision making . It has also been observed that on the trait level, self-esteem is associated with higher engagement in risky behaviors . As prospect theory (Kahneman and Tversky, 1979) suggests, people's risk preferences differ when mathematically identical options are framed positively as gains (increased risk preference) or negatively as losses (decreased risk preference). Prospect theory posits that framing effects account for the differences in risk preferences under positive and negative scenarios. It has been found that when given a choice between framing decisions involving risk positively or negatively, individuals with high self-esteem are more likely to impose a positive frame. Thus, motivational music may lead to enhanced self-esteem, which in turn allows framing decisions regarding risks more positively, as gains rather than as losses. While a number of studies have investigated the effect that listening to music has on risk behavior, none of these

have tested risk taking in a sports setting. Dey et al. (2006) and Brodsky (2002) showed that listening to music led to riskier behavior during a car-driving simulation. Halko and Kaustia (2015) showed, based on a gambling paradigm, that participants made riskier choices when listening to music they personally liked compared to music they personally disliked. Neuroscientific evidence suggests that personally liked music decreases loss aversion via differences in the value encoding of decisions under risk that correspond to enhanced activity in the amygdala and the striatum. When investigating risk behavior, gender differences also need to be taken into account. Across different domains and age groups, men are more likely than women to engage in risky behavior. These gender differences are even more pronounced when participants perform tasks involving physical skills such as playing shuffleboard or tossing rings onto pegs. Men are particularly more likely to take the opportunity to compete when given a choice between competing and not competing.

Summary

Listeners perceive music as being emotionally expressive. They appear to use both basic acoustic cues, such as loudness, as well

as music- and culture-specific cues, such as mode, to recognize emotions. Listeners can identify emotions expressed in unfamiliar music from other cultures with above-chance accuracy, which implies that there are universal cues to musical emotion. In addition to recognizing emotions in music, the available evidence confirms that listeners also experience emotions in response to music. Mechanisms of emotion induction are not well understood, however, and remain a central debate in the field. Also unclear is the range of emotions that music can induce, and whether these are similar to or different from everyday emotions. Music is likely to induce a wide range of emotions via multiple mechanisms. Music can also elicit mixed positive and negative responding simultaneously. Preferences for particular genres of music vary as a function of contextual factors and individual differences, whereas liking for music varies as a function of the emotion music conveys and evokes.

Enjoyment of sad sounding music is poorly understood at present. Emotions influence what music listeners choose to hear, and music influences how they feel.

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