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Role of music in augmenting the performance of sportsperson

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Abstract

The use of music in sports and sporting events is a common practice that is used for many years may be hundreds of years old. Some sports have specific traditions with respect to pieces of music played at particular intervals. Others have made the presentation of music very specific to the team—even to particular players. Music may be used to build the energy of the fans, players, athletes and music may also be introduced in ways that are less directly connected with the action in a sporting event. Role of music in increasing the performance of sportsperson has been investigated in detail. A phenomenological approach is utilized to analyze the data. The results suggest athletes utilize music for arousal regulation, concentration, mood enhancement, and team cohesion.

Keywords: Music, sportsperson, performance, arousal, mood, athlete

1. Introduction

1.1 Historical Perspective

The inclusion of music in sporting events is very old one. The role of music in the performance of athletes is always a point of interest in the mind of researchers^[1]. It was first included in 1896 Olympic games. On 25th March, 1896, the Philharmonic Orchestra played the National Anthem of the Greek and the first Olympic Hymn was incorporated written by the poet Kostic Palmas which was composed by well-known Greek composer Spyridon Samaras. Few songs have been associated with a particular sporting event. For example, repetitive organ music is played at key points of the game in basketball game. *Take Me Out to the Ball Game* is often played or sung at major- or minor-league baseball games, typically during the seventh-inning stretch. Fans of the home team at collegiate athletic events may entertain the losing visitors with a song recorded by Steam, titled "*Na Na Hey Hey Kiss Him Goodbye*", with its familiar refrain, "na na, na na na na, hey, hey, hey, goodbye."

In some cases a particular song may be played at a specific time in the game. For example, Neil Diamond's song "*Sweet Caroline*" is played during the eighth inning of Boston Red Sox home games and has been a regular part of the program since 2002 and during the eighth inning of New York Mets home games since 2006.

In the many countries where football is popular, and in the UK in particular, football music is a varied and popular subgenre of popular music. Songs are often released to coincide with specific events, such as the World Cup, or to become anthems for particular teams. Examples of music created to be football songs include New Order's "*World in Motion*", and "*Three Lions*". The Village People/Pet Shop Boys song "*Go West*" has also become popular, and an instrumental version of the music was used as the theme for the 2006 Football World Cup. Other sports also used theme music during opening ceremony or during the game.

In this article, we will focus on effects of different types of music on physical results of an athlete such as strength, gait, endurance, performance and motor skill acquisition.

Purpose of the Study

What is lacking in the current sport psychology literature is an examination of elite athletes "lived" experiences of music in sport. The purpose of the current study was to investigate the role of music in sport from a different perspective. This goal was accomplished by making an attempt to understand the experience of music in sport free of judgment and preconceived notions.

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2. Results

In order to understand the effects of music on the performance of sportsperson, we have to understand the relationship between the physical stimulus of the music and the sensory responses that may enable the exerciser to achieve better results. For years researchers have investigated the effects of music on exercise performance and results have revealed conflicting data, most likely because of the use of very different research designs techniques [2].

Some researchers have studied the role of music that might play in enabling exercisers to increase their workloads or their times to exhaustion. The theory is that music can prevent exercisers from focusing on the specific physical sensations of fatigue, although some research suggests that this mechanism may be more effective at lower exercise intensities than at higher intensities, where the body's internal cues of fatigue have a greater influence [3,4].

Szabo and colleagues [5] studied the effects of slow-rhythm and fast-rhythm classical music on progressive cycling to voluntary physical exhaustion. They observed that in comparison to symphony music, the fast music enhance performance two times faster than the slow music. The 12 male and 12 female subjects in the study listened to music that was slow, fast, slow-to-fast, and fast-to-slow—and a control group had no music. For the slow-to-fast and fast-to-slow trials, the tempo was adjusted once a subject's heart rate reached 70.0% of maximal reserve. The investigators found that the participants in the slow-to-fast intervention completed a slightly higher exercise workload than the participants in all other study conditions and the difference was statistically significant. According to the authors, the study suggests that music may temporarily distract exercisers from some of the body's internal cues typically associated with tiredness.

One study investigated the effects of different types and intensities of music on a graded maximal treadmill test [6]. Thirteen females and 11 males of institute ran to maximum of their capacity while listening to Type A i.e. loud, fast and exciting music; Type B i.e. soft, slow and easy-listening music; Type C or no music. The actual times to exhaustion varied by less than 30 seconds, and the maximal heart rates varied by only 2 beats per minute in the three conditions, which may very well indicate that in measures of maximal work capacity, music is not able to provide an ergogenic effect above that of the body's physiological limitations.

In order to understand the effect of Music on the intensity of the workout, Yamashita and his coworkers [7] performed a study on eight males. In their study eight males performed two 30-minute submaximal cycle ergometer exercise bouts—one at 40.0% of maximal oxygen consumption (VO₂ max) and one at 60.0% VO₂ max. In their study they found that athletes in the 40% VO₂ max trial who listened to self-selected music had a lower rating of perceived exertion (RPE) than controls (no music); however, the music did not show this effect during the 60% VO₂ max trial.

Atkinson and his coworkers [8] investigated average speed, power, heart rate and RPE for 16 physically active 25-year-old males during timed trials on a cycle ergometer. Dance music (142 beats per minute) was used in a 10-kilometer (10 K) trial, and the results were compared with those from a 10 K control trial that used no music. Average speed, power and heart rate were significantly higher in the group who had music accompaniment than in the control group. Though subjects were cycling at higher speeds during the music trial, their perceived exertion was also higher. This suggests that they were fully aware of how hard they were working, despite the

attempt to alter perceived exertion with the use of music. In their qualitative assessment of the trials, subjects noted an ergogenic effect of the music that seemingly stimulated their cycling performance. Substantiating this qualitative finding with a very large group (532 subjects) of male and female participants, Priest and colleagues [9] demonstrated that participants were inspired to exercise by preferential choices of music, with the one commonality being a strong rhythmic component.

Karageorghis and his coworkers [10] examined the effects of different types of music on the grip strength of 25 males and 25 females of college age. Participants were subjected to three testing conditions prior to a grip strength test: listening to stimulative, energetic music (more than 130 bpm); listening to sedative, relaxing music (less than 100 bpm); and listening to white-noise sounds from a blank cassette. Care was taken to choose music familiar to the subjects in order to enhance any arousal effect. Analysis of the results revealed that subjects had significantly higher strength scores when they listened to stimulative music rather than sedative music or white noise. Furthermore, sedative music produced significantly lower grip scores than white noise. No significant difference in gender responses was found.

Thaut and his colleagues [11] pointed out that rhythm constitutes one of the most essential structural and organizational elements of music. Although more research is needed to identify the exact mechanisms at work, these researchers found that rhythmic music can provide an external auditory stimulus that may augment some motor behavior processes.

Molinari and his colleagues [12] explained, this motor control enrichment from auditory rhythmic stimuli probably affects motor effectors in the cortex of the brain, or at the spinal levels. An enhanced understanding of the way rhythmic stimuli work may lead to new approaches for rehabilitating patients with cerebral motor defects. As an example, when patients with Parkinson's disease were exposed to a musical selection and then asked to perform certain motor tests, results showed significant improvement in aiming and line tracking, providing evidence of fine motor improvement through hand-arm coordination [13].

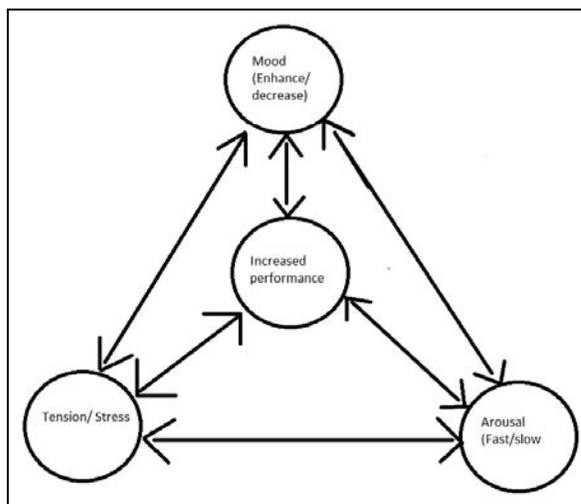


Fig 1: Schematic diagram showing the role of music in enhancing the performance of sportsperson.

Figure 1 shows the role of music in enhancing the performance of sportsperson. Music can increase the performance of the

sportsperson by reducing tension and stress and either by changing the mood. It depends upon person to person the types of music he or she may like. Some person like sweat and soft music while other like pop or jazz music. Effect on the performance of sportsperson may be different in different type of music he/she listens.

Table 1 shows consequence of Music in increasing the performance of sportsperson. Four different areas have been investigated i.e. Focus, Mood, Arousal and Tension/stress. Consequence of music on the performance of the sportsperson in these four areas have been described in Table 1.

Table 1: Role of Music in increasing the performance of sportsperson.

S. No.	Features	Consequence of Music	Performance of athlete
01	Focus	Decrease distractions	Increases the performance
02	Mood	Enhance mood	Performance increased
03	Arousal	Fast music increase arousal	Increases the performance
04	Tension/Stress	Stress is released	Performance increased

In a nutshell, it is concluded that there are six main key factors which affect the performance of sportsperson while listening music are: i) decrease in the feeling of tiredness, ii) increase in psychological stimulation, iii) Increase in physiological relaxation response iv) an enhancement in motor coordination v) reducing stress and vi) reducing fear of defeat. Although the research is somewhat conflicting when it comes to measuring the extent to which music can enhance maximal and near-maximal exercise performance, it does seem clear that stimulative, self-chosen music can provide an acute incentive to male and female exercisers of all ages and abilities.

3. Conclusion

Different types of music (soft/slow or fast/loud) have different influence on the performance of sportsperson. It depends on the choice of sportsperson what type of music he selects. The music facilitates exercise performance by reducing the sensation of fatigue, increasing psychological arousal, promoting relaxation and improving motor coordination. Although the current study provides a rich description of the experience of music in sport among athletes, it is only the beginning of truly understanding the experience of music in sport. Future research needs to be conducted that examines each theme separately, as this would provide more depth of the experience. Semi-structured, mixed methodological and phenomenological approaches could all be beneficial methods for further research regarding the experience of music in sport.

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