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Impact of various music compositions on 3000m race in girls

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Abstract
Music reduces muscle tension and improves body movement and coordination. Music may play an important role in developing, maintaining and restoring physical functioning in the rehabilitation of persons with movement disorders. Due to the variety of music compositions and their different effects on physiological and psychological factors and regarding the individuals' age, gender and mood as well as the time of listening, playback devices, temperament, customs, traditions, musical and cultural characteristics, personal preferences, the intensity of physical activities and different patterns of training programs, more investigations on this issue are needed. Therefore research on the above said subject becomes imperative.
The study was delimited to 3000 metres race for girl players. The girl players were taken from age group of 14 to 17 years of senior secondary schools of rural and urban areas as well as government and private schools. The girl players were taken from age group of 18 to 22 years of colleges of rural and urban areas as well as government and private colleges. A total of four types of compositions of music were used. i.e. Punjabi folk music, Punjabi rock and pop, Dhol beats, sad songs. Portable audio player and head phones or ear phones were used for the purpose of the study. The compact discs of at least 30 minutes for each category of composition of music were used. Subjects were given twenty songs to select, six of her choice for each category. Time were taken as a criterion and time readings were taken by a stop watch. The data were collected with and without music switched on through the head phones or ear phones.
It was found that all the four music compositions will have significant positive affect on the outcome of 3000 metres race in girls. The music compositions have positive affect regardless any area like rural or urban or schools or college or private or govt. Sector. It was found that Punjabi beat songs selected as per taste of the subject affected much more positively in full race The subjects given music after completion of half the race shown better results than the music given full time of race The music of taste works tremendously and can be very much helpful to increase the performance in other long races also. The coaches and trainers can adopt the music for better performance.

Keywords: music, developing, maintaining, restoring physical functioning

Introduction
This is an ages old folk rhyme of north India that illustrates how music influences our physical acts in positive and constructive way. There are folklore in almost every culture that indicates the ability of music of some type or the other that have a soothing or healing effect on our physical, mental or moral make-up. Music is intrinsic to all cultures and across these cultures people believe that music lifts their spirits. Researches in various fields suggest confirming music has psychotherapeutic benefits. Music tends to prop up relaxation of tense muscles, enabling us to easily release some of the tension we may carry from our hectic schedules. Music can help us sense-energized while exercising and recover after exercising, help dissolve the stress. No wonder every military force in the world has a specialized unit of musical band to keep the moral of forces up. It is also believed to have surprising benefits not only for learning languages, improving memory and focusing attention, but also for physical co- ordination, balance and development.
There are numerous instances of music being used to elevate the atmosphere to make it conducive to certain type of performances which may be productive physically. Even the ancient Indian cultural scenario talks about ability of different art forms which includes music to have different emotional surges called ragas. 'Beer rasa' has been suggested to have far reaching positive effects on soldiers going to war.
According to the new theories, music converges down the attention and distracts the sports person from activity-induced fatigue, removes mental agitation, serves as an exciting or soothing means before or during the activity, and helps the body respond to the rhythmic components of music in sub maximal activities.
Copland and Franks (1991) [3] investigated the effects of different compositions of music on heart rate, RPE and fatigue time in 24 college students while they were running on the treadmill. They reported that exciting music increases heart rate to a higher extent.
Sports psychologists are refining their ideas about why exercise and music are such an effective pairing for so many people as well as how music changes the body and mind during physical exertion or fatigue.
We can define fatigue as state of lack of physical energy and or mental motivation. Fatigue can be a natural consequence to any type of physical and mental activity. In most people in usual circumstances fatigue can be promptly relieved by reducing the level of activity. Fatigue is a very common complaint but technically it is a symptom and not a disease. Fatigue may have these consequences: lack of motivation, tiring soon after the activity begins, and difficulty in co-

ordination. Fatigue can reveal the change in human reaction time through the duration of activity. Fatigue can occur during both, the sort and prolong exercises. The energy and power generated by contacting muscles depletes the body of energy stores resulting in the sensations of fatigue and exhaustion.

Fatigue occurs when certain substances accumulate or others deplete. Fatigue may also be caused by the hormonal changes in the body. Music distracts people from pain and fatigue, elevates mood, increases endurance, reduces perceived effort and may even promote metabolic efficiency. When listening to music, people run farther, bike longer and swim faster than usual; often without realizing it.

Choosing music that motivates you will make it easier to start moving, walking, dancing, or any other type of exercise that you enjoy. Music can make exercise feel more like recreation and less like work. Furthermore, music enhances athletic performance. Anyone who has ever gone on a long run with their iPod or taken a particularly energetic spinning class knows that music can make the time pass more quickly.

Music reduces muscle tension and improves body movement and coordination. Music may play an important role in developing, maintaining and restoring physical functioning in the rehabilitation of persons with movement disorders.

Due to the variety of music compositions and their different effects on physiological and psychological factors and regarding the individuals' age, gender and mood as well as the time of listening, playback devices, temperament, customs, traditions, musical and cultural characteristics, personal preferences, the intensity of physical activities and different patterns of training programs, more investigations on this issue are needed. Therefore research on the above said subject becomes imperative.

Significance of study

The findings of this study may contribute significantly rather as a quantum leap in raising the standards of 3000 metres race in girls in following manner:

1. The results of the study would provide guidelines about the relationship between music and fatigue in 3000 metres race in girls.
2. The results of the study would help device a better training schedule for 3000 metres race in girls.
3. Physical Education Teachers and coaches may be better equipped in improving 3000 metres race in girls during training and competitions.
4. The study would affect the players for better race performance.
5. The study would also help and guide the research scholars to undertake similar studies in different games and sports for the better game performances.

Statement of the Problem

The statement of the problem is as “A study of impact of various music compositions on 3000m race in girls”.

Hypothesis of the present Study

- It was hypothesized that all the four music compositions will have significant affect on the outcome of 3000 metres race in girls of government schools in rural areas.
- It was hypothesized that all the four music compositions will have significant affect on the outcome of 3000 metres race in girls of private schools in rural areas.
- It was hypothesized that all the four music compositions will have significant affect on the outcome of 3000 metres race in girls of government schools in urban areas.
- It was hypothesized that all the four music compositions will have significant affect on the outcome of 3000 metres race in girls of private schools in urban areas.
- It was hypothesized that all the four music compositions will have significant affect on the outcome of 3000 metres race in girls of government colleges in rural areas.
- It was hypothesized that all the four music compositions will have significant affect on the outcome of 3000 metres race in girls of private colleges in rural areas.
- It was hypothesized that all the four music compositions will have significant affect on the outcome of 3000 metres race in girls of government colleges in urban areas.
- It was hypothesized that all the four music compositions will have significant affect on the outcome of 3000 metres race in girls of private colleges in urban areas.

Delimitations

1. The study were delimited to 3000 metres race for girl players.
2. The girl players were taken from age group of 14 to 17 years of senior secondary schools of rural and urban areas as well as government and private schools.
3. The girl players were taken from age group of 18 to 22 years of colleges of rural and urban areas as well as government and private colleges.
4. A total of four types of compositions of music were used. i.e. Punjabi folk music, Punjabi rock and pop, Dhol beats, sad songs.
5. Selection of music were purposefully and randomly selected from various music compositions.
6. The subject were taken randomly from the sports girl students those who have participated at least up-to district level of sports events.

Limitations

1. Randomly selected and available music compositions may or may not have significant impact on every individual subject.
2. Other variable factors may influence the study and results may not as correct.
3. The factors like hereditary, family history, daily routine, lifestyle habits that can have influence on the results of the study cannot be controlled.
4. Data were collected over a significant period of time, the influences of the variations in weather etc cannot be taken into account.

Review of literature

Research in the field of interplay of music and exercise dates to at least 1911, when American investigator Leonard Ayres, who was a former soldier and had experience of effects of military bands on moral of soldiers, found that cyclists pedalled faster while a certain band was playing

than when it was silent. Ever since then psychologists have been conducting hundreds of studies on the issue of how music changes people's performance in a variety of physical activities, ranging in intensity from strolling to sprinting.

Davis and Thaut (1989) found that music aroused autonomic nervous system responses (vascular construction, heart rate, musical tension, and finger skin temperature) even though subjects reported decreases in state anxiety and increases in relaxation.

Standley (1991) and Davis-Rollans and Cunningham (1987) found self-reports of psychological state improved with musical manipulations, but physiological measures (heart and respiration rates, finger temperature) did not change consistently. Stronger physiological correlates of music were reported.

Carol L. Krumhans (1997) [2] in her study 'An Exploratory Study of Musical Emotions and Psychophysiology' is of opinion that music added to a stressful film produced changes in skin conductance levels. A number of results also appear in clinical and therapeutic contexts

Citing a 2012 study by researchers at Sheffield Hallam University in which people who cycled in time to music needed 7 percent less oxygen than other cyclists, Scientific American explains that syncing your movements to music might help your body use energy more efficiently: maintaining a steady pace, reducing false steps, and decreasing how much energy you spend.

Randy Bonnette *et al*. (2012) [10] in her paper titled The Effect of Music Listening on Running Performance and Rating of Perceived Exertion of College Students, January 3, 2012, stresses that 'the sports arena is an environment where music has flourished. Traditionally, music has been used to motivate and inspire people prior to an important event (e.g. pre-game of a critical contest) as well as when they engage in sports and training for competition. Thus, athletes and traditional exercisers alike have used music as an accompaniment to exercise to sustain motivation, resist mental and emotional fatigue, and potentially enhance their physical and athletic performance. Scientific inquiry has revealed three key ways in which music can 'influence' preparation and competitive performances through dissociation, arousal regulation, and synchronization. More specifically, research indicates music to be particularly effective in distracting exercisers away from their perceived exertion.

Costas I. Karageorghis and David-Lee Priest (2013) [4] in their paper Music in the exercise domain: a review and synthesis say 'because rhythm response and musicality objectively denote audible properties of the musical stimulus, they are known as internal factors whereas cultural impact and association are referred to as external factors. In the field of psychomusicology, the terms intrinsic and extrinsic, intrinsic and ecological, and congeneric and extra genetic factors have been used in a similar manner. Music selections that exploit cultural and personal associations are likely to yield significant benefits, particularly in terms of cognitive and affective consequences.

Methodology

This methodology forms the core of all the research studies, the results obtained or derived would help the investigator in obtaining the investigator in obtaining answers to the question of research and would also help the research problem under study after having presented the conceptual frame work of different variables under study.

Design of study

The entire concept of music therapy is experimental. Music therapy is a scientific method. Music restores maintains and improves emotional, physiological and psychological wellbeing. Music beats have a very close relationship with heartbeat. The effect of music therapy may be immediate or slow. It largely depends on individual needs and tastes.

Samples

Ten samples from each category were randomly selected from rural and urban girl players from government schools, private schools, government colleges and private colleges Portable audio player and head phones or ear phones were used for the purpose of the study. The compact discs of at least 30 minutes for each category of composition of music were used. Subjects were given twenty songs to select, six of her choice for each category. Time were taken as a criterion and time readings were taken by a stop watch.

Collection of data

The data were collected with and without music switched on through the head phones or ear phones. The data were collected on the road. The data were collected from the same sample for second time with a time duration difference of at least one week.

Considering the aim of study and nature of data, following statistical techniques were used for analysis. Descriptive statistics such as mean, standard deviation were calculated in order to ascertain the nature of variables of self efficacy and locus of control.

Conclusions

It was found that all the four music compositions will have significant positive affect on the outcome of 3000 metres race in girls of government schools in rural areas, private schools in rural areas, government schools in urban areas, private schools in urban areas, government colleges in rural areas, private colleges in rural areas, government colleges in urban areas and private colleges in urban areas. It show that music compositions have positive affect regardless any area like rural or urban or schools or college or private or govt. Sector.

It was found that Punjabi beat songs selected as per taste of the subject affected much more positively in full race. For short term, the dhol beats have significant affect. The sad songs also have positive affect in the performance. but the Punjabi folk songs shown little affect. which might be due to less tasty for the subjects, as folk is old and subjects were from young age. The affect also depend on the likeness of the subject. The subjects given music after completion of half the race shown better results than the music given full time of race The music of taste works tremendously and can be very much helpful to increase the performance in other long races also. The coaches and trainers can adopt the music for better performance. The researchers should involve more studies for affect of music on various sports activities.

References

1 Brenda L, Copland B, Don F. Effect of types and intensities of background music on treadmill endurance. J Sport Med phys Fit. 1991; 31(1):100-103.

2 Carol L Krumhansl. Canadian Journal of Experimental Psychology, 1997; 51(4):336-352.
3 Copland BL, Franks BD. Effects of type and intensities of background music on treadmill endurance. Journal of sport medicine and physical fitness. 1991; 51(1):100-103.
4 Costas Karageorghis. Let's Get Physical: The Psychology of Effective Workout Music, Scientific American, 2013. http://www.scientificamerican.com/article/psychology-workout-music/
5 DeNora T, Bergh A. From wind-up to iPod: Techno-cultures of listening. In: Cook N., editor; Wilson-Leech D., Clarke E., editors. Cambridge companion to recorded music. Cambridge, UK: Cambridge University Press. 2009; p. 102-114.
6 Fathollahi Z. The effects of listening to two types of music on running time, salivary cortisol and RPE during one session training in active women. Unpublished MA thesis, Tehran University, Iran, 2006; p: 26-47.
7 Leonard Ayres. Let's Get Physical: The Psychology of Effective Workout Music, Scientific American, 2014. http://www.scientificamerican.com/article/psychology-workout-music/
8 Marcelo Bigliassi, *et al*. Music: a psychophysiological aid to physical exercise and sport Arch Med Deporte. 2013; 30(5):311-320.
9 Mohammad Reza Ramezan Pour. Comparison the Effects of Listening to Three Types of Music during Exercise on Heart Rate, Blood Pressure, Rating of Perceived Exertion and Fatigue Onset Time, Iranian Journal of Health and Physical Activity, 2011, 2012; 3(1):15-20.
10 Randy Bonnette. The Effect of Music Listening on Running Performance and Rating of Perceived Exertion of College Students, The Sport Journal, 2012. http://thesportjournal.org/article/the-effect-of-music-listening-on-running-performance-and-rating-of-perceived-exertion-of-college-students.