



## EFFECT OF MUSIC THERAPY ON INTRINSIC MOTIVATION, PHYSICAL SELF EFFICACY AND PERFORMANCE OF FEMALE FOOTBALL PLAYERS

**Mamta Sharma**

Assistant Professor, Department of Psychology, Punjabi University

**Gagandeep Kaur**

Freelance Consultant

**Voice of Research**

Volume 3, Issue 4

March 2015

ISSN 2277-7733

### Abstract

*Music therapy is increasingly used in sports for enhancing sport performance. It provides a mean of improving mental strength among sportspersons. The purpose of this study is to enhance intrinsic motivation, physical self-efficacy and performance of female football players through music therapy. For this purpose, twenty two female football players, in the age group of 21-26 were screened on the basis of their scores on Sport Motivation Scale and Physical Self-Efficacy Scale. Then, they were randomly assigned to experimental and control groups. The experimental group was given music therapy intervention for fifteen days. After intervention period, same scales were re-administered. In order to analyze the statistical data, t-test was applied. The results have shown that experimental group was significantly higher on intrinsic motivation and physical self-efficacy in comparison to control group. A football match was arranged between both groups at the end of study. The experimental group won the match by 4-2. The present research implies that music therapy can be highly effective in increasing psychological strength of sports persons.*

**Keywords:** music, intrinsic motivation, physical self-efficacy, performance, female, football players

In achievement contexts, considerable demands are placed on an individual who has the potential to challenge their ability to cope and evoke a substantial emotion response. Sport is an excellent example of such a context. The competitive nature of sport has the ability to evoke more negative and maladaptive affective states. Sport exerts considerable stress on the athlete at the highest level of performance. The mismatch between the demands placed on a sport performer and their ability to cope with the concomitant emotive states that arise from that demand, then it may interfere with their ability to perform, what Zajonc (1965) called the 'dominant response', i.e. the well practiced or trained movements and skills involved in sport performance. This can often, catastrophically, manifest itself in sometimes embarrassingly poor performances relative to performance in practice and training, a phenomenon often referred to as 'choking' (Baumeister, 1984).

In recent years, sport psychology researchers identifying psychological factors associated with athletic success. Competitive sports often demand athletes to train in intensely physical, psychological, and stressful environment to cope with various stresses in sport situations, such as physical injury, performance slumps, time management, interpersonal conflict, expectations, and fear of failure. Coping plays an important role in performance enhancement, injury prevention and recovery, and managing performance slumps. Certain physiological & psychological factors are catching attention these days. Physiological factors like Strength, flexibility and endurance are the important abilities for successful performance in sports and the relationships among these three create crucial physical athletic qualities (Maes et al., 1996; Thomis et al., 1998). The fundamental motor skills are another important physiological factor that affects sports performance directly (O'Connor, 2000). Those who lack fundamental motor skills are likely to experience frustration and difficulty in learning more advanced skills, reducing their enjoyment of sports and other activities (Rose et al., 1994). Psychological factors that exert profound influence on the

performance of sportspersons include anxiety (Weinberg and Genuchi, 1980), stress (Junge, 2002), fatigue (Sharpe & Miles, 1993), motivation (Edmunds, Ntoumanis, & Duda, 2006) and self efficacy (Feltz & Mugno, 1983). The focus of this research would be on enhancing motivation and physical self-efficacy of sportspersons because motivation, an innate part of their psychological makeup, moves a sportsperson to engage in needed preparation, even when practices are difficult, grueling and long, and self-efficacy is considered as performance modifier when the competitive circumstance is quite well defined and the level of importance of the competition is quite high (Grace, 1983).

Motivation is defined as "those psychological processes that cause the arousal, direction, and persistence of voluntary actions that are goal directed (Mitchell 1982). Intrinsic and extrinsic motivation has been of particular interest to researchers in the field of sport psychology (Deci & Ryan, 1985, 2000, 2008; Vallerand, 1997, 2001). Intrinsic motivation, recently been labeled "enjoyment-based intrinsic motivation" (Lindenberg, 2001), entails participation in an activity for the feelings of fun, pleasure, excitement, and satisfaction associated with it. In contrast, extrinsic motivation involves participation for the attainment of such rewards as money, trophies, and social approval or to avoid punishment. The concept of amotivation, or having no sense of purpose and lacking intent to engage in a particular behaviour, too has been added in Self-determination theory (Deci & Ryan, 1985, 2000; Ryan, 1995; Ryan & Deci, 2000).

Self-efficacy is beliefs in one's capabilities to successfully execute necessary courses of action (Bandura 1986 & 1997) which has been associated with task choice, effort expenditure, and perseverance in the face of failure or aversive stimuli (Bandura, 1986). Self-efficacy is both an important determinant and a consequence of physical activity (McAuley & Blissmer, 2000) and higher levels of self-efficacy are associated with superior sport performance (Moritz et al., 2000).

### Rationale

Researchers have applied a number of intervention



techniques, like mental imagery, progressive muscular relaxation, rationalizing, reappraising, blocking, and positive self-talk, avoidance coping, and emotion-focused coping etc., primarily oriented towards altering the individual's level of performance but music therapy alone didn't get much attention. Music Therapy is one of the most modern ways of enhancing intrinsic motivation, physical self-efficacy and sport performance in the most natural and effective way. The prevailing belief is that the music facilitates exercise performance by reducing the sensation of fatigue, increasing psychological arousal, promoting relaxation and improving motor coordination (Szabo, Small & Leigh 1999), But whether such beliefs are supported by scientific evidence showing that it is possible to enhance some aspects of performance using music therapy, the present research was conducted to put this belief to the test.

### Music Therapy

Music therapy is an aesthetic process which contains qualities such as creativity, intuition, inspiration, intention and spiritual elements (Amir, 1992). The benefits of music therapy in the context of sports psychology are enormous. Scientific inquiry into music and its effects on motor behaviour dates back to the early 20th century when it was suggested that music acts as a stimulus that promotes the body's natural movement (MacDougal, 1902). The scholastic literature suggests four ways in which music might improve physical performance: reduces perception of fatigue (Yamashita et al., 2006); increases levels of arousal (Karageorghis & Terry, 1997); encourages motor coordination or synchronization (Simpson & Karageorghis, 2006); and increases relaxation (Copeland & Franks, 1991).

Haun et al. (2001) proposed music therapy as a means of decreasing the physiological and behavioral anxiety. Music accompaniment has been shown to improve muscular endurance in the performance of junior high students doing sit-ups (Chipman, 1966). In a meta-analysis of various studies, a significant decrease of arousal due to stress was found by use of music alone or music assisted relaxation techniques (Pelletier, 2004).

Music therapy is highly motivating and engaging, and may be used as a natural "reinforcer" for desired responses. Music therapy describes how it enhances self-esteem and self-efficacy (Purdie, 1997; Purdie and Baldwin, 1994) as well as develops positive self-image (Jochims, 1995; Magee, 1999; McMaster, 1991). Music is often used to enhance self-efficacy, motivation and well-being (Iwanaga and Moroki, 1999). Lanzillo, Burke, Joyner, & Hardy (2001) showed that an individual music session that featured the participant's favorite music significantly enhanced feelings of state self-efficacy in collegiate athletes. Music appears to exert direct physiological effects through the autonomic nervous system. The aim of this study was to determine if regularly listening to a 30-minute music therapy over two weeks period would positively affect the participant's intrinsic motivation, self-efficacy and performance. The study verified the following hypotheses: Music therapy would enhance the intrinsic motivation. Female football players in the experimental group would in the experimental group would improve their intrinsic motivation

relative to the female players in the control group.

Music therapy would enhance the physical self-efficacy. Post intervention physical self-efficacy of experimental group would be more as compared to the control group.

Music therapy would enhance the sport performance. The experimental group would perform better relative to the control group.

### Research Design

Sample: Twenty-two female football players were screened on the basis of their scores on motivation and self-efficacy measures. The participants were in the age range of 21-26 years. All the screened participants were randomly assigned to experimental and control groups.

### Tools Used

Sport Motivation Scale; Physical Self-Efficacy Scale (PSES)

### Design and Procedure

An experimental and control assessment design was used in this study to examine the influence of music therapy intervention on intrinsic motivation, physical self-efficacy and sport performance. The participants were screened on the basis of their scores on Sport Motivation Scale and Physical Self-Efficacy Scale. Then, they were randomly assigned to experimental and control groups. Experimental group was given music therapy intervention for fifteen days. These participants were subjected to the instrumental flute music for half an hour daily. They were seated in a semicircle facing outward and were instructed to enjoy music through headphones till the music continued. After intervention period, the same scales were re-administered and a football match was arranged between both groups to study the efficacy of music therapy.

### Results And Discussion

The following Tables illustrate the statistical results of the effect of music therapy on sport performance and selected psychological variables.

Table 1 - Mean, Standard Deviation and t-value of Experimental and Control Groups on Sport Motivation Scale.

	Mean	SD	t-value
Experimental	69.45	4.73	6.49**
Control	61.59	3.14	

\*\* Significant at .01 level.

Figure 1 - Comparison of Mean values of Experimental and Control Groups on Sport Motivation

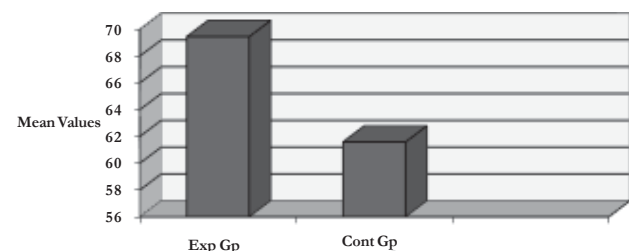


Table 1 shows that experimental group mean scores on intrinsic motivation are higher than control group mean scores. Experimental and control group scores have significant difference on sport motivation ( $t = 6.49$ ,  $p < .01$ ). These results led to the acceptance of our first hypothesis, which says that music therapy would help sports persons in



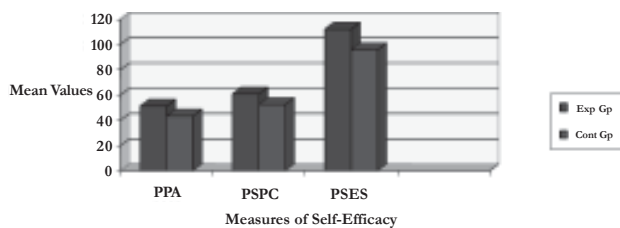
increasing their intrinsic motivation level. Figure 1 represents the mean difference in bar diagram form.

Table 2 - Mean, Standard Deviation and t-value of Experimental and Control Groups on Physical Self Efficacy Scale.

		Mean	SD	t-value
Perceived Physical Ability (PPA)	Experimental	51.23	2.91	9.10**
	Control	43.36	2.82	
Physical self-Presentation Confidence (PSPC)	Experimental	60.86	3.81	7.75**
	Control	52.45	3.38	
Physical Self-Efficacy Scale (PSES)	Experimental	112.09	4.46	11.49**
	Control	95.81	4.95	

\*\* Significant at .01 level.

Figure 2: Comparison of Mean values of Experimental and Control Groups on Physical Self-Efficacy Scale.



Experimental group mean scores on subscales of physical self-efficacy scale are comparatively higher than control group scores (Table 2). There is a significant difference between experimental and control group scores on perceived physical ability subscale ( $t = 9.10$ ,  $p < .01$ ), physical self-presentation confidence subscale ( $t = 7.75$ ,  $p < .01$ ) and physical self-efficacy scale ( $t = 11.49$ ,  $p < .01$ ). Graphical representation of mean scores has been shown in Figure 2. In addition to this, experimental group won the arranged football match by 4-2. These results prove our second as well as third hypotheses and are in line with the previous researches. Gold et. al. (2005) studied the effectiveness of resource-oriented music therapy and found that music therapy helps in creating positive self-image, thus enhancing patient's self-efficacy. In music therapy, the use of music (i.e. playing or listening to music) itself can often be a motivating factor for persons who may otherwise not be motivated for any other form of psychotherapy. Montello and Coons (1998) also found that group music therapy can facilitate self-expression and provide a channel for transforming frustration, anger, and aggression into the experience of creativity and self-mastery.

There are various studies that show the positive effect of music therapy on overall performance of sports performance (Templin & Vernacchia, 1995; Papa 1998, and Lanzillo et al, 2001). This research suggests the need for music therapists and sports specialists to work together to produce closer more productive links between music and sport.

#### References

Amir, D. (1992). *Awakening and Expanding the Self: Meaningful Moments in the Music Therapy Process as Experienced and Described by Music Therapists and Music Therapy Clients*. Doctoral Dissertation, New York University.

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs: Prentice-Hall.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman.

Baumeister, R.F. (1984). Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology*, 46, 610-620.

Brownley, K.A. (1992). *The effects of music on psychophysiological stress responses to graded exercise*. Microform Publications, College of Human Development and Performance, University of Oregon.

Bruscia, K. (1989). *Defining music therapy*. Spring City, PA: Spring House Books.

Chipman, L. (1966). *The effects of selected music on endurance*. Master's thesis, Springfield College. (From Completed Research in Health, Physical Education, and Recreation, 9, Abstract No. 462).

Copeland, B.L., & Franks, B.D. (1991). Effects of types and intensities of background music on treadmill endurance. *Journal of Sports, Medicine, and Physical Fitness*, 31, 100-103.

Deci, E. L. (1978). *Applications of Research on the Effects of Rewards*. In Lepper, M. R. & Greene, D. (Eds.) (1978). *The Hidden Cost of Rewards: New Perspectives on the Psychology of Human Motivation*. Hillsdale, New Jersey: Lawrence Erlbaum Associates, Publishers.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-68.

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology*, 49, 14-23.

Edmunds, J., Ntoumanis, N., & Duda, J. L. (2006). A test of self-determination theory in the exercise domain. *Journal of Applied Social Psychology*, 9, 2240-2265.

Feltz, D.L., & Mugno, D.A. (1983). A replication of the path analysis of the causal elements in Bandura's theory of self-efficacy and the influence of autonomic perception. *Journal of Sport Psychology*, 5, 263-277.

Gayton, W. F., Matthews, G. N., & Burchstead, G. R. (1986). An investigation of the validity of the physical self-efficacy scale in predicting marathon performance. *Perceptual and Motor Skills*, 63, 752-754.

Gold, C., Rolvsjord, R., Aaro, L.E., Aarre, T., Tjemsland, L., & Stige, B. (2005). Resource-oriented music therapy for psychiatric patients with low therapy motivation: Protocol for a randomised controlled trial. *BMC Psychiatry*, 5, 39, doi:10.1186/1471-244X-5-39.

Grace, M. (1983). *The relationship of pre-competition arousal assessments to self-perceived performance competencies in rowers*. Unpublished Master's thesis, Lakehead University, Canada.

Haun, M., Mainous, R.O., Looney, S. W., (2001). Effect of Music on Anxiety of Women awaiting Breast Biopsy. *Behavioral Medicine*, 27 (3), 127-132.

Iwanaga, M., & Moroki, Y. (1999). Subjective and Physiological Responses to Music Stimuli Controlled Over Activity and Preference. *Journal of Music Therapy*, 36 (1), 26-38.

Jochims, S. (1995). Emotional Processes of Coping with Disease in the early stages of Acquired Cerebral Lesions. *The Arts of Psychotherapy*, 22 (1) 21-30.

Junge, A (2002). "The influence of psychological factors on



- sports injuries: review of the literature. *American Journal of Sports Medicine*, 28 (5 supp), S10-S15.
- Karageorghis, C.I., & Terry, P.C. (1997). The psychophysical effects of music in sport and exercise: A review. *Journal of Sport Behavior*, 20, 54–68.
- Lanzillo, J. J., Burk, K. L., Joyner, A.B., & Hardy, C.J. (2001). The effect of music on the intensity and direction of pre-competitive cognitive and somatic state anxiety and state self-confidence in collegiate athletes. *International Sports Journal*, 5 (2), 101-110.
- Lindenberg, S. (2001). Intrinsic Motivation in a New Light. *Kyklos*, 54, 317-342.
- MacDougal, R. (1902). Relation of auditory rhythm to nervous discharge. *Psychological Review*, 9 (5), 460 - 480.
- Maes, H.H., Beunen, G.P., Vlietinck, R.F., Neale, M.C., Thomis, M., Vanden Eynde, B., Lysens, R., Simons, J., Derom, C., & Derom, R. (1996). Inheritance of physical fitness in 10-yr-old twins and their parents. *Medicine and Science in Sports and Exercise*. 28 (12), 1479–1491.
- Magee, W. (1999). Music Therapy within Brain Injury Rehabilitation: To what extent is our clinical practice influence by the search for outcomes? *Music Therapy Perspectives*, 17, 20-26.
- McAuley, E., & Blissmer, B. (2000). Self-efficacy determinants and consequences of physical activity. *Exercise and Sport Sciences Reviews*, 28, 85-88
- McMaster, N. (1991). *Reclaiming a Positive Identity: Music Therapy in the Aftermath of stroke*. In K.E. Bruscia (Ed). Case studies in Music Therapy, (pp. 547-560). Philadelphia: Barcelona Publishers.
- Mitchell, T. (1982). Motivation: New directions for theory research and practice. *Academy of Management review*, 7 (1), 80-88.
- Moritz, S.E., Feltz, D.L., Fahrbach, K.R., & Mack, D.E. (2000). "The Relation of Self-Efficacy Measures to Sport Performance: A Meta-analytic Review", *Research Quarterly for Exercise and Sport*, 71, 280-94.
- Montello, L., & Coons, E. E. (1998). Effects of active versus passive group music therapy on preadolescents with emotional, learning, and behavioral disorders. *Journal of Music Therapy*, 35, 49-67.
- O'Connor, J. (2000). *An investigation into the hierarchical nature of fundamental motor skill development*. Unpublished Doctoral Thesis. Royal Melbourne, Institute of technology, Australia.
- Pelletier, C. L. (2004). The effect of music on decreasing arousal due to stress: a meta-analysis. *Journal of Music Therapy*, 41 (3), 192-214.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., Brière, N. M., & Blais, M. R. (1995). Toward a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport & Exercise Psychology*, 17, 35-53.
- Papa, R. (1998). *The Effects of Selected Types of Musical Stimuli Upon Muscular Strength and Endurance Performance of College Age Athletes*. Unpublished Master's thesis, Slippery Rock University, Pennsylvania.
- Purdie, H. (1997). Music Therapy in Neurorehabilitation: Recent Developments and New Challenges. *Critical Reviews in Physical and Rehabilitation Medicine*, 9 (3&4), 205-217.
- Purdie, H., & Baldwin, S. (1994). Music Therapy: Challenging Low Self-Esteem in People with a Stroke. *British Journal of Music Therapy*, 8 (2), 19-24.
- Rose, B., Larkin, D. & Berger, B. (1994) Perceptions of social support in children of low, moderate and high levels of coordination. *The ACHPER Healthy Lifestyles Journal*, 41 (4), 18-21.
- Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality*, 63 (3), 397-428.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development and well-being. *American Psychologist*, 55, 68-78.
- Ryckman, R.M., Robbins, M.A., Thornton, B., & Cantrell, P. (1982). Development and validation of a Physical Self-Efficacy Scale. *Journal of Personality and Social Psychology*, 42, 891-900.
- Schunk, D. H. (1995). *Self-efficacy and education and instruction*. In J. E. Maddux (ed.), *Self-efficacy, adaptation, and adjustment: Theory, research, and application* (pp. 281-303). New York: Plenum Press.
- Schwartz, S.E., Fernhall, B., & Plowman, S.A. (1990). Effects of music on exercise performance. *Journal of Cardiopulmonary Rehabilitation*, 10, 312–316.
- Sharpe, M.H., & Miles T.S. (1993). Position sense at the elbow after fatiguing contractions. *Experimental Brain Research*, 94, 179-182
- Simpson, S.D., & Karageorghis, C.I. (2006). The effects of synchronous music on 400-m sprint performance. *Journal of Sports Sciences*, 24, 1095–1102.
- Templin, D. P., & Vernacchia, R. A., 1995. The effect of highlight music videotapes upon the game performance of intercollegiate basketball players. [Abstract]. *Sport psychologist*, 9 (1), 41-50.
- Thomis, M.A., Beunen, G.P., Maes, H.H., Blimkie, C.J., van Leemputte, M., Claessens, A.L., Marchal, G., Willems, E., & Vlietinck, R.F. (1998). Strength training: importance of genetic factors *Medicine and Science in Sports and Exercise*, 30, 724–731.
- Vallerand, R. J. (1997). *Toward a hierarchical model of intrinsic and extrinsic motivation*. In M. P. Zanna (Ed.), *Advances in experimental social psychology*: Vol. 29 (pp. 271-360). New York: Academic Press.
- Vallerand, R. J. (2001). *A hierarchical model of intrinsic and extrinsic motivation in sport and exercise*. In G. C. Roberts (Ed.), *Advances in motivation in sport and exercise* (pp. 263-320). Champaign, IL: Human Kinetics.
- Vallerand, R. J., & Losier, G. F. (1999). An integrative analysis of intrinsic and extrinsic motivation in sport. *Journal of Applied Sport Psychology*, 11, 142-69.
- Weinberg, R.S., & Genuchi, M. (1980). The relationship between competitive trait anxiety, state anxiety and golf performance: a field study. *Journal of Sport Psychology*, 2, 148-154
- Weinberg, R., Gould, D., & Jackson, A. (1979). Expectation and Performance: An empirical test of Bandura's self-efficacy theory. *Journal of Sports Psychology*, 1, 320-331.
- Yamashita, S., Iwai, K., Akimoto, T., Sugawara, J., & Kono, I. (2006). Effects of music during exercise on RPE, heart rate and the autonomic nervous system. *Journal of Sports Medicine and Physical Fitness*, 46, 425–430.
- Zajonc, R.B. (1965). "Social Facilitation". *Science*, 149, 269-274
- Zimmerman, B. J., & Bandura, A. (1994) Impact on self-regulatory influences on writing course attainment. *American Educational Research Journal*, 31, 845-862.