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## The Effect of Aerobics on Emotional Competence among Adolescence

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### **Abstract:**

*The main aim of the current study was to find out the effect of Aerobics on emotional competence among adolescence. A sample of 195 adolescent people with in the age range of 12 – 18 years was selected using the characteristics of stratified random sampling method. According to the scores in emotional scales 24 participants (12 in control group and 12 in experimental group) were selected (from the low score group) to study the effect of aerobics on emotional competence. The participants were matched in the cases of gender, age and education. The participants were practiced aerobics continuously for 30 days. Statistical technique used in this study was Wilcoxon Signed Rank Test. The results revealed that the aerobics has significant positive effect on emotional competence.*

### **1. Introduction**

It is customary to regard adolescence as beginning when children become sexually mature and ending when they reach the age of legal maturity. However, studies of changes in behaviour, attitudes, and values throughout adolescence have revealed not only that these changes are more rapid in the early than in the latter part of adolescence but also that the behaviour, attitudes, and values in the early part of adolescence period are markedly different from those in the later part. As a result, it has become a wide spread practice to divide adolescence into three subdivisions, early, middle and late adolescence.

Emotional competence is a learned capability based on emotional intelligence those results in outstanding performance at work. Our emotional intelligence determines our potential for learning the practical skills based on the five elements –self awareness, motivation, self-regulation, empathy and adeptness in relationships. Our emotional competence shows how much of that potential we have translated into on the job capabilities. Emotional competence is described as the essential social skills to recognize, interpret and respond constructively to emotions in you and others. Our emotional competence shows how much of that potential we have translated into on-the-job capabilities" (Goleman, 1995).

The concept of emotional competence is rooted in understanding emotions as normal, useful aspects of being human. Anger is a reaction to aggression and gives a person the strength to repel the aggression. Grief is a reaction to abandonment of feeling unloved and it has the effect of eliciting sympathetic responses from others. From this it can be seen that the suppression of emotion is not useful and that teaching people to suppress their emotions is a part of trying to control them. Emotionally competent people will express emotion appropriate to the situation and their needs and they will not seek to suppress emotions in others

Emotional competence can lead to improved health through avoiding stress that would otherwise result from suppressing emotions. It can also lead to improved relationships since inappropriate emotions are less likely to be expressed and appropriate behaviour is not avoided through fear of triggering some emotion. Our emotional intelligence determines our potential for learning the practical skills based on the five elements-self awareness, empathy and adeptness in relationships

There was a time the people thought that the causes of all the problems of adolescence are come from the environment. They believed that every problem had an environmental cause and never attached the pathology of physiological change and mind as a cause of these illnesses. But now there is a wide understanding about the mind – body relationship and people have started giving importance to a healthy mind for a healthy adolescence. It is not more than twenty years that people began to develop a humanistic attitude towards psychiatric patients especially with respect to their dealings with them. The present study also attempts to suggest an alternative (Aerobics) to improve emotional competence of the adolescence people.

Regular physical activity has positive effects on the prevention and rehabilitation of illness. Physical activity helps to improve physical self perception and mutual wellbeing. Aerobics is a form of physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness. It is usually performed to music and may be practiced in a group setting led by an instructor, although it can be done solo and without musical accompaniment. With the goal of preventing illness and promoting physical fitness, practitioners perform various routines comprising a number of different dance-like exercises. The problem under investigation is stated as follows: "*THE EFFECT OF AEROBICS ON EMOTIONAL COMPETENCE*". The definitions of key terms are as follows:

*Emotional competence* is a learned capability based on emotional intelligence those results in outstanding performance at work. Competence is thought about as the acquiring and regulating of emotion. Emotional competence is a part of emotional intelligence. The emotional intelligence determines our potential for learning the practical skills where as our emotional competence shows how much of that potential we have translated according to the life situation.

*Aerobics* is a form of physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness.

*Effect* means the result of a particular influence; in this study focused the influence of Aerobics training in the emotional competence and resilience of the individual.

The major objectives of the study are listed as; to find out the effect of aerobics on emotional competence

## 2. Literature Review

Competence is thought about as the acquisition and regulation of emotion. To begin to understand this competence we need a theory about emotional development. As was suspected there are maturational factors which influence emotional development. Risk to normal maturation, either through enquiry or retardation results in a loss of emotional competence. Individual differences in the emergence of emotional skills are present as well. These differences have at least two origins and include temperament or dispositional factors as well as socialization factors. Emotional competence is a part of emotional intelligence. The emotional intelligence determines our potential for learning the practical skills where as our emotional competence shows how much of that potential we have translated according to the life situation. Why we have chosen emotional behaviour as important competence. First emotions are the contents of social exchanges thus they play an important role in children's social adaptation. Second emotional behaviour has been considered as the motives or drives which lead us to learn to attempt to overcome frustration and to remember. Certain theories related to emotional competence are given below.

### 2.1. Emotional Intelligence Theory

Emotional intelligence is a relatively recent behavioural model, rising to prominence with Daniel Goleman's 1995 book called "Emotional intelligence". The early emotional intelligence theory was originally developed during the 1970s and 80s by the work and writings of psychologists Howard Gardner, Peter Salovey and John Jack Mayer. Emotional intelligence is increasingly relevant to organisational development and developing people, because the EQ principles provide a new way to understand and assess people's behaviours, management style, attitudes, interpersonal skills and potential.

Two aspects of emotional intelligence to be successful in life require the effective awareness, control and management of one's own emotions and those of other people. EQ embraces two aspects of intelligence;

- Understanding yourself, your goals, intentions, responses, behaviours and all.
- Understands others and their feelings.

Goleman identified 5 domains of EQ as:

- Knowing your emotions.
- Managing your own emotions.
- Motivating you.
- Recognising and understanding other people's emotions.
- Managing relationships, i.e., managing the emotions of others.

### 2.2. Self Determination Theory

Self determination is a macro theory of human motivation and personality, concerning people's inherent growth tendencies and their innate psychological needs. It is concerned with the motivation behind the choice that people make without any external influence and interference. The theory focuses on the degree to which an individual's behaviour is self motivated and self determined (Deci & Ryan, 2002).

Self determination theory is centered on the belief that human nature shows persistent positive features that is repeatedly shows effort, agency and commitment in their lives that the theory calls inherent growth tendencies. People also have innate needs that are the basis for self-motivation and personality integration. The theory identifies 3 innate needs that, if satisfied, allow optimal function and growth;

- Competence
- Relatedness
- Autonomy

These needs are seen as universal necessities that are innate not learned and seen in humanity across time, gender and culture (Chirkove, Ryan, Kim & Keplan, 2003).

### 2.3. Appraisal and Cognitive Theory

Emotions are those psychological states that relate the outer world of events to the inner world of desires –an emotion is an evaluation or appraisal of an event in terms of goals. The theoretical move made by Schechter and Singer involved linking bodily arousal to just such appraisals. Appraisals theory also connects to Tomkins idea of amplification, because, an emotion elicited by appraising an event in relation to an elicited by appraising an event in relation to a goal is an action-readiness, which sets priority among concerns and hence determines urgency (Nico Frijda, 1986).

In a comprehensive review of the research findings, Singer (1992) found that there are many psychological rewards of physical activity. Some of these are improved self-image, increased self-confidence, positive changes in mood, relief of tension, relief of premenstrual tension, increased alertness, increased energy and increased ability to cope. Optimism is crucial to psychological well-being and has been shown to be influential in achievement behavior, self-mastery and enhanced motivation. A recent investigation by Kavussanu and McAuley (1995) demonstrated the relationship between high physical activity and optimism. Their findings also revealed an "inverse relationship between regular exercise and trait anxiety levels"

In general, research has demonstrated that engaging in exercise and physical activity significantly enhances mental health. Participating in an exercise program has a positive impact on elevating mood and improving self-concept and self-esteem (Brandon & Loftin, 1991; Jackson & Marsh, 1986; King, Taylor, Haskell, & DeBusk, 1989; MacMahon, 1990; Mutrie & Biddle, 1995).

### **3. Methodology**

#### *3.1. Design*

The experimenter used a mixed design for the exploratory study in which the data were collected from a sample selected with the characteristic of simple random sampling and the scales were scored in order to get the total score and the component scores of each participant and used both scores for further interpretation. For the intervention study, two group pre – post matched design was used, in which people who scored low in the tools administered and who are willing to participate in the study were matched and randomly divided into 12 participants each, while making sure that the gender, socioeconomic status, material status, religion, domicile and the type of food were similar to each other. One group was considered as the experimental group to whom the experimenter administered aerobics and made sure that they practiced it continuously for 45 days and the other as control group who never practiced it and were kept away from practicing it during these 30 days. After the period of 45 days, a post test was taken with same tools from both the groups, in order to compare them with each other to know the effect of aerobics.

#### *3.2. Sample*

The sample of the present study included 195 adolescence participants within the age range of 12 to 20 years. The participants were drawn from Kannur districts in Kerala. The experimenter used the characteristics of simple random sampling method for the selection of sample for the present study. In this study several aspects such as age, gender, religion, domicile, type of food, income, health, education and type of family were taken into consideration for the selection of sample.

In order to study the effect of aerobics on emotional competence, the experimenter did a purposive sampling in which individuals with low scores in overall resilience and emotional competence were considered. Two groups of 12 participants each group included only those individuals who were low score in emotional competence and willingness to participate and ready to follow the rules and regulations of the study.

#### *3.3. Inclusion-Exclusion Criteria*

- a) Participants should be willing to participate and ready to follow the terms and conditions of the study.
- b) Participants should have a low score in emotional competence.
- c) Participants should be males.
- d) Participants should be aged between 12-18 years.

Based on the above conditions 24 individuals were selected, to test the effect of aerobics.

#### *3.4. Tools*

##### 3.4.1. Emotional Competence Scale (ECS)

Emotional competence scale (Aswathy & Ajilal, 2009) was designed to measure the level of Emotional competence of the normal people. The ECS was a self administering one. Instructions needed for the participants were printed in the scale itself; therefore, no separate instructions were necessary. The split half reliability half test coefficient of the scale is 0.85. This shows that the test is a highly valid measure of Emotional competence.

#### *3.5. Intervention technique-Aerobics*

Every exercise session will include 5 to 10 minutes warm up before exercise and 5 to 10 minutes' cool-down after exercise. The program will include the aerobic dance workout with music. The duration of exercise series will be 60 minutes. And the intensity of the training will increase gradually.

**3.5.1. Recommended Music**

Mirror man; the human League.

Warm up exercise were given for ten minutes as a part of aerobic dance work out program. Warm up sequence given in table 1

Sl. No:	Exercise	Duration.
1	Chest stretch. a) Grasp hands very high, elbows bent, press back and hold. (8 counts). b) Grasp hands low, behind back, lift and hold. (8 counts).	8sec
2	Ankle stretch. a) Weight on right foot and ball of left foot. Circle L ankle, stretching out and back in forward (8 counts). b) Reverse (8counts).	16sec-R;L side
3	Calf and Achilles Tendon stretch. a) Immediately step backward with same leg held, feet in forward/back ward stride; bend front knee just over toes, keeping back foot flat on floor. Strait arms forward press. Hold (8counts). b) Reverse (8counts).	8sec-R;L side
4	Hamstring stretch. a) Weight Left and turned out; encircle r knee and bring to chest, keeping spine upright. Hold. (8counts). b) Reverse (8 counts).	8sec R;L side
5	Quadriceps stretch. a) Left foot turned out ward carrying weight, bend right knee/leg backward, grasping shoestring area with right hand; left hand high and back for balance. Keeping knee pointing down and legs together bring heel close to buttocks. Hold (8counts). b) Reverse. (8counts).	8sec
6	Inner high stretch. a) Feet apart /toes forward, shift weight /hips right; flex right knee over right toe. (8/16 counts). b) Reverse.	8/16sec-R;L side
7	Back stretch. a) Feet apart, hands on thighs, flatten back. Hold. (8counts). b) Now round lower back upward, contract abdominals, tuck buttocks under hips. Hold. (8counts).	8sec
8	Trunk sideward lean. a) Sliding left hand down to left thigh, lean left; right hand and arm reach and stretch, close over head. Hold (8counts). b) Reverse right side. (8 counts).	8sec-R;L side
9	Shoulder- upper back stretch. a) Bring left upper arm under chin, keeping left elbow shoulder high; gently press left elbow toward u with right palm. Hold. (8 counts). b) Raise left arm/elbow above head, placing left palm on centre back; raise right arm; framing head; right elbow kept high; right palm gently presses left elbow backward. hold (8 counts). c) Reverse (a) then (b). (16 counts)	8sec R;L side
10	Neck stretch. a) Drop head to left side and press with right palm, keeping elbow high. stabilize with left hand on hip. Hold. (8counts). b) Reverse right side. (8 counts).	16sec

*Table 1: Warm Up Exercise and Duration.*

Week	Exercise	Repetition	Duration
First	1. Toe tapping (R;L)	8 count	5 sec
	2. Step touch in and out. (R:L) With hands pointing in and toe touch extending far out, to the side.	8 count	
Second	3. Step touch with arms out.(R;L) Leg crossed; right leg over left and brings arms in still shoulder high.	8 count	
	4. Cross step with arms parallel punch down.	8 count	
	5. Bounce right foot, lifting left knee to left side. Arms parallel, punch down.	8 count	
	6. Relaxation with deep breathing.		
	7. Marching.		
	8. On the spot marching; knee lift.	8 count	
	9. Marching with alternate arm punch to all direction.	8 count	
	10. On the spot marching with; punching in all direction.	8 count	
	11. Marching with stepping forward.	8 count	
	12. Marching with arm cutting.	8 count	
	13. Lunge side and bounce with arm movement.	8 count	
	14. Relaxation with deep breathing.	8 count	
Third	15. Side step out with arms side shoulder high. Two counts right and two counts left.	8 count	5sec
	16. Side step out with arms front rotation.	8 count	
	17. Same with arms rotation.	8 count	
	18. Forward march with arms upward.	8 count	
	19. Diagonal stepping forward. Diagonal movement step.	8 count	
	20. Relaxation with deep breathing.		
Fourth	21. One foot bounces while bending other knee. Step right knee-lift left knee forward, touch same elbow	8 count	
	22. One foot bounces and kicks same leg forward, waist height.	8 count	
	23. V step with arms upward or clap V shape movement of legs	8 count	
	24. Grape wine with kick, knee lift, clap	8 count	
	25. Weight on one foot, kick other leg to only a 90 degree waist –high level (or lower). Forward or sideward (1count).	8 count	

Table 2: Schedule of Aerobic Dance Work out Program

Sl. No:	Exercise	Duration
1	Deep breathing.	4 counts
2	Calf stretch.	4 seconds
	a) Feet apart, hands on thighs, flatten back. Hold. b) Round lower back upward, contract abdominals, tucks buttocks under hips. hold	
3	Standing cat stretch.	4 seconds
	Standing position, slight more than shoulder with apart, then round lower back, upward contract abdominal.	
4	Hamstring stretch.	4 seconds
	Weight left and turned out; encircle right knee and bring to chest; keeping spine upright. Hold.	
5	Quadriceps stretch.	4 seconds
	Left foot turned outward carrying weight, bend right knee/ leg backward, grasping shoestring area with right hand; left hand high and back for balance. Keeping knee pointing down and legs together bring heel close to buttocks. Hold.	
6	Chest stretch.	4 seconds
	a) Grasp hands very high, elbows bent, press back and hold. b) Grasp hand low behind back, lift and hold.	

Table 3: Cool down Sequence (5 Minutes.)

### 3.6. Procedure

First of all, the investigator met the participants individually and received their consent to participate in the study. Necessary information and instructions were given to the participants related to the importance to the study. After which, tools were given to the participants (Personal Data sheet, Emotional competence scale). The data collection was completed in several phases. There were 195 completely filled sets of tools after collecting the data.

After scoring, the whole sample was divided into high, medium and low groups based on the total scores they obtained for emotional competence in order to choose the experimental and the control group to test the effect of Aerobics. From the low scored group, 24 participants who were willing to participate and follow the provisions in the process were chosen to study the effect of Aerobics on the overall emotional competence. This selected group of 24 participants was divided randomly into two equal halves, viz; a study group and a control group.

Immediately after this pre-assessment, *Aerobics* was administered to the experimental group and was asked to continue the practice 30 days under adequate supervision. At the same time, the comparison group was restrained from undergoing any such practices. The follow up assessments of both groups were taken after the specified period of 30 days with the same tools that measured overall emotional competence.

## 4. Results ad Discussions

The mean score and standard deviations obtained by the two groups, at different assessment phases in emotional competence are given in the table 4.

Variable	Group	Assessment	Mean	SD
Emotional competence	Experimental	Pre	112.50	6.28
		Post	128.00	9.61
	Control	Pre	119.58	13.08
		Post	115.83	15.64

Table 4: Mean and standard deviation (SD) of Emotional competence score of Control Group and Experimental group at pre and post Assessments.

Since the mean and the standard deviation showed differences in between the pre and post assessment phases of the control and experimental groups, further analysis was done using Wilcoxon Signed Rank test to understand whether the differences are statistically significant. The results obtained from Wilcoxon Signed Rank test are given below.

Variables	Group	Assessment	Z score	Significance level
Emotional competence	Experimental	Pre con-Pre exp	-1.24	ns
		Post exp-Pre exp	-2.82	.01
	Control	Post con-pre con	-1.42	ns
		Post con-Post exp	-2.98	.01

Table 5: Comparison of Control group and Experimental group at pre and post assessments on Emotional competence: Results of Wilcoxon Signed Rank test

The details of the results are given in the table 5. The discussion of the preliminary analyses with mean and standard deviation and the further analyses discussed thereafter. Scrutinizing both table 56 and 57, it is clear that out of 9 variables under consideration emotional competence, showed significant differences in different group comparisons of control and experimental group scores at pre and post assessments.

In emotional competence, experimental group obtained a mean of 112.50 and a standard deviation of 6.28 in the pre test and a mean of 128 and a standard deviation of 9.61 in the post test, while the control group obtained a mean of 119.58 and 115.83 and a standard deviation of 13.08 and 15.64 respectively in the pre -test and the post test. The Z score obtained in post control- post experimental assessment was -2.98 which was significant at 0.01 level. And the Z score obtained in post experimental- pre experimental assessment was -1.24 which was significant at 0.01 level. Neither, pre control-pre experimental assessment nor post control-pre control assessment shows any significant difference. This result indicates that, *Aerobics* had a positive effect on improving the emotional competence of the participants. It gives an ease around others and determines one's ability to effectively and successfully lead and express.

Emotional competence showed remarkable positive effect after the short term practice of *Aerobics*. Aerobics can invigorate the mind since it supplies plenty of oxygen to the body. This would in turn provide a large amount of oxygen to the increases their resilience, emotional competence, emotional regulation and reaching out capacity.

*Aerobics* is capable of increasing both physical and mental health. While practicing *Aerobics*, the individual tend to concentrate more on the process (exercise-stretching, movements etc); and would worry less about his life events, and become relaxed and enjoy the music's of *Aerobics*, this gives a sense of calmness and make the mind lucid and steady; that helps the person to be resilient and emotionally competent. The increased supply of oxygen into the brain and whole body is capable to remove all kinds of emotional disturbances; sleep disturbances etc. *Aerobics* is capable of enhancing the mind and thereby remove all types of depressive symptoms in a person, by keeping him/her away from mental illness.

#### 4.1. Limitations and Suggestions for Further Research

This research has many limitations due to many factors. One of the limitations of the present study is the lack of time. The study has conducted on a relatively small sample. There were only 195 samples, but 300 samples are needed for generalisation of results. Secondly, while doing the sampling, the stratification of samples was not met fully. It is important that all the categories considered in the study should have equal number of participants. But in this research the investigator could not maintain equal number of individual in each category. Thirdly, *Aerobics* that gives a great effect after practicing 6 months was practiced only for 30 days in this study. Fourthly; also the study and control groups contained only males. The long term effect of *Aerobics* is not studied and its effect in females is also unknown with the present investigation. Fifthly; the sample size used to study the effect of *Aerobics* was 12 in each case. This lessens the scope of confirming and generalizing the results derived from this intervention program.

For further research, one can include more number of variety variables under consideration with a greater sample size. Stratification of sampling can also be improved. The effect of *Aerobics*, after practicing it for a longer period is expected to have a tremendous effect and inclusion of males into the study and control group in order to know its effect on them can also be a suggestion for further research.

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