Impact of Aerobics programme on some Blood Components of deaf and dumb pupils at the age from 12: 15

Prof.DR./ Farouk Al-Saied Abdel Wahab

Professor of Sports Physiology, Department of Sports Health Sciences, Faculty of Sports Education, Minya University

Prof.DR./ Mohsen Ibrahim Ahmed

Professor of Sports Physiology, Department of Sports Health Sciences, Faculty of Sports Education, Minya University

Researcher/ Rasha Salah Ahmed

PhD researcher in the Department of Sports Health Sciences - Faculty of Sports Education - Minya University

Introduction and Research Issue:

Doing sports is considered as an effective means of raising, modifying behavior; necessary to have public health and physical fitness, preparing youth and all citizens, therefore, it contributes to reduce the costs of treatment and the prevention of many diseases. In this view, all countries of the world are concerned with sports and have fully realized that all the efforts and funds they will offer will back a hundredfold in all aspects of life (4: 31).

Physiologically Sports Training must be based on scientific and technical rudiments, and from these rudiments training programmes authors and operators can understand the physiological dimensions for different age groups of the intern individuals, and ration and gradate the load of the appropriate training which commensurate with the functional situations of the body. While being aware of physiological information is a key factor in preparing different training programmes to attain objectives set out and achieve the development of different biological functions to the body systems (3: 17).

Sports Training also leads to blood changes in addition to other body organs and systems, the degree of these changes are associated with many factors, the most important of which is the period and type of training. Thus, Training effect will be permanent or temporary, and will include changes that occur for all blood compounds as well as blood volume and condition. (2: 255).

Physical education programmes are regarded as the main aspects of training and rehabilitation programme for mentally disabled, with these programmes, we can overcome their movement problems, develop their physical abilities, help them adapt to society, and turn them into productive workforces in society, As these programmes play a key role for mentally disabled, it is necessary to pay attention to the contents of these programmes (7: 23).

Aerobics workouts are important for fitness, Blood comes out of the heart and passes through the arteries at its highest rates carrying oxygen or saturated, when it returns to heart again through the veins, the oxygen amount decreases, because most of it has ran off with the different tissues of the body that needed it. The word 'aero' simply means the neediness to breathe during training (6: 18).

Aerobic exercises are aero activities and it is physical movements performed when there is sufficient supply of oxygen for the body to produce the necessary energy, and aerobic means muscular action that basically depends on oxygen, Muscles need oxygen to do their job and their need for oxygen increases as they work. And it relies on the work of the periodic and respiratory organs, and performs continuity in a period of time (15:30) minutes, and heartbeat ratio (135/160) beat/min for adults (9: 4).

Aerobic exercises also increase the heart's ability to pump oxygen through the body, inhaled and consumed oxygen, cause improvement during aerobic exercise and make the individual physically fit (8: 18).

Sports education programmes are considered one of the main aspects of the training and rehabilitation programme for disabled individuals through whom they can overcome their movement problems, develop their physical abilities and help them adapt to the surrounding community and turn them into productive workforces in society (7: 23).

Sports Training of the deaf has many advantages, where the individual can express himself through the practice of sports activity, this contributes to build self-confidence of the disabled, and is able to interact positively and grow well proportioned. The purposes of sports education for the deaf and dumb are not

different for able bodied. All sports activities can be carried out without amendments to playgrounds, gadgets or play laws unless there are multiple disabilities must to be considered (15: 11).

In this sense, Researchers demonstrate the importance of organized and planned aerobic training programmes according to the scientific method of this group and its role in the development of their physical abilities and physiology. Aerobic training programmes for that group aimed to increase physical abilities as well as develop their potential and seek to access to their appropriate physical condition and their ability to discharge his duties to the fullest extent possible. It also increases the ability of physiological variables, which affect their overall health and reach the required level of health.

Researchers realized the research problem through their work and expertise with some disabled groups and through the difficulty of understanding of these groups to how do exercises with normal explanation, which necessitates Thinking about appropriate way to how do exercises, which required from researchers to read about these groups that need special treatment, because it is enough about pain and sorrow they suffer. And through these readings, researchers realized the possibility that targeted and organized aerobic exercises according to practical method could be useful in making deaf and dumb pupils able to perform movement skills, especially if they are in a funny and endearing manner to the disabled heart.

After reviewing previous researches and studies, researchers found that there were many studies dealing with disability groups; Researchers didn't find – to their knowledge – studies included aerobic exercises had been prepared for the deaf and dumb category. This provoked their interest in conducting the current study to develop an aerobic programme and recognize its impact on some of the blood components for deaf and dumb pupils from the age of 12:15.

Research Objective:

The research aims to design a proposed aerobic training programme and recognize its impact on some blood components of deaf and dumb pupils from the age of 12: 15.

Research Assumptions:

1- There are statistically significant differences between the averages of the grades of advanced and posterior measurements of the experimental group in some components of the blood and for the benefit of posterior measurement
2- Changing percentage varies between advanced and posterior measurements of the experimental group in some blood components.

Search Procedure:

Research Curriculum:

The researchers used the experimental curriculum due to its suitability to the nature of the research, and they used one of the experimental plans, which is one set following the advanced and posterior measurements.

Society and Research Sample:

The research community consists of deaf and dumb pupils in Minya governorate. Researchers selected the research sample in the random manner from the research community of Al-Amal School for the Deaf and Dumb for the academic year 2019/2020 and its strength is 10 pupils, as well as 10

pupils as a reconnaissance sample to apply the exploratory experiment for research and perform scientific treating.

Equable distribution of sample individuals:

Researchers have ascertained how equable the distribution of experimental total individuals is in the light of the physical variables under examination and the blood components, and table (1) shows this.

Table (1)
Arithmetic Average, Intermediate, Standard Deviation and Torsional Modulus for Sample under examination at Variables under examination (N=10)

Variables		Arithmetic Average	Intermediate	Standard Deviation	Torsional Modulus
Blood Components	mcv	82.50	80.70	0.89-	6.06
	mch	27.45	26.72	-1.08	2.03
	mchc	32.70	32.42	-1.04	0.81
Physical Variables	Zigzag running	9.15	9.31	0.96	0.49
	Stretch the torso from sitting position longitudinally	5.00	4.70	-1.33	0.67

Table 1 shows the following:
The values of the torsional modules of the blood components and the physical variables under examination range from (-1.33, 0.9) that were confined between (+3, -3) indicating the moderation of the group's repetitive distribution.

Data collection tools and means:

First: Devices and tools used in research:

- Stopwatch.
- Playground.
- Box graded in cm.
- Medical injections, Cotton and Antiseptic material.

Second: Tests used in research:

- 9 meters Zigzag running test back and forth to measure agility.
- Stretch the torso from sitting position longitudinally test to measure flexibility.
- Blood components analysis tests carried out by a specialist doctor at Al-Ahram Medical Analysis Laboratory at Minya.

Suggested aerobic exercises programme:

Programme objective:

Designing suggested Aerobic exercises programme and knowing the effect on the development of some physical variables and blood components for deaf and dumb pupils.

Programme purposes:

- Pupils engage in various activities that contribute to the development of their physical abilities and the raising the level of some of their blood variables.

- Pupils continue to learn the skills they acquire from the fields and activities in their work and employ them to do simple work in their daily lives.
- Pupils can express themselves through the program's activities.
- Develop physical abilities to reach the highest possible level of physical performance.
- Pupils should be provided with basic information about the activities they learn.

Programme development bases:

- The content of the programme is commensurate with its objective.
- Selected activities (small game activities, physical exercise activities – exercises include all body muscles) should be commensurate with the dental phase under examination.
- The programme contains multiple easy colors and activities that are not restricted by difficult conditions so that the disabled individual does not become bored.
- Marinating security and safety factors in programme activities.
- Content would be concerned with activities that develop the physical abilities of pupils.
- To be found in the activities materials that are loved by the same pupils.
- Activities should be interesting and attract the attention of pupils.

Programme content:

a- Small Game Activities.
b- Physical exercise activities.
1- Walking. 2- Jumping. 3- Gambol.
5- Bouncing. 4- Running.
6- Exercises include all body muscles.

Researchers liked using of suspense, excitement, encouraging factors and help pupils as research sample in programme implementation.

Teaching methods used:

Researchers used a variety of methods due to the diversity of the program's activities, it used:

a- Model style of teacher and imitating by pupils in small games and physical exercises.
b- Free play style and follow-up by teacher

Overview of programme implementation:

a- Implementation of the proposed movement activities programme during the school day by (3) units per week.
b- Implementation of the proposed programme through units of 8 weeks' duration with three lessons per week.
c- Final form after introduction of proposed sports programme as follows:
- The introductory part (10) s aims to organize and prepare pupils psychologically and physically and activate their blood circulation and consists of a range of recreational and preparatory simple activities.
- The main part (30) s is a series of various recreational activities (small games) and competitions that achieve the overall objective of the programme.
- The final part (5) is intended to prepare the body to return to normal condition and reach the state of relaxation.
d- The final time of the lesson is (45) forty-five minutes in the programme.
e- Each unit of the programme includes part of all proposed activities of the programme (small game activities – physical exercises activities).

Statistical method used:

The following statistical transactions were used (arithmetic average, intermediate, standard deviation, torsional modules, Wilcoxon nonparametric test, percentage change ratio).

Presenting, discussing and interpreting of results:

Table (2)

Indication of differences between the averages of the grades of advanced and posterior measurements (for the experimental group in some blood components) (N=10)

Variables	Unit of measurement	Advanced measurement			Posterior measurement			Z value
		Arithmetic Average	Grades average	Sum of grades	Arithmetic Average	Grades average	Sum of grades	
mcv	mmol	70.80	7.00	7.00	83.30	5.33	48.00	2.12
mch	mmol	26.72	1.50	3.00	27.66	6.50	52.00	2.50
mchc	mmol	42.32	0.00	0.00	34.91	5.50	55.00	2.84

Tabular (Z) value at significance level (0.05) = 1.96

Table (2) shows the following:

Statistically significant differences are between the two averages of the advanced and posterior grades of measurements of the experimental group in certain components of blood and for the benefit of posterior measurement.

This is due to that there are some aerobic exercises in the experimental group improve their physiological aspects, especially those related to blood components, Doing any type of exercise improves an individual's physiological conditions and makes him more capable than non-practicing any kind of sport, Physical exercises have a great impact on maintaining the integral health of the human body which illustrated by this result that there has been an improvement in the outcomes of pupils, which researchers observed when they when conducting advanced and posterior measurements. There has been an improvement in all variables, physical exercises helped to improve the body's components, maximize oxygen consumption for pupils and increase their physiological capacity, which had a significant impact on improving their physical condition, their continued and regular attendance at

movement activities units, in particular the severity and load allocated to the training unit, have had an effective impact on the improvement of

their physical and health levels, The exercises also had a positive effect on the level of oxygen consumption.

These exercises where this helped expand or extend the lungs to fill up with the biggest amount of oxygen. They continued to perform without feeling stressed and tired, which led to high maximum oxygen consumption. Physical exercises improve these variables and increase the efficiency of the body's vital organs.

This is confirmed by the study of 'Mahmoud Fathy Abdel Mohsen' in (2015) (5) She pointed out that movement activities have a positive effect obvious and noticeable abstract improvement in physical variables and in the direction of posterior measurement in the experimental group, and the study of 'Poolman and Eval' in (2003) (10), it pointed out that the experimental group outperformed the controller in fitness components.

Table (3)

Percentage of improvement between advanced and posterior experimental measurements in some blood components and some physical variables

(N=10)

Variables		Advanced measurement	Posterior measurement	Percentage of improvement
Blood Components	mcv	80.70	83.30	3.22%
	mch	26.72	27.66	3.52%
	mchc	32.42	34.91	7.86%

Table (3) shows the following:

The percentage improvement between advanced and posterior experimental measurements of certain blood components ranged between (3.22%: 7.86%).

Researchers attribute that result to a marked change in the experimental group and improved greatly due to the nature of aerobic exercises based on the rudiments and principles of improving sports performance that lead to improve physical and physiological aspects in a positive and highly efficient manner. Using the proposed trainings in the same style of performance enables pupils develops important physiological capabilities in sustaining performance.

This which confirmed by the study of 'Ahmed Ezzat Mohamed'(2015) (1) where It indicated that there were statistically

significant differences between advanced and posterior measurements in favor of posterior measurement in all the physical and physiological variables under examination, and the ratio of improvement appeared as a progress of the level of posterior measurement of the experimental group to indicate the positivity of the proposed programme for the mentally disabled.

Conclusion:

1- The proposed aerobic training programme has contributed positively to the improvement of some of the blood components of deaf and dumb pupils from the age of 12: 15.
2- Statistically significant differences between the two averages of advanced and posterior measurements of the experimental group in certain components of blood and for the benefit of posterior measurement.
3- Percentage of improvements varied between the advanced and posterior measurements of the experimental group under examination in some blood components in the positive trend towards the improvement of those variables.

Recommendations:

1- Proposed aerobic training programmes should be used to improve the physiological and physical variables under examination.
2- Continuing in following up on the level of deaf and dumb pupils under examination after the completion of the programme to see the progress of their level.
3- Caring about the rationed training programmes for the disabled that contribute to improve the physiological aspects because its importance in raising their level of health.
4- Caring about the development of physiological aspects and observance of their linking because It is difficult to develop the physical aspect without the development of the physiological aspect.

5- Pledging workers at disability with appropriate movement programmes for this category through training courses to cultivate them in this field.

References

First: Arabic References:

1- Ahmed Ezzat Mohamed Mohamed (2015): The impact of a sports programme on some physiological variables for educable children with a disability at Minya City, unpublished master, Faculty of Sports Education, Minya University.
2- Bahaa El-Deen Ibrahem Salama (1994): Sports physiology, Dar Al Fikr Al Arabi, Cairo.
3- Esam Abdel Hamed Hasan (2000): The impact of the use of some physiological methods of rationing training load on Apparatus Respirators efficiency and some physical and skilled variables in football starters, unpublished PHD, Faculty of Sports Education, Minya University
4- Farouk Al-Saied Abdel Wahab (1995): الرياضة صحة ولياقة بدنية, Dar Al Shorouk, Cairo.
5- Mahmoud Fathy Abdel Mohsen (2015): Effect of movement activities on growth hormone and some of the physical abilities of educable mentally disabled children, unpublished master, Faculty of Sports Education, Minya University.

Second: English References:

6- Allen Jacksonetall: First time proof of sage's tolerability and efficacy in menopausal women with hot flushes. AdvTher 28 Jun ٢٠١١ (490-500).
7- David Auxte; Jean Pyfer & Carol Huetting (2003): Adapted Physical Education and Recreation; Seventh Edition Mosby Publishing Co; St Louis.
8- EnisOzkaya et all: Impact of hot flashes and night sweats on carotid intimamedia thickness and bone mineral density among .Postmenopausal women 'Int j GynecolObstet (2011), DOI:10,1016.
9- Laure s: Human Physiology from cells to systems "4thed publishing U.S.A. 2001.
10- Poolman (2003): Demonstting physicalfitess important EmR. Exceptional children wcnovew Ber. journal of mental suborn normality, Vol 76, No. 2 June.
11-Roi(B).Activitee physique adaptee aux handicape. Poo.50RM.2003.