



## AEROBICS FOR DISADVANTAGED PEOPLE

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### Abstract

Physical activity is essential for good health. Most people feel they should get more exercise, this applies to people with disabilities. Disabled people often do not get enough exercise, especially if they have problems with walking. However it is always possible to find the right type of exercise one can do depending on physical ability. Authors have organized the aerobic training for disadvantaged children and young people. There was a significant progress of individuals practicing in aerobic exercises in all segments. We included quite a large number of children and young people with motoric disabilities. The program was developed to suit individual needs because participants had different levels of psychophysical development and abilities. There was significant improvement in muscle strength, physical conditions, coordination, ability to imitate motion, and special orientation. The program shows that regular aerobic exercise can significantly improve the physical and mental health of for people with disabilities.

**Key Words:** Aerobics, disadvantaged people, health, improvement.

### INTRODUCTION

Nowadays, most people are not sufficiently physically active. This is especially true for the group of people with special needs who often avoid physical activity because of the impairment that they have (motor impairment, vision). However one can always find the right kind of exercises depending on the impairment. Analyzing the possible forms of physical activity for people with disabilities it is the authors' opinion that regular participation in aerobics classes could significantly improve not only physical but also mental health of participants, and facilitate their integration into the local community. Aerobics program can improve quality of life for all people with special needs and contribute to their socialization and quality leisure time. To verify this hypothesis, the authors analyzed previous studies, prepare an aerobics program and performed a pilot class for children with special needs.

Many studies have been published on the positive effects of aerobic on physical condition of people with special needs. Here are some of the relevant results of individual studies:

- Dalgas (2010) found that the quality of life for people with multiple sclerosis improved with aerobic exercise.
- Kileff and Ashburn (2005) have found that aerobic training improves the general condition and the mobility of people with special needs.
- Lee and Park (2010) concluded that physical activity increases satisfaction and happiness of people with special needs
- In the paper by (Smith, 1998) conclusions are that exercising on a treadmill improves general mobility for people with chronic paralysis suffered after stroke.
- Exercising on a treadmill increases the physiological fitness in chronic stroke patients and improves their functional mobility (Macko, 2001).



## METHOD

Authors organized aerobic classes for children and young people with special needs. Users are usually individuals that previously lived at home, often without any contact with adults and children their age outside their closest family circle. Such children often lack basic skills necessary to meet their own needs. For many such children first contacts are traumatic. Aerobic exercise programs can be used for preventive and remedial purposes.

Movement therapy is used for people of all ages and levels of physical fitness. It establishes psychomotor integrity of a person with disabilities that are acquired or congenital. In this type of exercise they perform movement and tasks in their own way.

Aerobics improves the sense of balance, movement, perception and motor skills. Fields of application are psychomotor therapy, from minimal cerebral dysfunction to attention deficit disorder or hyperactivity disorder. Principles, models and processes of social-group work are preservation of physical and mental health, maintenance of vitality, rest, refreshment, entertainment and promotion of individual sports and recreational activities in the society.

Persons with mobility impairments, who mostly missed early rehabilitation, are directed by certain specific aspects that affect their growth, lifestyle and struggle with oneself and their surroundings, in the terms of carrying out daily duties and activities. They are affected by varying degrees of disability in mental and physical development, and consequently their individual capabilities vary in ability to perform daily activities such as movements; hand movement; cognitive, perception, speech and sensory abilities; thus program has been adapted to each individual child.

We cannot choose health but we can choose a healthy lifestyle. We are all well aware that a healthy lifestyle includes movement, activity, sports and nutrition.

For people with disabilities aerobics can be an integral part of rehabilitation, but also a way for psychological adaptation to different situations and socialization. Group work offers the possibility to implement physical activities in a form of a game benefiting the child both physically and mentally.

Therapeutic process included children from the NGO "Mothers of handicapped children" TK Tuzla. Fifty children were included in physiotherapy treatments and corrective gymnastics, with different diagnoses of mental retardation, cerebral palsy and combined disorders.

Therapeutic process lasted from October 2006 to October 2007 and was performed in groups as well as individually. Group work included step aerobics and low ground impact exercises with exercise balls, tires and dumbbells. Groups were comprised of 15 children, relatively homogeneous in age, ability and diagnoses. With other children, individual sessions were performed in accordance with their capabilities and limitations.

Treatments were performed three times a week, during the weekdays with 7 children per day, lasting 20 to 30 minutes. Individual treatments were carried out accordance with the needs of the child from the massage, relaxation, passive and active assisted movements and corrective exercises.

Group work:

Trainings were performed three times a week

Children groups: duration of 30 - 40 minutes.

The group consisted of 35 children with different diagnoses and physical abilities.

Aerobics program consisted of two parts. The first part after warm-up consisted of aerobic training of middle and high intensity for 30 minutes. The second part was spent on strengthen training and shaping of all muscle groups in a harmonious manner.

### DISCUSSION RESULTS

The result of the initial testing of children in Fig.1

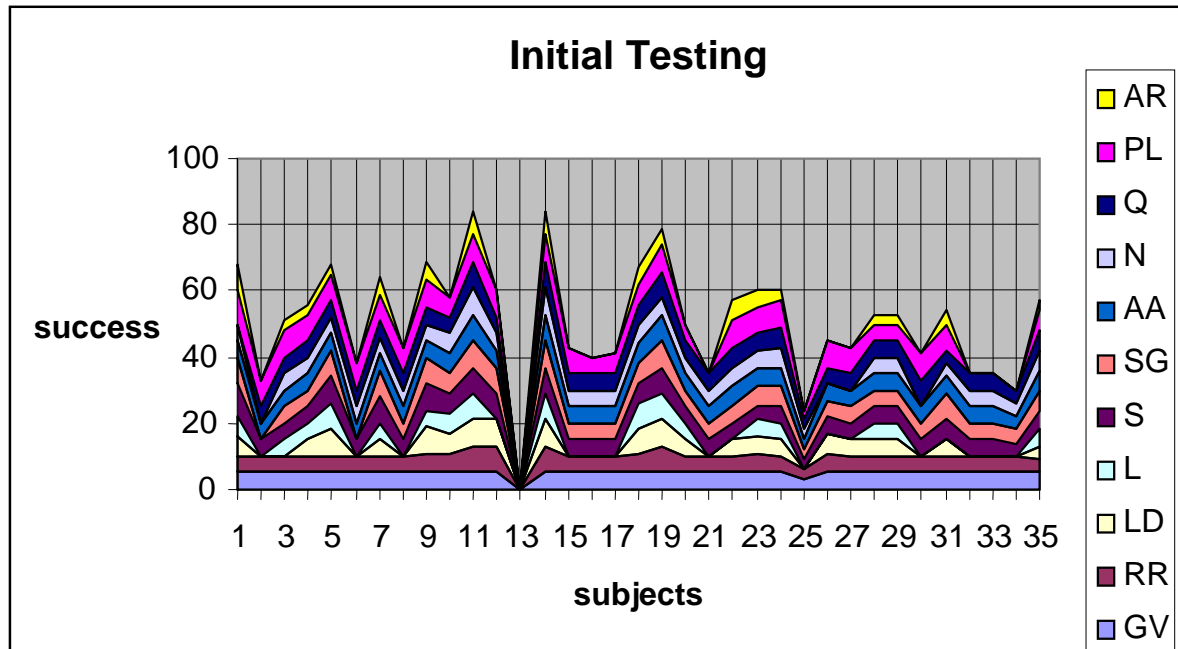


Fig. 1: Initial testing

Test results acquired after passing the course of aerobics are shown in Fig 2.

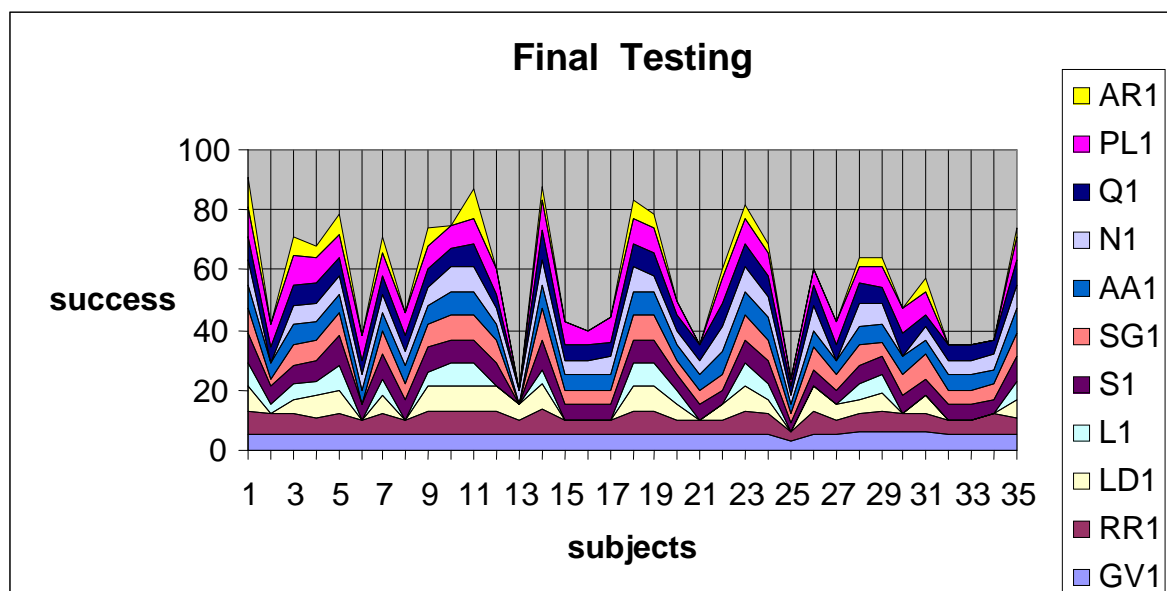


Fig 2: Final testing

Legend LD - lifting body and legs together, L - Lifting upper body from the base, S - Sit-ups with arms on the chest with bent knees, A - Leg extension and lifting of a 2 kg weight with a lower thigh, AA – Lifting of leg N – Lowering the leg, PL - Raising with the side rotation SG – Lifting off the chair using arms in 30 seconds - triceps, GV-Lifting of the back.

Based on the diagram showing individual results we gain insight for each child.

The results and level of improvement vary according to degree of disability and regular attendance during treatment. There are evident improvements for the duration of the Aerobics program for individuals and groups. Progress can be seen in Table 1 which shows the median values for the initial and final testing.

Table 1: The mean values for initial and final testing

| Element         | GV  | RR  | LD  | L   | S   | SG  | AA  | N   | Q   | PL  | AR    |
|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| Initial Testing | 4,9 | 5,4 | 6   | 5   | 5,8 | 5,9 | 5,4 | 5,2 | 5,4 | 7,2 | 4,706 |
| Final Testing   | 5,1 | 6,4 | 6,7 | 6,2 | 6,6 | 6,5 | 6,1 | 6,2 | 6,2 | 7,6 | 5,176 |

Significant improvement was noticed in muscular strength, capability to follow instruction, coordination, aerobic capability, endurance, progressive muscle relaxation and fine motor skills.

Aerobic program influenced all of the motor capabilities: strength, speed, endurance, flexibility, coordination, balance and accuracy.

## CONCLUSION

The study has shown that subjects who regularly participated in therapy achieved visible improvement in all spheres of aerobic capabilities: reduction of fatty tissue; shaping of individual groups; core strength; development of motor functions; flexibility and coordination; fortification and strengthening of musculoskeletal system and tend segments; general strength improvement; and personal strength. From the presented results it can be concluded that subjects' functional capabilities have been improved. It will be easy to implement the results of our study in physical education classes in educational institutions educating people with special needs.

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