

### **Research Summary**

#### **Nature of the research and its limits :**

This study is an attempt to identify the effect of a suggested motor program for the blind workers on the rate of production. This study is limited for the workers recorded in El Noor and El Amle society in Heliopolis in the years 1994, 1995.

#### **Aims of Research**

This research aims mainly to build up a motor program to develop the physical efficiency for the blind workers, and to identify its effect on each of the following :

- 1 - Elements of physical fitness.
- 2 - Limitation of the structural deformities which might be caused by the blindness and some jobs which the blind workers do.
- 3 - Rate of production of the workers under research

#### **Hypothesis of the research :**

- 1 - presence of a statistically significant differences between the pre-and the post measurements for the sample of the study in each of the following :-
  - Elements of physical fitness.
  - Physical efficiency.
  - Limitation of skeletal deformities in favour of the post measurements.
- 2 - Percentage of improvment resulting from applying the suggested motor program on each of the following :
  - Elements of physical fitness.
  - Physical efficiency.
  - Skeletal deformities.
  - Production rate.

must not be less than 25%.

- 3 - There is a positive relation which is statistically significant, between the physical efficiency and production rate for the blind workers.

**To achieve the aims of the research the researcher followed the following steps :**

- 1 - She used the experimental method of the one group design, with the use of the pre- and post measurments.
- 2 - The population of this study represents a group of blind workers registered in the professional center joined with El Noor and El Amle society in Heliopolis, and their

number is (250) blind workers, and their ages ranges between (12 - 50) years. She choosed the limit for this study among the workers which their ages ranges between (16 - 24) years, They were (86) blind workers. The researcher excluded from them about (56) whom were not matched with the rules and regulations Put by the researcher put, and so, the sample were (49) blind worker, from them she choosed (30) blind worker intentially in the order that 10 workers from carbet, Needle departments, and she get help of the remaining (19) in the preliminary studies because they agreed to share in the program, but not to continue till the end.

To collect the data of this study, she get used the following equipments and measurements.

**I - Test of physical efficiency elements for the blind.** which includes 6 units and was designed by kaother Matar (1981).

- 1 - Test of upward pull with the help of the fellow ( to measure the force ) ( straddl chins).
- 2 - Test of standing on one foot to measure balance ( Squat stand).
- 3 - Test of bending upper limbs for the position of lying down for girls (to measure muscular endurance ) ( Modified push - up for girls).
- 4 - Test of long jump from standing position to measure muscular efficiency ( standing broad jump ).
- 5 - Test of running in place for 15 seconds (to measure speed).
- 6 - Test of forward flexion of the trunk from standing ( to measure flexibility).

**II - Test of physical efficiency ( Astrand and Rhymang PWC)**  
the researcher choosed the bicycle ergometer for Astrand, and Rhymang test to measure the maximum oxygen consumption ( $VO_{2max}$  ) in which, the test depends on calculating the mean of two pulse measurments on the bicycle ergometer according to a specific system, then by the use of Astrand normogram to determine the physical efficiency of the person.

III - New York posture rating test which can help to test and evaluate 13 parts of the total body, some from the side (7. parts) and the others from the back of the examined body.

**TV Production Records :**

The researcher reviewed the records of the production of the society to know the mean production of the worker in her field, and she followed their production for six days, and calculated the mean by the way of recorded observation.

**V - Suggested motor program :**

The researcher has designed a motor program aiming to develop the physical efficiency of the blind worker (16 - 24 years ). processing to develop the elements of physical fitness, maximum oxygen consumption (VO<sub>2</sub>max ), resisting the skeletal deformities resulting from the blindness and the professional work which the worker does, The suggested motor program is based on a group of rules, the researcher put to achieve the aims for which they were put and designed.

**Preliminary studies :**

The researcher carried - out the first preliminary study aiming to train the assistants, and to determine the statistical coefficients ( to evaluate the program ), then she did the second preliminary study to test the units of the program .

**Pre - Measurements :**

The Pre - measurements were done for the sample of the study in the period from 29-9-1994 to 6-10-1994..

**Applying the program :**

The application of the program required a group of stages :

- getting ready of the place specified for the program.
- Stage of education, in which the blind will be educated for the different activities which the motor program will include.

This consumed 10 educational units each ranges between 4 - 5 hours daily in the period from 10-10-1994 to 27-10-1994. After that came the stage of application of the motor program on the experimental group which was composed of 30 blind workers period from 30-10-1994 to 19-10-1995 by 3 executive units weekly on Sunday, Tuesday, and Thursday.

### **Post Measurements :**

The researcher took the post measurements in the same way and order of the pre-measurements from 21-1-1995 till 28-1-1995.

### **Statistical study for data :**

The researcher used in her statistical study of the data, the arithmetic standard deviation, the mean, and the skew factor to find homogeneity, the correlation factor to find reliability, T- test to test indications of differences, percentage of improvement.

### **She concluded the following :**

- 1 - Physical efficiency is considered as a part of the physiological variables which is important and necessary for constructing motor programs for blind workers, because her continuity in work required a high physical efficiency to help her to resist physical exhaustion and uninterest from working for a long period which may lasts for eight hours continuously.
- 2 - The physical efficiency acts as an indicator for the functional efficiency of the person, and so it is one of the most important factors which affects to increase production. This efficiency can be developed through motor programs appropriate to the trained group.
- 3 - Applying a specific motor program for the blind requires a continuous personal follow up for the skeletal health to face any skeletal deformities which can be arisen from the blindness or the professional work. The study cleared that simple deformities can be improved and return back to normal in a percentage of 6.7% to 27% in the group of the study.
- 4 - The continuity of performing a motor program based on development of physical efficiency and improving elements of physical fitness for the blind workers may lead to overcome the problems of skeletal deformities (Simple deformities) and to return back to normal skeletal structure.
- 5 - The most familiar deformities (forward drop of the head, round shoulders, lateral tilt of the head, scoliosis,) can be overcome by the route of motor programs based on physical efficiency.
- 6 - The motor program may lead to improve maximum oxygen uptake for the blind workers.

- 7 - The motor program helps to improve the elements of physical fitness under the study represented in muscular power, balance, muscular endurance, speed and flexibility.
- 8 - There is a high positive relation between maximum oxygen uptake and the rate of production of the blind workers in their sections.

#### **Project of the study :**

According to the results of applying the suggested program which effected on the functional and professional factors for the sample of the study, the researcher recommends applying the suggested motor program on similar samples according to the following :

#### **1 - Aim of the program :**

The suggested motor program aims to develop the physical efficiency for the blind workers (16 -24 years ) by the order of the development of elements of physical fitness, maximum oxygen uptake (VO<sub>2</sub> max ), and resisting the skeletal deformities resulting from the blindness and the professional work which the blind does.

#### **2 - General rules for applying the project :**

- a - Preparing the project in Priel including drawing of the pathway of movement and number of repetition, and the points which must be followed on applying the activity so as the blind can do it in a personal way .
- b - Training the superuisors responsible to follow the athletic activity in the societies of the blind on applying the program and evaluating it.
- c - Applying the program in a personal way with a continuous supervision from the supervisors :
- d - The effort of working with the program depends on the rates of improvements in the act personally.
- e - Specialists in the athletic field and the administrators of blind societies must help in constructing the programs .
- f - The use of the tests of the elements of physical fitness and physical efficiency as a principle rule in the success of the workers.

### **Inclusion of the program :**

**The suggested motor program includes the following :**

- 1 - Exercises to develop each of, elements of physical fitness, muscular strength balance, muscular endurance, muscular power, speed, and flexibility .
- 2 - Exercises of walking, and running to develop cardio - respiratory endurance.
- 3 - A group of exercises proportional to resistance of the skeletal deformities.
- 4 - A group of recreational activities represented in small games in an individual way, or a double way.
- 5 - Free exercises with the company of music.
- 6 - Exercises with the use of simple equipments.

### **Ways of Conducting :**

- 1 - Education by touch, in which the worker touches her fellow which is represented by the research or one of her assistants, to feel the movement and imagine it , and to understand the used expressions .
- 2 - The subject does the required exercises and guide her to understand the act.
- 3 - The use of sound signals in demonstrating the directions of the recreational exercises and to join between exercises.
- 4 - The use of music with the preliminary part in some of its units.

### Asample of an Executive unit :

Parts	Time	exercises	rep.
1 - preliminary part a - Administrator part b - Warm up.	10 mins 3 mins 7 mins	getting the ground, equipments, girls ready. (standing ) feet jump in place, jump in place then high jump with bifurction of feet, 3 jumps in place and the forth coming down, 2 jumps in place and then righ jump with a quarter turn, then timer jump with straightening & bending of both upper limbds forward, side, and to up.	
2 - Main part. a - Physical part and physical efficiency	45 mins 30 mins	1- [Lying down with lower limbs up]. 45 , lowering down with raising the trunk for long squate. 2 - (Lying down) alternating bending and straightening of both lower hinbs. 3 - (Open standing - upper libs a side ) jump with crossing of both legs, and bending both upper limbs to fix the waist. 4 - standing on four, bending the hnees alternating straightening & bending both knees. 5 - Standing - holding a medical ball throwing the ball most away. 6 - Running for 2.15 mins. 7 - Walking for 1.45 minutes.	
b - Sheletal part	15 mins.	1 - (standing ) raising shoulders up and down. 2 - (Lying down - upper limbs aside ) raising limbs up, backward, and then aside with the use of a medical ball . 3 - ( Standing open - fixed waist ) bending the trunk aside with raising other limb.	
3 - Recovery	5 mins.	1 - ( Lying open - upper limbs aside ) relixation of the whole body 2 - ( long squate ) relaxation of both lower limbs with alternaing bending them a litte	

### Ways Of Evaluating The Program

The following tests were used in the program to know the extent of achieving the already previously put aims :

- Tests of elements of physical fitness.
- Astrand and Rhymang test for physical efficiency .
- New york test for structure.

### Recommendations

According to the results of this study, the researcher can recommend the following.

- 1 - Application of the suggested motor program to develop the physical efficiency to achieve raising the rate of production and wide spreading athletic activities among all the workers each according to his abilities with the increase of the qualified persons to follow up these programs.
- 2 - Must give more attention to the blinds by patting various programs because of the importance of these to help this category to cojoin the society.
- 3 - Determination of a sector in the faculties of physical education for girls and boys. to prepare and train leaders capable of working with the special catogories including the blinds.
- 4 - Spreading the cultural intelect for the blinds about the importance of physical activites, healthy and functionally, and also the adminstrators and supervisors so that they will be able to consult the act of this category for the motor programs
- 5 - Preparing special programs giving more interest for the compensating side of evey profession.
- 6 - Preparing recreational and athletic programs in every company through the working periods range between (5 - 10) miutes accompanied with central music in the production units.
- 7 - Specifying a sufficient time to do athletic programs so that the blind can give off her lidden power and getting use of it in the figure of production and it is preferable to be according to a preset time schedule.
- 8 - Putting a national plan for the motor activity for the blind in all the societies all over A.R.E.



- 9 - Holding special records about the physical conditions and the production status of the blind including cards for recording these points over the period of training .
- 10 - Starting the motor programs with the start of the professional training for the blind workers so that we can overcome the problems of skeletal deformities which can arise from the professional work, and improving the simple deformities which may be a result of blindness.

**A Motor Program for Developing physical  
Efficiency for Blind female workers and  
its effect on production pate**

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