THE COMPARISON ON SPORT SPECIFIC TEST PROTOCOL AND PROCEDURES TO IDENTIFY TALENT IN BLIND SOCCER BETWEEN STUDENTS WITH BLIND AND VISUALLY-IMPARED: A PRELIMINARY STUDY

[a]**Nagoor Meera Abdullah**
[b]**Nurul Amynah Ismail**
[c]**Mohamad Nizam Mohamed Shapie**

Faculty of Sports Science and Recreation, Universiti Teknologi Mara, Shah Alam, Selangor Darul Ehsan

[a]**nameera_ab@yahoo.com.my**

ABSTRACT: *This study was designed to assess the comparison of sport specific protocols to identifying talent in blind soccer among student with blind and visual impaired. Thirty male students with blind and visual impaired, aged between 13 to 15 years old from special school for the blind in Setapak, Kuala Lumpur participated the study and were selected through purposive sampling. Subjects went through test-retest method of 7 test protocols. The result showed that the blind students performed better in muscular endurance (21.10±7.17), flexibility (30.65±8.37), balance (20.99±19.39;18.44±17.76) and power (1.60±0.51), whereas the visually-impaired student showed better performance in agility (9.15±1.70), speed (7.06±1.02) and reaction time (2.35±0.62;2.34±0.74). There were important to establish several appropriate tests to identify the ability performance for the blind group. Modified sound reaction time (right and left), 20 meter shutter run and modified agility test have shown to be a good testprotocols in detecting talent in blind soccer.*
Keywords: blind soccer, physical activity, visually impaired, test protocols, talent

INTRODUCTION

The important role sport plays in modern society and also the fact that children become involved in sports programs at an ever-younger age contributed to different selection procedures and test being developed to identify potential talent (Shapie et al., 2014). This process is generally known as talent identification (TID) (Kruger, 2006). Talent identification has been defined as the process by which children are measured on a number of physical and performance variables that are perceived to be requisite for success within a given sport (Augustyn, 2005). Since an athlete requires many years of general training to achieve success in most sporting codes, it is important for athletes to participate in sport long before the age at which generally is accepted that top performance should be reached. Identifying talent early can consequently lead to improving performance in sport. One of the important things in talent identification testing is the capacity to interpret scores. Children who are blind generally have fewer opportunities and incentives to engage in activities that provide the amount and kind of stimulations that are typical for sighted children(Mittra, 2005). This limitation results in delays in physical activity. Moreover, research has shown that when children who are visually impaired are given equal opportunity to participate in regular activity, their physical fitness improves, and their exhibit levels of fitness that are comparable to those of sighted children (Moira et al. 2006). Talent identification can be defined as the process of recognizing current participants with the potential to become elite players, where's talent development aims at the providing the most appropriate learning environment to realize this potential(Kluka, 2003). Blindness is the inability to see anything, even light. If you are partially blind, you have limited vision. Complete blindness means that you cannot see at all and are in total darkness. Legal blindness refers to vision that is highly compromised: What a person with healthy eyes can see from 200 feet away, a legally blind person can see only from 20 feet away. According to (Dulin & Hatwell, 2006), blindness usually that happen early in life impairs spatial representation, especially. Moreover, children especially with visual impairments show delays in motor development, such as poor balance and inefficient gate, which may be byproducts of sedentary behaviors during the developmental years (Lieberman et al 2010).Therefore the study aim to compare the sport specific protocols to identifying talent in blind soccer among student with blind and visual impaired.

METHODOLOGY
Sample

 Thirty male students with blind and visual impaired (totally blind (10) and partially blind (20), aged between 13 to 15 years old from special school for the blind in Setapak, Kuala Lumpur voluntarily participated the study and been selected through purposive sampling. Their impairment been verify by the authorized ophthalmologist (a medical or osteopathic doctor who specializes in eye and vision care).

Instrument

All subjects went through seven (7) test protocols comprises of both health-related and skill-related fitness components. The seven (7) protocols are namely a) sit and reach test to measure lower back flexibility, b) bent knee sit up test to measure abdominal endurance, c) standing broad jump test to measure lower limb power, d) stork stand test to measure static balance, e) sound reaction time to measure reaction time and quickness, f) modified agility test to measure agility and g) 20 meter run test to measure speed.

Weight measurement was taken. The subjects wear the clothes on the weight, stand on and face the scale while take off their shoe. The reading been recorded to the nearest kg. Height measurement was determined by the subjects stand (without shoes) as tall possible with heels together and feet evenly balanced at an angle of approximately 60 degrees, using the medial borders of the feet and the wall as the reference lines.They inhaled deeply and maintain the designated position. The reading been recorded to the nearest centimeter.

Modified Sound Reaction Time Test was used to measure athlete's reaction time by using a voice (order of direction).This test is use the voice to give an order to the subject to run until they the cone on the right and left side. The distance between the starting line and the cone is 5 meter. When the subjects hear the sound comes from the voice loudly and randomly saying 'Left!' or 'Right!' they must run as fast as he can. Time will be recorded with 2 trials for the different direction of the test.

Standing Broad Jump was usedto measure explosive leg power. The subject stand behind the line marked on the ground with feet slightly apart. A two foot-take off landing is used, with swinging of the arms and bending of the knees to provide forward drive. The subject attempts to jump as far as possible, landing on both feet without falling backwards. The result will be are recorded for 2 attempts to the nearest 0.5 m.

20 Meter Run Test was used to determine acceleration, and also a reliable indicator of speed, agility and quickness. The test involves running a single maximum sprint over 20 meters. Start from a stationary position, with one foot in front of the other. The front foot must be on or behind the starting line. The starting position should be held for

2 seconds prior to starting, and no movements are allowed. Two trials are allowed and the rest period is 10 minutes, and best time is recorded. The measurement was recorded to the nearest 0.5 s.

Modified agility test was used to measure speed, body control and the ability to change direction. Procedure of this test is similar to T-test but it been modified to make it suitable for blindness. There are 2 cones, which is cone A and B. Subject is ready at the starting line. On the signal, "go!" the subject sprints to the cone. They must speed as fast as possible to the cone A, and move backward to the starting line. Then they speed to cone B. The steps are similar. They perform two trials and the rest period is 10 minutes. The time been recorded to the nearest 0.5 seconds.

Modified Standing Stork Test is to evaluate static balance. Remove the shoes before doing the test. The subject wears the blind fold. Stand with the hands on the hips. Place the sole of non-standing foot against the inside knee on the other leg. The time are recorded when the subject are ready. Both right and left leg are been test and 2 trials are allowed for each leg. The clock will be stopped when the subject's heel touched the floor.

The sit and reach test is used to measure the flexibility of the lower back and posterior thighs/ hamstring. Subjects remove the shoes and place the sit and reach box against the wall and sits on the floor with the box contact with the wall. They sit with their leg fully extended and soles of fact touching against the box. Feet should be close together. Place hands on top of one another and make sure the fingertips each together. Gradually reach forward, pushing the marker as far as possible. Hold the position for three seconds. Knees must be kept flat against the floor at all times. Subject is disqualified if they bounce back and forth, they do not hold the final position for 3 seconds and knees are not kept flat against the floor. Record the measurement to the nearest 0.5 cm.

One minute sit up was usedto measure the core and stability muscle of the subject. Subject lie down in supine position on the mattress with knee flexed at 90 degrees. Slowly up and both elbows should over the knee in a straight position. The subject starts the test upon received the signal 'GO' and stop when they hear 'STOP'. The subject should perform the sit up test in one minute. Finish one complete action will be counting from lie down, curl up until elbows over the knee and lie down back.

PROCEDURES

During the testing session, assistance were offered by the school teachers and the assistants. The approval to do the test was granted from the Ministry of Education (Special Education Division) and the school principal. After all the subjects fill in the consent form and the personal information form (for

those who cannot see clearly, they get help from the teachers and the assistants), they listen and understand the explanation on what is the next step. They have been given explanation and the demonstration on each of the test and the procedures. Subjects undergo warming up and stretching session for 15 minutes to make sure they are ready to perform the test. Subject who have difficulty to perform the test were assisted by the teacher/assistants. After all the subjects understand how to do the tests, then the procedure started. The subject was divided into 7 groups so that all of them

will do the test concurrently. After they finish a test, they will pursue to the next one until they performed the entire test. They were assisted to each test by the assistants.

DATA ANALYSIS
The study was analyzed used SPSS version 20.0 by comparing the means and the standard deviation of the 2 groups. The significant value was set at $p < 0.05$.

RESULTS

Table 1: Demographic data of the subjects

		Mean	SD
Blind	Age	1.40	0.69
	Height	158.04	6.21
	Weight	51.60	7.37
	BMI	20.92	3.15
Visual Impairment	Age	1.97	0.76
	Height	160.77	7.29
	Weight	54.18	21.52
	BMI	20.76	8.27

Table 1 shows the arithmetic mean and standard deviation on demographic data that were used in this study for the descriptive statistic. This data were divided into two groups which are blind and visual impaired. The mean ± SD for age was 1.40±0.69. For the heights was 158.04± 6.21, for

weight was 51.60±7.37 and BMI, 20.92± 3.15. For visual impairment group, the mean ± SD for age is 1.97 ± 0.76 for the height was 1.60.77 ± 7.29, for weight was 54.18 ± 21.52 and lastly for BMI was 20.76 ± 8.27.

Table 2: Independent T-Test analysis to compare the test protocols between blind and the visually-impaired.

Test protocols	Blind and visual impairment				
	Blind		Visual impairment		
	Mean	SD	Mean	SD	P value
Body Mass Index (kg/m^2)	20.92	3.15	20.76	8.27	0.956
Flexibility (cm)	30.65	8.37	32.77	9.79	0.563
Balance (R) (s)	20.99	19.39	26.54	24.11	0.534
Balance (L) (s)	18.44	17.76	21.47	19.71	0.685
Power (m)	1.60	0.51	1.94	0.42	0.06
Reaction Time (R) (s)	4.12	1.58	2.35	0.62	<0.001*
Reaction Time (L) (s)	3.71	0.83	2.34	0.74	<0.001*
Agility (s)	12.67	1.65	9.15	1.70	<0.001*
Speed (s)	7.06	1.02	4.60	0.75	<0.001*

P < 0.05

Table 2 revealed the Independent T-Test analysis for both groups based on the mean and the standard deviation. The result show that the blind students show better performance in muscular

endurance (21.10±7.17). This is because eye sight does not influence muscular endurance. Same goes to flexibility (30.65±8.37), balance (20.99±19.39;18.44±17.76) and power (1.60±0.51),

whereas the visually-impaired students show better performance in agility (9.15±1.70). This is because running in high speed do require better eye sight since they know where the end of the distance is. Same goes to speed (7.06±1.02) and reaction time (2.35±0.62; 2.34±0.74).

DISCUSSION

Subjects whore are visual impaired for overall is much better than students who are blind that used in this study. Blindness can lower physical work and lead to posture problems, orientation difficulties, depression and balance problems. Children with visual impairment need more support in their psychological and physical development. Health-related fitness is poorer in children with visual impairment compared to those with normal vision. Cardiovascular endurance, muscular endurance, flexibility and balance were lower in individuals with visual impairments than in individuals with no impaired sight (Erkan Calıskan & Anı Agopyan 2011). In this study the result of mean show subjects with blindness are more obese than visually impaired subjects and the lower aerobic capacity and obesity may be cause by lack of habitual physical activity.

Earlier studies reported that sport or exercise is beneficial for those who have blindness or visual impairment. Knowing that the results revealed large disparities in performance between children who are blind (B1) in comparison to their partially sighted peers (B2, B3) gives direction for instruction and future research. It is known that children who are blind need more tactile teaching methods, such as tactile modeling and physical guidance (Pamela S.Haibach 2014).

It has also been found that children with visual impairments need many repetitions with feedback in order to learn novel skills. In this study, researcher has to give physical instruction to subject who are totally blind and there are their friends who are partially blind are help to give the instruction to their friends. Some of the reasons that leads to lower level of motor skill in this study is the totally blind athletes must have an individual / partner to guide them in order to perform activities especially in this tests. They must have a partner that can really run together with the same speed. In this test also, athletes have to run and change body position and direction, running with a partner might be difficult, especially when it comes to turn their body. The totally blind athletes and his / her partner must have corporation to perform the test to prevent any injuries. In this study, students who are totally blind are been guided to do the test.

For 1 minute endurance test, there have a significant difference on endurance component between blind and visually-impaired subjects. Visually-impaired subjects show greater variability in their endurance performance, as opposed to their sighted peers. This including the variation in vision, how they perform the attitudes and variation in the vision (Abdullah, Tumijan, Latif, & Hamid, 2013).

Standing broad jump test indicates there has significant differences between blind and visually-impaired subjects. Visually-impaired subjects perform better than blind subjects. Visually-impaired has advantages because they can see partially the target point before they jump. It differences to blind subjects because they cannot estimate the target point and the point to landing. However, they perform with the correct technique with clear instruction and motivation from their friends

Modified sound reaction time test regarding the performance for both group subjects, they have a less difference. Visually-impaired subjects perform better than blind subjects. However, both group subjects perform overall the same. The alertness of the subjects was high because they alert to perform test after listen the instructions from the test administrator. In this study, it indicates that blind and visually-impaired groups have a good listening and high alertness. According to Bompa(2000), reaction is not only a muscular reflex to a stimulus, but also the ability of the muscles to contract quickly and powerfully. In this study, most of the subjects have shown a good feedback while doing the modified sound agility test. The data show that the reliability of this test is below than 0.05. So that there are significant differences between group and this test are reliable and can be apply for the next study in the future.

Balance is an indispensable factor for the blind and it helps to encourage the visually impaired person's integration in space. In this study, blind subjects showed a significant difference advantage over the visually-impaired subjects on the Modified Static Balance Stork Test. It may be because blind subjects are already adapted with the environment. So, it easier to perform the test and can balance on the longer time. Relative performance on fitness items of students with visual impairments varies with the nature of the particular test (Augustyn, 2005a and b).

Flexibility improves an athlete's development of coordination and technique and the ability of the proprioceptors to receive stimuli (Apostolopoulos, 2000). In addition, for flexibility sit and reach test, both groups perform overall the same. The result highlighted that blind and visually-impaired subjects have flexible body. They are easy to perform because several of subjects already know the correct technique. So, there are no significant difference on sit and reach test between blind and visually-impaired subjects. Literature indicates that flexibility needs to be trained at least three times a week, with each stretch being held for approximately 60 seconds (Apostolopoulos, 2000). From the results of this study, it shows that athlete with most of

subjects from B1 group are more flexible compare to B2. The improvements in flexibility are in a good level while doing a second trial.

Training to improve speed and explosive power will therefore lead to an improvement in the ability of limbs to move faster (Bompa, 2000). In his book, Bompa (2000) indicates that 4-8repetitions of speed over 20-60 metres with a resting interval of 3-4 minutes can be used as an effective method for improving acceleration in children. Running against resistance and along with resistance also are techniques, which can be used to improve speed and acceleration. Training to improve running form is also recommended in the literature as a training method to improve speed and acceleration (Dintiman, 2000). There 20 meter shutter run test in this study are reliable because the P-value is below that 0.05.

CONCLUSION

Some of the test protocols were reliable and can be used in the next study. There is a relationship between talent in football 5-a-side and specific sporting ability protocols and procedure in test protocols of modified sound reaction time, modified agility test and 20 meter shutter run has shown a good and positive result. From this test, researcher sees that most of the students were struggled during the second trial in order to beat their score at the first trial.

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