

Assessment of the Taekwondo Training Program through Talent Identification: Basis for Enhanced Training Program

Seigfred Neil Uy

seigfredneil.uy@deped.gov.ph

<https://orcid.org/0000-0003-1629-0033>

Tanauan School of Fisheries - DepEd
Ambulong, Tanauan City, Batangas, Philippines

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Abstract

The success of a training program is based on the performance of the athletes. Trainers and coaches should seek the talents of their players to develop a productive training program. When identifying an athlete's potential, Talent Identification Program in Sports is used. This program is used by many countries around the world in their preparation for big sporting events like the Olympics. An effective training program is the key to winning, for its goal is to improve the skills or talents of the athletes. One of the sports applying to the said programs is Taekwondo. Based on Sports Industry Research Centre (2003), The International Olympic Committee medal table is largely regarded by the government, the media, and the general public as a measure of a country's sporting achievement. This study focused on identifying the level of performance of Taekwondo athletes through standardized physical fitness tests. The researcher used Pearson r to correlate the relationship between the BMI and the performance of the student-athletes. Results revealed that athletes with underweight BMI scored advanced and skilled in all fitness tests, while athletes with normal BMI scored also advanced and skilled in physical fitness tests and the athletes with overweight BMI scored skilled and average in the fitness tests conducted. The results of the data analysis showed that there is no significant correlation between the athletes' skill-related fitness and their BMI. To improve athletes' abilities regardless of their BMI status, more research is required.

Keywords: body mass index (BMI), physical fitness test, reaction time, flexibility, leg power, agility, speed, taekwondo, training program

Introduction

One of the organized martial arts that emerged in Korea is taekwondo. Since 1992, this combat sport has established a solid international reputation and is recognized as an official Olympic sport. Taekwondo is described as "the appropriate manner of using all parts of the body to halt fighting and contribute to building a better and peaceful society" by the World Taekwondo Federation (WTF).

Taekwondo was historically created by a variety of martial artists in the 1940s and 1950s by fusing components of Chinese and Japanese combat systems. The terms Tae, which means to kick or leap, Kwon, which means fist or hand, and Do, which means "the method," are the origin of the phrase "Taekwondo" (American Taekwondo Association). The performance of taekwondo athletes depends on the preparation

and training they underwent before the competition. The improvement of taekwondo athletes’ skills is from a good training plan which may help to good sports performance.

Sports development is one of the important programs of the government. As stated in Article 14, Section 19 of the 1987 Philippine Constitution:

“(1) The state shall promote physical education and encourage sports programs, league competitions, and amateur sports, including training for international competitions, to foster self-discipline, teamwork, and excellence for the development of a healthy and alert citizenry.

(2) All educational institutions shall undertake regular sports activities throughout the country in cooperation with athletic clubs and other sectors.”.

In the Palarong Pambansa (National Level) of the Department of Education, the Taekwondo event is one of the most awaited sports of the league. Most of the universities in the Philippines are looking for the best athletes for their institutions. To reach the level of Palarong Pambansa, the athletes must win a gold medal at the regional level.

For the past five years, the Division of Tanauan City was competing in taekwondo in the Southern Tagalog CALABARZON Athletic Association (STCAA), but, the division is struggling in winning medals. This is why the researcher opted for the Tanauan City Division Taekwondo Team as the subject of this study.

The table below shows the performance of the Tanauan City Taekwondo Team in STCAA from the year 2014 to 2019:

Table 1
 STCAA 2014 – 2019 Tanauan City Taekwondo Team Results

Year of Competition	SECONDARY					
	Boys			Girls		
	Gold	Silver	Bronze	Gold	Silver	Bronze
STCAA 2019	0	0	1	0	0	1
STCAA 2018	0	0	0	0	0	0
STCAA 2017	0	0	0	0	0	0
STCAA 2016	0	0	0	0	0	0
STCAA 2015	0	0	1	0	0	0
STCAA 2014	0	0	0	0	0	0

The table above shows that the performance of the team in the past six consecutive STCAA needs improvement. To identify the strength and weaknesses of the team as the basis of the new training program, the researcher will use talent identification indicators in sports.

The main thrusts of this study are the talent identification indicators of the Tanauan City Taekwondo Athletes and their profile. To be in a better frame, different notions are hereby presented:

According to the training theory of the International Association of Athletics Federations (IAAF) “records are made to be broken”. It implies that the athletes should perform beyond the previous performance.

The development of athletes is a vital progression in coaching. Athletes' development provides a higher chance to achieve success in sports. Touch Football Australia describes talent identification athlete management and selection through athletes' development pathway.

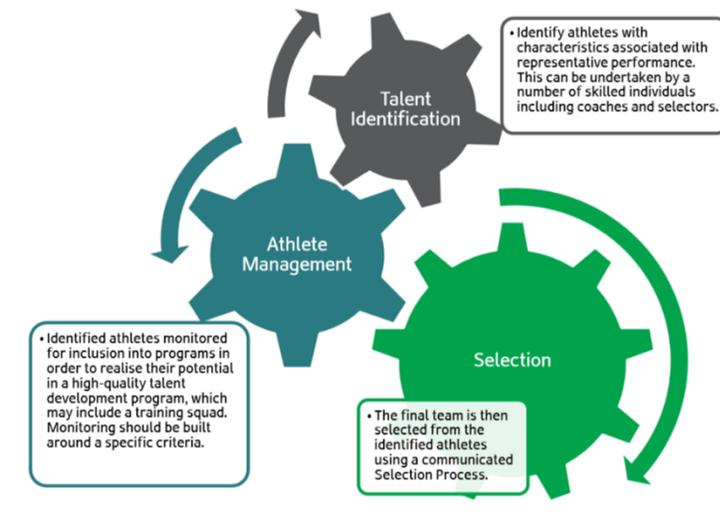


Figure 1. Athletes' Development Pathway (ADP)

Figure 1 shows that the development of athletes begins with talent identification. Talent identification (TI) is the process by which talented athletes are identified for representation. Athletes Management is the process wherein athletes will undergo programs that will enhance and improve the quality of their skills and capabilities. Selection is the final step in the pathway, it is the process of selecting the elite to represent the team.

There are indications that a person can flourish in sports; selection entails selecting the athletes who are best suited to carry out a particular duty in a team; lastly, development involves the provision of a training program or education which aims to unleash the athletes' maximum potential in the sports (Singh, 2015).

Finding the strength and weaknesses of the athletes will help the coach and trainers to design a training program effectively and efficiently.

Objectives of the Study

The objectives of this study are to 1) identify the Body Mass Index of the respondents; 2) measure the level of athletes' skill-related fitness in terms of agility, speed, power, reaction time, and flexibility; 3) correlates the relationship between the athletes' BMI and the level of skill-related fitness; and, 4) design an enhanced training program to improve the performances of the taekwondo athletes.

Methodology

The performance of taekwondo athletes was evaluated in this study as the basis for creating an improved training regimen. A standardized sports talent test was used to determine the level of performance of the 50 secondary taekwondo athletes from the City Schools Division of Tanauan.

The study's participants are secondary boys and girls who compete in taekwondo in Tanauan City Division for the academic year 2019–2020.

To be in the better frame, the distribution of the subjects when grouped according to sex is presented in Table 2 using the frequency and percentage.

Table 2
Distribution of Taekwondo Athletes

School Level	Frequency	Percentage
Secondary Boys	25	50%
Secondary Girls	25	50%
Total	50	100%

The table revealed that 25 or 50% of the respondents are males and 25 or 50% are females. In total, the subject of this study is 50 taekwondo athletes who were utilized and underwent a series of tests to determine their level of taekwondo talents.

Before conducting the study, the researcher asked for the approval of the authorities concerned to conduct this investigation. Upon the approval of the Schools Division Superintendent thru the Division Sports Supervisor, the researcher cooperated with the taekwondo team's coaches. The researcher provided directions on how to complete the instrument as well as a brief explanation of the study's objectives. To gather the needed data for this study, a structured talent identification instrument for sports and physical fitness was adopted. The instrument is composed of two parts; the first part is the Body Mass Index, while the second part will be the skill level in terms of, reaction time, flexibility, leg power, agility, and speed.

The following score ranges, together with verbal interpretations, will be used on the scale to describe the test results:

Reaction Time (second)	Flexibility (cm)	Leg Power & Strength (cm)	Agility (second)	Speed (second)	Interpretation
0.01 - 0.30	45.1 – 60.0	60.1 – 80.0	0.10 - 5.0	0.10 - 5.0	Advanced
0.31 - 0.60	30.1 - 45.0	40.1 - 60.0	5.1 - 10	5.1 - 10	Skilled
0.61 - 0.90	15.1 - 30.0	20.1 - 40.0	10.1 - 15	10.1 - 15	Average
0.91 – 1.20	0.10 - 15.0	0.10 – 20.0	15.1-20.0	15.1-20.0	Beginner

The following statistical measures were used to determine the performance of the students in the study. Frequency and Percentage were used to answer the specific problems posed at the beginning of the study. Mean was used to determine the perception of the respondents on the two Methods used in teaching. Independent t-tests were used to determine the significant relationship of the respondents on each method used in teaching.

Results and Discussion

1. Distribution of Taekwondo Athletes as to BMI

The results of the BMI are presented in Table 3.

Table 3
Distribution of Taekwondo Athletes as to BMI

Underweight	Normal	Overweight
17	18	15

As revealed in Table 3, athletes with Underweight BMI are 17, Normal BMI is 18 and Overweight BMI are 15.

2. Athletes Performance Test

Table 4
Result of the Athletes Performance Test

	Underweight		Normal		Overweight	
Reaction time	0.54 sec	Skilled	0.45 sec	Skilled	0.63 sec	Average
Flexibility	58.20 cm	Advanced	54.83 cm	Advanced	33.76 cm	Skilled
Leg Power	70.20 cm	Advanced	66.17 cm	Advanced	34.41 cm	Average
Agility	6.07 sec	Skilled	7.09 sec	Skilled	10.71 sec	Average
Speed	4.68 sec	Advanced	5.18 sec	Skilled	11.36 sec	Average

Table 4 shows the result of the athletes’ skills test as to reaction time, flexibility, leg power, agility, and speed when grouped according to their BMI category.

The table above shows that the result in terms of reaction time for athletes with underweight BMI scored an average of 0.54 sec with the verbal interpretation of skilled, athletes with normal BMI scored an average of 0.45 sec with the verbal interpretation of skilled, and for athletes under overweight BMI scored an average of 0.63 sec with the verbal interpretation of average. For flexibility, athletes with underweight BMI scored an average of 58.20 cm with the verbal interpretation of advanced, athletes with normal BMI scored an average of 54.83 cm with the verbal interpretation of advanced, and athletes with overweight BMI scored an average of 33.76 cm with the verbal interpretation of skilled. For the result of leg power, athletes with underweight BMI scored an average of 70.20 cm with the verbal interpretation of advanced, athletes with normal BMI scored an average of 66.17 cm with the verbal interpretation of advanced, and athletes with overweight BMI scored an average of 34.41 cm with the verbal interpretation of average. As to agility, athletes with underweight BMI scored an average of 6.07 sec with the verbal interpretation of skilled, athletes with normal BMI scored an average of 7.09 sec with the verbal interpretation of skilled, and athletes with overweight BMI scored an average of 10.71 sec with the verbal interpretation of average. And for the result of the speed test, athletes with an underweight BMI scored an average of 4.68 sec with the verbal interpretation of advanced, athletes with a normal BMI scored an average of 5.18 sec with the verbal interpretation of advanced, and athletes with an overweight BMI scored an average of 11.36 sec with the verbal interpretation of average.

3. Relationship of BMI to Reaction Time

Table 5
Relationship of BMI to Reaction Time

Variables	r-value	p-value	Decision	Interpretation
Reaction Time	1	-	-	-
Under weight	0.226	0.337	Failed to reject Ho	Not significant
Normal	-0.868	0.000	Reject Ho	Significant
Over weight	-0.134	0.634	Failed to reject Ho	Not significant

*Correlation is significant at the 0.05 level (2-tailed)

The analysis revealed that underweight and overweight athletes do not have a significant relationship with reaction time. This suggests that athletes with UW and OW BMI do not directly influence their level of performance in terms of reaction time. On the other hand, normal BMI has a significant relationship with reaction time. Respondents from this group reacted slower than the others. These results are supported by the study of Harris (2018) that the reflexes of athletes are based on or influenced by the speed of the opponent.

4. Relationship of BMI to Flexibility

Table 6
Relationship of BMI to Flexibility

Variables	r-value	p-value	Decision	Interpretation
Flexibility	0.251	0.366	Failed to reject Ho	Not significant
Under weight	1	-	-	-
Normal	-0.245	0.379	Failed to reject Ho	Not significant
Over weight	-0.192	0.492	Failed to reject Ho	Not significant

*Correlation is significant at the 0.05 level (2-tailed)

The table shows that athletes with underweight, normal, and overweight BMI do not have a significant relationship with their performance level in terms of flexibility. This suggests that athletes with UW, N, and OW BMI do not directly influence their flexibility. However, according to Lystad, et. al., (2013) that attaining excellence in taekwondo requires a great level of performance flexibility.

5. Relationship of BMI to Leg Power

Table 7
Relationship of BMI to Leg Power

Variables	r-value	p-value	Decision	Interpretation
Leg Power	0.032	0.910	Failed to reject Ho	Not significant
Under weight	1	-	-	-
Normal	-0.245	0.379	Failed to reject Ho	Not significant
Over weight	-0.192	0.492	Failed to reject Ho	Not significant

*Correlation is significant at the 0.05 level (2-tailed)

The table shows that athletes with underweight, normal, and overweight BMI do not have a significant relationship with their leg power. This means that athletes with UW, N, and OW BMI do not directly influence their leg power. On the other hand, as recommended in the study by Stone, M.H., et. al. (1999) that to maximize the athletes' strength, trainers should logically organize training to develop the athletes' power. Fong and Tsang (2012) also added that one might develop more muscle strength by practicing taekwondo for a longer period.

6. Relationship of BMI to Agility

Table 8

Relationship of BMI to Agility

Variables	r-value	p-value	Decision	Interpretation
Agility	-0.212	0.448	Failed to reject Ho	Not significant
Under weight	1	-	-	-
Normal	-0.245	0.379	Failed to reject Ho	Not significant
Over weight	-0.192	0.492	Failed to reject Ho	Not significant

*Correlation is significant at the 0.05 level (2-tailed)

Table data showed that athletes with underweight, normal, and overweight BMI do not have a significant relationship with their agility. This means that athletes with UW, N, and OW BMI do not directly influence their agility. This result is also supplemented by the study done by Singh, et. al., (2015) that there was no improvement in agility from different weight categories.

7. Relationship of BMI to Speed

Table 9

Relationship of BMI to Speed

Variables	r-value	p-value	Decision	Interpretation
Speed	-0.036	0.899	Failed to reject Ho	Not significant
Under weight	1	-	-	-
Normal	-0.245	0.379	Failed to reject Ho	Not significant
Over weight	-0.192	0.492	Failed to reject Ho	Not significant

*Correlation is significant at the 0.05 level (2-tailed)

The data shows that athletes with underweight, normal, and overweight BMI do not have a significant relationship with their speed. This means that athletes with UW, N, and OW BMI do not directly influence their speed. This is contrary to the study of Haddad, et al., (2009) that there is a significant relationship between speed and athletes' attributes.

As revealed by the results of the test, Body Mass Index as to underweight, normal, and overweight has no significant relationship to the athletes' performance in terms of flexibility, leg power, agility, and speed. On the other hand, athletes with normal BMI have a significant relationship with reaction time, while Underweight and overweight athletes have no significant relationship to their reaction time.

Based on the data results, the research come up with a training program design that will enhance Flexibility and Cardiovascular Endurance for the first month. In the second month, players must focus on developing their skills in Leg Power and Muscle Strengthening. For the third month, Speed and Agility should be developed. For the fourth month, the training must focus on the application of the different skills in the sparring, such as power and speed kicking, defense and foot works, and counterattacks.

Conclusions

In identifying the talents and skills of athletes in taekwondo, Body Mass Index has no significant relationship with their skills. Taekwondo athletes have different BMI since it has different weight category. Coaches and trainers must recognize the individual differences of the athletes in designing training programs. Furthermore, the success of the training program will not be measured by the level of skills of the athletes, but by the results of every competition that the athletes participated.

Recommendations

In light of the data acquired and the findings of the analysis, the following suggestions are made:

1. Since, athletes' BMI and performance in terms of reaction time, flexibility, leg power, agility, and speed have no significant relationship, trainers may continue to enhance the performance of the skills where athletes scored low.
2. A similar study may be conducted to improve the skills of the athletes.

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