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Research Article

Comparison of Sepak Takraw Athletes in Region IV-A Using Talent Identification Indicator: Basis for an Enhanced Training Development Program

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Abstract: This research was undertaken to compare the Sepak Takraw Athletes in Region IV using Talent Identification indicators which intended to become the basis for an enhanced training program. Specifically, it sought to find out the profile of the subjects in terms of age, height, weight, body mass index, playing position, and college/university; the measurement results of the athletes in terms of biomechanical parameters—reaction time, flexibility, lower extremity power and strength, agility, speed and acceleration, and cardiovascular endurance; and the results of comparing the biomechanical parameter measurement results when the respondents are grouped according to their profile. To find answers to this research, the study employed descriptive correlational method. The data were gathered using standardized instrument which intends to measure the biomechanical parameters of the athletes of Sepak Takraw in terms of reaction time, flexibility, lower extremity power and strength, agility, speed and acceleration, and cardiovascular endurance. To answer the questions posed in this study, frequency and percentage were utilized as statistical treatment. A total of 45 subjects were involved in the study. Fifteen Sepak Takraw athletes from Batangas State University, Cavite State University and Southern Luzon State University participated as subjects of the undertaking. In terms of Talent Identification; coaches should consider the height and the weight of the prospective players in choosing a playing position. In terms of skills enhancement of the athletes; coaches may consider training programs which may further develop the performance of the athletes with emphasis on lower extremity power and strength, agility, speed and acceleration, and cardiovascular endurance as athletes in this study performed moderately in terms of these tests. Coaches may consider the training program for Sepak Takraw developed by the researcher in improving the biomechanical parameters and skills of the athletes. In terms of support, the administration of SUC's may allocate enough budgets to realize and actualize the goals of sports development. The heads/coaches may supervise the training of athletes and organize leadership trainings and/or team buildings for their moral and spiritual development; and to benchmark on sports practices of top-performing schools/universities in the field of Sepak Takraw may also be considered.

Keywords: sepak takraw, athletes, talents, identification indicators, enhance, training, development and program.

1. Introduction

Talent identification (TI) is a complex task. Nowadays, researchers of many countries are trying to discover the most effective and efficient TI method there is. Many East European countries between the 1960s and 1970s have started to improve their traditional TI programs and have attempted to develop methods of talent identification which were supported by scientific evidence and theory. A number of component fitness tests for TI have also been

used—for Sepak Takraw, Anthropometry includes body mass index measurement and arm span test, agility (hexagon jump test), cardiovascular endurance (beep test), flexibility (side split, seat and reach test), power and strength (vertical jump and standing broad jump test), strength (1 minute sit up test) and balance (balance stork test) are the most common.

Sepak Takraw has been included in the Asian Games since 1990 in Beijing, China and has been recently developed in many places of the world like middle-east, Europe and America. Sepak Takraw is a complex sport that allows players to use all parts of their bodies except hands or arms to kick the ball. In Sepak Takraw, a team consists of three players with a different role: feeder, server, and spiker. Similar to sports such as volleyball, badminton, and tennis, the intensity of the game is intermittent, depending on the length of the rallies following a serve.

Regardless of how intense and erratic a game may be, the performance of an athlete in a sport may depend on the kind of preparation and training that he/she underwent before competition. A good sports training program is key to the improvement of sports skills which may riffle into good sports performance. Sports training programs specific to a kind of sport should develop the physical capacity of an athlete especially those that are required in the performance of skills explicit technique.

1.1 Objectives of the study

This investigation will focus on the comparison of Sepak Takraw athletes of Region IV-A using talent identification indicators with an end view of proposing training development program in Sepak Takraw to enhance the athletes' performance in the sport. What is the profile of the subjects in terms of the following: age, height,weight, body mass index, and playing position? What is the measurement results of the athletes in terms of the following biomechanical parameters: Reaction time, Flexibility, Lower extremity power and strength, Agility, Speed and Acceleration, and Cardiovascular endurance? How do the biomechanical parameter measurement results compare when they are grouped according to their profile?

2. Methodology

This research used descriptive method which gives a clear statement of what exists at present and in understanding "why it is so" and what it might be". Due to nature and scope of this investigation, the subjects of the study were the Sepak Takraw athletes of State University and Colleges in Region IV-A. Previous investigation reveals that among the SUC's in the region only three state universities have entries/participants for Sepak Takraw—Batangas State University (BatStateU), Cavite State University (CavSU), and Southern Luzon State University (SLSU).

A structured talent identification instrument adapted from a previous study in Iran conducted by Mimar et. al. entitled "Talent Identification Indicators in Sepak Takraw Male Elite Players on the Bases of Some Biomechanical Parameter" was used to gather the profile and biomechanical parameter measurements of the subjects. In order to be applicable in the research locale and to suit to the specific needs of the study, the researcher modified some parts of the instrument with consultation from a statistician and the thesis adviser. The instrument was composed of two parts; the first part involved the profile of the subjects in terms of age, height, weight, playing position, College/University, body mass index, level of competition participated in, and rank won by the team, while the second part was for the biomechanical parameter measurements of the subjects in terms of reaction time, flexibility, lower extremity power and strength, agility, speed, and cardiovascular endurance. This

investigation attempted to analyze quantitatively the biomechanical parameter measurements of the Sepak Takraw athletes among the SUC's in CALABARZON. Through this, the researcher could identify the parameters which may serve as talent identification tool for determining the potential of an athlete as a Sepak Takraw player.

Before conducting the study, the researcher first sought the approval of the authorities concern to conduct this investigation. Upon the approval of the presidents from the different SUC's involved in the study, the researcher coordinated with the sports director and with the coaches of the Sepak Takraw varsity team about the purpose of the study. The researcher made a brief explanation on the purpose of the study and instructions on how to complete the instrument. The conduct of the biomechanical parameter test was also explained to the authorities. The quantitative data to be gathered were subjected for checking, scoring, analysis and interpretation with the help of the statistician. The researcher with the help of the statistician made a careful evaluation of the results of the tests. The most appropriate statistical tools to answer the questions posed in this study are arranged according to the sequence as these are presented in the statement of the problem. The Statistical Package for Social Sciences (SPSS) was used in the processing of data. Frequency and Percentage were used to describe the occurrence of the subjects' profile and their measurement results in terms of the identified biomechanical parameters.

3. Results and Discussions

This chapter covers the presentation, analysis and interpretation of the quantitative data gathered in the investigation. The discussion of the finding is patterned in a manner that coincides with the organization of the problems posed in the study. The subjects used in this study were the Sepak Takraw Athletes of Region IV-A who played in the recently-concluded State Colleges and Universities Athletic Association (SCUAA) meet last December 2014. This portion dealt with the profile of the subjects according to age, height, weight, body mass index, playing position, and College or University from.

Results

3.1 Profile of the Subjects

3.1 Age

Age	Frequency	Percent
15 – 18 years old	23	51.1
19 – 21 years old	20	44.5
22 – 24 years old	2	4.4
Total	**45**	**100.0**

Majority of the subjects belong to the 15 – 18 year old age range. It is also noteworthy that only 2 out of the total 45 subjects belong in the 22 – 24 year old bracket.

3.2 Height

Height	Frequency	Percent
151 – 160 cm.	10	22.2
161 – 170 cm.	26	57.8
171 – 180 cm.	9	20.0
Total	**45**	**100.0**

There are 26 or 57.8% who have a height ranging from 161 – 170 cm. Further, there are 10 or 22.2% and 9 or 20% whose height measurement are ranging from of 151- 160 cm and 171 – 180 cm respectively.

3.3 Weight

Weight	Frequency	Percent
45 – 54 kg	18	40.0
55 – 64 kg	23	51.1
65 – 74 kg	4	8.9
Total	**45**	**100.0**

Table reveals that 23 or 51.1% of the subjects were found with weights ranging from 55–64 kg. It was also found that among the 45 subjects, 18 or 40% are with weights ranging from 45–54 kg. Only 4 or 8.9% were found to have weights which range from 65–74 kg.

It can be gleaned from the table that majority of the respondents have weight range of 55-64 kg. This finding is expected because of the athletes' height as presented in the previous table. Since the height of the athletes range from 161-170 cm (5'3"- 5'6"), it is expected that their weight will fall from 50-70 kg as based on the Recommended Healthy BMI Range (ideal weight and height chart) of World Health Organization (WHO). According to WHO, the ideal weight should be unique for everyone. The major factors that contribute to a person's ideal weight are height, gender, age, body frame, and body type.

3.4 Body Mass Index

Body Mass	Frequency	Percent
Underweight	3	6.7
Healthy weight	40	88.9
Overweight	2	4.4
Total	**45**	**100.0**

It can be seen from the table that 40 or 88.9% of the subjects are with "Healthy (Normal) Weight" body mass index, 3 or 6.7% are with body mass categorized as "Underweight", and 2 or 4.4% are with body mass categorized as "Overweight". The healthy weight finding is expected considering the previous discussions on weight and height. This is a clear indication that the athletes' measurement of body fat based on height and weight is ideal based on the released chart/guide of the World Health Organization. The ideas of Williams and Reilly (2000) strengthen the findings because according to them proportionality which is the relation between lengths of limbs is an important factor in playing. The player must have a normal weight so as to balance easily.

3.5 Playing Positions

Playing Position	Frequency	Percent
Tekong	14	31.1
Spiker	19	42.2
Feeder	12	26.7
Total	**45**	**100.0**

Of the total 45 subjects 19 or 42.2% were found to play the spiker position, 14 or 31.1% play as *Tekong* and 12 or 26.7 % play as feeder.

4. Respondents' Biomechanical Parameter Measurements

4.1 Reaction time

Reaction Time Score	Frequency	Percent
.045- .202 sec (Very Fast)	43	95.6
.203- .286 sec (Fast)	2	4.4
Total	**45**	**100.0**
Average reaction time = .169 sec (Very Fast)		

This composed of 43 out of the 45 total subjects or 95.6 %. Only two or 4.4% were found with reaction time categorized as fast.

4.2 Flexibility

Best Flexibility Score	Frequency	Percent
>27 cm (Super)	2	4.4
From +17 to +27 cm (Excellent)	29	64.5
From +6 to +16 cm (Good)	12	26.7
From 0 to +5 cm (Average)	2	4.4
Total	**45**	**100.0**
Average best flexibility score = 18.82 cm (Excellent)		

The results of the sit and reach measure of flexibility showed that 29 or 64.5% of the subjects have flexibility scores from +17 to +27, verbally interpreted as "Excellent". This is followed by 12 or 26.7% of the subjects with flexibility scores from +6 to +16, verbally interpreted as "Good".

4.3 Lower Extremity Power and Strength

Best Lower Extremity Power and Strength Score	Frequency	Percent
From 61 to 70 cm (Excellent)	12	26.7
From 51 to 60 (Good)	18	40.0
From 41 to 50 (Average)	12	26.7
From 31 to 40 (Fair)	3	6.7
Total	**45**	**100.0**
Average best lower extremity power and strength score = 62.9 (Excellent)		

4.4 Agility

Best Time in Hexagon Agility Test	Frequency	Percent
<12 sec (Very Fast)	14	31.1
From 12 to 15 sec (Fast)	27	60.0
From 16 to 19 sec (Moderate)	4	8.9
Total	**45**	**100.0**
Average best time in hexagon agility test = 13.0 seconds (Fast)		

The result of the hexagon agility test showed that the best time which ranges from 12 to 15 seconds was obtained by 27 or 60.0% of the respondents, and is verbally interpreted as "Fast". It was also revealed that 14 or 31.1% of the respondents scored a time of less than 12 seconds with a verbal interpretation of "Very Fast". Four or 8.9% of the respondents have registered scores between 16-19 seconds in the test.

4.5 Speed and Acceleration

Best Time In Speed and Acceleration Test	Frequency	Percent
< 4.80 sec (Very Fast)	6	13.3
From 4.80 to 5.09 sec (Fast)	25	55.6
From 5.10 to 5.29 sec (Moderate)	9	20.0
From 5.30 to 5.60 sec (Slow)	3	6.7
> 5.60 sec (Very Slow)	2	4.4
Total	**45**	**100.0**
Average best time in Speed and Acceleration Test = 5.08 seconds (Fast)		

The table reveals that 25 or 55.6% of the subjects scored a sprint time ranging from 4.80 – 5.09 seconds which is interpreted as "Fast". The results also showed that 9 or 20% of the subjects scored a sprint time of 5.10 to 5.29 seconds and is interpreted as "Moderate" speed. Third are those who registered score between 5.10-5.29 seconds which is interpreted as "moderate".

Last two are the set of players whose score ranged between 5.30-5.60 (slow) to over 5.60 (very slow) with 6 or 6.7% and 2 0r 4.4% respectively. When the average sprint time score of the subjects was computed, a sprint time score of 5.08 seconds was calculated reflecting a "Fast" speed and acceleration score.

4.6 Cardiovascular Endurance

Best Score In Beep Test Level	Frequency	Percent
> 13 (Excellent)	2	4.4
From >11 to 13 (Very Good)	3	6.7
From > 9 to 11 (Good)	11	24.4
From >7 to 9 (Average)	15	33.3
From 5 to 7 (Poor)	10	22.2
< 5 (Very Poor)	4	8.9
Total	**45**	**100.0**
Average Beep Test Level = 8.30 (Average)		

The table shows that 15 or 33.3% of the subjects completed at least 7–9 shuttle runs reflecting an "Average" level of cardiovascular endurance. There were 11 or 24.4% and 10 or 22.2% of the subjects who completed 9–11 and 5–7 shuttle runs which reflects "Good" and "Poor" cardiovascular endurance level respectively. Fourth are the athletes who completed less than 5 shuttle runs with 4 or 8.9% which was interpreted as "Very Poor", and those who have completed more than 13 runs were 2 or 4.4% of the athletes. When the average beep test

score of the subjects was considered, an average of 8.30 was calculated reflecting an "Average" level of cardiovascular endurance.

5. Comparison on the Biomechanical Parameter Measurements of the Subjects by Profile

5.1 By Age

Age	Reaction Time	Result	Flexibility	Result	Lower Extremity	Result
15-18	0.17465	Very Fast	18.6087	Excellent	72.9130	Super
19-21	0.17435	Very Fast	19.7500	Excellent	55.0000	Good
22-24	0.16035	Very Fast	18.5000	Excellent	60.0000	Good

Age	Agility	Result	Speed & Acceleration	Result	Cardiovascular Endurance	Result
15-18	12.5217	Fast	4.9857	Fast	7.9391	Average
19-21	12.5000	Fast	5.0515	Fast	8.7000	Average
22-24	12.0000	Fast	4.9000	Fast	8.5500	Average

The results reveal that those in the 22 to 24 year old bracket are best in reaction time, agility, and speed and acceleration with mean scores of 0.16035 —"Very Fast", 12.0000—"Fast", and 4.9000—"Fast", respectively. Those in the 19 to 21 years old age bracket are best in flexibility and cardiovascular endurance with mean average scores of 19.7500— "Excellent" and 8.7000—"Average", respectively. Respondents in the 15 to 18 years old age bracket are best in lower extremity power and strength with a mean average score of 72.9130 — "Super".

5.2 By Height

Height	Reaction Time	Result	Flexibility	Result	Lower Extremity	Result
151-160	0.16987	Very Fast	16.3000	Excellent	55.1000	Good
161-170	0.17579	Very Fast	19.2692	Excellent	71.3077	Super
171-180	0.17289	Very Fast	21.7778	Excellent	54.6667	Good

Height	Agility	Result	Speed & Acceleration	Result	Cardiovascular Endurance	Result
151-160	12.2000	Fast	4.9690	Fast	8.0200	Average
161-170	12.9231	Fast	5.0665	Fast	8.7269	Average
171-180	11.5556	Very Fast	4.8978	Fast	7.4000	Average

The results reveal that those in the 151 – 160 cm bracket are best in reaction time with mean score of 0.16987—"Very Fast". Those in the 161 – 170 cm bracket are best in lower extremity power and cardiovascular endurance with mean average scores of 71.3077—"Super" and 8.7269—"Average", respectively.

Respondents in the 171 - 180 cm bracket are best in flexibility, agility, and speed & acceleration with mean scores of 21.7778—"Excellent", 11.5556—"Very Fast" and 4.8978—"Fast", respectively.

5.3 By Weight

Weight	Reaction Time	Result	Flexibility	Result	Lower Extremity	Result
45-54	0.16973	Very Fast	20.5556	Excellent	55.0556	Good
55-64	0.17433	Very Fast	17.9565	Excellent	54.6957	Good
65-74	0.18938	Very Fast	19.2500	Excellent	62.0000	Excellent

Weight	Agility	Result	Speed & Acceleration	Result	Cardiovascular Endurance	Result
45-54	12.5556	Fast	5.0222	Fast	9.2833	Good
55-64	12.5652	Fast	5.0152	Fast	7.6565	Average
65-74	11.7500	Very Fast	4.9375	Fast	7.6250	Average

It was revealed that subjects who weigh from 45 – 54 kg are best in reaction time, flexibility, and cardiovascular endurance shown by average scores of 0.16973 second – "Very Fast", 20. 5556 cm—"Excellent", and 9.2833—"Good" beep test score respectively. The subjects who belong in the 65 – 74 kg bracket were found best in lower extremity power and strength, agility, and speed and acceleration with scores 62 cm, 11.75 sec—"Excellent", 11.7500—"Very Fast" and 4.9375 sec—"Fast" respectively.

5.4 By Body Mass

Body Mass	Reaction Time	Result	Flexibility	Result	Lower Extremity	Result
Underweight	0.18070	Very Fast	23.0000	Excellent	54.3333	Good
Healthy Weight	0.17223	Very Fast	19.0250	Excellent	54.6000	Good
Overweight	0.19561	Very Fast	15.0000	Good	75.0000	Super

Body Mass	Agility	Result	Speed & Acceleration	Result	Cardiovascular Endurance	Result
Underweight	12.3333	Fast	4.8333	Fast	10.0000	Good
Healthy Weight	12.5250	Fast	5.0245	Fast	8.2750	Average
Overweight	12.0000	Fast	5.0100	Fast	6.3500	Poor

5.5 By Playing Position

Playing Position	Reaction Time	Result	Flexibility	Result	Lower Extremity	Result
Tekong	0.17917	Very Fast	18.8571	Excellent	50.7143	Average
Spiker	0.17308	Very Fast	20.4737	Excellent	79.0000	Super
Feeder	0.16839	Very Fast	17.2500	Excellent	57.1667	Good

Playing Position	Agility	Result	Speed & Acceleration	Result	Cardiovascular Endurance	Result
Tekong	12.7143	Fast	5.0557	Fast	7.7071	Average
Spiker	12.4737	Fast	5.0342	Fast	8.5368	Average
Feeder	12.2500	Fast	4.9225	Fast	8.6333	Average

When the subjects were grouped in terms of their playing positions the Spikers' were found best in flexibility (20.4737 cm)—"Excellent" and lower extremity power and strength (79 cm) — "Super", while the Feeders' were found best in reaction time (0.16893 sec) —"Very Fast", agility (12.25 sec) —"Fast", speed and acceleration (4.9225 sec) —"Fast", and cardiovascular endurance (8.6333 beep test score)—"Average".

5.6 By College/University

College/ University	Reaction Time	Result	Flexibility	Result	Lower Extremity	Result
SLSU	0.17758	Very Fast	19.3333	Excellent	51.7333	Good
BSU	0.16737	Very Fast	20.8000	Excellent	85.3333	Super
CVSU	0.17659	Very Fast	17.2000	Excellent	56.0667	Good

College/ University	Agility	Result	Speed & Acceleration	Result	Cardiovascular Endurance	Result
SLSU	12.4000	Fast	5.0800	Fast	9.1867	Good
BSU	11.6000	Very Fast	4.8507	Fast	8.0867	Average
CVSU	13.4667	Fast	5.1027	Fast	7.6400	Average

3. Discussion

3.1. Profile of the Subjects

3.1Age

Many of the athletes were third and fourth year students considering the educational system in the country. The result of having a good number of players in the 19-21 years old bracket was expected because coaches preferred athletes who have more exposure in competitions.

3.2 Height

The findings indicating athletes whose height ranges between 161 to170 cm may be attributed to the fact that Filipinos are the second shortest race in Southeast Asia.

3.3 Weight

Majority of the respondents have weight range of 55-64 kg. This finding is expected because of the athletes' height as presented in the previous table. Since the height of the athletes range from 161-170 cm (5'3"- 5'6"), it is expected that their weight will fall from 50-70 kg as based on the Recommended Healthy BMI Range (ideal weight and height chart) of World Health Organization (WHO).

3.4 Body Mass Index

The athletes' measurement of body fat based on height and weight is ideal based on the released chart/guide of the World Health Organization. The ideas of Williams and Reilly (2000) strengthen the findings because according to them proportionality which is the relation between lengths of limbs is an important factor in playing. The player must have a normal weight so as to balance easily.

3.5 Playing Positions

There are greater number of athletes who play the spiker position suggests the importance of the spiker in winning a game. A *regu* is composed of three players; a *Tekong* who serves the ball and plays more on defense, a feeder who sets the ball and acts as the playmaker, and a spiker who execute the attacks and plays both on offense and defense as a blocker.

The important role that a spiker plays in the game along with the high risk of performing attacks implies that team coaches opt to include spikers as reserve players in cases injuries may occur.

4. Respondents' Biomechanical Parameter Measurements

4.1 Reaction time

The athletes through time and training had adjusted to the reaction time required to be able to receive the fast moving ball in in the game. The study of Sujae and Koh (2008) which aimed to gain insights on *Sepak Takraw* serves, identified technique differences, and established factors influencing ball speeds.

4.2 Flexibility

Flexibility of the lower limbs may be an important attribute for excellence in *Sepak Takraw*. According to Aziz *et al.*, (2003) kicking the ball at higher point in *Sepak Takraw* is very important. So players with sufficient range of motion especially in hip joint are able to serve or spike the ball with sharper angle and also block the opponent's spiker.

4.3 Lower Extremity Power and Strength

According to Zhang (2010), in *Sepak Takraw*, players need to jump high as much as they can to spike or block. Both Spike and Block are very important techniques in *Sepak Takraw* game and constitute most of the total movements and reflexes in the game. Furthermore, a lot of points are gained through these techniques.

4.4 Agility

The subjects' agility is categorized as fast can be an indicator of good playing skills of the athletes. Agility is required when playing a team sport game like *Sepak Takraw*. Sprinting patterns of team sport athletes involve rapid directional changes in comparison to the straight line running for track and field athletes according to Young *et al.*, (2002).

4.5 Speed and Acceleration

The ability to cover short distance quickly would be a great advantage for the badminton player. This may be true for *Sepak Takraw* athletes considering the same size of court and height of the net for the game. Speed and acceleration can be considered as a necessary component for *Sepak Takraw*. Due to the nature of the game it is important for the *Sepak Takraw* players to reach their maximum speed as fast as possible. Considering the speed of the ball during the game, the ability of covering the court in short time is vital similar in a net-barrier sport like badminton.

4.6 Cardiovascular Endurance

The athlete reached higher level and completed greater number of shuttle runs (20m); hence, the athletes have higher level of endurance. This is an indication that the athletes can stand long period of time in playing *Sepak Takraw*.

This finding was supported by the notions of Reiman and Manske, (2009) that the said sport is played in long duration times, one must need a good cardiovascular endurance to maintain the fitness and to control the energy used.

5. Comparison on the Biomechanical Parameter Measurements of the Subjects by Profile

5.1 By Age

When the anthropometric and physiological profiles of the players were compared within age groups, U23 players were significantly taller and heavier with significantly better ROM of the neck, trunk, and ankle joints and back and leg strength than the U15 players.

No significant difference was found in %bf between the three age categories. Mean maximum heart rate during exercise was significantly higher in the U15 group when compared to the U18 and U23 groups. Mean Vo2max was similar between the three groups.

5.2 By Height

Taller players have better ROM of the neck, trunk, and ankle joints and back and leg strength than the shorter players. Similarly, the present study found that *Sepak Takraw* players with height advantage, those who are 171-180 cm tall, are better in most biomechanical parameters. It was found that they are best in flexibility, agility, and speed & acceleration with mean scores of 21.7778 – "Excellent", 11.5556 – "Very Fast" and 4.8978 – "Fast", respectively.

5.3 By Weight

Players who are heavier are with significantly better ROM of the neck, trunk, and ankle joints and back and leg strength than lighter players. Similarly, heavier subjects in the present undertaking who belong in the 65 – 74 kg bracket were found best in lower extremity power and strength, agility, and speed and acceleration with scores 62 cm, 11.75 sec—"Excellent", 11.7500—"Very Fast" and 4.9375 sec—"Fast" respectively.

5.4 By Body Mass

The participants were found with a mean BMI of 21.7- 23.2 kg/cm. Descriptive analysis and the one-way analysis of variance (ANOVA) were used to describe the anthropometric data and to determine the significant differences among the groups on muscular strength, muscular endurance, body composition, flexibility, power and agility.

5.5 By Playing Position

There was no significant difference in other measured parameters. This was probably due to all three players groups need to perform basic skills such as inside kick, onside kick, and knee kick during a game or practice. As the results showed differences between three groups in the measured parameters, talent identification in *Sepak Takraw* should be based on differences of three playing position.

5.6 By College/University

Athletes from Batangas State University performed better in most tests indicates the strong potential of the athletes to perform better during games. This was validated as the *Sepak Takraw* team from Batangas State University won the championship in the recently concluded SCUAA 2014 held last December 2014 at the University of the Philippines, Los Baños, Laguna.

6. Conclusion

Majority of the respondents were aged 15 – 18 year old; with height ranging from 161 – 170 cm.; weight ranging from 55–64 kg; with a Healthy (Normal) Weight" body mass index; and are assigned as spikers. The athletes' were found to have very fast reaction time; excellent flexibility as revealed by sit and reach; good in terms of lower extremity power and strength; fast in terms of agility and speed and acceleration; and lastly, with an average level of cardiovascular endurance. Respondents in the 15 to 18 years old age bracket are best in lower

extremity power and strength; respondents in the 171-180 cm bracket are best in flexibility, agility, and speed & acceleration; subjects who belong in the 65–74 kg bracket were found to be best in lower extremity power and strength, agility, and speed and acceleration; underweight athletes were best in flexibility, speed and acceleration, and cardiovascular endurance tests; in terms of playing positions, spikers were found to be best in flexibility and lower extremity power and strength, feeders' were found to be best in reaction time, agility, speed and acceleration and cardiovascular endurance.

In the light of the important findings revealed in this study, the following conclusions were drawn: Coaches should consider the height of prospective players as the findings revealed that players with height advantage are able to perform better in most biomechanical parameters as compared with players who are smaller. Coaches may also consider the weight of the prospective players in choosing a playing position, as the study revealed that feeders are good in reaction time, agility, speed and acceleration, and cardiovascular endurance. Further, coaches who will employ the use of biomechanical parameters in talent identification may consider the results of the performances in assigning playing positions. Those who will perform best in flexibility and lower extremities power and strength can be assigned as spikers and *tekongs* as these qualities are revealed to be present in the two playing positions. Those players who will perform well in reaction time, agility, speed and acceleration, and cardiovascular endurance can be chosen as feeders as these are qualities present in feeders as revealed in the study.

In terms of skills enhancement of the athletes: Coaches may consider designing a training program which may further develop the performance of the athletes in all biomechanical parameters with emphasis on lower extremity power and strength, agility, speed and acceleration, and cardiovascular endurance as athletes in this study performed moderately in terms of these tests. Second, coaches may consider utilizing the training program for *Sepak Takraw* developed by the researcher in improving the biomechanical parameters and skills of the athletes. Utilize and enhance Talent Identification process so that those who truly deserve the support from coaches and administration will be properly chosen. Supervise the training of athletes and organize leadership trainings and/or team buildings for moral and spiritual development. The training program developed by the researcher may be utilized to enhance the performance of the athletes in *Sepak Takraw*. Benchmarking of sports practices of top-performing schools/universities in the field of *Sepak Takraw*. *In terms of support, from the administration:* Allocate enough budgets to help realize and actualize the goals of the program. This can be done through approval of the administration to procure the needed resources through the Annual Procurement Plan prepared by the Sports Director/ Heads. Ensure that the facilities provided are foster safety and security. Review, amend and enhance the delivery of sports services and policies, i.e. scholarships to further motivate the players.

For other Researchers: Similar studies may be conducted to explore other facets of concerns relative to Talent Identification of athletes.

Conflicts of interest

There is no conflict of interest of any kind.

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