

Analysis of the Model of Volleyball Passing Pattern with the Level of Injury and Fitness of Students of State High School in Makassar City

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ABSTRACT

The purpose of the research is to identify the types of injuries, the level of body fitness and to establish patterns of volleyball passing for high school age. In addition, this research and development was carried out to obtain in-depth data on the types of injuries, fitness levels and applications of volleyball passing forms for high school ages and to identify the efficiency, ability and reach of students in the form they are made of. This research is included in descriptive research. The population in this research and development was high school students in Makassar City consisting of 5 high schools, 15 volleyball players in each high school. The sample of the study was 75 determined by the Slovin formula and selected randomly. The instruments used in the study were a questionnaire, as well as a test instrument for the level of physical fitness and volleyball passing consisting of lower passing and upper passing which were used to collect volleyball passing data for high school aged children, while the stages in this research and development were, at stage: (1) needs analysis, (2) expert evaluation (initial product evaluation); (3) limited trials (small group trials); and (4) main trials (field testing). The comparative analysis test used is the parametric statistical test. And the percent value for the effectiveness of volleyball passing, injuries and the level of physical fitness obtained. From the results of the study, it can be concluded the injury factor for students of State Senior High Schools in the City of Makassar is categorized as good, the level of physical fitness of students is categorized as medium, the level of student volleyball passing is categorized as good, the student volleyball passing pattern model is very effective.



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1. Introduction

Volleyball is a distinct and thrilling sport that calls for strong collaboration and reliable individual performance. All players must be ready to fulfill a range of roles on the team since, unlike many other team sports, players rotate to different positions on the court. Elite players may specialize, but newcomers and

casual players should get familiar with the fundamentals of every position [2]. Volleyball is among the most widely practiced sports in the world. Every year, 6.6 million men and women play volleyball in the United States alone. Volleyball players must constantly modify in order to maximize every rally because the sport is one of opportunity rather than perfection [9].

Volleyball is a popular sport practiced all over the world. Ankles, knees, and shoulders are the joints that are put under the most stress in this physically demanding activity. The crucial times are when you jump and land. After the ankle, the knee is the joint that is most commonly impacted. Acute events can result in injuries, which frequently impact the anterior cruciate ligament, or from recurring stressors that cause overuse syndromes such patellar tendinitis [1]. It can be challenging to pinpoint volleyball injuries related to running because the majority of acute injuries suffered by volleyball players occur as a result of traumatic occurrences, such as knee or ankle sprains after landing from a jump or finger injuries when blocking. Athletes who play indoor volleyball are more likely to suffer an accident than those who play beach volleyball, suggesting that the sport of beach volleyball may even be safer than the indoor form [11].

Sports injuries are injuries that occur to the muscular system and body during exercise as a result of an accident (accident) or an error that can actually be avoided such as poor warm-up, motor skills, serious exercise that is very heavy, and high levels of stress. The types of injuries that often occur in volleyball include strains, sprains, injuries to the knees, ankles, injuries to the elbows, injuries to the back, fractures, injuries that have occurred before" [5]. The most frequently reported injuries to volleyball players were ankles (40.6%), fingers (36.6%), knees (21.2%), and shoulders (15.5%) [12]. One of the factors that can cause injury is the explosive type and takes place continuously, there is direct physical contact between competing players, the equipment used by players, the facilities provided for matches, the wrong technique, the conditions the athletes themselves, and the poor warm-up [13].

In every practice or during a match at the volleyball club in Makassar City, players often experience injuries, both minor injuries and serious injuries. Injuries that often occur in volleyball games such as ankle sprains, strains and fractures. Efforts to prevent injuries that can be done by both players and coaches include increasing physical fitness through training, prevention through food, prevention through warming-up and cooling-down.

The main cause of a decrease in the level of physical fitness in children is because they are inactive, which is caused by the little time spent doing physical exercise or physical exercise [4]. Additionally, during a match that lasts between 60 and 120 minutes, cardiorespiratory endurance aids in reducing recovery time following maximal intensity exertion [8]. Due to the nature of the game, volleyball players' jumping ability is one of the most important physical fitness features [7].

[10]"extracurricular activities are activities carried out outside of class hours (face to face) carried out at school or outside school which aim to further enhance knowledge and abilities from various fields of study". Extracurricular implementation is not only in the arts, but there are also several sports that are usually included in extracurricular activities at school including basketball, soccer, takraw, pencaksilat, karate, taekwondo, karate, and volleyball. With sports included in the extracurricular activities, it is hoped that students can improve their abilities and talents in sports as well as improve their physical fitness.

[3] states "Every child is capable of being creative. However, when pupils are forced to suppress their creativity by participating in an activity they dislike or which does not motivate them, then their response can lead to inappropriate behavior".

It is related to the statements that have been stated in the previous section, so that this proves that it is necessary to increase the form of passing patterns in volleyball games, which in the future can be used as a solution to make it easier for students to practice passing more efficiently and be able to avoid injuries and improve fitness. Through the development of the form of passing patterns it is hoped that it can help students in pursuing forearm passing and overhand passing skills to be better, far from injury and improve body fitness. And it can be used as a challenge for body learning teachers, especially when providing the forearm passing and overhand passing modules through the development of passing patterns. Not only that, but students can also watch it enthusiastically and feel happy without getting bored while following it. In order for this goal to be successful, a teacher must also pay attention to the character of children at the age of high school who usually like to play, like to move, like to collaborate in groups and like to feel or do something directly.

2. Material and Methods

2.1 Participants

The research was conducted by a high school in Makassar City, Indonesia for 2 years, from 2021 - 2022. The population in this study was 92 people, while the sample was 75 people selected by random sampling technique.

2.2 Study Design

This research is descriptive research using a quantitative research approach. The changes measured were the type of injury, the level of physical fitness and effectiveness and passing skills which consisted of forearm passing and overhand passing volleyball before and after being given a pattern model for 2 years.

2.3 Instruments

The instruments used in the study were a questionnaire, as well as a test instrument for the level of physical fitness and volleyball passing consisting of lower passing and upper passing which were used to collect volleyball passing data for high school aged children, while the stages in this research and development were, at stage: (1) needs analysis, (2) expert evaluation (initial product evaluation); (3) limited trials (small group trials); and (4) main trials (field testing).

2.4 Procedure

The steps of the research stages to be carried out include:

1. Observing each school where the research will be carried out
2. Identify students who are volleyball players
3. Prepare the tools to be used
4. Trial validation of questionnaires and tools for physical fitness tests
5. Product design in the form of a volleyball passing pattern model.
6. Design validation is a process for assessing learning models by experts.
7. Design improvements after known weaknesses.

2.5 Statistical Analyses

In analyzing the research data to be obtained, the researcher will use several statistical tests as follows:

- 1 Descriptive statistical test, to describe the results of injuries, levels of physical fitness and volleyball passing.
- 2 The comparative analysis test used is the parametric statistical test. And the percent value for the effectiveness of volleyball passing, injuries and the level of physical fitness obtained.

3. Findings and Discussion**Table 1.** Distribution of Respondents by School

School	n	%
a. State High School 5	15	20,0
b. State High School 9	15	20,0
c. State High School 12	15	20,0
d. State High School 16	15	20,0
e. State High School 21	15	20,0
Total	75	100,0

Table 1 shows that the number of respondents obtained from 5 state high schools (State High School 5, State High School 9, State High School 12, State High School 16, and State High School 21) was 15 people each (20.0%).

Table 2. Head Injury Frequency Tabulation

No	Score	Frequency	Percentage	Category
1.	7-8	70	93,3	Excellent
2.	9-10	5	6,7	Good
3.	11-12	0	0,0	Medium
4.	13-14	0	0,0	Poor
5.	>15	0	0,0	Very Poor
Total		75	100,0	

Based on table 2 results of research on injuries to the head consisting of 7 item questions consisting of five indicators including fainting, bruising, abrasions, bleeding, and tearing when passing volleyball, it appears that out of 75 samples it turns out that those who have a good classification once as many as 70 people (93.3%), and good classification as many as 5 people (6.7%), and there are no students who have medium, poor and very poor classifications.

Table 3. Trunk Injury Frequency Tabulation

No	Score	Frequency	Percentage	Category
1.	10-11	0	0,0	Excellent
2.	12-13	34	45,3	Good
3.	14-15	40	53,3	Medium
4.	16-17	1	1,3,	Poor
5.	18-20	0	0,0	Very Poor
Total		75	100,0	

Based on table 3 above, injuries to trunk consist of 10 question items consisting of five indicators including fainting, bruising, abrasions, bleeding, and tears when passing volleyball, it appears that of the 75 samples it turned out that 34 students (45.3%) had a good classification, 40 students (53.3%) had a moderate classification, and 1 person (1.3%) had a poor classification, and no students had an excellent classification and very poor.

Table 4. Arm and Hand Injury Frequency Tabulation

No	Score	Frequency	Percentage	Category
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1.	17-20	8	10,7	Excellent
2.	21-24	61	81,3	Good
3.	28-28	6	8,0	Medium
4.	29-32	0	0,0	Poor
5.	33-35	0	0,0	Very Poor
Total		75	100,0	

Based on table 4 above on the results of research on injuries to the arms and hands consisting of 17 question items consisting of five indicators including fainting, bruising, abrasions, bleeding, and tears when passing volleyball, it appears that out of 75 student samples, it turned out that 8 people (10.7%) had very good classifications, 61 people (81.3%) had good classifications, and 6 people (8.0%) had moderate classifications, and there were no students which has poor and very poor classifications.

Table 5. Leg and Foot Injury Frequency Tabulation

No	Score	Frequency	Percentage	Category
1.	14-16	0	0,0	Excellent
2.	17-19	3	4,0	Good
3.	20-22	59	78,7	Medium
4.	23-25	13	17,3	Poor
5.	26-28	0	0,0	Very Poor
Total		75	100,0	

Based on table 5 above, the results of the research on injuries to the legs and feet consisted of 14 question items consisting of five indicators including fainting, bruising, abrasions, bleeding, and tears when passing volleyball, It appears that of the 75 student samples, 3 people (4.0%) had a good classification, 59 people (78.7%) classified as medium, and 13 people (17.3%) classified as poor and none of the students has excellent and very poor classification.

Table 6. Results of Tabulated Data Analysis of Injury Variables

No	Score	Frequency	Percentage	Category
1.	48-56	0	0,0	Excellent
2.	57-65	44	58,7	Good
3.	66-74	31	41,3	Medium
4.	75-83	0	0,0	Poor
5.	84-96	0	0,0	Very Poor
Total		75	100,0	

Based on table 6 above regarding the results of research on injuries experienced by students it was obtained from 75 sample students that it turned out that 44 people (58.7%) had a good classification, and 31 people (41.3%) had a medium classification, and there are no students who have excellent, poor and very poor classifications.

Table 7. Physical Fitness Results Through the 60 Meter Running Test

No	Score	Frequency	Percentage	Category
1.	<7,2"	0	0,0	Excellent
2.	7,3" - 8,3"	11	14,7	Good
3.	8,4" - 9,6"	64	85,5	Medium
4.	9,7" - 11,0"	0	0,0	Poor

5.	>11,1"	0	0,0	Very Poor
Total		75	100,0	

Based on table 7 above regarding the research results of the 60-meter running test obtained by students, it appears that out of 75 student samples, 11 people (14.7%) had good classifications, and 64 medium classifications. people (85.3%), and there are no students who have excellent, poor and very poor classifications.

Table 8. Physical Fitness Results Through the Pull Up Test

No	Score	Frequency	Percentage	Category
1.	> 19	0	0,0	Excellent
2.	14-18	0	0,0	Good
3.	9-13	29	38,7	Medium
4.	5-8	45	60,0	Poor
5.	<4	1	1,3	Very Poor
Total		75	100,0	

Based on table 8 above regarding the results of the pull-up test research obtained by students, it appears that of the 75 sample students it turns out that as many as 29 people (38.7%) have a medium classification, 45 people have a poor classification (60 .0%) and the classification of very poor is 1 person (1.3%), and there are no students who have excellent and good classifications.

Table 9. Physical Fitness Results Through the Sit Up Test

No	Score	Frequency	Percentage	Category
1.	> 41	18	24,0	Excellent
2.	30-40	57	76,0	Good
3.	21-29	0	0,0	Medium
4.	10-20	0	0,0	Poor
5.	0-9	0	0,0	Very Poor
Total		75	100,0	

Based on table 9 above regarding the results of the sit-up test research obtained for students, it appears that out of 75 student samples it turns out that 18 people (24.0%) have an excellent classification, and 57 people have a good classification (76.0%), and there were no students who had medium, poor and very poor classifications

Table 10. Physical Fitness Results Through the Vertical Jump Test

No	Score	Frequency	Percentage	Category
1.	>73	0	0,0	Excellent
2.	60-72	0	0,0	Good
3.	50-59	26	34,7	Medium
4.	39-49	49	65,3	Poor
5.	<38	0	0,0	Very Poor
Total		75	100,0	

Based on table 10 above regarding the research results of the vertical jump test obtained for public high school students in Makassar City, it appears that of the 75 sample students it turns out that 26 people (34.7%) have a medium classification, and 49 people have a poor classification. (65.3%), and there were no

students who had excellent, good and very poor classifications.

Table 11. Physical Fitness Results Through the 1200-meter run test

No	Score	Frequency	Percentage	Category
1.	< 3,14"	0	0,0	Excellent
2.	3,15" – 4,25"	0	0,0	Good
3.	4,26" – 5,12"	13	17,3	Medium
4.	5,13" – 6,33"	51	68,0	Poor
5.	> 6,34"	11	14,7	Very Poor
Total		75	100,0	

Based on table 5.11 above regarding the research results of the 1200 meter running test obtained by students of Public High Schools throughout the City of Makassar, it appears that out of 75 student samples it turns out that 13 people (17.3%) have good and excellent classifications, there is no medium classification. poor 51 people (68%) and very poor as many as 11 people (14.7%).

Table 12. Physical Fitness Level Conversion Value

No	Score	Frequency	Percentage	Category
1.	22-25	0	0,0	Excellent
2.	18-21	0	0,0	Good
3.	14-17	57	76,0	Medium
4.	10-13	18	24,0	Poor
5.	05-09	0	0,0	Very Poor
Total		75	100,0	

Based on table 12 above regarding the results of the research on the level of physical fitness tests obtained by students, it appears that of the 75 sample students, it turns out that as many as 57 people (76.0%) have a medium classification, and 18 people are classified as poor. (24.0%), and there were no students who had excellent, good and very poor classifications.

Table 13. Results of forearm pass volleyball

No	Score	Frequency	Percentage	Category
1.	49-60	15	20,0	Excellent
2.	37-48	55	73,3	Good
3.	25-36	5	6,7	Medium
4.	13-24	0	0,0	Poor
5.	<12	0	0,0	Very Poor
Total		75	100,0	

Based on table 13 above regarding the results of the research on the volleyball underpass test obtained by students, it appears that out of 75 student samples it turns out that 15 people (20.0%) have an excellent classification, 55 people have a good classification (73.3%) and medium classification as many as 5 people (6.7%), and there are no students who have poor and very poor classifications.

Table 14. Results of overhand pass volleyball

No	Score	Frequency	Percentage	Category
1.	49-60	0	0,0	Excellent
2.	37-48	29	38,7	Good

3.	25-36	46	61,3	Medium
4.	13-24	0	0,0	Poor
5.	<12	0	0,0	Very Poor
Total		75	100,0	

Based on table 5.14 above regarding the results of the upper passing test obtained by students, it appears that out of the 75 sample students it turns out that 29 people (38.7%) have a good classification, and 46 people (61.3%) have a medium classification. and there are no students who have excellent, poor and very poor classifications.

Table 15. Results of passing volleyball

No	Score	Frequency	Percentage	Category
1.	97-120	0	0,0	Excellent
2.	73-96	67	89,3	Good
3.	49-72	8	10,7	Medium
4.	25-48	0	0,0	Poor
5.	<24	0	0,0	Very Poor
Total		75	100,0	

Based on table 15 above regarding the results of the volleyball passing test research obtained for students, it appears that of the 75 student samples it turns out that 67 people (89.3%) have a good classification, and 8 people (10.7%) have a medium classification. and there are no students who have excellent, poor and very poor classifications.

Table 16. Results of the effectiveness test of forearm pass volleyball

Variable	n	Mean	Correlation	T-test	Sig
Pre test	75	44,65	0,826	17,602	0,000
Post test	75	50,46			

Based on table 16 above, the results of the volleyball underpass test obtained a correlation value of 0.826 and a significance test obtained t count of 17.602 which has a value greater than t table 95% of 2.045 (t count = 17.602 > t table 95% = 1.671) with a degree freedom = 75 – 1 = 74. The result of t count is greater than t table at a significance level of 0.05, so the null hypothesis is rejected. In conclusion, there is a significant difference between pre-test and post-test. The volleyball under passing model is effective for increasing volleyball under passing in students.

Table 17. Results of the effectiveness test of overhand pass volleyball

Variable	n	Mean	Correlation	T-test	Sig
Pre test	75	36,58	0,872	21,226	0,000
Post test	75	41,40			

Based on table 17 above, the calculation results for the volleyball passing test result obtained a correlation value of 0.826 and a significance test obtained t count of 21.226 which has a value greater than t table 95% of 2.045 (t count = 21.226 > t table 95% = 1.671) with degrees of freedom = 75 – 1 = 74. The result of t count is greater than t table at a significance level of 0.05, so the null hypothesis is rejected. In conclusion, there is a significant difference between pre-test and post-test. The volleyball passing model is effective for increasing volleyball passing for students.

Table 18. Results of the effectiveness test of passing volleyball

Variable	n	Mean	Correlation	T-test	Sig
Pre test	75	81,24	0,879	25,910	0,000
Post test	75	91,86			

Based on table 18 above, the results of the volleyball passing test obtained a correlation value of 0.879 and a significance test obtained t count of 25.910 which has a value greater than t table 95% of 2.045 (t count = 25.910 > t table 95% = 1.658) with degrees of freedom = 75 – 1 = 74. The result of t count is greater than t table at a significance level of 0.05, so the null hypothesis is rejected. In conclusion, there is a significant difference between pre-test and post-test. The volleyball passing model is effective for improving volleyball passing for high school students

The research results obtained for students were obtained for the dominant sub-variables on the arms and hands, as well as the legs and feet. Several students received head and body injuries. Injuries that occur in the arms and hands are the occurrence of pain and bruising. This is due to the touch of the volleyball being dominated by the movement of the arms and hands. For students or volleyball players, it is certain that they will feel pain and bruising in these parts of the arms and hands, even though the legs and feet occur as a result of shifting or less optimal foot reactions in anticipating the arrival of the ball. Thus, causing injury to the legs and feet in the form of pain, blisters, cramps and sprains. Likewise, injuries to the head and body often occur because students often anticipate the ball less than optimally.

Analysis Sports injury is any form of activity that exceeds the threshold of the body's ability due to exercise. Physiologically sports injuries occur due to an imbalance between workload and the ability of the body's tissues to carry out sports activities. In general, the causes of sports injuries include lack of warm-up, doing the wrong smash, forcing the body's condition beyond the body's ability threshold before exercising. especially in the lead-up to matches that demand a lot of explosive movements.

The first consideration in injury prevention is accepting the fact that we cannot avoid injury. Wibowo says that: in health science, preventive action is prioritized over curative action (treatment) because: 1) Prevention is better than cure. 2) If the treatment is not perfect, it can cause defects/invalids. 3) During illness, reducing productivity [14].

Usually, an effective way to deal with injury is to understand the different types of injury and recognize how our bodies respond to these injuries. It can also understand the body so that we can know what to do to prevent injury, to detect an injury so it doesn't get worse, what is done is to be treated professionally.

The achievement results of the research obtained on students were obtained in the medium category. This shows that students who actively exercise will provide a good level of physical fitness. So, every student is required to be able to exercise regularly in order to obtain good physical fitness. Physical education provides opportunities for students to be directly involved in various learning experiences through physical activities, playing and sports which are carried out in a systematic, directed and planned manner. The provision of learning experiences is directed to fostering, as well as forming a healthy and active lifestyle throughout life.

Analysis of physical fitness in terms of physiology is "the ability to work muscles depends on the efficiency of the circulatory system, namely the efficiency of the circulatory system that the heart pumps throughout the blood vessels in the body [6]. A person's fitness condition can be improved with well-structured

training, athlete performance is largely determined by training factors, with training in a physical fitness program it will be able to influence physiological development and growth so that it will realize better performance improvements. In achieving the degree of physical fitness so that it is more optimal, it must be intensive in carrying out a physical training program in accordance with the components of physical fitness with an approach or method that is in accordance with the implementation instructions. Physical fitness is strongly influenced by age, gender, hereditary (genetic) factors, food intake and habituation to a healthy lifestyle.

The physical fitness training program places more emphasis on physical conditioning skills programs including running 60 meters, pull-ups for 1 minute, sit-ups for 1-minute, vertical jumps, the training program made must refer to the components of the physical fitness test in order to achieve maximum results. This research is also supported by some research data researched by Prabowo (2013) with the results of the study, namely that it can be seen that male students who take part in the basketball extracurricular at SMA N 1 Bantul out of 26 male students (100%) there are 0 students (0%) in excellent category, 3 students (11.54%) in the good category, 19 students (73.08%) in the medium category, 4 students (15.38%) in the very poor category, and 0 students (0%) in the very category poor.

The results obtained in the study showed that of the two passes that were carried out, namely the lower passing and the upper passing. Forearm pass volleyball is better than overhand pass. This proves that the dominant students still use the bottom pass in controlling the ball, even though to direct the ball it is better to pass over volleyball. However, in defending in volleyball games, forearm pass volleyball is better for keeping the ball from coming. Because the ball that is served or smashed by the opponent is usually hard. Medium passing is usually used for second players or commonly called tosser. Overall, the results achieved in student volleyball passing were categorized as good.

Thus, in order to increase maximum performance in volleyball, all players must really master the basic techniques in volleyball, especially the basic passing technique, because passing is the initial touch after serving and the key to success in carrying out an attack. For this reason, volleyball game coaches must really understand the concept of motion in passing so that fatal mistakes do not occur. In addition, a sports coach or teacher must also be able to analyze a movement so that it can minimize frequent mistakes

Analysis of overhand pass is a technique that is often used as a set up to present the ball in smashing. In order for teammates to be able to play or carry out attacks well against their opponents, the top passing technique must be done properly and precisely. A good and precise top pass will make it easier for his friends to play the ball or carry out attacks so that the results are more perfect. To be able to do the top pass properly and correctly, players must master the movement techniques correctly. The ability to master the basic technique of overhand pass in volleyball is basically an ability that is acquired through practice.

The results of testing the effectiveness of the volleyball passing model carried out in this study were by conducting tests on 75 students who were given treatment using the movement pattern of down passing, up passing, and a combination of the two passing. This treatment was given for 5 meetings using 12 models consisting of 4 lower passes, 4 upper passes and 4 combination passes, in each meeting. The medium test used in this study was to use the lower passing and upper passing volleyball tests to find out the results of students' volleyball passing.

After carrying out the initial test and giving the treatment according to what was previously disclosed, then the final test is carried out. With the results of the above research, it can be said that the success criteria are

good. This is shown by the increased ability of volleyball passing skills, both lower passing and upper passing for students increases. Students become more enthusiastic and motivated to explore techniques in volleyball games.

The volleyball passing pattern model seems to make students more enthusiastic about learning. This can be seen from the attitude of students who always want to try every movement and always want to practice with the variations of the model given. Students become more enthusiastic when learning takes place, and it looks like students are more focused. For teachers, seeing students' enthusiasm is so great is success in choosing learning methods. And it is proven that learning using this game pattern model activity makes students more enthusiastic.

This increase is not solely influenced by movement patterns. However, the increase in learning outcomes in each lesson is also influenced by the teacher and the learning techniques used in learning. The learning technique used in this study is a pattern model game. By implementing games that support improving the ability to practice volleyball passing, student motivation can increase and result in increased student learning activities.

Analysis of the effectiveness of developing the upper and lower passing models is an important routine exercise to get accuracy in performing upper passing, therefore, regular training is needed so that one's upper passing skills improve better. The practice of overhand pass itself can be done periodically and continuously to practice some of the top passing techniques itself. Passing can be done well if you master good and correct technique. To obtain good top passing quality, a player must increase the variety of exercises to improve the accuracy of the top passing technique.

The factor that affects the accuracy when performing top passing is coordination. Without good coordination skills, students will find it difficult to carry out techniques in a harmonious, harmonious and stimulating manner, so that they appear flexible and easy. Students who coordinate well will find it easier to perform one movement skill and spend less energy than students who have low coordination.

Good coordination makes good accuracy possible, so it is necessary to carry out serious, regular and continuous skill training so that there is an increase in the movement skills of a player, so that later the accuracy of passing will be better

4. Conclusion

From the results of the study, it can be concluded: the injury factor for students of State Senior High Schools in the City of Makassar is categorized as good, the level of physical fitness of students is categorized as medium, the level of student volleyball passing is categorized as good, the student volleyball passing pattern model is very effective.

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