

The Difference in the Effect of Medicine Ball Chest Throw and Kettlebell Floor Press Exercises on Arm Muscle Power and Passing Ability of Men's Basketball Athletes of the Man 2 Club Medan Model In 2025

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ABSTRACT

The low arm muscle power and passing ability of MAN 2 Model Medan basketball athletes is the problem addressed in this study. This condition causes a decrease in playing effectiveness and teamwork. This study aims to determine the effect of medicine ball chest throw and kettlebell floor press exercises on the arm muscle power of male basketball athletes at the MAN 2 Model Medan club. The research method applied in this study was a Pre-test and post-test two-group design. The research sample consisted of 12 male athletes divided into two groups, namely the medicine ball chest throw group and the kettlebell floor press group. The research was conducted over 18 sessions. The first hypothesis test shows that the $t\text{-count} > t\text{-table}$ ($8,06 > 2,571$). It is concluded that H_0 is rejected and H_1 is accepted, which means that there is a significant effect of medicine ball chest throw training on arm muscle power. The second hypothesis test shows that the $t\text{-count} > t\text{-table}$ ($6,79 > 2,571$). It can be concluded that H_0 is rejected and H_1 is accepted, which means that there is a significant effect of kettlebell floor press training on arm muscle power. The third hypothesis test shows that $t\text{-count} > t\text{-table}$ ($9,13 > 2,571$). It can be concluded that H_0 is rejected and H_1 is accepted, meaning that there is a significant effect of medicine ball chest throw training on passing ability. The fourth hypothesis test shows that $t\text{-count} > t\text{-table}$ ($5,70 > 2,571$). It can be concluded that H_0 is rejected and H_1 is accepted, meaning that there is a significant effect of kettlebell floor press training on passing ability. The fifth hypothesis test shows that $t\text{-count} < t\text{-table}$ ($2,06 < 2,228$). This can be concluded that there is no significant difference in the effect between the post-test of the medicine ball chest throw group and the post-test of the kettlebell floor press group on arm muscle power. However, the calculations show that the medicine ball chest throw group exercise has better results than the kettlebell floor press group on arm muscle power. The sixth hypothesis test shows that the $t\text{-count}$ is less than the $t\text{-table}$ ($1,93 < 2,228$). It can be concluded that there is no significant difference in the effect between the post-test of the medicine ball chest throw group and the post-test of the kettlebell floor press group on passing ability. However, the calculations show that the medicine ball chest throw group exercise has better results than the kettlebell pullover group on passing ability.

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INTRODUCTION

Basketball is an increasingly popular and interesting sport because it can be played by both men and women and involves teamwork with various game techniques. In one team there are 12 players with 5 core players who play on the court. This game requires direct interaction between players as well as mastery of basic techniques such as shooting, passing, catching, and dribbling.

One of the basic techniques that is important is the chest pass, which is the passing of the ball from the front of the chest to teammates. The success of this technique is influenced by physical conditions such as arm muscle power, wrist flexibility, and eye and hand coordination. Arm muscle power is an important component because it plays a role in producing strength and accuracy when passing and shooting.

Several previous studies have shown the importance of this aspect. Safitri (2019) stated that passing exercises affect chest passing ability. Dinata (2019) and Trinanda et al. (2024) showed that medicine ball exercises are effective in increasing arm muscle power. In addition, Setyawan (2023) found that kettlebell exercises can significantly increase muscle strength and power. Irmawati (2017) also revealed the relationship between arm muscle power and technical ability in the game of basketball.

However, based on the results of observations at the MAN 2 Model Medan Basketball Club, athletes' chest pass ability is still relatively low, characterized by a lack of passing accuracy, suboptimal coordination, and weak arm muscle power. This is due to the lack of implementation of special training variations such as medicine balls and kettlebell s in the training program.

Therefore, research is needed to determine the difference in the effect of medicine ball chest throw and kettlebell floor press exercises on arm muscle power and passing ability of men's basketball athletes of the MAN 2 Model Medan Club in 2025.

IMPLEMENTATION METHOD

This research was carried out on the MAN 2 Model Medan basketball court with a total of 24 meetings. Research activities were carried out in one week for 8 meetings, namely Monday to Sunday. On Monday to Friday, training was carried out at 16.00–18.00 WIB, while on Sunday two training sessions were carried out, namely the morning session at 07.00–09.00 WIB and the afternoon session at 16.00–18.00 WIB. Thus, the entire research lasted for approximately 4 weeks.

The study population was 40 athletes, while the sample was taken as many as 12 athletes using the purposive sampling technique with the age criteria of 14–17 years and having practiced for more than 1 year. The method used was an experiment with a two-group pretest-posttest design. The sample was divided into two groups using the matching pairing technique. Group A was given medicine ball chest throw exercises, while group B was given kettlebell floor press exercises. Before and after treatment, tests were carried out to measure arm muscle power (push-ups) and passing ability (chest pass).

The independent variables in this study were medicine ball and kettlebell exercises, while the bound variables were arm muscle power and passing ability. Data were collected through tests and analyzed using normality tests, homogeneity tests, and t-tests to determine the effect of treatment.

RESULTS

1. Description of Research Data

This research was conducted at the MAN 2 Model Medan men's basketball club. This study was carried out in 24 meetings or for 4 weeks starting with a pre-test and ending with a post-test. This study used a two-group pretest-post-test design experimental research. Then matching pairing was carried out on the samples according to the results of the pre-test, after that, group A will be treated with medicine ball chest throw exercises and group B will be treated with kettlebell floor press exercises.

Here is the Pre-test arm muscle power data medicine ball chest throw exercise group:

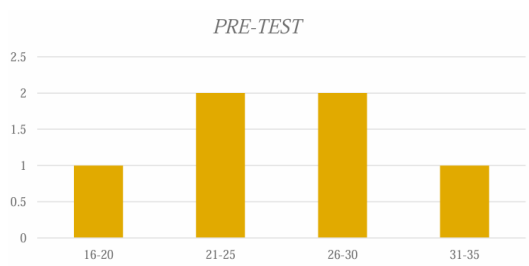


Figure 1. Histogram Frequency Value Pre-test Arm Muscle Exercise Group Medicine ball chest throw

Table 1. Frequency Distribution Value Pre-test Arm Muscle Exercise Group Medicine ball chest throw

Interval Classes	Frequency (f)	F%
16-20	1	16.67
21-25	2	33.33
26-30	2	33.33
31-35	1	16.67
Quantity	6	100

Based on the histogram and frequency distribution table above, the results of the pre-test arm muscle power of the medicine ball chest throw group with 6 samples that have been studied were obtained 1 person with an interval class of 16-20, 2 people with an interval class of 21-25, 2 people with an interval class of 26-30, and 1 person with an interval class of 31-35.

Here is the histogram and frequency distribution table of the post-test arm muscle strength group medicine ball chest throw exercises:

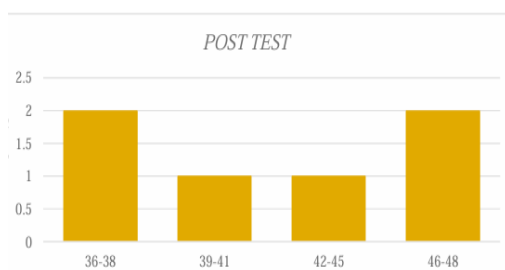


Figure 2. Histogram Frequency Value Post-test Arm Muscle Muscle Group Medicine ball chest throw

Table 2. Frequency Distribution Value Post-test Arm Muscle Exercise Group Medicine ball chest throw

Interval Classes	Frequency (f)	F%
36-38	2	33.33
39-41	1	16.67
42-45	1	16.67
46-48	2	33.33
Total	6	100

Based on the histogram in figure 4.2 and the frequency distribution table in table 4.2 above, the results of the post-test arm muscle power of the medicine ball chest throw group with a sample of 6 people were obtained: 2 people with an interval class of 36-38, 1 person with an interval class of 39-41, 1 person with an interval class of 42-45, and 2 people with an interval class of 46-48.

Here is the histogram and data frequency distribution table Pre-test arm muscle group kettlebell floor press:

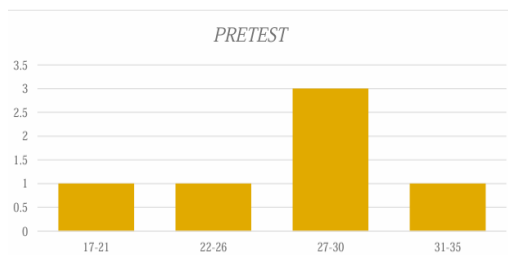


Figure 3. Histogram Frequency Value Pre-test Arm Muscle Group Kettlebell floor press

Table 3. Frequency Distribution of Pre-test Value Arm Muscle Arm Exercise Group Kettlebell floor press

Interval Classes	Frequency (f)	F%
17-21	1	16.67
21-24	1	16.67
26-30	3	50.00
31-35	1	16.67
Total	6	100

Based on the histogram graph and frequency distribution table above, the results of the pre-test arm muscle power of the kettlebell floor press group with 6 samples were obtained there were 1 person with an interval class of 17-21, 1 person with an interval class of 21-24, 3 people with an interval class of 26-30, and 1 person with an interval class of 31-35.

Here is a picture of the frequency histogram and the frequency distribution table of the value of the post-test arm muscle strength group exercise kettlebell floor press.

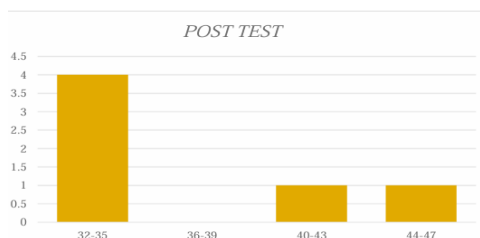


Figure 4. Histogram Frequency Value Post-test Arm Muscle Group Kettlebell floor press

Table 4. Frequency Distribution of Values Post-test Power Arm Muscles Group Exercise Kettlebell floor press

Interval Classes	Frekuensi (f)	F%
32-35	4	66.67
36-39	0	0.00
40-43	1	16.67
44-47	1	16.67
Total	6	100

Based on the histogram image and the thickness of the frequency distribution above, the results of the post-test arm muscle power of the kettlebell floor press group with a sample of 6 people were obtained, there were 4 people with an interval class value of 32-35, no sample with an interval class value of 36-39, 1 person with an interval class of 40-43, and 1 person with an interval class value of 44-47.

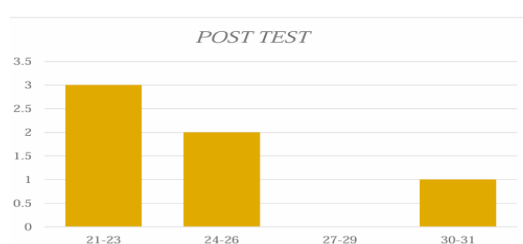
The following is a graph of the histogram and the distribution table of Pre-test passing scores in the medicine ball chest throw group.

Table 5. Frequency Distribution of Pre-test Passing Scores Medicine ball chest throw

Interval Classes	Frequency (f)	F%
12-13	3	50.00
14-15	2	33.33
16-17	0	0.00
18-19	1	16.67
Total	6	100

Based on the histogram image and frequency distribution table above, the results of the Pre-test passing in the medicine ball chest throw exercise group with a sample of 6 people were obtained, 3 people with an interval class value of 12-13, 2 people with an interval class value of 14-15, no samples with an interval class of 16-17 and 1 person with an interval class of 18-19.

Here is a histogram image and a distribution table of the frequency of the post test passing score of the medicine ball chest throw group.

**Figure 6. Histogram Frequency of Values Post-test Passing Group Medicine ball chest throw****Tabel 6. Distribusi Frekuensi Nilai Post-test Passing Kelompok Medicine ball chest throw**

Interval Classes	Frequency (f)	F%
21-23	3	50.00
24-26	2	33.33
27-29	0	0.00
30-31	1	16.67
Total	6	100

Based on the frequency histogram image and frequency distribution table above, the results of the post-test passing score of the medicine ball chest throw group with a sample of 6 people were obtained, there were 3 people with a class interval of 21-23, 2 people with a class interval of 24-26, and 1 person with a class interval of 30-31.

Here is the frequency histogram and frequency distribution table of pre-test passing values of kettlebell floor press exercise groups.

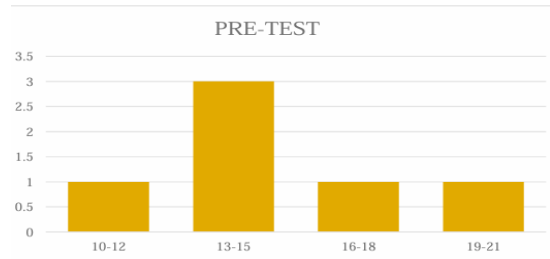


Figure 7 Histogram of Pre-test Passing Value Rate Kettlebell floor press

Table 7 Frequency Distribution of Pre-test Passing Values Kettlebell floor press

Interval Classes	Frequency (f)	F%
10-12	1	16.67
13-15	3	50.00
16-18	1	16.67
19-21	1	16.67
Total	6	100

Based on the frequency histogram image and frequency distribution table of the Pre-test passing value of the kettlebell floor press exercise group with a sample of 6 people, it was obtained that there were 1 person with an interval class of 10-12, 3 people with an interval class of 13-15, 1 person with an interval class of 16-18, and 1 person with an interval class of 19-21.

Here is a histogram image and a post-test passing score frequency distribution table of kettlebell floor press exercise groups.

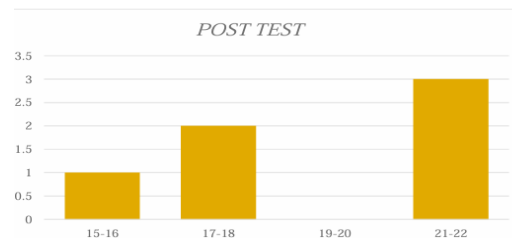


Figure 8. Histogram of Frequency of Value Post-test Passing Group Kettlebell floor press

Table 8. Frequency Distribution of Post-test Passing Values Kettlebell floor press

Interval Classes	Frequency (f)	F%
15-16	1	16.67
17-18	2	33.33
19-20	0	0.00
21-22	3	50.00
Total	6	100

Based on the frequency histogram image and frequency distribution table above, the post-test passing results of the kettlebell floor press exercise group with a sample of 6 people were obtained, there were 1 person with an interval class of 15-16, 2 people with an interval class of 17-18, and 3 people with an interval class of 21-23.

2. Testing Data Analysis Requirements

The hypotheses that have been determined previously will be answered through data analysis with several tests, namely, normality tests, homogeneity tests and hypothesis tests or t-tests.

Normality Test

The normality test aims to determine whether the data that has been obtained has a normal distribution by using the normality test of liliefors.

Table 9. Normality Test Results of Arm Muscle Power Exercise Group Medicine ball chest throw

Variabel	Mean (X) and Standard Deviation (S)	Lcount	Ltable	α	Remarks
Pre-test power muscle arm butt medicine ball	X= 26,5 S= 5,93	0.1865	0.319	0,05	Normal
Post-test power otot Medicine Ball Sleeve	X= 42,16 S= 4,83	0.173	0.319	0.05	Normal

In the table above, the Pre-test Pre-test value is 0.159 and the post-test is 0.288 with a level of $\alpha = 0.05$ where the Pre-test Pre-test value (0.1865) < 0.319 and the post-test (0.173) < 0.319. Therefore, it can be concluded that the sample comes from a normally distributed population.

Table 10. Normality Test Results of Arm Muscle Power Kettlebell Floor Press Training Group

Variabel	Mean (X) and Standard Deviation (S)	Lcount	Ltable	α	Remarks
Pre-test power otot Arm Floor Press	X= 26,1 S= 5,84	0.111	0.319	0,05	Normal
Post-test power otot Arm Floor Press	X= 36 S= 6,35	0.288	0.319	0.05	Normal

In the table above, the Pre-test Count value is 0.159 and the post-test is 0.288 with a level of $\alpha = 0.05$ where the Pre-test Count value (0.111) < 0.319 and the post-test (0.288) < 0.319. Therefore, it can be concluded that the sample comes from a normally distributed population.

Table 11. Results of the Normality Test of Passing Medicine Ball Chest Throw Training Group

Variabel	Mean (X) and Standard Deviation (S)	Lcount	Ltable	α	Remarks
Pre-test passing medicine ball chest throw	X= 14.33 S= 2.5	0.296	0.319	0.05	Normal
Post-test passing medicine ball chest throw	X= 24.17 S= 2.316	0.191	0.319	0.05	Normal

In the table above, the Pre-test Pre-test value is 0.233 and the post-test is 0.181 with a level of $\alpha = 0.05$ where the Pre-test Pre-test value is < 0.319 and the post-test (0.191) is < 0.319. Therefore, it can be concluded that the sample comes from a normally distributed population.

Table 12. Results of the Normality Test of Passing Kettlebell Floor Press Exercise Group

Variabel	Mean (X) and Standard Deviation (S)	Lcount	Ltable	α	Remarks
Pre-test <i>passing</i> kettlebell <i>floor press</i>	X= 14,5 S= 3,20	0,180	0,319	0,05	Normal
Post-test <i>passing</i> kettlebell <i>floor press</i>	X= 18,83 S= 2,85	0,238	0,319	0,05	Normal

In the table above, the pre-test Lcal value was 0.144 and the post-test was 0.236 with a level of $\alpha = 0.05$ where the pre-test Lcal value (0.180) < 0.319 and the post-test (0.238) < 0.319. Therefore, it can be concluded that the sample comes from a normally distributed population.

Homogeneity Test

Table 13. Homogeneity Test Results of Arm Muscle Power and Passing Group Medicine ball chest throw and Kettlebell floor press

Variabel	Fcount	Ftable	df(n1) = k-1	df(n2) = n-k	α	Remarks
Pre-test then post-test power muscle arm glut medicine ball chest throw	1,50	7.71	1	4	0,05	Homogen
Pre-test and post test Power Muscle Arm Ass kettlebell floor press	1,18	7.71	1	4	0.05	Homogen
Pre-test dan post test passing medicine ball chest throw	1,16	7.71	1	4	0,05	Homogen
Pre-test dan post test passing kettlebell floor press	1,26	7.71	1	4	0.05	Homogen

Based on the results of the calculation above, the pre-test and post-test arm muscle power data in the medicine ball chest throw and kettlebell floor press groups obtained a significance value of 1.50 and in the kettlebell floor press exercise group, a significance value of 1.18 was obtained. In the pre-test and post-test passing data of the medicine ball chest throw group, a significance value of 1.16 was obtained and in the kettlebell chest throw group, a significance value of 1.26 was obtained. It can be concluded that all data are accepted and homogeneous because the Fcal value < the F value of Table 7.71.

Uji Hypothesis

The purpose of this hypothesis test is to determine whether the independent variables in this study affect the bound variables and also to determine whether there is a significant difference in influence.

First Hypothesis Test

The first hypothesis sounds, "There is a significant effect of medicine ball chest throw exercises on the increase in arm muscle power". The research will be considered significant if the t-value is calculated > t-table.

Table 14. First Hypothesis Test

	Pre-test	Post-test	Difference	Dk(n-1)	T-count	T-table
N		6				
Total	159	253	94			
Average	26,5	42,17	15,67	5	8,06	2,571
SB	5,94	106.6	4,76			

In the distribution list table t with dk (6-1) = 5 and level $\alpha = 0.05 = 2.571$, meaning that the tcount value of > ttable (8.06 > 2.571) is calculated. This means that H0 is rejected and Ha is accepted. It can be concluded that medicine ball chest throw has a significant influence on increasing arm muscle power of MAN 2 Moden Medan male athletes in 2025.

Second Hypothesis Test

The second hypothesis sounds, namely "There is a significant effect of kettlebell floor press exercises on increasing arm muscle power". The research will be considered significant if the t-value is calculated > t-table.

Table 15. Second Hypothesis Test

	Pre-test	Post-test	Difference	Dk(n-1)	T-count	T-table
N		6				
Total	157	216	59			
Average	26,17	36	9,83	5	6,79	2,571
SB	5,85	6,36	3,54			

In the distribution list table t with dk $(6-1) = 5$ and level $\alpha = 0.05 = 2.571$, meaning that the tcal value of the ttable $> (6.79 > 2.571)$. This means that H_0 is rejected and H_a is accepted. It can be concluded that kettlebell floor press has a significant influence on increasing arm muscle power of MAN 2 Moden Medan male athletes in 2025.

Third Hypothesis Test

The third hypothesis sounds, namely "There is a significant effect of medicine ball chest throw exercises on improving passing ability". The research will be considered significant if the t-value is calculated $>$ t-table.

Table 16. Third Hypothesis Test

	Pre-test	Post-test	Difference	Dk(n-1)	T-count	T-table
N		6				
Total	86	14,5	59			
Average	14,33	24,17	9,83	5	9,13	2,571
SB	2,50	2,32	2,63			

In the distribution list table t with dk $(6-1) = 5$ and level $\alpha = 0.05 = 2.571$, meaning that the tcal value of the ttable $> (9.13 > 2.571)$. This means that H_0 is rejected and H_a is accepted. It can be concluded that medicine ball chest throw has a significant influence on the increase in passing of MAN 2 Moden Medan male athletes in 2025.

Fourth Hypothesis Test

The third hypothesis sounds, namely "There is a significant influence of kettlebell pullover exercises on improving passing ability". The research will be considered significant if the t-value is calculated $>$ t-table.

Table 17. Fourth Hypothesis Test

	Pre-test	Post-test	Difference	Dk(n-1)	T-count	T-table
N		6				
Total	87	113	26			
Average	14,5	18,8	4,3	5	5,70	2,571
SB	3,21	2,86	1,86			

In the distribution list table t with dk $(6-1) = 5$ and the level $\alpha = 0.05 = 2.571$, which means that the tcal value of the ttable $> (5.70 > 2.571)$. This means that H_0 is rejected and H_a is accepted. It can be concluded that the kettlebell floor press has a significant influence on increasing the arm muscle power of MAN 2 Moden Medan male athletes in 2025.

Fifth Hypothesis Test**Table 18. Fifth Hypothesis Test**

	X1 Medicine ball chest throw	X2 Kettlebell floor press	Difference	T-count	T-table
N		12			
Total	253	216	37		
Average	42.17	36	6,17		
SB	106,6	71,64	34,9	2,05	2,228
SB GABUNGAN		5,23			

In the table of distribution lists t with dk2 $(12-2) = 10$ and level $\alpha = 0.05 = 2.228$, meaning the tcal value of the t < table $(2.56 < 2.288)$. The conclusion was that there was no significant effect between post-test medicine ball chest throw and post-test kettlebell floor press on the increase in arm muscle power.

Table 19. Percentage Increase in Arm Muscle Power

Groups	Average		Percentage Improvement
	Pre-test	Post-test	
Medicine ball chest throw	26,7	42,16	58%
Kettlebell floor press	26,17	36,6	38%

However, statistically, medicine ball chest throw exercises have a greater percentage of improvement than kettlebell floor press exercises. This can be seen from the average value of medicine ball chest throw exercises that are greater than kettlebell floor press exercises.

Sixth Hypothesis Test**Table 20. Sixth Hypothesis Test**

	X1 Medicine ball chest throw	X2 Kettlebell floor press	Difference	T-count	T-table
N		12			
Total	145	113	32		
Average	24,2	18,8	6,17		
SB	60,54	48,7	11,8	1,931	2,228
SB GABUNGAN		5,72			

In the distribution list table t with dk2 $(12-2) = 10$ and level $\alpha = 0.05 = 2.228$, meaning that the tcal value is < ttable $(1.931 < 2.288)$. The conclusion is that there is no significant effect between post-test medicine ball chest throw and post-test kettlebell floor press on the increase in arm muscle power.

Table 21. Percentage Increase in Passing

Groups	Average		Percentage Improvement
	Pre-test	Post-test	
Medicine ball chest throw	14,33	24,17	69%
Kettlebell floor press	14,50	18,8	30%

However, statistically, medicine ball chest throw exercises have a greater percentage increase than kettlebell floor press exercises in improving the passing ability of men's basketball athletes MAN 2 Medan Model in 2025. This can be seen from the average value and percentage value of the improvement in medicine ball chest throw exercises is greater than the kettlebell floor press exercise.

DISCUSSION

The Effect of Medicine Ball Chest Throw Exercises With Kettlebell Floor Press On Arm Muscle Power of Men 's Athletes MAN 2 Basketball Club Terrain Model Year 2025

The discussion of the results of the analysis of research data aims to draw conclusions from the results of the research that has been carried out. The first hypothesis shows that there is a significant influence between medicine ball chest throw exercises on arm muscle power in male athletes of the MAN 2 Model Medan 2025 basketball club. This is shown by a t-count value of 8.06 greater than 2.571 thus accepted and rejected.

The second hypothesis shows that there is a significant influence of the kettlebell floor press exercise group on the arm muscle power of male athletes of the MAN 2 Basketball Club Medan Model Year 2025. It can be seen that the t-count value of 6.79 is greater than the t-table which is 2.571, thus accepted and rejected. The cause of the increase in arm muscle power that occurs in athletes is due to medicine ball chest throw and kettlebell floor press which are carried out with low to high intensity and increase the load in each training session.

In accordance with research conducted by D. A. Sari, 2019 (2019:4-5) proves that medicine ball chest throw can increase arm muscle power by comparing Pre-test and post-test results and obtaining a statistical significance value of $P < 0.05$ which shows the real effect of the study. Medicine ball chest throw exercises can increase arm muscle power because this exercise combines speed and movement strength (force x velocity). This exercise not only involves arm muscles, but also involves shoulder, chest, and core muscles.

According to research that has been conducted by Trength, et al (2013:6-8) kettlebell floor press exercises can increase arm muscle power, especially in arm and shoulder muscles. After 10 weeks of doing an exercise program using kettlebell floor press, it can significantly increase arm muscle power by using floor press, bench press, and clean methods which are indicators of upper muscle power.

The Effect of Medicine Ball Chest Throw And Kettlebell Floor Press Exercises on the Passing of Men's Basketball Athletes MAN 2 Medan Model in 2025

The results of the third hypothesis test show that there is a significant influence of medicine ball chest throw training on improving the passing ability of men's basketball athletes MAN 2 Model Medan in 2025. This can be seen from the t-calculation value, which is 9.13, which is greater than the t-table, which is 2.571.

From the testing of the fourth hypothesis, it also shows that there is a significant difference from the kettlebell floor press exercise to the improvement of passing ability in male athletes of the MAN 2 Model Medan basketball club in 2025. This can be seen in the results of the t-count value, which is 5.70, which is greater than the t-table of 2.571. Therefore, it can be concluded that the kettlebell floor press exercise can improve the passing ability of male athletes of the MAN 2 Model Medan basketball club in 2025.

Medicine Ball Chest Throw can improve the passing ability of basketball athletes because the medicine ball chest throw exercise trains explosive movements similar to the acceleration phase in chest pass in basketball. This chest throw movement can train arm and shoulder muscle skills and can produce force in a short time or rate of force development (Nidzam, et al., 2022: 8-10). In accordance with research that has been conducted by Izza, et al. (2024:11-13), there is a significant influence on increasing arm muscle power in junior high school male athletes in grade IX. This can be explained by the results of passing ability in basketball games based on the AAHPERD chest pass test ($P < 0.05$). Therefore, it can be concluded that medicine ball chest throw practice can improve passing ability in basketball.

The kettlebell floor press exercise can affect the increase in arm muscle power so that it can increase the passing ability of basketball athletes. This is because the kettlebell floor press exercise is able to train and increase the power of the arm muscles and core muscles in basketball athletes which physically supports the ability to pass and consistently. The floor press movement by pushing the kettlebell hard until the arm is almost straight can train core strength and flexibility so that this exercise is able to improve basketball passing skills (Kumar, 2020:3-5).

Difference in the Effect of Medicine Ball Chest Throw Exercises With Kettlebell Floor Press On Arm Muscle Power Male Athlete Club Basketball MAN 2 Model Medan

The fifth hypothesis shows that there is no significant difference in the effect between medicine ball chest throw and kettlebell floor press on the increase in arm muscle power in male athletes of the MAN 2 Model 2025 basketball club. This can be seen by the t-count value (2.05) being smaller than the t-table (2.228) thus the accepted hypothesis is rejected.

From the results of the test, the percentage increase showed that the medicine ball chest throw exercise was more effective in increasing arm muscle power in MAN 2 Model Medan basketball male athletes. The difference in the increase in post-test results from the medicine ball chest throw exercise and the kettlebell floor press exercise was 20% with the percentage increase in the post-test medicine ball chest throw exercise in arm muscle power training was 58% and the percentage increase in the post-test kettlebell floor press in arm muscle power training was 38%.

Physiologically, medicine ball chest throw and kettlebell floor press exercises have almost the same characteristics in increasing and training arm muscle power. Medicine ball chest throw exercises are exercises that combine the elements of strength and speed or force x velocity. Thus, these exercises are considered effective in increasing arm muscle power, especially the upper body. On the other hand, kettlebell floor press exercises are exercises that focus on strengthening the chest, shoulders, and arm muscles, and training core muscle stabilization, so that these exercises contribute to increasing arm muscle power. The similarity of the muscles trained and relatively similar movement patterns cause the physiological adaptation that occurs in group A and group B to be relatively balanced.

In this study, both groups were given an exercise program with a frequency of 8 times a week for 6 weeks. This condition can allow both groups to experience almost equal improvements, so the difference is not large enough to be statistically significant. However, there is a descriptive difference in the percentage increase in arm muscle power between the two treatment groups, with the medicine ball group showing superior results than the kettlebell floor press group. However, the difference in improvement between the two groups is not large enough to provide a statistically significant difference.

These findings are in line with several previous studies such as a study conducted by Davieri, et al. (2022, 163-164) on the effect of medicine ball plyometric exercises and dumbbell exercises on arm muscle power in basketball. There is also a study conducted by Sari and Purnomo (2019, 13-15) on the effect of medicine ball chest throw and medicine ball overhead throw exercises on arm muscle strengthening. These two studies state that various forms of strength and plyometric training can significantly increase arm muscle power, but these forms of exercise are not large enough to provide a statistically significant difference.

Differences in the Effect of Medicine Ball Chest Throw And Kettlebell Floor Press Exercises on the Passing Ability of Men's Athletes Basketball Club MAN 2 Model Year 2026

The results of the sixth hypothesis test can be concluded that medicine ball chest throw and kettlebell floor press exercises do not have a significant influence on the passing ability of male athletes of the MAN 2 Model Medan 2025 basketball club. It can be seen that the t-count value of 1.931 is greater than the t-table value of 2.228.

From the results of the percentage increase in passing ability, it shows that medicine ball chest throw is more effective than kettlebell floor press exercises. This can be proven by the percentage value of the post-test passing ability showing a difference of 40% increase with a percentage value of increasing passing ability in the medicine ball chest throw exercise group of 69% while the percentage value of increasing passing ability in the kettlebell floor press exercise group is 31%.

Medicine ball chest throw is more effective in improving passing ability in basketball athletes because the chest throw movement in this exercise is carried out with an individual throwing the ball explosively with both arms fully straightened, while the training partner will receive the ball by controlling the momentum, then relax the arm before again pushing the ball towards the partner with coordinated and continuous follow-up movements (Izza, et al, 2024: 6-10).

Medicine ball chest throw and kettlebell floor press exercises showed that there was no significant difference in the passing ability of basketball athletes. This is due to the complex characteristics of passing skills and are not only influenced by the physical component, namely arm muscle power. Other studies also show that coordination is a very dominant factor in determining passing success. Research conducted by Sufyandi, et al (2019, 10-12) states that eye and hand coordination has a significant influence on passing ability, so exercises that do not specifically practice coordination will not make a significant difference in passing results. This shows that increasing arm muscle power through medicine ball chest throw and kettlebell floor press exercises is not necessarily followed by an increase in optimal passing ability.

Research conducted by Wati (2022, 8-11) explains that exercises using medicine balls can improve passing ability, but the improvement is not always significantly different when compared to different training methods that also train the same ability. Thus, it can be concluded that there is no significant difference between the two training methods in this study due to the similarity of the training characteristics, the equality of the training program, and the complexity of the factors that affect passing ability, so that the two exercises provide a relatively balanced improvement effect.

CONCLUSION

Based on the results of the study, it can be concluded that medicine ball chest throw and kettlebell floor press exercises both have a significant influence on increasing arm muscle power and passing ability in MAN 2 Model Medan men's basketball athletes in 2025. However, there is no significant difference in the effect between the two types of exercises, both on the increase in arm muscle power and passing ability. Thus, both training methods can be used effectively in improving athlete performance, especially in aspects of arm muscle strength and passing skills.

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