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## Effectiveness of rubber and dumbbell exercises on kisame tsuki's punching velocity in karate athletes

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### Abstract

Study This aim For compare effectiveness method exercise rubber and dumbbells in increase velocityblow kisametsuki among Sports Club athlete Achievements of Jakarta State University. Study This use approach quantitative with design Two Group Pretest Posttest, where two groups different undergo different exercises. The subjects studied were a total of 14 kumite athletes, divided into 2 groups of 7 athletes exercise rubber and 7 athletes exercise dumbbells Treatment given for 16 meetings with frequency 4 times a week give influence to enhancement velocityblow kisame tsuki. Data processing uses SPSS version 20 with the exact T test T count results exercise rubber 8,826 more big from T count exercise dumbbell 3.334 and also the difference the grain score results show that the criteria for increasing rubber have a medium increase with a value of 0.3, while for dumbbells it has a value of 0.2, so the increase is low. So it can be stated that it is effectively used to increase the velocity of Kisame tsuki's Punch.

**Keywords:** Velocity, Kisame Tsuki, rubber, dumbbell

### 1. Introduction

Human do activity physique with objective guard health known bodies as sport. Additionally, several consider sport as means achievement performance. Man own potency outside normal in reach performance sport through consistent practice and dedication. Sport become vital means for man For develop ability physical and mental, as well For reach extraordinary achievement normal in various branch sport. Through directed training and high commitment, someone capable reach performance impressive sport, reflects potency optimally in reach goals and success in the sports arena.

Apart from focusing on education academic, college high also provides supporting facilities and programs development ability Athletics. With exists club sports, facilities adequate exercise, as well training from staff expert, student own chance For hone talent sport they while chase title academic. College tall create supportive environment growth athletic and intellectual, possible student For reach achievements in the field sport while obtain quality education.

Sports Club Jakarta State University Karate Achievement or Klub Olaharaga Prestasi Karate (KOP Karate UNJ), which is part from Faculty Knowledge Sports, providing receptacle for karate athlete for increase Skills technical and physical they. Apart from that, KOP Karate UNJ also provides chance to its members For Study about management organization and participation in various sporting events especially in karate field.

From the results analysis, researcher find that In the last two events, namely Esa Unggul Cup 2023 and Dies Natalies 2023, many kumite athletes from KOP Karate UNJ skip opportunity moment do blow kisametsuki Because lack of velocity. Blow kisametsuki own potency become effective weapon If done with velocityfull, because more efficient compared to with blow other. However, if done with slow, blow the prone to For parried or anticipated with blow or kick against.

Karate is art defend originating self from known Japan Because techniques strong punches and kicks as well as efficient. Apart from being form defense self, karate is also a exercise physically involved development character, discipline, and mental concentration.

In karate training, focus given to techniques base like practiced punches, kicks, and blocks in a way over and over again For repair strength, velocity, and accuracy movement. Additionally, word practice, which is series practiced movements in a way together, as well as kumite, which is exercise battle oppose opponent, also becomes part important from karate learning. Karate doesn't only offer skill defend self, but also constitute means For development self, improve health physical, mental and spiritual.

Regular and consistent exercise play role important in increase blow Kisame Tsuki in art defend karate self. Through With focused training and correct technique, karate athletes can hone strength and velocity in blow the in a way effective. Exercise also helps strengthen the muscles involved in do blow, increase coordination body, as well repair balance and posture required in produce strong and accurate blows. Plus, practice in a way repetition also helps build trust self and mental peace of mind use technique blow in situation match or self-defense. With So, regular practice is key For develop and improve ability blow Effective Kisame Tsuki in context art defend karate self.

One of technique strengthening foundation base art defend karate self is blow Kisame Tsuki. With movement straight and fast to direction front, blow This aim For attack chest or head against. This technique No only depend on strength physical, but also requires mental focus and coordination good body. As fundamental element in karate, the blow Kisame Tsuki doesn't only hone ability physical, but also constructive discipline and dexterity required in art defend self.

In research This is the tool used For increase velocity including rubber and dumbbells. Rubber or also known as *resistance bands*, is type designed rubber special For exercise with various models available. On the other hand, dumbbells is tool burden with varying weight, often used in a pair. Therefore that, researcher decide For inspect is There is enhancement significant in velocity blow kisame tsuki with use second type tool exercise the. Research purposes This is give information about the most effective tool For increase velocity blow kisame Tsuki, okay use rubber nor dumbbells.

## 2. Materials and methods

### 2.1 Time

Study This follow the start process from preparation of research proposals and data collection, up to preparation report results study. Research sites held at the Sports Club Karate Achievement Campus B, Jakarta State University, located on Jl. Youth No. 10, Rawamangun, East Jakarta, DKI Jakarta. Research proposal submission process starting in March 2023, followed with application retrieval of data from April to June 2023, and manufacturing report results research in June 2023. Treatment done a total of 16 meetings, with frequency 4 times in One Sunday, namely Thursday, Friday, Monday and Tuesday.

### 2.2 Sample

Population study This consists of 75 members of the UNJ KOP karate. Retrieval method sample used is purposive sampling, ie technique data retrieval with choose sample based on consideration certain (Sugiyono, 2010) [18]. The considerations taken is athlete club sport karate achievements University Country Jakarta Which including in category athlete active totaling 14 people who are athlete category *kumite*. Researcher in research This take sample that is athlete

*kumite* in accordance with title and problem in the research This totaling 14 people. Deep data study This taken from 2 groups, with each group has 7 samples. Study done in range time from May 17 to June 14 2023 at Jakarta State University GOR. Data collection was carried out twice, namely pretest on May 17 2023 and posttest on June 14 2023. Each athlete given two chances at the pretest and posttest, and the results best from second chance that was taken.

### 2.3 Data Retrieval

Blow *Kizami Tsuki* own point 1 inside match. Although only give points 1, blow *kizami tsuki* including blow Which difficult For in avoid or parried, so that can done n repeatedly in One match. So blow *Kizami Tsuki* This very help athlete in obtain victory moment compete. Tools used consists from punching bag, whistle, stopwatch, book and ballpoint.

Rubber or otherwise known with *resistance bands* own have different weight levels, in this study 2 types of rubber were used, namely yellow with a *resistance weight* of 3.5 – 7 kg and red with a *resistance weight* of 5 kg – 16 kg. The dumbbells used in this research are aligned with the weight of the *resistance band*, namely 3 kg and 5 kg. The training program can be seen in Table 1.

**Table 1:** Exercise Program

Types of Exercises		
Kisame on target slow		
Step kisame		
Step and pull		
Step Kisame		
Double Step Kisame		
Kisame on explosive targets		
Dose		
Item	Micro 1-2	Micro 3-4
Repetition	15	17
Set	3	4
Intensity	65%	75%
Rubber/Dumbbel	Yellow / dl 3kg	Red / dl 5kg
Rest/reps	30 seconds	30 seconds
Rest/sets	60 seconds	120 conds

Study This adopt approach quantitative with Two Group Pretest Posttest design, where the experiment conducted on two different groups and received treatment different exercises too. This design more perfect compared to with the previous model Because covers test initial (pretest) before treatment, followed with measurement back (posttest) after giving treatment For evaluate impact treatment the. With Thus, impact experiment can be measured in a way Certain. Group First accept exercise using rubber, temporarily group second accept exercise with dumbbells.

**Table 2:** Group Design Two Group Pre-Post Test

Subject	Pre	Treatment	Post-test
S <sub>1</sub>	pre-test	Rubber training	Post-test
S <sub>2</sub>	pre-test	Dumbbell exercises	Post-test

Data analysis methods applied is the T-test statistical test. In method This is the data that is analyzed expected own normal distribution between variable dependent (velocity blow kisame tsuki) and variables independent (rubber exercises and dumbbell exercises). This matter aim For get coefficient minimal variance between second variable the Before researcher do data analysis, some condition must fulfilled moreover formerly. For use analysis statistics parametric,

researcher need carry out prerequisite tests. This matter aim For ensure whether the data will analyzed fulfil necessary conditions or no, so step analysis furthermore can determined. Test prerequisites This includes normality test, homogeneity test, and T test.

## 2.4 Data Management

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## 3. Results & Discussion

Test data collection beginning or pretest, subject group exercise *rubber* totaling 7 people. Pretest data collected on the sample who did exercise *rubber* is obtained that is time lowest 1.50 seconds, time highest 1.29 seconds, value middle or mean 1.39 seconds, Std. Deviaton 0.08, and median 1.42 seconds. Test data collection beginning or pretest, subject group exercise dumbbells totaling 7 people. Pretest data collected on the sample who did exercise dumbbells obtained that is time lowest 1.25 seconds, time highest 1.66 seconds, value middle or mean 1.49 seconds, Std. Deviaton 0.15, and median 1.53 seconds.

Test data collection end or posttest, subject group exercise *rubber* totaling 7 people. Pretest data collected on the sample who did exercise *rubber* is obtained that is time lowest 1.15 seconds, time highest 1.41 seconds, value middle or mean 1.25 seconds, Std. Deviaton 0.09, and median 1.26 seconds. Test data collection end or posttest, subject group exercise dumbbells totaling 7 people. Pretest data collected on the sample who did exercise dumbbells are obtained that is time lowest 1.28 seconds, time highest 1.67 seconds, value middle or mean 1.51 seconds, Std. Deviaton 0.14, and median 1.54 seconds.

### Data analysis

On studies This is a normality test applied For evaluate is distribution a data is classified as normal or No. Testing This utilise Shapiro-Wilk test method due the amount of data is

less of 100.

**Table 3:** Rubber Training Data Results

No	Nama	Pre Test	Post Test	Gain Score
1	S1	1,29	1,17	-0,57
2	S2	1,31	1,15	-0,84
3	S3	1,32	1,18	0,44
4	S4	1,42	1,31	0,58
5	S5	1,45	1,26	0,79
6	S6	1,45	1,28	0,77
7	S7	1,5	1,41	1,00
Average		1.39	1.25	0.31

**Table 4:** Dumbbell Training Data Results

No	Name	Pre Test	Post Test	Gain Score
1	S1	1.25	1.28	0.12
2	S2	1.41	1.43	0.22
3	S3	1.41	1.42	-0.13
4	S4	1.53	1.54	0.25
5	S5	1.57	1.55	-0.40
6	S6	1.63	1.63	0.00
7	S7	1.66	1.67	0.06
Average		1.49	1.50	0.02

**Table 5:** Normality test

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Pretest Rubber	,208	7	,200*	,928	7	,531
Dumbbell Pretest	,168	7	,200*	,937	7	,615

Based on results, p value of velocity data UNJ KOP Karate athlete is bigger from 0.05. In conclusion are research data the normally distributed.

**Table 6:** Homogeneity Test

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Posttest Rubber	.208	7	.200*	.928	7	.531
Posttets Dumbbell	.164	7	.200*	.938	7	.624

Homogeneity test done For evaluate is sample own uniform variance or No with use device SPSS software version 20. Test this using the anova test was obtained velocitydata results UNJ KOP Karate athlete obtained sig. > 0.05. In conclusion is existing data in research This nature homogeneous.

**Table 7:** T test

	Practice Group	N	Mean	Std. Deviation	Std. Error Mean
Speed	Rubber	7	10.0071	.75412	.28503
	Dumbbells	7	11.9957	1.08640	.41062

**Table 8:** Gain Score Table

Gain Score Criteria (Arifatun <i>et al.</i> , 2015)	
Interval	Criterial
$G \geq$	High
$0,3 \leq g < 0,7$	Medium
$G \leq 0,3$	Low

The results of the data that have been input show test results differ on average between mark pretest and posttest. Test result group exercise *rubber* obtained calculated t value (14.718) > t table (2.447), Sig value. (2-tailed) (0.0001) < 0.05. That means, there is enhancement exercise *rubber* to velocityblow *kisame tsuki* on KOP Karate UNJ athletes. data



that has been input via SPSS version 20 above showing test results differ on average between mark posttest exercise *rubber* and *dumbbell* t. Test result group obtained value [t count *rubber* (14,718) > t count *dumbbell* (1.996)], t table (2.447). These results showing that calculated t value exercise *rubber* > t count exercise dumbbells, as well as t tables *rubber* > t table, meaning enhancement exercise *rubber* more Good than exercise *dumbbell* so more effective used For increase velocity. The grain score results show that the criteria for increasing rubber have a medium increase with a value of 0.3, while for dumbbells it has a value of 0.02, so the increase is low. So it can be stated that it is effectively used to increase the speed of *Kisame tsuki's* punches in KOP Karate UNJ athletes.

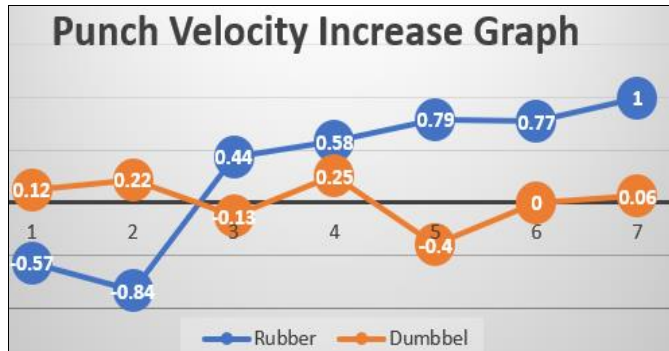


Fig 1: Punch Velocity Increase Graph

Practice blow *Kisame Tsuki* with effective, needed targeted and consistent approach. physical training in a way regular required For strengthen muscle arms and core, improving strength and velocityblow. Plus, practice techniques that focus on precise movements and positions Correct body is very important. Use equipment exercise like rubber or dumbbells help increase strength and velocityblow. Plus, practice together with instructor or colleague exercise can give bait valuable return For repair technique and improve performance. With dedication and consistent practice, blow *Kisame Tsuki* got it improved with significantly, improve ability in art defend karate self.

Use tool exercise like rubber or dumbbells help exercise blow *Kisame Tsuki* became more effective. Tools This can used For strengthen muscle arms and core, improving strength as well as velocityblow. Rubber band or resistance band, you can give varying resistance so that possible stabilization strength and velocityblow with intensity that can be customized. Temporary that, dumbbells provide burden possible additions used in exercise For increase strength muscles and develop control movement. With help tools This, karate athletes can more effective in train and improve Skills blow *Kisame Tsuki* as well increase quality technique and performance in practice art defend karate self

#### 4. Conclusions

Based on data analysis, then results study can there is enhancement velocity blow *kisame tsuki* use exercise *rubber* and dumbbells, however after comparing there is more improvement Good If use exercise *rubber* than dumbbells so that can concluded that more effective use exercise *rubber* For increase velocityblow *kisame tsuki* on KOP Karate UNJ athletes.

#### 5. Acknowledgements

Based on findings research, suggested For increase quality results study with increase amount subject study. Subject study should separated or isolated for treatment No distracted by activity other. Additionally, research advanced can done with introduce variable addition. The researchers expected can explore variation exercise different speeds for reach more good results.

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**Appendix****Table 1: T Test Result**

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