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The Effect Of The Use Of Ankle Weights On The Quality Of "T" Kick Of PSHT Students Of Sidoarjo Branch In Prambon Village

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Abstract

The quality of the T kick is one of the important aspects in pencak silat, which is inrvation results, the quality of the T kick of PSHT Sidoarjo Branch students in Prambon Village is still not optimal. This study aims to determine the effect of using ankle weights on the quality of T kicks. The study used a quantitative method with a One Group Pretest–Posttest Design. The research sample consisted of 16 students selected using a total sampling technique. Data collection was carried out through kick quality tests before and after treatment, then analyzed using descriptive statistics, normality tests, homogeneity tests, and paired-samples t-tests. The results of the study showed an increase in the average score from 25.50 in the pretest to 33.69 in the posttest. The results of the hypothesis test obtained a Sig. (2-tailed) value = 0.000 (p <0.05), which indicates that the use of ankle weights has a significant effect on improving the quality of T kicks. Thus, training using ankle weights is effective as an alternative training method to improve the quality of T kicks in PSHT students.

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1. INTRODUCTION

Pencak silat is a cultural heritage of Indonesia that has been recognized internationally as part of the nation's identity. Besides its function as a martial art, pencak silat has also developed into a competitive sport that demands mastery of technique, physical fitness, and tactical skills. In sparring pencak silat competitions, kicking is one of the most dominant forms of attack because it has high value and is effective in gaining points. One frequently used technique is the T-kick, a kick executed in a straight trajectory from a sideways position using the heel as the impact surface. The success of this technique is greatly influenced by the strength, speed, accuracy, and coordination of the pencak silat's movements.

Based on observations of students from the Persaudaraan Setia Hati Terate (PSHT) Sidoarjo Branch in Prambon Village, it was found that the quality of T-kicks was still suboptimal. Most students had difficulty producing fast, powerful, and accurate kicks, resulting in less-than-optimal attack effectiveness in training and matches. This situation indicates the need for training methods that can improve both physical ability and kicking technique. One training method that can be

implemented is the use of *ankle weights.* An ankle weight is a device that is attached to the ankle to provide additional weight during training. The gradual use of external weights can increase leg muscle strength, explosive power, and motor coordination, which is expected to improve kicking quality. The training principle is based on the concept of *progressive overload*, namely the systematic application of loads so that the body adapts and experiences increased physical abilities. Several previous studies have shown that training with additional weights can improve kicking performance in pencak silat. Research by Lungit Wicaksono et al. (2020) showed that training with adhesive weights has a significant effect on the speed of a silat athlete's front kick. Research by Anhar et al. (2023) also proved that training with rubber is effective in increasing the speed of a pencak silat athlete's front kick. Furthermore, Nimrot Manalu et al. (2025) explained that training with elastic media can increase kick strength and accuracy. However, research specifically examining the effects of using *ankle weights* on the quality of T-kicks in PSHT students is still relatively limited, so further research is needed. The novelty of this study lies in its specific focus on the effect of ankle weights on the quality of T-kicks among PSHT students, a combination that has not been directly examined in previous studies, thereby offering new empirical evidence and a practical contribution to the development of training methods in pencak silat. Based on these problems, this study aims to analyze the effect of using *ankle weights* on the quality of T-kicks in PSHT Sidoarjo Branch students in Prambon Village. The results of this study are expected to contribute as an alternative effective training method for coaches and athletes in improving the quality of kicking techniques and serve as a reference for developing training programs in the sport of pencak silat.

2. RESEARCH METHODS

This study uses a quantitative method with a pre-experimental approach through a One Group Pretest–Posttest Design. This design is used to determine the effect of using *ankle weights* on the quality of the T kick by comparing the measurement results before (*pretest*) and after (*posttest*) giving treatment to the same group.

The research was conducted at the PSHT Sidoarjo Branch training ground, Prambon Village, in April–June 2026. The research population consisted of 16 PSHT students, all of whom were sampled using the total sampling technique (*saturated sampling*).

The research instrument used Mega's Kick Accuracy Test to measure the quality of T kicks. Measurements were taken twice, namely before and after treatment. The treatment was in the form of a training program using an *ankle weight* weighing 2 kg, given over 16 sessions. Each training session consisted of a 15-minute warm-up, a 60-minute core workout that included variations of T-kick exercises using *ankle weights*, and cooling for 20 minutes.

The data were analyzed using descriptive statistics to describe the characteristics of the data. Prerequisite tests were then performed, including the Shapiro–Wilk normality test and the Levene homogeneity test. Hypothesis testing was performed using the Paired Sample t-test with the help of IBM SPSS Statistics software version 25 at a significance level of 0.05. Furthermore, the magnitude of the treatment effect was analyzed using Cohen's*dz* (*effect size*) to determine the strength of the effect of using *ankle weight* towards improving the quality of T kicks.

3. RESULTS AND DISCUSSION

The results of the study show that the use of *ankle weight* has a positive influence on improving the quality of T-kicks in PSHT Sidoarjo Branch students in Prambon Village. Based on descriptive statistical analysis, the average value (*mean*) pretest was 25.50, while the posttest average increased to 33.69. Thus, there was an average increase of 8.19 points after participants followed the training program using *ankle weights during* 16 meetings.

Before hypothesis testing, the data were first tested using normality and homogeneity tests. The results of the Shapiro–Wilk normality test showed a pretest significance value of 0.916 and a posttest significance value of 0.493 ($p > 0.05$), indicating that the data were normally distributed. Furthermore, the homogeneity test using the Levene Test obtained a significance value of 0.453 ($p > 0.05$), indicating that the data had homogeneous variance. With these prerequisite tests met, the analysis continued using the Paired Sample t-test.

The results of the hypothesis test showed a t value of -60.213 with a Sig. (2-tailed) value of 0.000 ($p < 0.05$). These results indicate that there is a significant difference between the pretest and posttest scores, so the alternative hypothesis is accepted. Thus, the use of *ankle weight* was proven to have a significant effect on improving the quality of T-kicks in PSHT Sidoarjo Branch students in Prambon Village. The magnitude of the treatment's influence was also strengthened by the calculation results of the *effect size* using Cohen's dz of 15.05, which is included in the very large effect category, thus indicating that the exercise using *ankle weight is* not only statistically significant, but also has a very large practical impact.

The increase in the quality of the T kick obtained in this study is thought to have occurred because training using *ankle weight* can improve leg muscle strength, explosive power, motor coordination, and control when kicking. The added weight to the legs during training causes the muscles to adapt to the higher workload. When the weight was removed during the posttest, participants were able to produce faster, stronger, and more accurate kicks than before the treatment.

The findings of this study align with the principle of progressive overload, which involves gradually applying training loads to improve physical abilities through the body's adaptation process. Furthermore, these results support the research of Lungit Wicaksono et al. (2020), which states that weight training can increase the speed of a silat athlete's kicks. These results are also consistent with the research of Anhar et al. (2023), which shows that weight training significantly improves kicking performance, and the research of Nimrot Manalu et al. (2025), which reports that resistance training effectively increases kicking strength and accuracy.

This study also has several limitations that should be acknowledged. First, the One Group Pretest–Posttest design used in this research did not include a control group, so the improvement in T-kick quality observed cannot be fully attributed to the ankle weight training alone; factors such as maturation, familiarization with the testing procedure, or natural motor learning may also have contributed to the results. Second, this study did not statistically control for external factors such as participants' prior training experience and physical condition, which may have influenced individual responses to the training program. Future studies are encouraged to take these factors into account when interpreting similar findings.

Based on the results of the study, it can be stated that the use of *ankle weights* is an effective training method for improving the quality of T-kicks in pencak silat students. This training program can be used by coaches as an alternative when developing physical and technical training, particularly

to improve kicking strength, speed, and accuracy, thus supporting athlete performance in training and competitions.

4. CONCLUSION

Based on the research results, it can be concluded that the use of *ankle weights* had a significant effect on improving the quality of T-kicks in PSHT Sidoarjo Branch students in Prambon Village. This was shown by an increase in the average score from 25.50 to 25.50 in the *pretest* to 33.69 in the *posttest*, as well as the results of the Paired Sample t-test, which obtained a Sig. (2-tailed) value = 0.000 ($p < 0.05$). In addition, the value of *effect size* Cohen's dz of 15.05 indicates that the use of *ankle weight* has a very big influence on improving the quality of T kicks. Thus, training using *ankle weight* can be used as an alternative effective training method to increase the strength, speed, and accuracy of T kicks in athletes and pencak silat students. For future research, it is recommended to employ an experimental design with a control group and a larger sample size in order to strengthen the validity of the findings and to control for potential confounding variables such as participants' training experience and physical condition.

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