



Physical Condition Profile of Nurussalam Taekwondo Club Medan Athletes

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Abstract.

Background

Based on the problem in this research, how is the physical condition of the Nurussalam Taekwondo Club Medan athletes, which consists of 1) flexibility, 2) explosive power of leg muscles, 3) speed, 4) agility, 5) strength.

Objectives

This study aims to determine the physical condition of Nurussalam Taekwondo Club Medan athletes as it is without providing any prior treatment.

Methods

This type of research is quantitative with a descriptive approach. The population in this study were all 20 athletes of Nurussalam Taekwondo Club Medan, while the sample in this study was 13 people. This research is called incidental sampling technique research. Data collection techniques to measure the physical condition of Nurussalam Taekwondo Club Medan athletes were by conducting push-up tests, sit-up tests, 30-meter runs, Illinois agility runs, sit and reach, and standing long jumps.

Results

Physical condition of Nurussalam Taekwondo Club Medan athletes, where the “very high” category is 7.69% (1 athlete), the “high” category is 23.08% (3 athletes), the “moderate” category is 38.46% (5 athletes), the “low” category is 30.77% (4 athletes), the “very low” category is 0% (0 athletes). Based on the average value, which is 301.13, the physical condition of Nurussalam Taekwondo Club Medan athletes is in the “Moderate” category.

Conclusion

The physical condition profile of Nurussalam Taekwondo Club Medan athletes can be concluded that the “very high” category is 7.69% (1 athlete), the “high” category is 23.08% (3 athletes), the “moderate” category is 38.46% (5 athletes), the “low” category is 30.77% (4 athletes), the “very low” category is 0% (0 athletes). Based on the above categories, it can be concluded that the physical condition profile of Nurussalam Taekwondo Club Medan athletes is in the “Moderate” category.

Keywords: Profile, Physical Condition, Taekwondo Athletes

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INTRODUCTION

The essence of sport is physical activity, such as playing games, and it involves the ability to sustain oneself, others, or the environment. Because sport includes competitive behavior, it should be carried out with a sense of humor and sportsmanship. Team sports encourage people to unite in an atmosphere of joy and honesty. Sport provides opportunities for individuals to act kindly and compassionately, without being overly critical of themselves. It can also be used as a medium to express thoughts. Sporting achievement is essentially the result of a long and continuous process and cannot be achieved instantly. This process includes various aspects such as systematic training, adequate facilities and infrastructure, and coaching that focuses on developing athletes' potential from an early age. However, there are still various obstacles in the athlete development process, especially in mapping and evaluating physical condition, which is in fact a key indicator in measuring an athlete's readiness for competition.

In line with efforts to improve the quality of national sports, the Indonesian government, through Komite Olahraga Nasional Indonesia, continues to promote athlete development across various sports, including taekwondo. Taekwondo, as a martial art that is rapidly developing in Indonesia, including North Sumatra, requires a high level of physical readiness from its athletes. Based on data from Pengurus Besar Taekwondo Indonesia, the number of registered taekwondo athletes in 2023 reached more than 55,000 active athletes across Indonesia, with around 1,200 athletes coming from North Sumatra, indicating that this sport has a broad development base. In addition, sport contributes to a person's well-being, both mentally and

physically, which ultimately affects their quality of life. Considering the importance of sport in human life as well as its role in improving the quality of life of Indonesian society, the government provides guidance and development in the field of sports, including improving athletes' skills. To achieve the desired level of health and well-being, training should begin as early as possible and can be pursued through both formal and informal education.

In relation to the system of sports development and improvement, the Indonesian government established a national organization, Komite Olahraga Nasional Indonesia, to promote various sports activities, including taekwondo. Taekwondo is a form of martial art originating from Korea, emphasizing both mental and physical training. Through consistent practice, practitioners can develop strong mental abilities and good sports ethics. Taekwondo also has a philosophical foundation that enables individuals to develop their body, mind, and spirit holistically. Taekwondo is a traditional Korean martial art that offers many benefits. It not only teaches physical skills such as fighting techniques but also instills mental discipline. In other words, taekwondo helps individuals develop both mental and physical abilities through disciplined practice.

The basic techniques of taekwondo consist of various offensive and defensive movements that utilize different parts of the body. To become a skilled practitioner, one must understand the following fundamentals: (1) target areas of the body (*keup*), (2) body parts used for attack and defense, (3) stances, (4) blocking techniques (*makki*), and (5) attacking techniques (*kongkyok kisul*). There are two main types of competition in taekwondo. The first is *kyorugi*, which involves sparring between two opponents using various techniques. The second is *poomsae*, which focuses on demonstrating sequences of movements and techniques. In *kyorugi*, athletes compete using kicks and punches, either offensively or defensively, to gain points. In *poomsae*, athletes perform specific patterns of movements, and those with the highest scores are declared winners.

The application of proper technique, strength, balance, endurance, flexibility, concentration, and self-control is essential in taekwondo training. *Poomsae* practitioners require high endurance due to the time and precision needed in performance. Flexibility is also crucial, as it enables efficient and wide-ranging movements. Above all, mental focus and accuracy are key factors, as athletes must maintain high levels of concentration to execute techniques correctly. Every athlete must pay close attention to their physical condition to remain in optimal shape. To improve physical condition, all its components must be developed. Physical condition consists of several key elements, including (1) strength, (2) endurance, (3) muscle power, (4) speed, (5) flexibility, (6) agility, (7) coordination, (8) balance, (9) accuracy, and (10) reaction.

Since physical condition is one of the main factors influencing performance in all sports, including taekwondo, it must be given serious attention. A good physical condition supports the mastery of basic techniques and ultimately determines the quality of an athlete's performance. In addition to technical skills, athletes must maintain a healthy physical condition to sustain performance over time.

Nurussalam Taekwondo Club Medan, as one of the active and productive clubs in producing high-achieving athletes, has contributed to various competitions at city, provincial, and national levels. However, there is still no scientific data that systematically documents the physical condition profiles of its athletes, even though such information is crucial for performance development. Physical condition is the main foundation in taekwondo, as the sport requires dominance in components such as speed, endurance, muscle strength, agility, flexibility, coordination, balance, and reaction accuracy. The lack of regular monitoring and evaluation of physical condition can lead to decreased performance and increased risk of injury during training and competition.

According to research by Sugiharto (2022) on student-level taekwondo athletes in West Java, 60% of athletes showed an imbalance between muscle strength and flexibility, which directly affected movement effectiveness in competition. This highlights the importance of evaluating physical condition not only for short-term competition needs but also for designing appropriate training programs and preventing overtraining and injuries. In the context of clubs such as Nurussalam Taekwondo Club Medan, one of the main challenges is the absence of a systematic database that records athletes' physical condition evaluations, both individually and collectively. In fact, each athlete has differences in training load tolerance, physiological response, and adaptability, which should form the basis for developing training programs. Differences in physical condition across age categories and competition classes also require more specific and individualized training approaches.

Each taekwondo class has unique physical characteristics that influence athletes' learning and development. Therefore, regular physical assessments are essential to monitor improvements and identify potential issues that may negatively affect performance. Coaches must continuously monitor athletes' physical condition to ensure steady improvement and quickly detect any problems that could hinder

performance. According to existing theories, a good physical condition is essential for every athlete and serves as a benchmark for improving training levels. It is also important for students and coaches to understand each athlete's physical condition as valuable information that can help them overcome challenges and optimize performance.

METHOD

Research Design

The research design used in this study is quantitative research with a descriptive approach, which aims to systematically collect and present data to obtain an objective picture of a particular phenomenon or variable without conducting hypothesis testing (Sugiyono, 2021). In the context of this study, a descriptive approach was used to obtain detailed information regarding the physical condition profiles of Nurussalam Taekwondo Club Medan athletes, including aspects of strength, endurance, speed, agility, and flexibility.

Participant

The research location was at the Nurussalam Taekwondo Club Medan. The population in this study was all 20 athletes from the Nurussalam Taekwondo Club Medan. After determining the population size, the next step was to determine the sample to be studied. A sample is a subset of the population and its characteristics (Sugiyono, 2021: 81). The sample consisted of 15 athletes from the Nurussalam Taekwondo Club Medan. They were selected by chance and were suitable as samples, namely athletes who had participated in Taekwondo championships.

Sampling technique is a sampling technique. To determine the sample to be used in the study, various sampling techniques exist. The sampling technique used by the researcher was propositional sampling. According to Sugiyono (2017: 85), propositional sampling is a technique for determining samples based on specific considerations. For example, if research is to conduct research on food quality, the sample data source would be people who are food experts, or if research on political conditions in a region is to conduct research on political experts.

Data Analysis

The data obtained for each test item is the raw data obtained from the results of each test. The data is then converted using t-scores and interpreted by categorizing the data.

The T-score results serve as the basis for determining clarification. To determine the T-score limit for each category, a standard score (T-score) is used. To facilitate data distribution, a standard score (T-score) is used with a five-category assessment. According to Saifuddin Azwar (2010:175-176), the five-category assessment is as follows:

Table 1. Physical Condition Profile Assessment Norms

No	Normal Range	Category
1	$M + 1,5 S < X$	Very High
2	$M + 0,5 S < X \leq M + 1,5 S$	High
3	$M - 0,5 S < X \leq M + 0,5 S$	Medium
4	$M - 1,5 S < X \leq M - 0,5 S$	Low
5	$X \leq M - 1,5 S$	Very Low

Description:

M: Mean value

X: Score

S: Standard deviation

RESULTS AND DISCUSSION

Results

This research was conducted at the Nurussalam Taekwondo Club Medan. The subjects were 13 athletes from the Nurussalam Taekwondo Club Medan. Physical condition data consisted of strength, speed, agility, flexibility, and explosive power of the leg muscles, which were then converted into T-scores. The physical condition data for the Nurussalam Taekwondo Club Medan athletes yielded a minimum score of

239.47, a maximum score of 370.55, a mean of 301.13, and a standard deviation of 44.43. The complete results are presented in Table 4.1 as follows:

Table 1 Physical Condition of Nurussalam Taekwondo Club Medan Athletes

No	Code Name	Strength		Speed		Agility		Flexibility		Explosive Power Leg Muscles		Total		
		PUSH UP		SIT UP		LARI 30M		Illinois Agility		Sit down and grab			Standing Jump	
		n	T Skor	n	T Skor	n	T Skor	n	T Skor	n	T Skor		n	T Skor
1	R1	23	43.78	50	58.3	4.34	66.27	15.00	57.76	38	49.6	223	59.32	335.03
2	R2	30	51.13	40	49.69	5.12	55.87	14.26	62.01	45	61.65	204	54.32	334.67
3	R3	15	35.37	55	64.11	5.40	52.13	15.47	55.06	39	51.33	215	57.21	315.21
4	R4	35	56.38	50	58.3	4.56	63.33	15.00	57.76	48	66.82	244	64.83	367.42
5	R5	25	45.88	50	58.3	5.32	53.2	15.92	52.47	41	54.77	211	56.16	320.78
6	R6	46	67.94	40	49.69	4.87	59.2	14.16	62.59	48	66.82	242	64.31	370.55
7	R7	35	65.38	45	52.5	5.25	54.13	16.15	51.15	37	47.88	194	51.7	322.74
8	R8	22	42.73	50	58.3	5.84	46.27	15.93	52.41	27	30.67	183	48.81	279.19
9	R9	40	61.64	50	58.3	6.19	41.6	18.77	36.09	34	42.72	154	41.19	281.54
10	R10	20	40.63	30	35.08	5.62	49.2	15.52	54.77	35	44.44	157	41.98	266.1
11	R11	15	35.37	35	40.88	6.43	38.4	18.28	38.91	37	47.88	142	38.03	239.47
12	R12	40	61.64	27	31.59	6.97	31.2	18.48	37.76	34	42.72	138	36.98	241.89
13	R13	30	51.13	35	40.88	6.38	39.07	19.62	31.21	34	42.72	131	35.14	240.15
<i>Mean</i>		28.92		42.85		5.56		16.35		38.23		187.54		301.13
<i>Std, Deviation</i>		9.52		8.61		0.75		1.74		5.81		38.06		44.43
<i>Minimum</i>		15		27		4.34		14.16		27		131		239.47
<i>Maximum</i>		46		50		6.97		19.62		48		244		370.55

When presented in frequency distribution form, the physical condition data for Nurussalam Taekwondo Club Medan athletes is presented in Table 4.2 as follows:

Table 2. Frequency Distribution of Physical Condition of Nurussalam Taekwondo Club Medan Athletes

No	Interval	Category	F	%
1	367.78 < X	Very high	1	7,69%
2	323.35 < X ≤ 367.78	Tall	3	23,08%
3	278.92 < X ≤ 323.35	Currently	5	38,46%
4	234.49 < X ≤ 278.92	Low	4	30,77%
5	X ≤ 234.49	Very Low	0	0%
Amount			13	100%

Discussion

From the description of the research results on the physical condition profile of athletes at Nurussalam Taekwondo Club Medan, it was found that the overall physical condition falls into the "moderate" category, with the highest frequency in the moderate category consisting of 5 athletes (38.46%). Specifically, 1 athlete (7.69%) is in the "very high" category, 3 athletes (23.08%) in the "high" category, 5 athletes (38.46%) in the "moderate" category, 4 athletes (30.77%) in the "low" category, and none (0%) in the "very low" category. The push-up strength of the athletes is categorized as "moderate." This indicates that, overall, arm muscle strength still needs improvement. According to recent research, arm muscle strength plays an important role in enhancing the effectiveness of blocking and punching techniques in taekwondo. Exercises such as push-ups are effective in optimizing maximum muscle contraction when dealing with external loads or resistance (Sari & Nugroho, 2020).

The sit-up strength of the athletes is categorized as "good." Overall, the 13 male athletes fall into this category, indicating that abdominal muscle strength should be maintained. According to Widiastuti (2015), abdominal muscle strength is crucial in taekwondo for withstanding attacks and reducing pain from opponents' strikes. It refers to the maximum contraction produced by a muscle or group of muscles. The 30-meter sprint speed of the athletes is categorized as "poor." This indicates that speed needs significant improvement, and therefore speed training is essential. Speed is defined as an individual's ability to respond

to stimuli and perform movements quickly within a very short time to cover a certain distance, involving efficient and coordinated muscle work (Putra & Yuliana, 2021).

The agility of the athletes, measured through the Illinois Agility Run test, is categorized as “very good.” This condition should be maintained and further improved through structured and continuous training programs. Agility is the ability to move quickly while changing direction, which is highly important in taekwondo for both evading and countering attacks effectively (Ramadhan & Setiawan, 2020). The flexibility of the athletes, measured using the sit and reach test, is categorized as “excellent” (super). This ability should be maintained and further enhanced, as flexibility is essential in taekwondo for performing movements such as high kicks and body rotations. Flexibility allows joints to move through an optimal range of motion and also helps reduce the risk of injury. It plays a significant role in improving performance in martial arts (Ananda & Prasetyo, 2021).

The leg muscle explosive power of the athletes, measured through the standing long jump test, is categorized as “poor.” Therefore, it is necessary to improve this component through regular, structured, and well-planned training programs. Explosive power of the leg muscles is defined as the combination of strength and speed of muscle contraction, which is essential in many sports activities, including taekwondo (Sjahriani, 2017).

CONCLUSION

The physical condition profile of athletes at Nurussalam Taekwondo Club Medan is divided into five components: strength, speed, agility, flexibility, and leg muscle explosive power. The strength component is measured through two tests: push-ups and sit-ups. The overall results show that push-up strength falls into the moderate category, while sit-up strength is in the good category. The speed component, measured through a 30-meter sprint test, is overall in the poor category. The agility component, assessed using the Illinois Agility Run test, is overall in the very good category. The flexibility component, measured by the sit and reach test, is overall in the excellent (super) category. Meanwhile, the leg muscle explosive power, measured through the standing long jump test, is overall in the poor category.

Based on the research titled “The Physical Condition Profile of Athletes at Nurussalam Taekwondo Club Medan,” it can be concluded that 7.69% (1 athlete) fall into the “very high” category, 23.08% (3 athletes) in the “high” category, 38.46% (5 athletes) in the “moderate” category, 30.77% (4 athletes) in the “low” category, and 0% (0 athletes) in the “very low” category. From these results, it can be concluded that the overall physical condition profile of athletes at Nurussalam Taekwondo Club Medan is in the “moderate” category.

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AUTHOR CONTRIBUTION STATEMENT

This research was conceptualized and designed by Hamdani Muhammad, who developed the research objectives and methodology, managed data collection, coordinated with participants, and supervised fieldwork at STOK Bina Guna Medan. Muhammad Syaleh performed data analysis, interpreted the findings, and contributed significantly to the drafting of the manuscript. All authors participated in the revision of the manuscript, approved the final version for submission, and take full responsibility for the integrity and accuracy of the work.

CONFLICT OF INTEREST AND FUNDING

The authors declare no conflict of interest related to the conduct, authorship, or publication of this study.

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