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Establishing standard levels in physical proficiency tests to accept students into the Department of Sports Sciences and Physical Activity at Taibah University.

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Abstract:

The study aimed to Establishing standard levels in physical proficiency tests to accept new students applying to the Department of Sports Sciences and Physical Activity at Taibah University. The study used the descriptive approach. The study was conducted on a sample of students applying to the Department of Sports Sciences and Physical Activity, numbering (120) students, in the academic year 2023/2024 AD. The study tools consisted of physical proficiency tests, represented by physical tests, which are (speed, ability, agility, flexibility, muscular strength, abdominal muscle endurance, respiratory endurance) tests. The results of the study showed the construction of standards for physical proficiency tests, indicating the grades for each physical test. The study recommends the necessity of applying the standards it reached in accepting new students to the Department of Sports Sciences and Physical Activity in the coming years. Adopting the standard level tables reached by this study to evaluate the level of physical efficiency of new students in the Department of Sports Sciences and Physical Activity in the following years.

Keywords: *(standard levels - Sports Sciences - physical proficiency tests - accept students)*

Introduction:

The Department of Sports Sciences and Physical Activity is one of the scientific departments in the College of Education. It is one of the departments that was the first to be established within the College of Education, as it was established in the year (1400 AH) in Medina through the branch of the College of Education of King Abdulaziz University in Medina. Taibah University was then established in the year (1424 AH). The vision, mission and goals of the department serve to achieve the vision and goals of the National Transformation Plan of the Kingdom of Saudi Arabia 2030 AD by serving the community in spreading and developing awareness of the importance of sports sciences and physical activity, preparing a good citizen in terms of physical, health and mental aspects, and maintaining the level of physical and general health fitness for all parties that employ the department's graduates, in addition to qualifying cadres and graduates who are able to bear responsibility and are professionally qualified in the field of sports sciences and physical activity. To achieve this, applicants to join the Department of Sports Sciences and Physical Activity are required to pass the department's admission tests, which include physical, health, physical and skill fitness, in addition to personal tests. Passing the physical fitness tests is considered one of the most important basic requirements for accepting a student into the department, as the student's passing of the physical fitness test is a true indicator of the abilities and motor potential that qualify him to excel and achieve the vision, mission and goals of the department. Scientific opinions indicate the importance of physical fitness tests as one of the important goals in physical education programs because it provides information through which motor potential can be interpreted. (Alawi and Radwan, 2000), (Armoroad Jackson, 2002).

Abdul Haq (2010) also confirms that physical fitness is of great importance when practicing any physical activity, as it is considered the cornerstone of all sports activities, as it is one of the aspects of comprehensive physical fitness. Khasawneh (2009) states that advanced countries in sports activity rely heavily on developing comprehensive physical fitness for all members of society in general and relying on it in physical education programs in particular. It is necessary for the student applying to study physical education to be characterized by comprehensive fitness represented by a healthy body and its freedom from deformities and his acquisition of the qualities of strength, speed, endurance and flexibility in a balanced manner, which makes him able to develop the special physical qualities related to learning various motor skills. Youssef (2009) adds that choosing a student to study in the sports field requires the necessity of having certain physical

qualifications so that he can achieve an acceptable level of development in the practical and theoretical aspects, and thus he needs to possess physical specifications so that he can practice various sports activities, and these specifications include strength, agility, flexibility, speed and endurance, which enable him to learn and acquire sports skills during his studies at the college, which qualifies him to be a successful teacher or trainer.

Bakir (2011) explains that the standards are one of the objective means that are relied upon in evaluating the performance of individuals, as the raw scores extracted from the test results do not give a real meaning unless they are calibrated and converted into values that can be translated, such as setting a person's level in relation to the group and judging his level compared to them and what he has put in place, in addition to the fact that the standards are values that determine the relative position of the individual and determine the setting of scores for special standard units in physical performance tests. Salama (2000) points out the importance of setting standard scores for physical and skill tests that measure the physical characteristics associated with the nature of the practiced sports performance, as they guide us about the physical condition of the athlete or student and identify areas of deficiency and weakness in physical preparation methods.

Many studies and scientific opinions have agreed on the importance of determining standard levels for physical attributes when evaluating people as determinants of selection, such as the study of Aman Khasawneh and others (2009), which aimed to determine standard levels in physical fitness tests for students of the Faculty of Physical Education at Yarmouk University in Jordan, the study of Rami Saleh Halawa and Hussam Abdul Razzaq Barakat (2011), which aimed to build standard levels for some tests related to physical fitness elements to evaluate new female students in the Faculty of Physical Education at the University of Jordan, the study of Ali Muhammad Jalal al-Din (2013), which aimed to set standards for physical fitness for new students in the Faculty of Physical Education at the University of Baghdad, the study of Adi Daraghmeh (2015), which aimed to set standard levels for some physical and skill tests for students applying for admission to the departments of physical education in Palestinian universities, the study of Issam Najah (2016), which aimed to set standard levels for health-related physical fitness elements for female students of physical education at Mutah University, and the study of Hill, Corey Hill, Kory and Thornburg, Roland (2016), which aimed to develop effective standards for testing physical fitness for pre-service physical education teachers, and the study of Aman Khasawneh (2018), which aimed to determine standard levels in physical fitness tests for students of the Faculty of Physical Education at Yarmouk University in Jordan, and the study of Samir Muhammad Mustafa Manawwar (2018), which aimed to build standard levels for basic tennis skills for students of the Faculty of Sports Sciences and Physical Activity at King Saud University, and the study of Mustafa Abdul Rahman Makhlouf (2019), which aimed to build standard levels to evaluate the level of physical fitness elements for ninth and tenth grade students in the intermediate educational stage in the schools of the South Amman region affiliated with the International Relief Agency, and the study of Fathi Al-Warshafani, Muhammad Al-Fazani and Tawfiq Al-Haddad (2021): which aimed to set standard T-scores for physical fitness tests used in accepting new students at the Faculty of Physical Education and Sports Sciences at the University of Benghazi, as all studies recommended the necessity of determining And to build standard levels to measure and evaluate the elements of physical fitness for admission tests for students enrolled in departments and colleges of physical education and sports sciences. The researchers benefited from scientific studies and opinions in determining the nature of the study procedures, in addition to choosing the tests that suit the sample of this study.

Study Problem:

Through the researchers' work as faculty members in the Department of Sports Science and Physical Activity, and as members of the department's admission tests, they noticed that there are no clear and unified criteria for selecting students enrolled in the Department's Sports Science and Physical Activity program, and to achieve the department's vision and goals in accepting distinguished students qualified to meet the department's requirements, especially the practical aspect. This was confirmed by (Morrow, 2000) that tests and measures based on sound scientific foundations are considered tools that help the trainer and teacher in evaluating performance in various aspects of physical activity, which can then identify strengths and weaknesses in addition to predicting the future. To achieve this, the researchers see building a unified scientific scale by building standard levels for physical efficiency tests, as determinants for accepting students into the department.

Study Objective:

Building standard levels for physical efficiency tests for students applying for admission tests to the Department of Sports Science and Physical Activity.

Study Question:

What are the standard levels for physical efficiency tests for students applying for admission tests to the Department of Sports Science and Physical Activity?

Study areas:

Human field:

Students applying for admission tests in the Department of Sports Sciences and Physical Activity in the academic year 2023/2024.

Spatial field:

Department of Sports Sciences and Physical Activity, College of Education, Taibah University

Temporal field:

The study was conducted at the beginning of the first semester of the academic year 2023/2024.

Study procedures: -

Study method:

The researchers used the descriptive to suit the nature of the study.

Study community and sample: -

The study sample was selected intentionally from the community of new students applying for admission tests in the Department of Sports Sciences and Physical Activity, where the size of the study sample was (120) students, and the following table shows the homogeneity of the study sample in basic measurements.

Table (1)
Shows the homogeneity of the study sample in the basic measurements N = 120

Statistical significance / Variables	Unit of measure	less valuable	Highest value	Mean	SD	Skewness Coefficient	kurtosis coefficient
Age	(year)	17.00	19.20	18.18	0.63	-0.01	-0.78
Height	(cm)	162.00	183.00	171.23	4.53	0.54	-0.02
Weight	(kg)	43.00	86.00	62.38	10.30	0.11	-0.60

It is clear from Table No. (1) which is concerned with the statistical description of the study sample in the basic variables under study that the data for the total study sample are moderate and not scattered and are characterized by the normal distribution of the sample, as the values of the skewness coefficient in it range between (-0.01 to 0.54) and these values are close to zero, which confirms the moderation of the data for the study sample

Study tools and devices:

- An approved device for measuring length (Resta-meter) to the nearest centimeter.
- An approved medical scale for measuring weight to the nearest kilogram.
- A stethoscope (to measure the pulse).
- A field and track.
- A box for measuring flexibility.
- A timer.

Measurements and tests used for the study:

In light of the theoretical study and in line with the objectives of the study and guided by what was mentioned in the reference studies and available scientific references on methods of measuring physical efficiency, the researchers identified a number of measurements, which are:

Basic measurements:

- Total body length: The Resta-meter device was used to measure the total length.
- Weight: The weight was estimated using the medical scale.

Physical efficiency measurements:

Physical efficiency tests were presented to the experts to determine the most important measurements to be used, and the following table shows the opinions of the experts on physical efficiency tests:

Table (2)
Percentage of opinions of the committee formed in the physical efficiency tests for the study sample (n=10)

NO	Test		Suitable		Not Suitable	
			Number	Percentage	Number	Percentage
1	Speed	30m sprint test	8	80%	2	20%
		50m sprint test	1	10%	9	90%
		100m sprint test	1	10%	9	90%
2	Power	Triple jump test	1	10%	9	90%
		Long jump from a standstill	8	100%	2	20%
		Vertical jump from a standstill	1	10%	9	90%
3	Agility	Various shuttle run test	1	10%	9	90%
		Zigzag run between hurdles test with numbers	2	20%	8	80%
		Inclined prone from standing (30 seconds)	7	70%	3	30%
4	Flexibility	Forward trunk flexion from standing	7	70%	3	30%
		Forward trunk flexion from sitting	2	20%	8	80%
		Backward trunk flexion from prone	1	10%	9	90%
5	Muscular Strength	Bend arms from prone position	8	80%	2	20%
		Push up from handstand	1	10%	9	90%

NO	Test		Suitable		Not Suitable	
			Number	Percentage	Number	Percentage
		Pull up with weight on the bar	1	10%	9	90%
6	Muscular Endurance	Leg raises from prone (1 min)	2	20%	8	80%
		Leg flexion from prone squat (1 min)	7	70%	3	30%
		Back raise from prone (1 min)	1	10%	9	90%
7	Respiratory Endurance	800m run	9	90%	1	10%
		1500m run	1	10%	9	90%
		Cooper test (12 min run)	0	0%	10	100%

It is clear from Table (2) that the percentage of agreement of the opinions of the experts on the physical efficiency tests ranged between (70%: 100%), and the researchers accepted a percentage of (70%) for the agreement of the opinions of the experts to accept the test. It is clear from Table (3) that there was agreement to accept (7) tests to evaluate physical efficiency.

Basic Study: -

The basic study was implemented on the study sample in the period from 08/20/2023 to 08/27/2023, in the Department of Sports Sciences and Physical Activity, Taibah University - Madinah - Kingdom of Saudi Arabia. The following is the statistical description of the measurements and tests under study

Table (3)

Statistical description of the variables of motor abilities under study for the study group N = 120

Statistical significance / Variables		Unit of measure	Min	Max	Mean	SD	Skewness Coefficient	kurtosis coefficient
Speed	30m Sprint	sec)	5.16	9.44	6.40	0.68	-0.18	2.76
Power	Long Jump	(cm)	110.00	250.00	190.12	37.06	-0.31	-0.81
Agility	Standing Incline	(number/30sec)	3.00	37.00	15.61	5.34	0.34	5.43
Flexibility	Standing Forward Bend	(cm)	-20.00	22.00	1.15	8.41	-0.09	-0.64
Strength	Standing Arm Bend	(number)	13.00	57.00	29.87	10.28	0.30	-0.63
Muscular Endurance	Low Bend	(number/1q)	15.00	70.00	36.99	10.08	0.49	0.83
Respiratory Endurance	Squat Bend	(q)	2.36	6.23	3.46	0.73	0.70	4.62

Table No. (3) for the statistical description of the study sample in the variables of Physical efficiency under study shows that the data for the total study sample are moderate and not scattered and are characterized by the normal distribution of the sample, as the values of the skewness coefficient range between (-0.31 to 0.70) and these values are close to zero, which confirms the moderation of the data for the study sample.

Statistical treatments:

The researchers used some statistical treatments to achieve the objectives and questions of the study via the computer using the statistical package program SPSS Version 25 to analyze the results. Statistical treatments were conducted at a confidence level of (0.95) corresponding to a significance level (probability of error) of 0.05, as follows:

- Arithmetic mean.
- Standard deviation.
- Median.
- Skewness coefficient.
- Flattening coefficient.
- Levels and percentiles.
- Thorndike T Score

- the Profile planning ranges**.**

Presentation and discussion of results:
Presentation of results for raw scores, T-score and ranking of the variables under study.

Table (4)
Raw scores, T score and ranking of the variables under study

Speed 30-meter sprint			***Ability Long Jump from Standing***			***Agility Prone to Standing Incline***			***Flexibility Front trunks bend down from standing***		
Raw Grade	***T score***	***Arrangement***	***Raw Grade***	***T score***	***Arrangement***	***Raw Grade***	***T score***	***Arrangement***	***Raw Grade***	***T score***	***Arrangement***	***Raw Grade***	***T score***	***Arrangement***
5.16	*68.12*	*1*	*6.68*	*45.91*	*48*	*250*	*66.16*	*1*	*37*	*90.05*	*1*	*22*	*74.81*	*1*
5.44	*64.03*	*2*	*6.71*	*45.47*	*49*	*249*	*65.89*	*2*	*28*	*73.20*	*2*	*15*	*66.48*	*2*
5.45	*63.88*	*3*	*6.72*	*45.32*	*50*	*248*	*65.62*	*3*	*25*	*67.58*	*3*	*14*	*65.29*	*3*
5.5	*63.15*	*4*	*6.74*	*45.03*	*51*	*247*	*65.35*	*4*	*24*	*65.71*	*4*	*13*	*64.10*	*4*
5.52	*62.86*	*5*	*6.75*	*44.89*	*52*	*240*	*63.46*	*5*	*23*	*63.84*	*5*	*12*	*62.91*	*5*
5.57	*62.13*	*6*	*6.76*	*44.74*	*53*	*235*	*62.11*	*6*	*22*	*61.97*	*6*	*11*	*61.72*	*6*
5.62	*61.40*	*7*	*6.79*	*44.30*	*54*	*230*	*60.76*	*7*	*21*	*60.09*	*7*	*10*	*60.53*	*7*
5.64	*61.10*	*8*	*6.8*	*44.16*	*55*	*223*	*58.87*	*8*	*20*	*58.22*	*8*	*9*	*59.34*	*8*
5.68	*60.52*	*9*	*6.82*	*43.86*	*56*	*221*	*58.33*	*9*	*19*	*56.35*	*9*	*6*	*55.77*	*9*
5.75	*59.50*	*10*	*6.87*	*43.13*	*57*	*220*	*58.06*	*10*	*18*	*54.48*	*10*	*4*	*53.39*	*10*
5.76	*59.35*	*11*	*6.91*	*42.55*	*58*	*215*	*56.71*	*11*	*17*	*52.61*	*11*	*3.5*	*52.80*	*11*
5.77	*59.21*	*12*	*6.95*	*41.96*	*59*	*210*	*55.37*	*12*	*16*	*50.73*	*12*	*3*	*52.21*	*12*
5.82	*58.47*	*13*	*6.96*	*41.82*	*60*	*209*	*55.10*	*13*	*15*	*48.86*	*13*	*2*	*51.02*	*13*
5.84	*58.18*	*14*	*6.99*	*41.38*	*61*	*205*	*54.02*	*14*	*14*	*46.99*	*14*	*1*	*49.83*	*14*
5.86	*57.89*	*15*	*7*	*41.23*	*62*	*202*	*53.21*	*15*	*13*	*45.12*	*15*	*0*	*48.64*	*15*
5.89	*57.45*	*16*	*7.02*	*40.94*	*63*	*200*	*52.67*	*16*	*12*	*43.24*	*16*	*-1*	*47.45*	*16*
5.91	*57.16*	*17*	*7.12*	*39.48*	*64*	*195*	*51.32*	*17*	*11*	*41.37*	*17*	*-2*	*46.26*	*17*
5.94	*56.72*	*18*	*7.21*	*38.16*	*65*	*192*	*50.51*	*18*	*10*	*39.50*	*18*	*-3*	*45.07*	*18*
5.97	*56.28*	*19*	*7.41*	*35.24*	*66*	*190*	*49.97*	*19*	*9*	*37.63*	*19*	*-4*	*43.88*	*19*
6	*55.84*	*20*	*7.65*	*31.74*	*67*	*189*	*49.70*	*20*	*8*	*35.75*	*20*	*-5*	*42.69*	*20*
6.03	*55.41*	*21*	*7.89*	*28.23*	*68*	*184*	*48.35*	*21*	*7*	*33.88*	*21*	*-6*	*41.50*	*21*
6.05	*55.11*	*22*	*7.93*	*27.64*	*69*	*183*	*48.08*	*22*	*4*	*28.27*	*22*	*-7*	*40.31*	*22*
6.06	*54.97*	*23*	*8.2*	*23.70*	*70*	*180*	*47.27*	*23*	*3*	*26.39*	*23*	*-8*	*39.12*	*23*
6.11	*54.24*	*24*	*9.44*	*5.58*	*71*	*175*	*45.92*	*24*				*-9*	*37.93*	*24*
6.12	*54.09*	*25*				*174*	*45.65*	*25*				*-11*	*35.55*	*25*
6.15	*53.65*	*26*				*165*	*43.22*	*26*				*-12*	*34.36*	*26*
6.16	*53.51*	*27*				*160*	*41.87*	*27*				*-13*	*33.17*	*27*
6.18	*53.21*	*28*				*158*	*41.33*	*28*				*-15*	*30.79*	*28*
6.19	*53.07*	*29*				*155*	*40.52*	*29*				*-16*	*29.61*	*29*
6.21	*52.78*	*30*				*150*	*39.17*	*30*				*-20*	*24.85*	*30*
6.22	*52.63*	*31*				*145*	*37.83*	*31*						
6.29	*51.61*	*32*				*142*	*37.02*	*32*						
6.35	*50.73*	*33*				*140*	*36.48*	*33*						
6.38	*50.29*	*34*				*135*	*35.13*	*34*						
6.39	*50.15*	*35*				*125*	*32.43*	*35*						
6.4	*50.00*	*36*				*110*	*28.38*	*36*						
6.41	*49.85*	*37*												

Speed 30-meter sprint						Ability Long Jump from Standing			Agility Prone to Standing Incline			Flexibility Front trunks bend down from standing		
Raw Grade	T score	Arrangement	Raw Grade	T score	Arrangement	Raw Grade	T score	Arrangement	Raw Grade	T score	Arrangement	Raw Grade	T score	Arrangement
6.44	49.42	38												
6.47	48.98	39												
6.49	48.68	40												
6.5	48.54	41												
6.51	48.39	42												
6.52	48.25	43												
6.53	48.10	44												
6.56	47.66	45												
6.6	47.08	46												
6.61	46.93	47												

Follow Table (4)

Raw scores, T score, and ranking of the variables under study

Respiratory endurance 800-m run						Muscle endurance Bend the arms from the inclined position			Strength Squat trunk flexion		
Arrangement	T score	Raw Grade	Arrangement	T score	Raw Grade	Arrangement	T score	Raw Grade	Arrangement	T score	Raw Grade
36	49.80	3.47	1	64.92	2.36	1	82.76	70	1	76.39	57
37	49.67	3.48	2	63.29	2.48	2	68.86	56	2	71.53	52
38	49.39	3.5	3	62.88	2.51	3	66.88	54	3	69.58	50
39	49.12	3.52	4	62.74	2.52	4	65.89	53	4	66.66	47
40	48.44	3.57	5	62.61	2.53	5	63.90	51	5	65.69	46
41	48.17	3.59	6	62.33	2.55	6	62.91	50	6	64.72	45
42	43.95	3.9	7	56.07	3.01	7	61.92	49	7	63.75	44
43	42.58	4	8	55.80	3.03	8	60.92	48	8	62.77	43
44	42.17	4.03	9	55.66	3.04	9	59.93	47	9	59.85	40
45	41.90	4.05	10	55.52	3.05	10	58.94	46	10	57.91	38
46	40.27	4.17	11	54.98	3.09	11	57.95	45	11	56.94	37
47	39.86	4.2	12	54.84	3.1	12	56.96	44	12	55.96	36
48	37.41	4.38	13	54.43	3.13	13	55.96	43	13	54.99	35
49	28.82	5.01	14	54.16	3.15	14	54.97	42	14	54.02	34
50	24.06	5.36	15	53.75	3.18	15	53.98	41	15	53.05	33
51	23.65	5.39	16	53.62	3.19	16	52.99	40	16	52.07	32
52	23.51	5.4	17	53.48	3.2	17	51.99	39	17	51.10	31
53	15.20	6.01	18	53.34	3.21	18	51.00	38	18	50.13	30
54	12.21	6.23	19	53.21	3.22	19	50.01	37	19	49.16	29
			20	52.94	3.24	20	49.02	36	20	48.18	28
			21	52.80	3.25	21	48.02	35	21	45.27	25

Respiratory endurance 800-m run			*Muscle endurance Bend the arms from the inclined position*			*Strength Squat trunk flexion*					
Arrangement	*T score*	*Raw Grade*	*Arrangement*	*T score*	*Raw Grade*	*Arrangement*	*T score*	*Raw Grade*	*Arrangement*	*T score*	*Raw Grade*
			22	***52.66***	***3.26***	***22***	***47.03***	***34***	***22***	***44.29***	***24***
			23	***52.39***	***3.28***	***23***	***46.04***	***33***	***23***	***43.32***	***23***
			24	***52.25***	***3.29***	***24***	***45.05***	***32***	***24***	***42.35***	***22***
			25	***52.12***	***3.3***	***25***	***44.05***	***31***	***25***	***41.38***	***21***
			26	***51.85***	***3.32***	***26***	***43.06***	***30***	***26***	***40.40***	***20***
			27	***51.71***	***3.33***	***27***	***41.08***	***28***	***27***	***39.43***	***19***
			28	***51.57***	***3.34***	***28***	***40.08***	***27***	***28***	***38.46***	***18***
			29	***51.44***	***3.35***	***29***	***39.09***	***26***	***29***	***37.49***	***17***
			30	***51.30***	***3.36***	***30***	***38.10***	***25***	***30***	***36.51***	***16***
			31	***51.16***	***3.37***	***31***	***37.11***	***24***	***31***	***35.54***	***15***
			32	***50.89***	***3.39***	***32***	***36.11***	***23***	***32***	***34.57***	***14***
			33	***50.76***	***3.4***	***33***	***34.13***	***21***	***33***	***33.60***	***13***
			34	***50.35***	***3.43***	***34***	***29.17***	***16***			
			35	***50.21***	***3.44***	***35***	***28.18***	***15***			

Table No. (4) for the raw scores, the modified standard score for Thorndike T score and the ranking of the variables under study is as follows: -

- Speed test (30-meter sprint) T score values ranged between (5.58 to 68.12).
- Power test (broad jump from standing) T score values ranged between (28.38 to 66.16).
- Agility test (prone to inclined position) T score values ranged between (26.39 to 90.05).
- Flexibility test (forward trunk bending from standing) T score values ranged between (24.85 to 74.81).
- Strength test (bending arms from pronation) T score values ranged between (33.60 to 76.39).
- Muscular endurance test (squatting trunk flexion) T-score values ranged from (28.18 to 82.76).
- Respiratory cyclic endurance test (800-meter run) T-score values ranged from (12.21 to 64.92).

Discussion of the T-scores for the physical fitness tests of the study sample:

Speed test (30-meter sprint).

T-scores ranged from (5.58 to 68.12), indicating a large variation in speed levels among participants. Speed is an essential component of athletic performance and is highly dependent on the composition of fast muscle fibers (Type II fibers) and neuromuscular skills. Low performance of some students may indicate a deficiency in these fibers or poor training in fast movements (Kenney, Wilmore, & Costill, 2019). Higher values in the T-scores reflect a better level of physical fitness, which may result from intensive training.

Power test (standing broad jump)

T-scores ranged from (28.38 to 66.16), indicating a difference in muscle power among participants. The standing broad jump is a measure of explosive power, which is the ability to produce force quickly (Haff & Triplett, 2016). Students with higher T-scores had good explosive power, which may be a result of effective high-intensity strength training.

Agility Test (Prone Incline from Standing)

T-scores ranged from 26.39 to 90.05, reflecting wide variations in agility levels. Agility is the ability to change direction quickly and accurately, and is essential in most sporting activities (Turner, Bishop, & Edwards, 2022). High performance indicates a high level of motor coordination and neuromuscular flexibility, while low scores may reflect poor motor control or lack of training in rapid movements.

Flexibility test (forward trunk flexion from standing)

T-values ranged from (24.85 to 74.81). Flexibility is an essential component of physical fitness, affecting athletes' ability to perform full movements efficiently and reduce the risk of injury (Behm et al., 2021). Low values may be indicative of poor flexibility or lack of training, while high values indicate good flexibility that enhances overall performance.

Strength test (arm flexion from prone)

T-values ranged from (33.60 to 76.39), indicating variability in muscle strength levels. Muscle strength is an essential component of athletic performance, especially in activities that require pushing or pulling (Haff & Triplett, 2016). High values indicate good strength from intense resistance training, while low values may reflect the need for improvements in upper body strength.

Muscular endurance test (squat trunk flexion)

T-scores ranged from (28.18 to 82.76), reflecting a wide range of muscular endurance. Muscular endurance is measured by the ability to perform repetitive movements for long periods without fatigue and is a key factor in many sports (Kraemer & Knuttgen, 2022). High performance indicates good levels of muscular endurance, while low values may reflect poor muscular endurance.

Cyclic respiratory endurance test (800-meter run)

T-scores ranged from (12.21 to 64.92), indicating a wide range of variability in cardiorespiratory endurance. Cardiorespiratory endurance reflects the body's ability to efficiently consume oxygen during sustained physical activity (Gibala & Jones, 2021). Low values may reflect a lack of cardiorespiratory fitness or insufficient capacity to consume oxygen, while high values indicate good levels of endurance, which is critical for performance in sports that require prolonged effort.

Based on the T-scores, standard levels can be set for each test, which are used as criteria for accepting students into the Sport Science and Physical Activity program. For example, minimum performance limits for students in speed, muscular endurance, and strength tests may be set to determine their physical readiness to study the program (Kenney et al., 2019). T-scores can be used to classify students into high, medium, and low levels, allowing for the customization of training programs to improve their weaknesses. The results indicate that there is a large disparity in physical fitness levels among students. It is necessary to use these results to improve admission criteria into the Sport Science and Physical Activity Department, and to develop training programs that target improving different physical aspects of students, whether in speed, muscular strength, or cardiorespiratory endurance. T-scores can be used to set standard criteria for accepting students and to develop customized training programs to meet their individual needs.

Table (5)
Levels and percentiles of the physical efficiency variables under study for the study sample

Variables	Mean	median	Levels and percentiles																	
			5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
Speed	6.40	6.44	7.9	7.0	7.0	6.9	6.8	6.7	6.6	6.5	6.5	6.4	6.4	6.2	6.1	5.9	5.9	5.8	5.7	5.6	5.5
Power	190.12	190.00	125.0	135.5	140.3	150.0	160.0	175.0	180.0	186.0	190.0	190.0	195.0	200.0	210.0	210.0	220.8	230.0	230.0	235.0	248.0
Agility	15.61	15.00	8.0	10.0	11.2	13.0	13.0	14.0	14.0	14.0	15.0	15.0	15.0	16.0	16.0	17.0	18.0	18.0	19.0	20.0	25.0
Flexibility	1.15	0.00	-12.0	-11.0	-7.9	-6.0	-4.8	-3.0	-2.0	-1.6	0.0	0.0	1.6	3.3	4.0	6.0	10.0	10.0	11.0	12.0	13.0
Strength	29.87	30.00	15.0	16.1	18.0	19.0	20.0	23.0	25.0	28.0	30.0	30.0	31.6	33.0	33.7	35.0	36.8	40.0	40.0	44.0	47.0
Muscular Endurance	36.99	36.00	23.1	24.1	26.0	26.2	31.0	32.0	34.0	35.0	35.0	36.0	38.0	38.6	40.0	41.0	42.8	44.0	47.0	50.9	54.0
Respiratory Endurance	3.46	3.29	5.4	4.2	4.0	3.5	3.5	3.5	3.4	3.4	3.3	3.3	3.3	3.2	3.2	3.2	3.1	3.1	3.0	3.0	2.5

It is clear from Table No. (5) for the levels and percentiles of the motor ability variables under study that the levels of the sample under study in the study variables were as follows:

- The value of the degree of the variable (speed) (30-meter sprint) at the 50th percentile was (6.4), the value of the highest percentile was 95 (5.5), and the value of the lowest percentile was 5 (7.9).
- The value of the degree of the variable (ability) (long jump from standing) at the 50th percentile was (190.0), the value of the highest percentile was 95 (248.0), and the value of the lowest percentile was 5 (125.0).
- The value of the degree of the variable (agility) (prone oblique from standing) at the 50th percentile was (15.0), the value of the highest percentile was 95 (25.0), and the value of the lowest percentile was 5 (8.0).
- The value of the variable (flexibility) (forward trunk bending from standing) was at the 50th percentile (0.0), the highest percentile was 95 (13.0), and the lowest percentile was 5 (-12.0).
- The value of the variable (strength) (arm bending from prone position) was at the 50th percentile (30.0), the highest percentile was 95 (47.0), and the lowest percentile was 5 (15.0).
- The value of the variable (muscular endurance) (trunk bending from lying squat) was at the 50th percentile (36.0), the highest percentile was 95 (54.0), and the lowest percentile was 5 (23.1).
- The value of the variable (respiratory endurance) (running 800 meters) was at the 50th percentile (3.3), the highest percentile was at the 95th (2.5), and the lowest percentile was at the 5th (5.4).

Discussion of levels and percentiles for physical efficiency tests for the study sample

Speed variable (30-meter sprint)

The percentile value was 50 (6.4) seconds, reflecting the average performance of the sample. Speed is a key factor in sports activities that require rapid changes in direction or quick sprints. Recent studies show that speed training enhances neuromuscular stimulation and contributes to improved performance (Morin & Samozino, 2019).

Performance at the 95th percentile (5.5) reflects a significant improvement in speed, which may indicate the quality of physical training in some students (Reed, 2021).

Power variable (standing broad jump)

The percentile value was 50 (190.0) cm, which is a good average for explosive power. The ability to broad jump depends on strength in the lower extremities and demonstrates the ability to convert stored energy into rapid movements (Cormie, McGuigan, & Newton, 2018).

At the 95th percentile (248.0 cm), high performance is typically associated with intense strength training that targets fast-twitch muscle fibers (Suchomel, Nimphius, & Stone, 2016).

Agility variable (prone oblique from standing)

The value at the 50th percentile (15.0 seconds) reflects the average agility of the sample. Agility is based on speed, balance, and fine motor control. Agility training helps improve response speed and directional changes in sports activities (Young & Willey, 2018).

High performance at the 95th percentile (25.0 seconds) reflects improved motor abilities, an indicator of regular and effective training.

Flexibility variable (forward trunk flexion from standing)

The value at the 50th percentile was (0.0 cm), indicating moderate flexibility. Flexibility is an essential component of reducing injuries and improving range of motion in athletic performance (Page, Frank, & Lardner, 2020).

At the 95th percentile (13.0 cm), good performance reflects a high level of flexibility, which can be improved through advanced flexibility training programs (Behm, Chaouachi, & Jean-Sébastien, 2019).

Strength variable (arm flexion from prone)

At the 50th percentile, the value was (30.0 repetitions), which is an indicator of moderate muscle strength. Strength training improves muscle capacity and endurance and increases strength in the target muscles (Faigenbaum & Myer, 2020).

A high performance at the 95th percentile (47.0 repetitions) reflects a high level of endurance and muscular strength, which can be enhanced through resistance training programs (Suchomel et al., 2016).

Muscular endurance variable (squat trunk flexion)

The value at the 50th percentile (36.0 repetitions), reflecting an average level of muscular endurance. Muscular endurance plays an important role in the ability to maintain performance over a long period of activity (Zatsiorsky & Kraemer, 2020).

At the 95th percentile (54.0 repetitions), high values reflect improved muscular endurance as a result of intensive training programs based on continuous and resistance training (Baechle & Earle, 2019).

Cardiorespiratory endurance variable (800-meter run)

The value at the 50th percentile (3.3 minutes), which is a good average for cardiorespiratory endurance. Cardiorespiratory endurance depends on the body's ability to efficiently consume oxygen during sustained physical activity (Powers & Howley, 2018).

Performance at the 95th percentile (2.5 minutes) reflects a high capacity for oxygen consumption and endurance of prolonged physical effort, which can be improved through high-intensity aerobic training (Midgley, McNaughton, & Jones, 2020). The percentile values show large variations in physical performance among the students participating in the study. These results highlight the importance of tailoring training programs to each individual to improve their physical performance. The percentile levels can be used as a tool to assess performance and guide future training, to ensure that motor abilities are improved in all aspects

Table (6)
shows the calculated values for the profile planning the measurements under study

Variables	All simple		Profile planning ranges						
			Positive Category			Intermediate category	Negative Category		
	mean	SD	Greater than M + SD2	Greater than M + 0.5 SD: Less than M + SD2	Greater than M + 0.5 SD: Less than M + SD	0.5 ±M SD	Less than M 0.5 - SD: Greater than M - SD	Less than M - SD2 Greater than M - SD2	Less than M - SD2
Speed	6.40	0.68	5.04	5.72	6.06	6.06	6.74	7.08	7.76
			Less than	5.04	5.72	6.74	7.08	7.76	Greater than
Power	190.12	37.06	264.24	227.18	208.65	208.65	171.59	153.06	116.00
			Greater than	264.24	227.18	171.59	153.06	116.00	Less than
Agility	15.61	5.34	26.29	20.95	18.28	18.28	12.94	10.27	4.93
			Greater than	26.29	20.95	12.94	10.27	4.93	Less than
Flexibility	1.15	8.41	17.97	9.56	5.36	5.36	-3.06	-7.26	-15.67
			Greater than	17.97	9.56	-3.06	-7.26	-15.67	Less than
Strength	29.87	10.28	50.43	40.15	35.01	35.01	24.73	19.59	9.31
			Greater than	50.43	40.15	24.73	19.59	9.31	Less than
Muscular Endurance	36.99	10.08	57.15	47.07	42.03	42.03	31.95	26.91	16.83
			Greater than	57.15	47.07	31.95	26.91	16.83	Less than
Respiratory Endurance	3.46	0.73	2.00	2.73	3.10	3.10	3.83	4.19	4.92
			Less than	2.00	2.73	3.83	4.19	4.92	Greater than

It is clear from Table (6) which shows the calculated values of the Profile planning ranges for the measurements under study that it can be classified into three levels (positive category) (intermediate category) (negative category)

Table (7)
Levels, frequencies and percentages of physical efficiency variables under study for the study group N=120

Variables	Levels	Repetition	%
Speed	Less than the average category	33	%27.50
	Intermediate category	45	%37.50
	Larger than the average group	42	%35.00
Power	Less than the average category	33	%27.50
	Intermediate category	43	%35.83
	Larger than the average group	44	%36.67
Agility	Less than the average category	21	%17.50
	Intermediate category	79	%65.83
	Larger than the average group	20	%16.67
Flexibility	Less than the average category	35	%29.17
	Intermediate category	47	%39.17
	Larger than the average group	38	%31.67

Follow Table (7)
Levels, frequencies and percentages of physical efficiency variables under study for the study group N=120

Variables	*Repetition*	*Repetition*	*%*
Strength	*Less than the average category*	*41*	*%34.17*
	Intermediate category	*46*	*%38.33*
	Larger than the average group	*33*	*%27.50*
Muscular Endurance	*Less than the average category*	*31*	*%25.83*
	Intermediate category	*59*	*%49.17*
	Larger than the average group	*30*	*%25.00*
Respiratory Endurance	*Less than the average category*	*19*	*%15.83*
	Intermediate category	*73*	*%60.83*
	Larger than the average group	*28*	*%23.33*

Table No. (7) for the levels, repetitions and percentage of the variables under study for the study group is as follows:

Speed (30-meter sprint)

The number of repetitions for the level was less than the average category (33 repetitions, 27.50%), the number of repetitions for the average category level was (45 repetitions, 37.50%), and the number of repetitions for the level was greater than the average category (42 repetitions, 35.00%).

Power (long jump from standing)

The number of repetitions for the level was less than the average category (33 repetitions, 27.50%), the number of repetitions for the average category level was (43 repetitions, 35.83%), and the number of repetitions for the level was greater than the average category (44 repetitions, 36.67%).

Agility (prone torso from standing)

The number of repetitions for the level was less than the average category (21 repetitions, 17.50%), the number of repetitions for the level was average category (79 repetitions, 65.83%), and the number of repetitions for the level was greater than the average category (20 repetitions, 16.67%).

Flexibility (forward trunk flexion from standing)

The number of repetitions for the level was less than the average category (35 repetitions, 29.17%), the number of repetitions for the level was average category (47 repetitions, 39.17%), and the number of repetitions for the level was greater than the average category (38 repetitions, 31.67%).

Strength (Low-prone Arm Curl)

The number of reps for the level was below the average category (41 reps, 34.17%), the number of reps for the level was above the average category (46 reps, 38.33%), and the number of reps for the level was above the average category (33 reps, 27.50%).

Muscular Endurance (Low-prone Trunk Curl)

The number of reps for the level was below the average category (30 reps, 25.83%), the number of reps for the level was above the average category (59 reps, 49.17%), and the number of reps for the level was above the average category (30 reps, 25.00%).

Respiratory endurance (800m run)

The number of repetitions for the level was less than the average category (19 repetitions, 15.83%), the number of repetitions for the level was average category (73 repetitions, 60.83%), and the number of repetitions for the level was greater than the average category (28 repetitions, 23.33%).

Discussion of the results of the side-shape network range (below average category, average category – above average category):

Speed variable (30-meter sprint)

It is shown that 33 participants (27.50%) were below average category, while 45 participants (37.50%) achieved performance in the average category, and 42 participants (35.00%) were above average category. This indicates a relatively balanced distribution among participants in terms of speed, reflecting the possibility of developing it through individual training programs. According to studies, speed is one of the basic motor skills in many sports activities and requires intensive training to develop fast and explosive muscles (Clark, Lucett, & Sutton, 2018).

Power variable (standing broad jump)

The results show that 33 participants (27.50%) were below average category, 43 participants (35.83%) were in the average category, and 44 participants (36.67%) were above average category. This close distribution reflects the continuous improvement in motor ability and the ability to produce force. Motor ability training, particularly through explosive strength training, contributes effectively to the development of athletic performance (Haff & Triplett, 2015).

Agility variable (prone oblique from standing)

It was observed that 21 participants (17.50%) were below the median category, while 79 participants (65.83%) were in the median category, and only 20 participants (16.67%) exceeded the median category. This indicates that agility is a challenge for most participants. Agility requires coordination between speed, balance, and strength, and is essential for good performance in sports activities that require rapid changes in direction (Sheppard & Young, 2020).

Flexibility variable (forward trunk flexion from standing)

Flexibility results indicated that 35 participants (29.17%) were below the median, 47 participants (39.17%) were in the median category, and 38 participants (31.67%) were above the median category. Flexibility plays an important role in reducing injuries and improving motor performance

and requires continuous improvement through frequent stretching programs (Behm, Chaouachi, & Jean-Sébastien, 2019).

Strength variable (arm flexion from prone position)

The percentage of participants who were below the median category was 34.17%, while 38.33% were in the median category, and 27.50% were above the median category. Muscle strength is essential for achieving stability and balance in movement, and improving it enhances performance in a wide range of sports activities (Faigenbaum & Myer, 2020).

Muscular endurance variable (squat trunk flexion)

The results were distributed so that 25.83% were below the median category, 49.17% were in the median category, and 25.00% were above the median category. Muscular endurance depends on the body's ability to maintain strength over a long period of time and is important for physical activities that require continuous effort (Baechle & Earle, 2019).

Cardiorespiratory endurance variable (800-meter running)

The cardiorespiratory endurance results showed that 15.83% of the participants were below the median category, 60.83% were in the median category, and 23.33% exceeded the median category. Cardiorespiratory endurance is considered a major factor in the ability to sustain physical effort for long periods and is associated with improved performance of the heart and respiratory systems (Midgley, McNaughton, & Jones, 2020).

The results indicate that there is a difference in the levels of physical efficiency among the participating students. By analyzing the percentage distributions, it can be concluded that the middle category accounts for the largest proportion in most variables, indicating the possibility of improving performance through targeted training interventions. Enhancing physical abilities through intensive and directed training programs is necessary to improve performance in various motor aspects.

Conclusion:

In light of the study objectives, statistical treatments, and presentation and discussion of the results, the researchers reached the following conclusions:

1. The percentile ranks were determined, and standard levels were built for physical efficiency tests for students applying for admission tests in the Department of Sports Sciences and Physical Activity.
2. There is a difference in the levels of physical efficiency among students participating in the admission tests in the Department of Sports Sciences and Physical Activity.
3. The students' results in the physical efficiency tests are subject to the normal distribution within the normal curve.

Recommendations:

In light of the results of the study, the researchers recommend the following:

1. Applying the standard levels for physical efficiency tests that were built in selecting students applying for admission tests in the Department of Sports Sciences and Physical Activity.
2. Adopting the standard level tables reached by this study to evaluate the level of physical efficiency of new students in the Department of Sports Sciences and Physical Activity in the following years.
3. Use these results to improve admission criteria in the Department of Sports Science and Physical Activity and develop training programs targeting the improvement of various physical aspects of students accepted in the department.
4. Use these tests as an indicator and guide for the educational process in practical courses when teaching students accepted in the Department of Sports Science and Physical Activity.

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