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Anthropometric, cardio-respiratory and body composition parameter of secretarial staff in Prince Abubakar Audu University Anyigba

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Abstract
This study aimed to examine the notable distinctions in anthropometric measurements, cardio-respiratory indicators, and body composition parameters among secretarial staff at Prince Abubakar Audu University in Anyigba. The researchers employed a complete enumeration procedure to select secretarial staff from the university's seven faculties. The anthropometric variables considered included body girth measurements such as thigh, mid-thigh, hip, wrist (both relaxed and contracted), waist circumference, upper arm length, lower arm length, upper leg length, and lower leg length. Physiological parameters, such as resting heart rate, systolic blood pressure, and diastolic blood pressure, were also recorded. Descriptive statistics, including mean and standard deviation, were utilized to summarize the collected data, while inferential statistics, specifically ANOVA, were employed to compare the measurements across the seven faculties. The results indicated that the faculty of education exhibited the highest values for these parameters among the groups. Based on these findings, it can be concluded that the secretarial staff in the study area generally had low skinfold measurements. One of the recommendations arising from the study is that the secretarial staff should engage in regular physical fitness activities.

Keywords: Anthropometric, cardio-respiratory fitness, body composition, physiological and secretarial staff

1. Introduction
Anthropometric measurements involve the scientific study of the human body's measurements and proportions, including factors such as weight, height, body mass index (BMI), body circumference (such as arm, waist, hip, and calf), waist-hip ratio, elbow amplitude, and knee-heel length. These measurements are crucial in understanding and comparing the physical characteristics and morphology of individuals. Athletes, in particular, greatly benefit from anthropometric assessments as specific physical characteristics strongly influence their suitability and performance in different sports. Anthropometry serves as a scientific approach to measuring various body parts and dimensions across different ages, races, social classes, and other divisions. The field of physical ergonomics further emphasizes anthropometry as a research area that examines body measurements, including body size, shape, strength, mobility, flexibility, and work capacity.

Cardio-respiratory fitness (CRF) refers to the capacity of the circulatory and respiratory systems to provide oxygen to the skeletal muscles during sustained physical activity. The measurement of
CRF, known as VO_2 max, is highly correlated with cardiovascular risk factors and is a more accurate indicator than mere physical activity levels. VO2max represents the maximum rate at which the body can utilize oxygen during intense exercise and is typically expressed as millilitres of oxygen per kilogram of body weight per minute [5].

There are numerous benefits of cardio-respiratory fitness for secretarial staff. It can significantly reduce the risk of heart disease, lung cancer, type 2 diabetes, stroke, and other diseases. Improving cardio-respiratory fitness enhances the condition of the lungs and heart, leading to an increased sense of well-being.

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Growing evidence suggests that cardio-respiratory fitness may be a better predictor of mortality compared to other risk factors such as smoking, hypertension, high cholesterol, and type 2 diabetes. A recent study even revealed that lower levels of cardiorespiratory fitness were associated with premature death in individuals under the age of 65 in recent generations. This suggests that low cardio-respiratory fitness may be emerging as a new risk factor for early mortality [6].

Body composition refers to the proportion of fat and lean muscle tissue in the human body. It is commonly expressed as a percentage of total body weight and plays a crucial role in an individual's health and physical fitness profile [7]. Relying solely on body weight as an indicator of good health is insufficient since it does not differentiate between pounds or kilograms of lean body mass and fat. As people recognize the importance of assessing health risks, the popularity of body composition as a measure of progress is increasing. It serves as a vital measurement for evaluating health and fitness levels among volleyball players, the general population, and individuals of both genders. Examples of body composition measurements include body mass index (BMI), waist-to-hip ratio (WHR), and body fat percentage determined through skinfold measurements. Having excess weight that lacks muscle can be particularly detrimental. In the context of assessing fitness levels for athletes, body composition is essential [8]. Furthermore, it can be predicted using anthropometric measures [8]. Waist-to-hip ratio (WHR) is one of seven measurements that doctors use to determine if someone is overweight and assess if the excess weight poses health risks. Unlike body mass index (BMI), which calculates the ratio of weight to height, WHR compares the circumference of the waist to the circumference of the hips [9]. The World Health Organization (WHO) has set guidelines for a healthy waist-to-hip ratio (WHR). According to these guidelines, a WHR of 0.9 or less is considered healthy for men, while a WHR of 0.85 or less is considered healthy for women. However, if the WHR is 1.0 or higher in both men and women, it indicates an increased risk for heart disease and other conditions associated with being overweight.

Table 1: Waist-to-hip ratio chart

Female	Male	Health risk
0.80 or	0.95 or	Moderate risk
Lower	Lower	Low health
0.81 to 0.84	0.96 to 1.0	Risk
0.85 or	1.0 0r	Moderate risk
Higher	Higher	Higher risk

The skinfold measurement test is a longstanding and widely used method for assessing body composition and determining body fat percentage [10]. This test involves measuring the thickness of skinfold folds, which represents the amount of fat located beneath the skin, also known as subcutaneous adipose tissue. By measuring these skinfold thicknesses at specific sites on the body, an estimation of the individual's percentage of body fat can be derived.

Table 2: Skinfold Caliper Chart

Ability	Gender	Excellent	Good	Average	Below Average	Poor
Normal	Male	60-80	81-90	91-100	111-150	150+
Normal	Female	70-90	9-100	100-120	121-150	150+
Athlete	Male	40-60	61-80	81-100	101-130	130+
Athlete	Female	50-70	71-85	86-110	111-130	130+

[11] Discussed the concept of determining the appropriate weight for an individual based on their height and age.

However, it is important to note that there is no universal ideal healthy weight that applies to everyone. Body mass index (BMI) is a commonly used tool to assess whether a person's body weight is appropriate for their height. BMI calculates an individual's weight relative to their height. According to [12, 11], the following BMI ranges are commonly used:

- A BMI below 18.5 indicates that a person is underweight.
- A BMI between 18.5 and 24.9 is considered ideal.
- A BMI over 30 is indicative of obesity.
- A BMI between 35 and 39.9 falls under the category of Obese II.
- A BMI above 40 is classified as Obese III.

These BMI ranges provide a general guideline for assessing weight status, but it's important to consider individual factors and consult with a healthcare professional for a comprehensive evaluation.

1.1 Justification for the Study
The research problem that was addressed in this study will describe the factors associated with anthropometric, cardio-respiratory and body composition parameters among the secretarial staff of Prince Abubakar Audu University. This helped secretarial staff to know the fitness components which will be of benefit to them and how it affects their daily life activities.

Given that regular physical activity is crucial for maintaining a healthy lifestyle, the study recognized that many secretarial staff lead physically inactive lives and may experience exhaustion or lack time for exercise. The advancements in science and technology have significantly reduced the need for physical exertion in daily life, particularly in recent generations. In contrast, athletes lead physically active lives as their academic curriculum includes regular exercise and participation in outdoor games. The study acknowledged that physical inactivity is a major health issue and emphasized the importance of regular exercise in preventing and managing various chronic diseases and conditions. Anthropometric, cardio-respiratory, and body composition assessments provided an opportunity for secretarial staff to observe the effects of training and evaluate their cardio-respiratory systems.

Therefore, it was necessary to determine if the secretarial staff at Prince Abubakar Audu University possessed similar anthropometric, cardio-respiratory, and body composition profiles. This understanding was essential for ensuring good cardiac efficiency and optimal performance in their daily work routine activities. The study expressed a strong motivation to undertake this research based on the importance of addressing these aspects for the well-being and performance of the secretarial staff. This research aimed to conduct a comparative analysis of the anthropometric, cardiorespiratory, and body composition parameters among secretarial staff at Prince Abubakar Audu University in Kogi State, Nigeria.

1.2 The specific objectives were as follows
- To determine the differences in selected anthropometric variables among the secretarial staff at Prince Abubakar Audu University.
- To identify the differences in cardio-respiratory variables among the secretarial staff at Prince Abubakar Audu University.
- To assess the differences in body composition among the secretarial staff at Prince Abubakar Audu University.

The research aimed to investigate and compare these specific aspects to gain insights into the characteristics and profiles of the secretarial staff at the university. By analyzing the anthropometric measurements, cardio-respiratory variables, and body composition parameters, the research aimed to contribute to a better understanding of the health and fitness levels of the secretarial staff in the university setting.

The significance of this research work could be seen in the improvements of physical fitness and also to promote the need for excellent performance of Secretarial Staff, in Prince Abubakar Audu University, Anyigba. The research could also be useful in knowing the difference in anthropometric, physiological and body composition of Secretarial Staff at Prince Abubakar Audu University, Anyigba. This work will also point to prominent fitness components peculiar to secretariat staff and what to expect of secretarial staff.

This research tends to check if secretarial staff are exposed to risk factors that could be of health challenges to them. This work will educate the staff on how to be physically fit and healthier in performing their daily activities. This study also tends to educate the staff about Anthropometrics physiological variables and body composition expected to be possessed by the secretarial staff.

2. Materials and Methods
The research design employed for this study was a causal-comparative design, also known as an ex-post facto design because it involves comparing groups of persons to find out if some independent variables have caused a change or influenced the dependent variables. The representative samples of the secretarial staff will be used by measuring the anthropometric, physiological and body composition of the entire secretarial staff in the seven (7) faculties. This is done by exposing them to the morning body measurement as a form of treatment during the measurement of their body parameter. The research was carried out at Prince Abubakar Audu University, located in Anyigba, within the Dekina Local Government area of Kogi State, Nigeria. The study included all the secretarial staff members employed in the seven faculties that are part of Prince Abubakar Audu University.

2.1 Anthropometric and Body Composition Measurements
The participant's physical and anthropometric characteristics were assessed using standardized procedures [13]. Measurements of body mass and stature were conducted indoors using an electronic weighing scale (Seca digital floor scale, Sec-880; Seca, Birmingham, UK) and a wall-mounted stadiometer (Model Sec-206; Seca, UK). Body mass index (BMI) was calculated by dividing the weight in kilograms by the square of the stature in meters (kg/m^2). Each measurement was taken three times, and the median value of the three readings was recorded.

To estimate the percentage of body fat, the revised regression equations developed by Slaughter, *et al.*, as mentioned in [14] for black children, were employed. Based on the Fitness Gram revised data from The Cooper Institute [15], participants were categorized into either the healthy weight (HW) group or the overweight (OW) group, considering their risk and fatness levels.

To assess abdominal fat, waist circumference (WC) measurements were taken using a retractable metal tape (Creative Health Products, MI, USA). The measurements were obtained at the level of the umbilicus and midway between the lower rib margin and the iliac crest. Readings were taken at the end of a quiet expiration, with the nearest 0.1 cm recorded. Two measurements were taken, and the average score was documented.

2.2 Fitness testing
The participants' Cardio-Respiratory Fitness (CRF) was evaluated using the progressive aerobic cardiovascular endurance run (Pacer) protocol. The PACER test is a well-established and reliable assessment of aerobic fitness, commonly used with individuals of different age groups, including children, adolescents, and adults [13]. The maximum speed at which each participant completed the test was recorded and utilized to estimate their peak VO2 (oxygen consumption) in millilitres per kilogram per minute (ml/kg/min). This estimation was based on the regression equation provided by [17] in [12]. The specific details regarding the administration of the test have been previously described.

2.3 Blood pressure
Blood pressure measurements were obtained using an automated digital BP monitor (HEM-705 CP; Omron) after the participants had been seated quietly for a period of 10 minutes. Resting systolic blood pressure (SBP), diastolic blood pressure (DBP), and pulse rate were measured on the participants' right arm using cuffs of appropriate sizes. The accuracy of this instrument has been validated [18, 13]. Each measurement was taken twice with a 2-minute interval between readings, and the average value of the two readings was recorded.

2.4 Data Analysis
Descriptive statistics, including the mean and standard deviation (SD), were utilized to summarize the characteristics of the sample, including the measured and derived variables. The independent samples t-test was employed to examine potential differences in physical characteristics, performance, and features among the Secretarial staff. Furthermore, an analysis of variance (ANOVA) was conducted to determine if there were significant differences among the variables of the Secretarial staff at Prince Abubakar Audu University, Anyigba. All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) software, version 25, developed by SPSS Inc. in Chicago, IL, USA. Statistical significance was set at an alpha level of 0.05 or less.

3. Results and Discussion
The results of the data analysis were presented in the tables below. Table 3 displays the average values, standard deviations, and results of the analysis of variance (ANOVA) conducted for the physical characteristics of the secretarial staff in the seven faculties. The table provides a summary of the data, including the means and standard deviations, as well as the statistical analysis comparing the variables among the faculties.

Table 1: Show Variables, Group and Mean ± SD

Variables	Group	N	Mean ± SD	T	Sig
Age	Art & Humanities	3	45.67±11.54	0.754	.617
	Social sciences	3	42.67±6.80		
	Agricultural science	3	43.34±20.20		
	Management	3	41±4.35		
	Education	3	52.34±4.50		
	Natural science	4	37±5.94		
	Law	2	44.50±0.70		
Height	Art & Humanities	3	163.167±2.84	3.005	.042
	Social sciences	3	161±3.60		
	Agricultural science	3	156.80±2.15		
	Management	3	164.53±4.30		
	Education	3	167.05±4.0		
	Natural science	4	164.62±3.01		
	Law	2	163.60±1.97		
Weight	Art & Humanities	3	67.20±9.62	0.695	.658
	Social sciences	3	70.80±1.90		
	Agricultural science	3	63.20±8.05		
	Management	3	73.94±16.12		
	Education	3	80.07±19.14		
	Natural science	4	65.27±10.250		
	Law	2	71.750±12.51		

$p \leq 0.05 \leq 3.82$

Table 3 shows the mean, standard deviation and t-value of age, height and weight of secretarial staff in the 7 Faculties, for Art & Humanities, Social Sciences, Agricultural Sciences, Management Sciences, Education, Natural Sciences and Law with age, Art & Humanities 45.67±11.54, Social Sciences 42.67±6.80 Agricultural Science 43.34±20.20 Management Sciences 41±4.35 Education 52.34±4.50 Natural Sciences 37±5.94 and Law 44.50±0.70 and the t-value 0.754 Faculty of Education are the oldest while Faculty of Natural Science is the youngest. For height Art & Humanities has 163.167±2.84, Social Sciences 161±3.60, Agricultural Science 156.80±2.15, Management Sciences 164.53±4.30, Education 167.05±4.0, Natural Science 164.62±3.01, law 163.60±1.97 and t-value 3.005, Faculty of Education are the tallest.

For weight Art & Humanities 67.20±9.62, Social Sciences 70.80±1.90 Agricultural Science 63.20±8.05, Management Science 73.94±16.12, Education 80.07±19.14, Natural Sciences 65.27±10.250, law 71.750±12.51 and t-value 0.695, Faculty of Education are the heaviest from ANOVA test made they are the difference among the three (3) variables were Faculty of Education having the highest parameter among the group.

Table 4: Shows mean, SD and F results for Anthropometric variables of secretarial staff in the seven (7) faculties

Variables	Group	N	Mean ± SD	T	Sig
Contracted arm girth	Art & Humanities	3	34.00±2.29	1.217	.354
	Social sciences	3	33.40±2.65		
	Agricultural science	3	31.34±3.68		
	Management	3	34.00±3.60		
	Education	3	31.83±4.19		
	Natural science	4	32.25±2.59		
	Law	2	27.50±1.41		
Relaxed arm girth	Art & Humanities	3	31.83±2.81	0.732	.502
	Social sciences	3	31.17±2.30		
	Agricultural science	3	29.67±3.88		
	Management	3	32.33±2.88		
	Education	3	30.67±3.61		
	Natural science	4	30.00±4.81		
	Law	2	79.75±4.59		
Waist girth	Art & humanities	3	89.83±8.22	1.976	.138
	Social sciences	3	95.00±5.56		
	Agricultural science	3	93.33±6.82		
	Management	3	101.50±11.78		
	Education	3	101.50±12.75		
	Natural science	4	89.37±6.34		
	Law	2	16.25±1.06		
Hip girth	Art & humanities	3	107.500±7.088	1.049	.436
	Social sciences	3	103.667±5.13		
	Agricultural science	3	104.667±4.53		
	Management	3	104.50±5.074		
	Education	3	106.50±16.82		
	Natural science	4	97.12±12.93		
	Law	2	89.75±2.47		
Arm span	Art & humanities	3	57.66±2.56	1.160	.380
	Social sciences	3	58.93±3.00		
	Agricultural science	3	54.16±3.17		
	Management	3	67.83±16.54		
	Education	3	44.00±24.26		
	Natural science	4	57.62±3.11		
	Law	2	46.10±.98		
Thigh girth	Art & humanities	3	51.00±6.92	971	.480
	Social sciences	3	56.66±1.15		
	Agricultural science	3	56.50±3.77		
	Management	3	57.83±9.07		
	Education	3	55.50±6.00		
	Natural science	4	53.70±5.86		
	Law	2	47.50±3.53		

Palm finger length	Art & humanities	3	18.26±.87	1.301	.319
	Social sciences	3	19.00±1.32		
	Agricultural science	3	18.50±.80		
	Management	3	19.00±1.80		
	Education	3	20.33±.57		
	Natural science	4	19.37±.62		
	Law	2	18.85±.21		

$p \leq 0.05 \leq$ critical value 3.82

Table 4 represents the mean, standard deviation and t-value of anthropometric of secretarial staff in the seven (7) faculties which are the Faculty of Art & Humanities, Faculty of Social Sciences, Faculty of Agricultural Science, Faculty of Management Science, Faculty of Education, Faculty of Natural Science and Faculty of Law include their contracted arm girth, relaxed arm girth, waist girth, hip girth, wrist girth, chest girth, leg length, in Prince Abubakar Audu University (PAAU), Anyigba secretarial staff with contracted arm girth of Art & Humanities 34.00±2.29, social science 33.40±2.65, Agricultural Science 31.34±3.68, Management Science 34.00+3.60, Education 31.83±4.19 Natural Science 32.25±2.59, law 27. 50±1.44 and t-value 1.217. Relaxed arm girth for Art & Humanities 31.83±2.88, Social Science 31.17±2.30, Agricultural Science 29.67±3.83, Management Science 32.33±2.88, Education 30.67±3.61, Natural Science 30.00±4.81, law 79.75±4.59 and t-value .932. Waist girth for Art & Humanities 89.83±8.22, Social Science 95.00±5.56, Agricultural Science 93.33±6.82, Management Science 101.50±11.78, Education 101.50±12.75, Natural Science 89.37±6.34, law 16.25+1.06 and t-value 1.976. Hip girth for Art & Humanities 107.500+7.08, Social Science 103.667+5.13 Agricultural Science 104.667±4.53, Management Science 104.50±5.07, Education 106.50±16.82, Natural Science 97.12±12.93, Law 89.75±2.47 and t-value 1.049.

Arm span for Art & Humanities 57.66±2.56, Social Science 58.93±3.00, Agricultural Science 54.16±3.17, Management Science 67.83±16.54, Education, 44.00±24.26, Natural Science 57.62±3.11, Law 46.10±.98 and t-value 1.160. Mid-thigh girth for Art & Humanities 45.16±6.80, Social Science 50.33±.57, Agricultural Science 52.16±5.00, Management Science 49.16±6.71, Education 49.83±3.78, Natural Science 45.75±5.10 Law 44.00±3.53 and t-value 1.047. Thigh girth for Art & Humanities 51.00±6.92, Social Science 56.66±1.15, Agricultural Science 56.50±3.77, Management Science 57.83±9.07, Education 55.50±6.00, Natural Science 53.70±5.86, law 47.50±3.53 and t-value .971. Palm + finger length for Art & Humanities 18.26±.87, Social Science 19.00±1.32, Agricultural Science 18.50±.80, Management Science 19.00±1.80, Education 20.33±.57, Natural Science 19.37±.62 Law 18.85±.21 and t-value 1.301. As seen from the ANOVA test, there is differences in age, weight, height body girth and heart rate, although from the analysis of ANOVA the faculty of education are the oldest in age, tallest in height, heaviest in weight and wider in the waist and all closely related on other body girth measurement from the study of ANOVA.

Table 5: Presents the mean, standard deviation and t-value of the physiological test of secretarial staff in the seven (7) faculty in Prince Abubakar Audu University Anyigba.

Variables	Group	N0	Mean±SD	T	Sig
Heart rate	Art & Humanities	3	65.33±4.04	.329	.911
	Social sciences	3	79.00±18.68		
	Agricultural science	3	70.33±16.65		
	Management	3	68.00±13.22		
	Education	3	73.66±2.88		
	Natural science	4	71.25±13.25		
	Law	2	68.50±17.67		
Systolic	Art & Humanities	3	132.234±8.082	1.933	.145
	Social sciences	3	140.00±23.51		
	Agricultural science	3	111.667±26.53		
	Management	3	130.334±11.37		
	Education	3	141.667±21.22		
	Natural science	4	147.500±22.70		
	Law	2	152.500±26.16		
Diastolic	Art & Humanities	3	83.00±9.00	1.933	.145
	Social sciences	3	81.66±8.32		
	Agricultural science	3	69.00±16.52		
	Management	3	81.66±4.93		
	Education	3	92.00±11.72		
	Natural science	4	97.25±7.92		
	Law	2	82.00±24.04		

$p \leq 0.05 \leq 3.82$

Table 5 presents the mean, standard deviation and F-value of heart rate, systolic and diastolic of secretarial staff in the seven (7) faculties which are the Faculty of Arts & Humanities, Faculty of Social Science, Faculty of Agricultural Science, Faculty of Education, Faculty of Natural Science and Faculty of Law with a heart rate of Art & Humanities 65.33±4.04 Social Science 79.00±18.68, Agricultural Science 70.33±16.65, Management Science 68.00±13.22, Education 73.66±2.88, Natural Science 71.25±13.25, Law 68.50±17.67 and t-value -329.

Systolic of Art & Humanities 132.234±8.082, Social Science 140.00±23.51, Agricultural Science 111.667±26.53, Management Science 130.334±11.37, Education 141.667± 21.22, Natural Science 147.500±22.70, Law 152.500±26.16 and t-value 1.209.

Diastolic for Art & Humanities 83.00±9.00, Social Science 81.66±8.32, Agricultural Science 69.00±16.52, Management Science 81.66±4.93, Education 92.00±11.72, Natural Science 97.25±7.92, Law 82.00±24.04 and t-value 1.933. From the ANOVA test, Law has a higher systolic parameter (152.500) compared to the Natural Science, Social Science and Education although all are closely related in terms of exercise followed by faculty of education 141.66±21.22 and natural science 147.500±22.70 but the Faculty of Social Science and Management Science has a similar diastolic from the result of ANOVA.

Table 6: Presents the mean, standard deviation and t-value of the body composition parameters of secretarial staff in the seven (7) faculty in Prince Abubakar Audu University Anyigba.

Variables	Group	N0	Mean +SD	T	Sig
Waist hip ratio	Art & Humanities	3	.835±.048	3.362	.029
	Social sciences	3	.916±.032		
	Agricultural science	3	.891±.030		
	Management	3	1.022±.077		
	Education	3	.957±.057		
	Natural science	4	.926±.069		
	Law	2	.888±.026		
Skin fold calliper	Art & Humanities	3	39.46±5.53	2.233	.101
	Social sciences	3	38.66±1.72		
	Agricultural science	3	32.76±4.067		
	Management	3	38.83±75		
	Education	3	31.03±6.67		
	Natural science	4	41.72±5.94		
	Law	2	37.30±98		
BMI	Art & Humanities	3	25.32±4.34	.375	.883
	Social sciences	3	27.35±1.85		
	Agricultural science	3	25.73±3.81		
	Management Science	3	27.22±4.54		
	Education	3	28.62±5.60		
	Natural science	4	24.18±4.67		
	Law	2	26.81±5.40		

$p \leq 0.05 \leq 3.82$

Table 6 represents the mean, standard deviation and F-value of waist-hip ratio, skin fold calliper and BMI of Secretarial Staff in the seven (7) faculties in Prince Abubakar Audu University, Anyigba which are the Faculty of Art & Humanities, Faculty of Social Science, Faculty of Agricultural Science, Faculty of Management Science, Faculty of Education, Faculty of Natural Science and Faculty of Law with waist-hip ratio of Art & Humanities 835±.048, Social Science .916+.032, Agricultural Science .891±.030, Management Science 1.022±.077, Education .957±.057, Natural Science .926±.069, Law .888±.026 and t-value 3.362. Skinfold calliper of Art & Humanities 39.46±5.53, Social Science 38.66±1.72, agricultural science 32.76±4.067, management science 38.83±.75, education 31.03±6.67, Natural Science 41.72±5.94, Law 37.30±.98 and t-value 2.233. BMI for Art & Humanities 25.32±4.34, Social Science 27.35±1.85, Agricultural Science 25.73±3.81, Management Science 27.22±4.54, Education 28.62±5.60, Natural Science 24.18±4.67, Law 26.81±5.40 and t-value .375.

As seen from the ANOVA test, the faculty of Management Science are wider in the waist while the Faculty of Natural Science are ticker in skin fold calliper and are all closely related in BMI measurement from the analysis of ANOVA.

4. Discussion
The main findings of this study indicate that there is no significant difference in the physical characteristics, such as age, height, and weight, among the secretarial staff at Prince Abubakar Audu University in Nigeria. The findings show that education is associated with being older, taller, and heavier compared to the other faculties. These results are consistent with previous studies [19-21], which suggest that physical performance measures improve during childhood and adolescence, reach a peak in the late teens to early thirties, and then gradually decline. However, [22] reported that the decline in performance associated with age depends on the level of physical activity, especially beyond the age of thirty. Furthermore, it was explained that trained secretarial staff at any given age tend to demonstrate a higher level of performance compared to untrained individuals.

The second main finding of this study is that there is no significant difference in physiological variables, including systolic blood pressure, diastolic blood pressure, and heart rate, among the secretarial staff at Prince Abubakar Audu University in Nigeria. This finding is consistent with a review by [23], which concluded that there is no significant difference in blood pressure (both systolic and diastolic) and heart rate among different groups. It is also supported by [2], who observed that all players have low heart rates, indicating good cardiac efficiency due to their physical activity and work efficacy. This finding suggests that the secretarial staff in the seven faculties studied share similar physiological characteristics in terms of blood pressure and heart rate, which can be attributed to their level of physical activity and overall health.

The third main finding of this study is that there is no significant difference in body composition variables, such as body mass index (BMI) and skinfold calliper measurements,

among the secretarial staff at Prince Abubakar Audu University, except for waist-hip ratio where significant differences were observed. In terms of skinfold calliper measurements, all faculties have low skinfold values, indicating lower levels of body fat. However, the Natural Science faculty stands out with thicker skinfold measurements, suggesting that individuals in this faculty may have a higher level of muscle mass or athletic conditioning compared to other faculties.

When considering BMI, the Natural Science faculty shows an ideal BMI value of 24.19, indicating a healthy weight. On the other hand, other faculties are categorized as overweight. This suggests that individuals in other faculties should pay attention to their weight and strive to maintain a healthier BMI, as it can positively impact their performance during office hours.

Regarding the waist-hip ratio, it was found that the Management Science faculty had a higher risk level compared to other faculties. This indicates that individuals in this faculty may be at a higher risk for health conditions such as obesity, diabetes, and high blood pressure. Therefore, it is recommended that the secretarial staff in the Management Science faculty undergo exercise interventions to improve their health and reduce their risk of these diseases.

In summary, while there are no significant differences in BMI and skinfold calliper measurements among the faculties, the findings highlight the importance of maintaining a healthy weight and engaging in regular exercise for optimal performance and overall health among secretarial staff. The Natural Science faculty serves as an example with their favourable body composition measurements, indicating the potential benefits of exercise and physical activity for improving performance in other faculties.

5. Conclusion
5.1 Based on the findings of the study, the following conclusions can be drawn
1. Education faculty members are generally older, taller, and heavier compared to other faculties. However, a significant height difference was observed among the faculties, namely art & humanities, social science, agricultural science, management science, natural science, and faculty of law.
2. The study found no significant differences in body girths among the seven faculties. This indicates that the secretarial staff in these faculties have similar body measurements, which may be attributed to their similar work functions.
3. There were no significant differences in physiological variables, including heart rate, systolic blood pressure, and diastolic blood pressure, among the secretarial staff in the seven faculties of Prince Abubakar Audu University, Anyigba. This suggests that the cardiovascular health of the staff members is comparable across the faculties.
4. In terms of body composition variables, such as body mass index (BMI) and skinfold calliper measurements, no significant differences were found among the faculties, except for the waist-hip ratio. Significant differences were observed in the waist-hip ratio, indicating that the management science faculty had a higher risk compared to other faculties in terms of abdominal fat distribution. This highlights the need for exercise interventions and lifestyle modifications for staff

members in the management science faculty to reduce the risk of health issues associated with excess abdominal fat.

In summary, while there were some variations in physical characteristics and body composition among the faculties, the overall findings indicate similarities in physiological variables and body girths. These conclusions provide valuable insights for understanding the health and fitness profiles of the secretarial staff in different faculties at Prince Abubakar Audu University, Anyigba.

5.2 Implications of the Study
The implications of this study are twofold. Firstly, it enables secretarial staff to assess their anthropometric, physiological, and body composition characteristics about their performance and functional capabilities. By understanding these measurements, staff members can identify areas that require improvement and take targeted actions to enhance their overall health and fitness.

Secondly, the study compares the seven faculties within Prince Abubakar Audu University to determine which group performs better in terms of anthropometric, physiological, and body composition variables. This comparison provides valuable insights and highlights areas of advancement for each faculty. By identifying the faculties that excel in certain aspects, valuable knowledge can be shared and best practices can be implemented to improve the overall health and fitness of secretarial staff across all faculties.

6. Recommendation
6.1 From the observed findings, listed are some recommendations made for this study
1. That the secretarial staff of seven faculties should be engaged in regular physical fitness activities to enable efficient and sufficient valid performance in their daily work routine activity.
2. That they should make an improvement on their body girth in other to meet up with the standard of their performance.
3. That the secretarial staff in the faculty of education, management science and natural science should be engaged in regular exercise which is very important for health problems to enable them to have good cardiac efficiency for excellent performance.
4. The school management should put in place enough sporting facilities and equipment for the seven faculties as it enhances more improvement and draws more clear differences to quantify the relationships of related researchers that will be done
5. The school management should give a day for general exercise for the staff which will go in a long way in assisting secretarial staff for improvement in their daily routine activity.

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