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Physical Fitness of Nigerian Armed Forces Personnel in their Flexibility in Federal Capital Territory Abuja

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Abstract. Physical fitness is of particular importance to Armed forces, not only because of its benefits, but also because it makes them battle ready. The main purpose of this study was to compare the physical fitness of Nigerian Army, Navy and Airforce personnel. To achieve this purpose, a sample of 235 subjects with mean age 31+ 5.4, years mean height 1.7 + 0.59, meters mean weight 63.2 + 74 were selected from the Nigerian Armed forces resident in Mogadishu Cantonment, Asokoro, Abuja. The sample comprised 80 Nigerian Army, 85 Navy and 70 Air force. sit and reach for flexibility was conducted to assess the subjects physical fitness. The data collected were analyzed to assess flexibility levels of Nigerian Army, Navy and Airforce personnel. The findings of this study revealed that the Nigerian Army personnel were better in flexibility (M=23.189±5.176) for sit and reach, than the Nigerian Navy and Airforce personnel. It was thus recommended that the physical fitness programme of the Nigerian Armed forces should be strengthened by increasing the frequency, intensity and duration of exercise to improve flexibility. Similarly, the Nigerian Armed forces should develop norms for different components of physical fitness for different age groups of different discipline, so as to improve their overall fitness and wellbeing.

1. Introduction

Available research evidence clearly indicates that loss of functional capacity and increased morbidity and mortality attributable to chronic disease and disability are closely associated with low physical fitness level (United States Department of Health and Human Services 2008, Venkateswarlu, 2011), It has also been shown that regular physical activity is associated with increased life expectancy and reduced risk of coronary heart disease, stroke, diabetes, hypertension, obesity, and osteoporosis (Angel, 2014). Health organizations have made recommendations that emphasize activities, that include common activities like climbing stairs, walking, gardening and different forms of recreational pursuits (U.S. Department of Health and Human Services, 2008). All adults are recommended to accumulate at least 30 minutes of exercise per day with an intensity equivalent to walking at 3-4 miles per hour (Blair et al., 1996). Physical fitness is of particular importance to the armed

forces, not only because of its health benefits, but also because it makes them battle ready.

Flexibility is the ability to move joints and use muscles through their full range of motion. The sit-and-reach test is a good measure of flexibility of the lower back and backs of the upper legs (Sharkey, 2010). Flexibility is expressed by the range of motion in a given joint or combinations of them. Johnson and Nelson (1979) defined flexibility as the ability of an individual to move the body and its parts through a wide range of motion as possible without undue strain to the articulations and muscle attachments. The range joint can move is limited by three factors: Amount of bulk (muscles and other tissues), Bone structure of the joint, the extensibility of the muscles and connective tissue which cross over the joint and the third factor is of the greatest concern in trying to increase range of motion (U.S Department of Defense, 2012). There are two types of flexibility (Jensen and Fisher 1979). One is passive flexibility, which is demonstrated by the range of movement that occurs in a joint when the muscles are relaxed and the body part is moved by another person. The other is dynamic flexibility, which is demonstrated by the range of movement that can occur in the joints as a result of contractions of the muscles, which control the joints. A well-organized fitness programm will develop this so as to help reduce injuries to the minimum and improve the reaction time of athletes and non-athletes alike.

2. Methodology

Simple one — way analysis of variance (ANOVA) design was used in this research, as the investigation involves field experimental research, Kerlinger (1986). In this design, the three armed forces were listed in the three columns and the test scores are entered as Y measures under each column. The population for this study consisted of 1185 Nigerian Armed Forces personnel resident in Mogadishu Cantonment, Asokoro' Abuja consisting of 400 Nigerian Army, 350 Nigerian Air force and 435 Nigerian Navy. The sample for this study was selected by using stratified random sampling technique were the researcher prepared 400 pieces of papers, out of which 80 were numbered and the remaining pieces of paper were left blank. Those army personnel who picked numbers 80 of the pieces of were then selected as the subjects for the study for the Army. In the case of the Air Force, 350 pieces of paper were prepared out of which 1-70 were marked and the remaining pieces of paper were left blank. Those Air Force personnel who picked numbers 1-70 of the pieces of paper were then selected as the subjects for the Air Force.

A total of 435 pieces of paper were prepared for personnel of the Navy, out of which 1 — 85 were numbered and the remaining pieces of paper were left blank. Those who picked the numbered pieces of paper were selected as the subjects for the Navy. The number of subjects selected for each of the armed forces was twenty percent 20% of the total armed forces personnel. For the Army 80 subjects representing 20% of 400 were used, for the Air Force, 75 subjects representing 20% of 350 were used while for the Navy, 85 subjects representing 20% of 435 were se1ected. The selection of 20% of the total population is statistically accepted in sampling technique, Krejcie and Morgan (1970). The apparatus consisted of a box (constructed) with a measuring scale showing 23cm at the level of the feet. The box was placed against a wall. The subjects removed their shoes and assumed a. sitting position on the floor with legs fully

extended forward with the hands placed on top of each other. The subjects sat and reached directly forward up to four times along the measuring scale on the box. In this position, the subject stretches forward, his maximum reach on each trial with the knees fully, extended and the feet still in contact with the box. The distance attained was recorded to the nearest cm. For each trial, the maximum distance reached and maintained for (10) seconds is the measure of flexibility. Height was measured with a Harpenden digital readout, wall — mounted stadiometer. (Ross and Marfell Jones, 1993). Height was measured standing erect bare-footed looking straight ahead against the stadiometer. A horizontal broad wooden blade was used on the head of each subject against the instrument. Height was read off the instrument to the nearest 0.01 mm. Body weight with minimal clothing (0 05kg) was measured with a spring balance. Weight was converted to kilogram (kg). The height and weight measures were used to calculate the Body Mass Index (BMI) using the Quetelet Index by dividing weight (in kg) by height (in meters) Squared. (wt / Ht2), the BMI values were read off a Nornogram for BMI (Bray and Gray, 1988, Wilmore and Costill, 1999).

3. Results

Table 1: Demographic characteristics and performance of the subjects in the various physical fitness tests

	ALL FORCES			ARMY			AIRFORCE			NAVY		
	M	SD	SE	M	SD	SE	M	SD	SE	M	SD	SE
	31.021	5.434	.355	29.862	3.221	.360	30.900	8.3.15	.994	32.212	3.606	.391
	1.677	.059	.004	1.677	.055	.006	1.669	.056	.007	1.683	0.683	.007
	63.153	7.381	.481	63.325	5.158	.577	63.186	5.769	.690	62.965	9.967	1.081
	21.120	5.578	.364	23:189	5.176	.579	20.376	4.543	.543	19.784	6.179	.670

Table 1: shows that the mean scores of Nigerian Army, Air Force Navy were very similar in age, height, weight. However, the Army personnel were better in sit and reach (23.189 ± 5.176) suggesting that army personnel had better flexibility than personnel of the Air Force and Navy.

Hypothesis testing:

There is no significant difference in flexibility among the Nigerian Army, Air Force and Navy.

To test sub hypothesis 3, the data collected on flexibility (sit and reach) of the Nigerian Army, Air Force and Navy were analyzed by using multiple regression analysis, the results of which are shown in Table 2:

Tab1e 2: Multiple regression analysis for differences amongst the Nigerian Army, Air Force and Navy in flexibility.

Variable	Source	DF	SS	MS	F
Sit and reach	Regression	1	472.20	472.20	16.16**
	Residual	233	6807.94	29.22	

F(r,233) = 3.89 < .05 **Significant

An examination of Table 2: indicates that significant differences exist among the Nigerian Army, Air Force and Navy personnel in flexibility. Scheffe‘s post hoc test revealed that the significant differences amongst the armed forces in flexibility were due to greater flexibility of the Nigerian Army (23 .189 ± 5.176) compared to that of the Nigerian Air Force and Navy personnel, suggesting that the Nigerian Army was better than the Nigerian Air Force and Navy in flexibility.

4. Discussion

Flexibility refers to the range of motion. Sit and reach test was used to measure flexibility in this study. The results of the study show that the average flexibility level of the Nigerian Armed Forces was about 21cm, which was far less than the armed forces of other countries like the USA and Canada. For example for a 17 —21 years male solider to obtain 50 points, he should be in a position to run 2 miles in 16 minutes 36 second. Even Nigerian athletes competing in national competitions hardly attain these standards, (U.S. Army website, 2005). As in the case of other components of physical fitness training programme, the Nigerian Armed Forces should be strengthened to improve flexibility. The Nigerian Army has better ‘flexibility (m 23.19) than the Nigerian Air Force and Navy personnel This is attributable to the nature, range and difficulty of physical task that y personnel perform which has positive impact on their flexibility.

It is further reflected in the lower body fat percent of the Nigerian Army compared to that of the Nigerian Air Force and Navy personnel. However, the average of Nigerian Armed forces body fat percent was higher than that of the armed forces of other Countries like the USA and Canada. This may be explained by the fact that body fat **%** of the armed forces from other countries appear to have more strenuous programmes of physical fitness and conditioning than the Nigerian Armed Forces. It is ‘therefore suggested that the Nigerian Armed forces should renew their physical fitness programmes for men of each of the forces and of each division of each of the forces. As a matter of urgency, the Nigerian Armed Forces should develop physical fitness standards for each force and for the combined forces for men and by age and by task.

5. Conclusion

With the limitations of this study, and from the results obtained the following conclusion was made:

- The Nigerian Army personnel were better in their level of flexibility than the persone1 of the Nigerian Air Force and the Navy.

6. Recommendations

On the basis of the findings of this study, the following recommendations were made:

- The findings of the study show that the physical fitness level of the Nigerian Armed Forces was not as good as that of the armed forces of other Countries It is therefore recommended that the physical fitness programme of the Nigerian Armed forces should be strengthened by increasing the frequency, intensity and duration of exercise to improve their flexibility.
- It is recommended that the Nigerian Armed Forces should develop norms for different components of physic& fitness for different age groups of different disciplines.

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