

# Anthropomorphic Patterns And Smoking In A Nigerian Population

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## ABSTRACT

Anthropomorphic measurements in terms of height, weight and body mass index determined in 5000-volunteered males and females. These include 2000 smokers (1500 males and 500 females) aged between 16 and 56 ( $\pm$  SD;  $38 \pm 16$ ) years, 1000 ex-smokers (700 males and 300 females) in the same age bracket; and 2000 non-smokers (1000 males and 1000 females) aged 16 to 56 (mean  $\pm$  SD;  $39 \pm 17$ ) years, The group who had never smoked which formed the control group.

When compared to other groups, the males that smoked tobacco were taller than all other groups; possibly because of the increased tallness, the male smokers also weighed much more than each of the other groups. It is possible that tobacco smoking increases the secretion of the male sex hormone testosterone, which promotes increased linear growth in males. On the other hand it may be possible that the gene which codes for tallness in men also encode male craving for tobacco. For tobacco smoking, which is implicated in many health hazards, male tallness may probably be the only health benefit.

**Keywords:** Tobacco smoking, males, females, anthropomorphic measurements.

Tobacco smoking is an old habit of man (IARC 1985). It has been reported that tobacco smoking elevates mood of persons by stimulating the nervous system of such individuals (Domino, 1998). The main tobacco plant is *Nicotiana tabacum* (*N. tabacum*) though some other varieties such as *Nicotiana Rustica* are available (World Health Organisation 2002). Majority of smokers (males and females) begin the habit before the age of 18 years (Morris 1981). Tobacco smoking is dangerous to health because of the many serious side effects, which have been reported by several investigators (World Health Organization, 2002; Doll et al, 1994).

Among the very many health hazards of tobacco smoking are increased risk of mortality, morbidity, increased blood pressure (hypertension) which can, after many years of mis-untreatment, complicate into stroke, renal failure, cardiac infarct or cerebrovascular accidents (Guyton, 1999).

Ernstrom and co-workers have reported that quitting of tobacco (ex-smokers) reduces the risk of heart disease from tobacco use and other problems associated with tobacco smoking (Ernstrom, 1999). This study was under taken to determine the effects of tobacco smoking on stature of male and female population of Ebonyi State.

## MATERIALS AND METHODS

The study material comprised 5000-volunteered individuals (3200 males and 1800 females) aged between 16 and 56 (mean  $\pm$  SD;  $38 \pm 16$ ) years. The study population comprised

individuals of various professions e.g. civil servants, artisans, teachers etc. The study group included 1500 males and 500 females (2000) apparently healthy subjects who had smoked for a minimum of six months and were actively smoking. These were also aged between 16 and 56 (mean  $\pm$  SD;  $38 \pm 16$ ) years. A second group comprised 700 males and 300 females (1000) adults who had stopped smoking (ex-smokers) in the same age bracket as smokers. The last group was 1000 males and 1000 females (2000), who had never smoked. This last group formed the control. They were also aged between 16 and 56 (mean  $\pm$  SD;  $37 \pm 17$ ) years.

The data were collected between June, 2002 and December, 2003 from both rural and urban dwellers of Ebonyi State of Nigeria. From history taken from participants at the time of study, it was understood that each participant had been living in Ebonyi State for the past 10 years and are all Nigerians. Ex-smokers were defined as persons who had stopped smoking for at least 6 months. For persons classified as non-smokers and taken as controls, none had ever smoked tobacco. The method of research and its goal was explained to each participant and each gave her/his consent.

## Research Method

Close-ended questionnaires were used in the collection of data. Family history of diseases associated with relevant parameters which could affect growth in any way e.g diabetes mellitus, sickle cell disease etc were taken and those concerned were

excluded from the study. Information on age, economic status, types of food eaten, passive/active tobacco use, specific age of initiation, age of cessation of smoking for ex-smokers and reason for cessation were all taken. Measured in subjects and controls were height, weight, systolic and diastolic blood pressures and pulse rate.

The anthropomorphic measurements were by the use of meter rule for height and weight balance, HANA BAHROOM scale, JAPAN model Biz 9011).

### Statistical Analysis

The averages were determined by means of student T-test and the multiple logistic regression model was used to identify the correlations between variables.

### DISCUSSION

In this study the effects of tobacco smoking on height, weight and body mass index of 1500 males and 500 females (total 2000) volunteers had been assessed. Most publications in medical literature have associated tobacco with several health hazards e.g.; impotence, loss of sexual desire, infertility in

both males and females, priapism in males, increased systolic and diastolic blood pressures, atherosclerosis and body weakness (IARC, 1985; Domino, 1998; World Health Organization, 2002; Morris, 1981; Doll et al, 1994; Advanced fertility centre of Chicago, 2004; Guyton, 1999; Schroeder et al, 1997).

The mechanisms by which tobacco smoking causes or promotes these health abnormalities have been proposed by some of these investigators (IARC, 1985; Doll et al, 1994; Advanced fertility center of Chicago, 2004). For example; the Advanced Fertility Center of Chicago has reported that tobacco smoking damages the tiny blood vessels which supply blood to the penis and by so doing reduces sexual desire of individuals and can therefore cause impotence insusceptible men (Advanced Fertility Center of Chicago, 2004). Same researches have proposed that tobacco or its decrease can cause blockage of androgen receptors in gonadal tissues and so decrease sexual desire (Advanced Fertility Centre of Chicago, 2004; Guyton, 1999).

No report has ever suggested any health

### Results

**Table 1: Height (in meters) weight (in Kgs) and body mass index compared between smokers and non-smokers.**

Age (yrs)	Height (meters)	Weight (kg)	Weight/height Kg/m <sup>2</sup>
Smokers Ex-NS smokers		SEXS NS	SEXS NS
16-20yrs	1.72 1.75 1.7	60.2 72.2 67.2	23.1 23.6 23.6
21-25yrs	1.79 1.76 1.7	71.2 70.8 66.5	22.2 24.5 23.0
26-30yrs	1.79 1.7 1.73	70.1 64.7 65.5	21.9 23.8 21.9
31-35yrs	1.73 1.65 1.67	77.6 71.6 63.7	25.9 24.5 22.8
36-40yrs	1.73 1.71 1.73	88.5 66.3 64	29.6 21.7 21.4
41-45yrs	1.79 1.75 1.68	72.3 68.9 57.2	29.6 21.7 21.4
46-50yrs	1.76 1.76 1.72	72.1 70.1 67.5	22.6 20.8 20.3
50-above	1.56 1.82 1.77	86.3 69.6 48.9	23.3 22.7 22.8
SD	0.07 0.05 0.03	7.7 2.6 6.4	4.7 1.5 2.6

**Table 2: Mean anthropomorphic measures of weight and height compared between female and male smokers**

Age	Height (in M)				Weight (Kg)				
	In yrs	Female Smokers (FS)	Male Smokers (MS)	Female Non-smokers	Male Non-smokers	FS	MS	FNS	MNS
16-20yrs		1.56	1.72	1.59	1.72	67.2	82.6	84.5	88.4
21-25yrs		1.62	1.78	1.64	1.68	71.2	91.5	69.6	73.6
26-30yrs		1.71	1.69	1.7	1.72	75.2	69.4	78.9	92.1
36-40yrs		1.7	1.73	1.58	1.65	88.9	68.9	72.2	93.4
41-45yrs		1.72	1.69	1.53	1.69	78.6	78.9	81.1	78.8
50yrs above		1.58	1.72	1.57	1.66	85.3	90.3	82.8	76.6
Mean		1.65	1.72	1.62	1.68	78.3	81.7	73.3	80.2
SD		0.06	0.03	0.05	0.03	7.2	10.4	9.9	9.2

possible benefit of tobacco smoking. But it is possible that when tobacco smoking stimulates the nervous system and elevates mood, a balancing effect takes place (Domino, 1998). Whether or not this is a health benefit of tobacco smoking is yet to be properly understood. As found in our study, male smokers tend to have significant increase in height compared to male and female non-smokers. It is possible that tobacco smoking stimulates appropriate tissues, which secrete the male sex hormones: testosterone, which is known to promote linear growth especially in males (Guyton, 1999; Schroeder et al, 1997). On the other hand it may be also argued that the gene that codes for tallness in males also codes for increased crave for tobacco. May be and in accordance with our finding, the known health benefit of tobacco smoking is tallness in males.

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