

Prevalence And Types Of Alopecia And Grey Hair Among The South - Eastern Nigerians

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ABSTRACT

The types and prevalence of alopecia and grey hair on the scalp among the Southeast Nigerians was studied, using a population sample of two thousand (2000) subjects chosen within Enugu and Ebonyi states metropolis. The ages ranged from 40 years and above. Personal data or history of subjects was obtained through the administration of questionnaire and personal communication and observation of the scalp.

Results showed that five hundred and thirty eight males (26.9%) of the total sample size had Type IV of common male pattern baldness, three hundred and fifty males (17.85%) had Type V of common male pattern baldness, three hundred and three males (15.15%) had type VI of common male pattern baldness and eight hundred male (40%) had type VII of common male pattern baldness while two men (0.1%) had alopecia totalis. 27.15% had solitary grey hair (minimum of 5 grey hairs per head), 12.5% had the bunch type of grey hair, 52.15% had the generalized type of grey hair while 7.7% had little or no grey hair (less than 5 grey hairs per head). We therefore deduce from our statistical analysis that in males over 60 years of age there is an 80% incidence of male pattern baldness of types IV, V, VI and VII.

Keywords: Types, incidence, alopecia, grey hair.

Alopecia, baldness or hair loss, shows that a fifth of all cases are due to genetics, although it is not clear whether baldness follows the maternal or paternal line, or whether it skips generations (Microsoft, Encarta Encyclopaedia 2004). A less common form of baldness is alopecia prematura (premature baldness), in which a young person's hair falls out without first turning grey, possibly caused by seborrhoea. In *alopecia areata*, loss of hair in irregular patches may be caused by inflammation, high fever, hormone disorders, radiotherapy, or Chemotherapy. In *alopecia totalis* (complete loss of scalp hair) and *alopecia universalis* (total loss of all body hair) no stubble or regrowth is found in the affected areas (Microsoft Encarta Encyclopaedia 2004).

The average human scalp contains between 100, 000 and 150,000 hairs and about 100 hairs are naturally lost from the head everyday. (Rook et al., 1968). Genetic baldness is caused by the body's failure to produce sufficient new hairs, and not by excessive hair loss (Taylor et al, 1977). It affects many more men than women, although women also develop a characteristic pattern of hair loss (Norwood, 1973). About one quarter of men have started balding by the time they are 30 years old, and about two thirds are either bald or are balding by 60 years [Website A]. Both men and women lose hair density as they age, but men develop a typical pattern of baldness associated with production of the male hormone testosterone (Smith and Gong, 1978). Men

who do not produce testosterone (because of genetic abnormalities or castration) do not develop this pattern of baldness [Website C]. The use of steroids by young men to enhance bodybuilding may accelerate the effects of testosterone on baldness. Female-to-male transsexuals taking testosterone may also develop male-pattern baldness [Microsoft Encarta Encyclopedia, 2004]

For hair loss caused by illness, radiotherapy or medication, no treatment is necessary as the hair usually grows back on recovery or when the therapy is complete [Website B]. Other forms of baldness are permanent, and no treatment has yet proved successful. For male and female hair loss, an expensive prescription drug minoxidil marketed in the United Kingdom as Regaine has been shown to restore hair in less than 50% of cases and baldness resumes when the treatment is discontinued (Enlow, 1995). Punch grafting, which transfer hair from one part of the head to another, is a somewhat painful and expensive process, but the results are usually permanent [Microsoft Encarta Encyclopedia 2004].

Several factors could also lead to loss of scalp hair such as genetic predisposition, endocrine secretion, and aging (Coutois et al, 1995). Growth rates are up to 0.35 per day, possibly slightly faster in females (0.35mm) than males (0.34mm) [Website D]. Myers 1951 stated that the scalp hair- typically, females will have slightly faster growing hair scalp than males of the same age but slower hair elsewhere e.g. on the leg. According to Website D, daily

growth rate for scalp hair diminishes with age (Table 1)

In the normal human scalp, the anagen phase last 2-3 years on average and occasionally much longer, the catagen phase lasts 2-3 weeks and the telogen phase last approximately 3 months. 85% - 90% of all scalp hair follicles (in the absence of any disease state) are in anagen, 10-14% are in telogen and only 1-2% are in catagen phase [Rook et al, 1968].

The study of baldness dates back to the time of Hippocrates (Circa 400 B. C). That when eunuchs were found not to become bald. The most significant contribution to this study was made much later, however, in 1942, Hamilton suggested that androgens are a pre-requisite and incitant in male pattern baldness. "Common baldness" is a general term employed for the common forms of alopecia that, in some dermatological classifications are subdivided into "idiopathic premature" and "Senile" alopecia. These forms of baldness account for more than 50% of the causes of alopecia. According to Hamilton (1951), the following factors influence the development of common baldness:

Inherited predisposition: that is necessary for development of common baldness.

Endocrine stimulation: particularly that provided by testes and ovaries. Type II scalps, which replace type I in 96% of normal men after sexual maturation (Ferriman, 1951) [Fig. 1] failed to develop in males who are castrated prior to puberty and in those who did not mature sexually for other reasons [Hamilton, 1951]. Androgens appear to be the agents usually implicated in common baldness; especially in extensive baldness (types v, vi, and vii) [Fig. 1], which appears normally in men.

Aging: In normal men, advancing age is accompanied by an increase in the incidence and extent of baldness. There are four types of male pattern baldness- types IV, V, VI and VII. This Genetic, Endocrine and aging factors are interdependent. No matter how strong the inherited predisposition to baldness, alopecia will not result if inciting agents, such as androgens, are missing [Hamilton, 1951].

Table 1: showing the daily growth rate for scalp hair with relation to age.

AGE CATEGORY	DAILY GROWTH RATE FOR SCALP HAIR (MM)
Pre - Puberty	0.41
Adolescent/ Young adult	0.31
Matured adult	0.34
Retirement age	0.32

Courtesy of Myers, 1951

This incidence is socially crucial and has given a cause for concern because it distorts the aesthetic appearance of the individual as well as the physiognomy, which depicts mood, the state of mind and other psychic conditions (Last, 1985). The hair whorls also disappear in the presence of baldness or alopecia if it affects the particular region of the whorls (Ucheya et al, 2002). Shaving off completely and changing the colour of the scalp hair by application of dye could lead to changing of an individual's facial appearance (Akpa, 2003). Alopecia exposes the scalp to direct heat from sunrays (Ovidiu et al, 1980). Recent technology such as hair transplantation has been able to provide a curative measure to the treatment of alopecia (Norwood, 1973). This work therefore aims at enumerating the types, and prevalence of alopecia among Southeastern Nigerians.

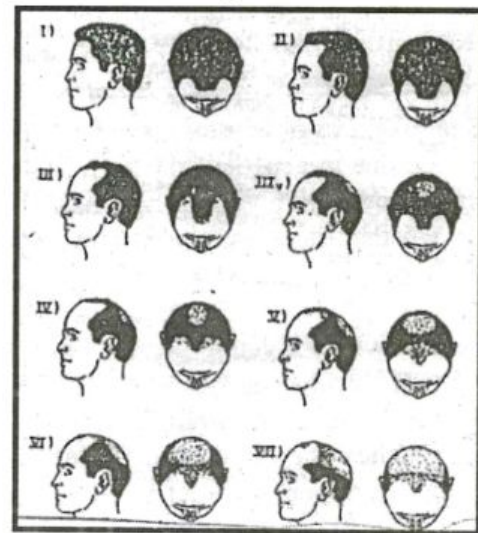


Fig. 1: Standards for classification of most common types of male pattern baldness (types 1-7).

Courtesy: Human Hair Growth in health and disease; American Lecture series, PUB NO: 801 by Ferriman, D.M.

MATERIALS AND METHODS

A questionnaire was passed round among adult men within Enugu and Ebonyi states metropolis during social or cultural gatherings. For illiterates who could neither read nor write information were obtained through personal communications and observations of the scalp hair.

This was done to determine the types and prevalence of alopecia among Southeast Nigerians.

Sampling size was 2000 subjects, with ages ranging from 30 years and above. There was no age limit for the old people because bald scalp sites extend with aging. Alopecia and grey hair was classified based on the observation of the regions of the scalp that was bared and the regions of location of grey hair (Fig. 2).

The questionnaire contained information such as age, sex, year of debut of alopecia, type of alopecia, year of appearance of few solitary grey hairs and finally year of appearance of grey hairs in bunches, individuals perception about alopecia. Exclusion criteria include subjects with infected scalp or scar due to trauma

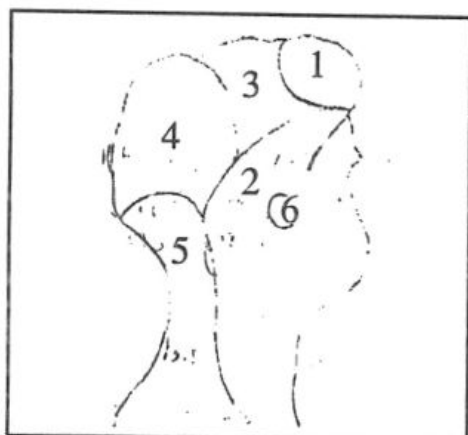


Fig. 2: Illustrating the Division of the scalp into five regions

RESULTS

Types of alopecia: Four types of alopecia were observed among the total population studied (Types IV, V, VI and VII). Total loss of hair (alopecia totalis) was observed amongst two men out of the total sample studied, this however is rare and abnormal. Three types of grey hair were also recorded among the total sample studied (Solitary, Bunch and Generalized types).

Incidence: From the total sample studied five hundred and thirty eight subjects (26.9%) had Type IV of common male pattern baldness, three hundred and fifty seven (17.85%) had Type V of common male pattern baldness, three hundred and three (15.15%) had Type VI of common male pattern baldness alopecia (Fig. 1 & Table 2) while two of the subjects (0.1%) had total loss of hair on the scalp (alopecia totalis), one of this subjects was 75 years of age while the other was 79 years. For grey hair out of the total sample studied (2000) five hundred and fifty three subjects (27.65%) had Solitary type of grey hair, two hundred and fifty subjects (12.5%) had Bunch type of grey hair, one thousand and forty-three subjects (52.15%) had Generalized type of grey hair while one hundred and fifty four subjects (7.7%) showed complete absence of grey hair. However, it was observed that generally the intensity of the baldness and grey hair increases with age (Fig. 2) and that in males over 60 years of age there is an 80% incidence of male pattern baldness of types IV, V, VI and VII (Fig. 3).

Table 2: Showing types, frequency and percentage frequency of alopecia within the studied population.

TYPES OF ALOPECIA	FREQUENCY	PERCENTAGE FREQUENCY (%)
IV	538	26.9
V	357	17.85
VI	303	15.15
VII	800	40
Alopecia totalis	2	0.1%
TOTAL	2000	100

Table 3: Showing types of grey hair, sites of location, frequency and percentage frequency.

TYPES	LOCATIONS	FREQUENCY	PERCENTAGE FREQUENCY
Solitary type	Dispersed	553	27.65
Bunch type	Localized bunch	250	12.5
Generalized type	Disperses	1043	52.15
None (no grey hair)	-	154	7.7
Total		2000	100

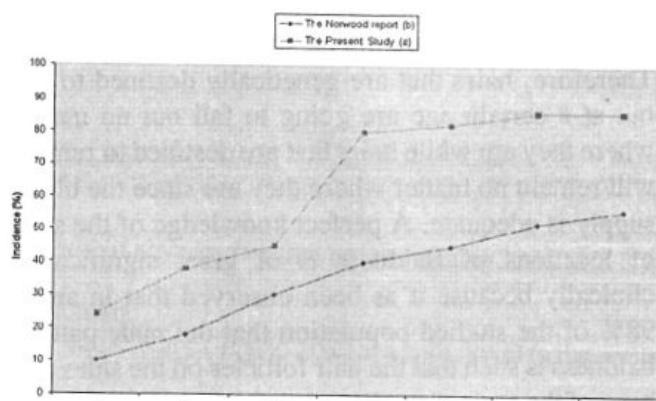


Fig. 3: showing incidence of male common pattern of baldness types IV, V, VI & VII of this study (curve a) as a function of age of the subjects compared to study reported by (Norwood, 1973) curve b.

Curve (a) represents the report from this present study while Curve (b) represents the study reported by (Norwood 1973). These results are remarkably similar except that the results from this study (curve a) are from 20-30% higher. Curve a shows that in males over 60 years of age there is an 80% incidence of male pattern baldness of types IV, V, VI and VII.

DISCUSSION

The statistical analysis of this study has shown that the incidence of types IV, V, VI and VII pattern of male common baldness increases with age as indicative in males over 60 years of age with an 80% incidence of male pattern baldness of the mentioned types (Fig. 1 & 3) which is in total agreement with the report by (Norwood 1973). The generalized type of grey hair is more frequent than all other types of grey hair among South Eastern Nigeria. Information deduced from the questionnaire and personal interviews showed that alopecia and grey hair is a condition, which has a social effect on the life style of the people. This often results to wearing of caps in social gathering. The psychological impact is

immense with feeling of social isolation, some even get depressed by losing their physical attractions hence this confirms with the report by (Udo, 2000).

Therefore, it has been deduced from this findings that very few people (10% of the sample studied) regarded alopecia and grey hair as a normal manifestation since readily available is no serious impingement on the health of the individual because it is believed to be a normal anatomical feature that manifest with aging while by majority (90% of the sample studied) it is seen as an abnormality which manifest through middle to old age. This however; is in total conformity with the stated law by [Norwood, 1973] that "apparently, Genetic information/code is intrinsically contained within each follicle and has nothing to do with the blood supply or innervations. Therefore, hairs that are genetically destined to fall out at a certain age are going to fall out no matter where they are while hairs that are destined to remain will remain no matter where they are since the blood supply is adequate. A perfect knowledge of the sites of locations of Baldness is of great significance clinically because it as been observed that in about 98% of the studied population that the male pattern baldness is such that the hair follicles on the sides and back of the scalp virtually never fall out, this is also in agreement with the report by (Norwood, 1973) that since in male pattern baldness, the hair follicles on the sides and back of the scalp virtually never falls out, it is logical to assume that hair taken from these areas and transplanted to some other areas will survive and grow in a normal manner. He further stressed the fact that hair follicles surgically transferred from one location to another on the same person survive, grow, and retained the same characteristics as they had in the original site, finally he concluded that the technique of hair transplant consists of taking small, round cylinders of hair-bearing skin called GRAFTS; which range in size from 2-5mm in diameter, from

the donor area by the use of a small, sharp punch and placing the grafts in punched- out sites in the recipient area.

In conclusion, alopecia could be hereditary or induced by other factors such as endocrine stimulation, nutrition, and aging as indicative by 98 % of the sample studied with ages ranging from 40 years and above. Alopecia and grey hair to mankind is associated with social, psychological and health problems, it is interesting to be aware that this can be done away with majorly by hair grafting or by gene replacement.

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