

Androgenetic Alopecia: What Impact Does It Have On the Quality of Life?

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Abstract

Background: Androgenetic alopecia (AGA) is a common hair disorder resulting from a combination of genetic, hormonal, and nutritional factors. It may be associated with psychological, social, and emotional disturbances in the affected individuals and this may lead to a significant reduction in the quality of life (QoL). **Aim:** This study determined the impacts of AGA on the QoL among a Nigerian population. **Patients, Materials and Methods:** This was a hospital-based cross-sectional study involving 110 adults with AGA. Adult patients with AGA attending dermatology clinic were consecutively recruited after obtaining an informed consent. The QoL was assessed with Hairdex questionnaire. **Results:** The mean age of the study participants was 43.45 ± 11.72 years (age range of 23–82 years) with male-to-female ratio of 14.7:1. The AGA duration ranged from 2 to 38 years, with a mean duration of 11.5 ± 4.2 years. Significant impairment in QoL was observed among the subjects in the Hairdex domains of symptoms, functioning, emotion, stigmatization, and self-confidence. Subjects who have previously been treated were more affected compared to those who were new and were yet to receive any treatment. **Conclusion:** Significant proportion of individuals with AGA experience enormous impairment in the QoL, indicating the need for psychosocial support while managing such patients.

Keywords: Androgenetic alopecia, pattern hair loss, quality of life, Nigeria

INTRODUCTION

Androgenetic alopecia (AGA), also called pattern alopecia, pattern hair loss, or pattern baldness, is the most common form of alopecia, characterized by progressive decline in hair growth or the presence of nonfunctional or dead hair follicles on the scalp in a specified pattern.^[1] It is referred to as female pattern baldness in females, and male pattern baldness in males.^[2] AGA results from excessive action of androgen in genetically susceptible men and women with polygenic inheritance pattern, causing thinning of hair which usually begins between ages 12 and 40 years.^[3] The classical history of AGA is a gradual thinning of hairs followed by hair loss in a well-defined pattern. This commonly starts in the temporal areas in men but in women, the process often begins from the vertex.^[4,5] The process continues gradually following the Hamilton–Norwood classification in men but in women, the frontal hairline is usually retained.^[6] AGA is seen in 50% of adult men and perhaps as many women worldwide.^[4,7] Up to 13% of premenopausal women reportedly have some evidence

of AGA.^[5] The incidence of AGA increases greatly in women following menopause and may affect up to 75% of women older than 65 years.^[5] The prevalence of AGA (male and female) in a study by Oiwoh *et al.*^[8] in South-Western Nigeria is 29.95% but a higher prevalence of 65% is seen among the male adult population in the Northern Nigeria.^[9]

The quality of life (QoL) is defined by the World Health Organization as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns.^[10] It is a broad-ranging concept affected in a complex way by the person's physical health, psychological

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state, personal belief, social relationship, and their relationship to salient features of their environment.^[10] Individuals with AGA experience both psychological and emotional stress, leading to a significant reduction in the QoL and secondary morbidities.^[7,11] In total, 88% of women with mild-to-moderate alopecia have reported change in daily activities and 72% have reported loss of self-esteem.^[12] According to Wells *et al.*,^[13] very low self-esteem occurs in men with increasing hair loss regardless of their age. However, these disturbances are worse in women with higher levels of societal anxiety, possibly because of the cosmetic importance of hair. Davis and Callender^[14] noted that though alopecia is not life-threatening and considered cosmetic in many cases, the effects on patients' QoL are real. This is because the perception of hair as an agent of beauty, youthfulness and health, with the provision of sense of self-identity and self-esteem is lost in patients with alopecia. For women, hair portrays femininity and self-confidence.^[14]

The aim of this study is to assess the impacts of AGA on QoL of the affected individuals in South-Western Nigeria. The psychological disturbance as well as impairment in the QoL among individuals with AGA are usually not given the deserved attention.^[15] For instance, while there is a paucity of data on the QoL among individuals with AGA in Nigeria, there are treatment protocols and many published articles on holistic management of skin diseases, including AGA, in some other climes. In view of the interconnection between the body and mind (physical and psychological health), QoL has become a major part of medical evaluation in patients with skin diseases as improvement in the QoL is also considered when evaluating the efficacy of medical interventions, hence this study.

Patients, Materials and Methods

This was a hospital-based cross-sectional study involving 110 adults (103 males and 7 females) with AGA. Adult patients with AGA attending dermatology clinic were consecutively recruited after obtaining an informed consent. Patients who had other forms of alopecia, in addition to AGA, were excluded from the study. Ethical approval was obtained from the Ethics and Research Committee of the institution, where the study was conducted (Ethical clearance certificate number ERC/2018/06/13). Male AGA (MAGA) and female AGA (FAGA) were graded using the Hamilton–Norwood classification and Ludwig classification, respectively. The details of each grading system are given below.

Hamilton–Norwood grading of male androgenetic alopecia

- Type I: No or very minimal hairline recession along the anterior border in the frontotemporal region [Figure 1]^[16]
- Type II: The anterior border of the hair in the frontotemporal region has symmetric triangular areas of recession which extend no further posteriorly than 2 cm anterior to a line drawn in a coronal plane at the level of the external auditory meatus [Figure 1]
- Type III: The triangular areas in Type II extend posterior to the coronal plane, which is 2 cm anterior to the external

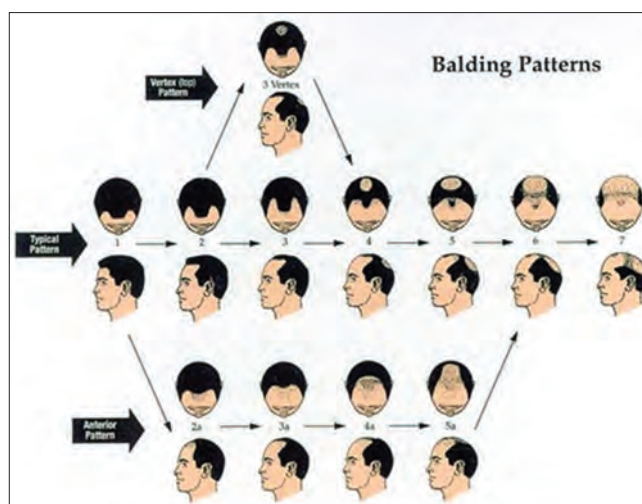


Figure 1: Hamilton–Norwood classification of MPHL

auditory meatus. This is the minimal level considered to represent baldness [Figure 1]

- Type III Vertex: Most of the hair loss is seen on the vertex. Frontal hair loss may be similar to Types I or II but should not exceed Type III. This type is most commonly seen with advancing age [Figure 1]
- Type IV: Hair loss on the vertex is associated with frontal loss more severe than Type III, but the frontal and vertex areas are separated by a distinct band of hair [Figure 1]
- Type V: Greater hair loss than Type IV with only a sparse band of hair separating the frontal and vertex areas. The hair left on the occipital and parietal areas begins to form the shape of a horseshoe when viewed from above [also true for Types VI and VII, Figure 1]
- Type VI: The frontal and vertex areas of hair loss are contiguous with greater lateral and posterior areas of denudation [Figure 1]
- Type VII: The most severe form of male pattern baldness. Only a narrow sparse horseshoe-shaped band of hair is left extending from the ears posteriorly to the occiput [Figure 1].

In addition, Types II through V can also be designated with a type A variant. The major features of the Type A variant are: (1) the entire anterior hairline border recedes in unison without leaving the mid-frontal peninsula of hair and (2) there is no simultaneous balding of the vertex. The two minor features are: (1) scattered sparse hairs frequently persisting in the entire area of balding and (2) the horseshoe-shaped fringe of hair that remains on the sides and back tends to be wider and reaches higher on the head. These variants exist only in about 3% of the population.^[17]

Ludwig grading of female androgenetic alopecia

- Grade I: Perceptible thinning of the hair on the crown, limited in the front by a line situated 1–3 cm behind the frontal hairline [Figure 2]^[18]
- Grade II: Pronounced rarefaction of the hair on the crown within the area seen in Grade I [Figure 2]

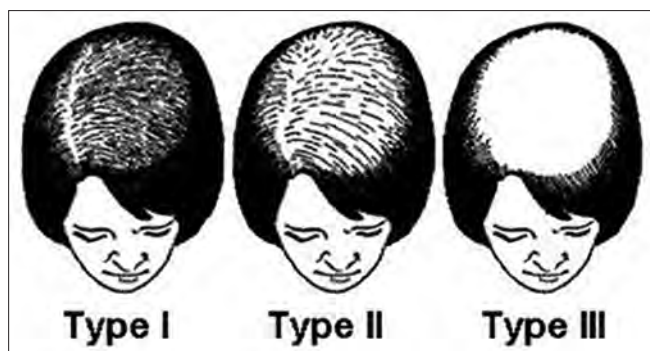


Figure 2: Ludwig classification of FPHL

- Grade III: Full baldness (total denudation) within the area seen in Grades I and II [Figure 2].^[6]

Hairdex questionnaire, a hair-specific questionnaire which has been validated in Nigeria for use in both English and Yoruba language,^[19] was used to assess the QoL of the study participants. The English or Yoruba version of the questionnaire, depending on the preferred language of each subject, was administered to the subjects by the same researcher to ensure uniformity of information. Hairdex assesses 5 domains of QoL which include the symptoms, emotion, functioning, stigmatization, and self-confidence and it contains a total of 48 questions. AGA occurring before 30 years of age was considered premature.^[20] MAGA was subdivided into mild (Hamilton–Norwood class I to III), moderate (Hamilton–Norwood class IV and V), and severe (Hamilton–Norwood class VI and VII). IBM SPSS Statistics (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp) was used for data analysis. Numerical variables were expressed as means \pm standard deviation (SD) for normally distributed data and the outcome variables expressed in mean for two groups were compared using independent (Student's) *t*-test or analysis of variance, where there are more than two groups. The level of statistical significance was set at 0.05.

RESULTS

The mean age of the study participants was 43.45 ± 11.72 years (age range of 23–82 years) with male-to-female ratio of 14.7:1. The AGA duration ranged from 2 to 38 years, with a mean duration of 11.5 ± 4.2 years. There is no significant difference in the duration of symptoms between the male and female subjects with AGA (Student's *t*-test = -0.869 , $P = 0.382$). Family history of AGA was present in 88 (80%) of the subjects. All the seven (100%) female patients with AGA had received one form of treatment or the other before presentation at the dermatology clinic. Meanwhile, only 15 (14.6%) out of the one hundred and three male patients with AGA had received treatment previously. While none of the 22 patients (male and female) who had received previous treatment for AGA was satisfied with the treatment outcome, the females were 6 times more likely to seek treatment for AGA than males and this was statistically significant ($\chi^2 = 10.291$, $P = 0.003$).

Five of the female subjects had Ludwig class II (moderate) AGA, one had Ludwig class I (mild), and another female had Ludwig class III AGA. All the 103 male subjects had AGA ranging from class III to VII on the Hamilton–Norwood system. Class III MAGA had the highest frequency, accounting for 47 (45.6%) of the subjects followed by MAGA class IV (30.1%). There were two cases of MAGA class VII (1.9%). Mild, moderate, and severe MAGA accounted for 47.4%, 43.6%, and 9%, respectively. The images of some of these classes are captured below [Figures 3–8].

Each of the five domains of the Hairdex questionnaire was assessed and the scores obtained among the study participants are shown in Table 1. The mean \pm SD scores for symptom, emotion, functioning, stigmatization, and self-confidence among the subjects were 8.75 ± 1.18 , 21.88 ± 7.93 , 21.25 ± 6.73 , 16.18 ± 4.8 , and 19.42 ± 3.85 , respectively. For symptom, emotion, functioning and stigmatization, the higher the score, the higher the negative impacts of AGA on the QoL. However, the self-confidence score has an inverse relationship with AGA's impact on QoL, which means the higher the self-confidence score, the lower the negative impacts of AGA on QoL. The subjects with premature AGA (AGA before the age of 30 years) had higher scores in the total Hairdex and subgroups of symptom, emotion, functioning, and stigmatization. There is a significant difference in the Hairdex symptom subgroup between patients with premature AGA and those with adult-onset AGA ($t = 2.582$, $P = 0.018$). Although the mean scores in all the domains for Hairdex except self-confidence were higher in the females with AGA than their male counterparts, these were not statistically significant as shown in Table 1. Similarly, there is no significant difference in the QoL with respect to other socio-demographic data [Table 1].

There is no statistically significant difference in QoL between the male patients with mild, moderate, and severe AGA [Table 2]. Conversely, patients who had one form of treatment or the other for their AGA had a more impaired QoL in all the five domains and in total Hairdex score when compared to those who had never sought or received any form of treatment ($P < 0.05$) as shown in Table 2.

DISCUSSION

The mean total Hairdex score among the study participants is comparable to what was obtained by Gonul *et al.*^[21] in their study. However, the mean subtotal Hairdex scores are slightly higher than the findings by Sawant *et al.*^[22] in India but Bade *et al.*^[23] in India and Schmidt *et al.*^[24] in Germany found higher mean scores for total and subtotal Hairdex in their studies. This variation in the Hairdex scores from these studies is likely attributable to differences in the ability to cope with events of life by people in different geographical parts of the world. This study showed that individuals with AGA have significant impairment in their QoL in all domains of Hairdex and this suggests that subjects with AGA suffer emotional and



Figure 3: Ludwig class III Female androgenetic alopecia



Figure 4: Hamilton–Norwood Class IIIa male androgenetic alopecia



Figure 5: Hamilton–Norwood Class IV male androgenetic alopecia



Figure 6: Hamilton–Norwood Class IVa male androgenetic alopecia



Figure 7: Hamilton–Norwood Class V male androgenetic alopecia



Figure 8: Hamilton–Norwood Class Va male androgenetic alopecia

psychological disturbances in addition to impaired functioning, stigmatization and low self-esteem.^[13,18,25] Many of the male patients (55.6%) in this study were worried the hair loss may get worse and the females shared the same view. Almost half of the male patients visit salon weekly to ensure the remaining

hairs are cut to the level of the scalp and all the women in the study constantly use camouflage to ensure the bald area is not seen by a nonmember of their household. These varying degrees of impairment in QoL suffered by AGA patients are

Table 1: Relationship between sociodemographic status and quality of life among the Subjects

	Hairdex subgroups (mean±SD)					
	Symptom	Emotion	Functioning	Stigmatization	Self-confidence	Total
Subjects	8.75±1.18	21.88±7.93	21.25±6.73	16.18±4.79	19.42±3.85	87.47±16.80
Gender						
Male	8.72±1.12	21.76±7.78	21.09±6.67	16.07±4.79	19.46±3.86	76.19±21.25
Female	9.33±2.31	24.00±12.17	24.00±8.72	18.00±5.29	18.67±4.16	84.67±32.39
<i>t</i> -test	0.868	0.315	0.726	0.675	0.346	0.657
<i>P</i>	0.389	0.781	0.624	0.502	0.730	0.514
Age (years)						
Below 30	9.17±1.38	23.26±8.20	22.84±7.38	16.96±5.44	20.22±4.08	92.45±19.84
30 and above	8.72±0.36	21.62±6.32	19.22±5.02	15.88±4.04	19.50±2.69	84.94±14.38
<i>t</i> -test	2.582	1.352	1.712	1.204	-0.177	1.770
<i>P</i>	0.018	0.220	0.098	0.242	0.869	0.087
Marital status (single, married and widowed)						
Single	9.21±1.63	24.29±9.59	22.36±7.61	16.71±6.02	18.93±4.89	91.50±19.29
Married	8.62±0.99	21.17±7.34	20.90±6.54	16.00±4.43	19.52±3.52	86.31±16.12
Widowed	8.00±0.00	18.00±0.00	20.00±0.00	16.00±0.00	22.00±0.00	84.00±0.00
<i>F</i> -test	1.563	0.933	0.255	0.114	0.346	0.533
<i>P</i>	0.219	0.400	0.776	0.893	0.709	0.590
Educational qualification (none, primary, secondary and tertiary)						
None	8.00±0.00	24.67±7.64	20.67±5.03	17.67±2.08	21.67±0.58	92.67±7.57
Primary	8.00±0.00	15.33±1.16	16.33±2.89	14.33±4.04	19.00±1.73	73.00±6.08
Secondary	8.59±1.05	20.23±8.04	18.86±5.90	14.95±5.01	20.18±3.72	82.82±16.51
Tertiary	9.03±1.32	23.52±7.91	23.62±7.00	17.14±4.77	18.66±4.16	91.97±17.02
<i>F</i> -test	1.534	1.585	2.945	1.121	1.025	2.231
<i>P</i>	0.216	0.204	0.041	0.349	0.389	0.095
Ethnicity (Yoruba and Igbo)						
Yoruba	8.89±1.27	21.48±7.74	20.91±7.04	15.87±4.99	19.28±3.98	75.87±22.52
Igbo	8.18±0.41	23.55±8.86	22.64±5.28	17.45±3.73	20.00±3.35	79.82±18.08
<i>t</i> -test	1.821	-0.774	-0.761	-0.987	-0.552	-0.540
<i>P</i>	0.074	0.442	0.450	0.328	0.583	0.591
Religion (Christianity and Islam)						
Christianity	8.66±1.14	22.10±8.56	20.76±6.48	15.93±4.92	19.72±3.63	75.72±21.66
Islam	8.86±1.24	21.64±7.37	21.75±7.05	16.43±4.72	19.11±4.10	77.57±21.98
<i>t</i> -test	-0.640	0.217	-0.553	-0.389	0.602	-0.320
<i>P</i>	0.525	0.829	0.583	0.698	0.550	0.751
Employment status (employed and unemployed)						
Employed	8.67±1.11	21.21±8.14	20.67±7.08	15.54±4.87	19.64±4.12	74.44±22.41
Unemployed	8.94±1.35	23.33±7.45	22.50±5.86	17.56±4.42	18.94±3.23	81.39±19.63
<i>t</i> -test	-0.821	-0.941	-0.956	-1.496	0.632	-1.130
<i>P</i>	0.415	0.351	0.343	0.140	0.530	0.263

ANOVA: Analysis of variance, SD: Standard deviation, *t*-test: Independent *t*-test, *F*-test: One-way ANOVA

corroborated by many other studies. For instance, in a local study by Ekpudu^[25] on pattern of alopecia and effects of alopecia on QoL of patients, majority of the patients (54%) had a moderate to extremely large impairment in QoL; female patients having more impairment in QoL than male patients. Studies by Oiwoh^[18] in South-Western part of Nigeria and Dlova *et al.*^[11], in their study on QoL in South African women with alopecia, also corroborated these findings. While Oiwoh *et al.*^[18] used Hairdex questionnaire, Ekpudu^[25] and Dlova *et al.*^[11] used the Dermatology Life Quality Index and alopecia QoL indicators questionnaire respectively to assess

QoL in AGA. These observations among African patients with AGA have also been reported in similar studies in Asia, America, Europe, and Australia.^[7,12,15-22,24,26,27] In fact, the QoL of AGA patients is affected more than previously thought.^[21] According to Wells *et al.*,^[13] very low self-esteem occurs in men with increasing hair loss regardless of their age. These disturbances are worse in women with higher levels of societal anxiety, possibly because of the cosmetic importance of hair. For women, hair portrays femininity and self-confidence.^[14] Davis and Callender^[14] noted that even though alopecia is not life threatening and considered cosmetic in many cases, the

Table 2: Relationship between severity of male androgenetic alopecia, previous treatment for androgenetic alopecia, and quality of life among the subjects

	Hairdex subgroups (mean±SD)					
	Symptom	Emotion	Functioning	Stigmatization	Self-confidence	Total
Severity of MAGA						
Mild	8.65±0.98	21.42±7.12	21.69±6.37	15.77±5.41	19.19±4.08	86.73±16.98
Moderate	8.92±1.32	21.96±7.60	21.21±7.22	16.54±4.08	19.75±3.97	88.38±15.26
Severe	8.00±0.00	22.75±14.18	16.50±4.04	15.25±5.56	19.50±1.73	82.00±24.10
<i>F</i> -test	1.247	0.062	1.060	0.220	0.126	0.261
<i>P</i>	0.296	0.940	0.354	0.804	0.882	0.771
Previous treatment						
No	8.55±1.02	20.79±7.68	20.02±6.39	15.38±4.69	19.94±3.85	72.81±20.30
Yes	9.70±1.49	27.00±7.38	27.00±5.29	19.90±3.35	17.00±2.87	94.60±19.32
<i>t</i> -test	-2.968	-2.339	-3.219	-2.882	2.273	-3.107
<i>P</i>	0.004	0.023	0.002	0.006	0.027	0.003

ANOVA: Analysis of variance, SD: Standard deviation, *t*-test: Independent *t*-test, *F*-test: One-way ANOVA, MAGA: Male androgenetic alopecia

effects on patients' QoL are real. This is because the perception of hair as an agent of beauty, youthfulness, and health with provision of sense of self-identity and self-esteem is lost in patients with AGA.

The mean total and subtotal Hairdex scores, with exception of self-confidence, were higher among the female patients with AGA compared to their male counterparts. The lower score in self-confidence among the females shows females with AGA are less confident compared to their male counterparts. These differences in the Hairdex scores among the male and female subjects are comparable to the findings in the previous studies, where females with AGA had higher scores in domains of symptoms, emotion, functioning, stigmatization, and total Hairdex score but a lower score in self-confidence compared to their male counterpart.^[21,25,28,29] Although the mean scores in all the domains of Hairdex, except self-confidence, were higher in the females with AGA than their male counterparts, these were not significant. Similar studies also found no statistical difference in the QoL in both genders.^[18,30]

There was no significant difference in the QoL among the subjects with premature AGA and adult-onset AGA, except in the symptom subgroup of Hairdex, but the QoL is significantly impaired in all the age groups. Similarly, marital status, ethnicity, religion, educational qualification, and employment status have no significant impact on the QoL among individuals with AGA. This is similar to the findings by Zhang *et al.*^[30] in China and Gonul *et al.*^[21] in Turkey. Oiwoh,^[18] however, discovered patients with AGA who had secondary and tertiary education scored higher in emotion, functioning, and stigmatization with Hairdex subscales and in total Hairdex score. Similar to this study, Gonul *et al.*^[21] found no significant difference in total Hairdex or Hairdex subgroups based on the employment status in patients with AGA.

All the patients who had sought or received treatment for AGA previously had more impairment in the QoL compared to their counterparts who had never sought or received treatment. They reported more symptoms ($P = 0.004$),

emotional disturbance ($P = 0.023$), impaired functioning ($P = 0.002$), stigmatization ($P = 0.006$), and lower self-confidence ($P = 0.027$). These results are consistent with the findings by Han *et al.*^[31] in South Korea, Gupta *et al.*^[15] in India and Goldberg and Huxley^[32] in London, who all reported the group of AGA patients who suffer most in terms of QoL were those who were under specialist treatment and consult their general practitioner, as compared to those who "cope" with their disease.^[32] The highly impaired QoL in this group of people may be the reason for their continued presentation in the hospital in an attempt to get a satisfactory care for their hair loss.

CONCLUSION

AGA is not a physical disorder only; it also has enormous negative psychological impacts with impairment in the QoL among the sufferers. Patients with AGA experience higher symptoms, emotional disturbances, impaired functioning, stigmatization, and lower self-esteem compared to their counterparts without the disorder. It is therefore important to include QoL in the evaluation of patients with AGA and offer them psychosocial support in addition to medical therapy.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Hamilton JB. Patterned loss of hair in man; types and incidence. *Ann N Y Acad Sci* 1951;53:708-28.
2. Trueb RM. Inflammatory phenomena and fibrosis in androgenetic alopecia. *Int J Dermatol* 2010;3:25-32.
3. Price VH. Androgenetic alopecia in women. *J Investig Dermatol Symp Proc* 2003;8:24-7.
4. Cranwell W, Sinclair R. Male Androgenetic Alopecia. *Endotext*; 2016. Available from <https://pubmed.ncbi.nlm.nih.gov/25905192/>. [Last accessed on 2021 Oct 21].
5. Robert P. Androgenetic Alopecia. *Medscape Reference*. Available from:

- <https://www.emedicinemedscape/article/1070167>. [Last accessed on 2021 Oct 22].
6. Ludwig E. Classification of the types of androgenetic alopecia (common baldness) occurring in the female sex. *Br J Dermatol* 1977;97:247-54.
 7. Safavi K. Prevalence of alopecia areata in the first national health and nutrition examination survey. *Arch Dermatol* 1992;128:702.
 8. Oiwoh S, Akinboro A, Olasode O, Onayemi E. Androgenetic alopecia: Prevalence and clinical characteristics in a south-western Nigerian population. *Niger J Med* 2021;30:507-13.
 9. Adamu H, Shehu YM, Ogunbiyi AO. Prevalence and patterns of male AGA in Kano, Nigeria. *Niger J Dermatol* 2020;2:36-41.
 10. The WHOQOL Group. The World Health Organization quality of life assessment (WHOQOL): Development and general psychometric properties. *Soc Sci Med* 1998;46:1569-85.
 11. Dlova NC, Fabbrocini G, Lauro C, Spano M, Tosti A, Hift RH. Quality of life in South African black women with alopecia: A pilot study. *Int J Dermatol* 2016;55:875-81.
 12. Basra MK, Shahrulkh M. Burden of skin diseases. *Expert Rev Pharmacoecon Outcomes Res* 2009;9:271-83.
 13. Wells PA, Willmoth T, Russell RJ. Does fortune favour the bald? Psychological correlates of hair loss in males. *Br J Psychol* 1995;86:337-44.
 14. Davis DS, Callender VD. Review of quality of life studies in women with alopecia. *Int J Womens Dermatol* 2018;4:18-22.
 15. Gupta S, Goyal I, Mahendra A. Quality of life assessment in patients with androgenetic alopecia. *Int J Trichology* 2019;11:147-52.
 16. Feingold KR, Anawalt B, Boyce A. The Hamilton-Norwood Classification of Male Androgenetic Alopecia. *Endotext*; 2000. Available from https://ncbi.nlm.nih.gov/books/NBK278957/figure/male-androgen-alopecia_f_male-androgen-alopecia_figure7/. [Last accessed on 2021 Oct 22].
 17. Verret D. Classification of Baldness. Available from: <https://www.drverret.com/classification>. [Last accessed on 2021 Oct 20].
 18. Gupta M, Mysore V. Classifications of patterned hair loss: A review. *J Cutan Aesthet Surg* 2016;9:3-12.
 19. Oiwoh SO. Quality of Life, Dermoscopy and Cardiovascular Risk Factors in Androgenetic Alopecia among adults in Ogbomoso, Southwest Nigeria. Dissertation for the Award of Fellowship of West African College of Physicians; October, 2019.
 20. Narad S, Pande S, Gupta M, Chari S. Hormonal profile in Indian men with premature androgenetic alopecia. *Int J Trichology* 2013;5:69-72.
 21. Gonul M, Cemil BC, Ayvaz HH, Cankurtaran E, Ergin C, Gurel MS. Comparison of quality of life in patients with androgenetic alopecia and alopecia areata. *An Bras Dermatol* 2018;93:651-8.
 22. Sawant N, Chikhalkar S, Mehta V, Ravi M, Madke B, Khopkar U. Androgenetic alopecia: Quality-of-life and associated lifestyle patterns. *Int J Trichology* 2010;2:81-5.
 23. Bade R, Bhosle D, Bhagat A, Shaikh H, Sayyed A, Shaikh A. Impact of androgenic alopecia on the quality of life in male subjects: Results of an observational study from tertiary care hospital. *J Med Sci Clin Res* 2016;04:12900-7.
 24. Schmidt S, Fischer TW, Chren MM, Strauss BM, Elsner P. Strategies of coping and quality of life in women with alopecia. *Br J Dermatol* 2001;144:1038-43.
 25. Ekpudu V. Pattern of Alopecia and the Effect of Alopecia on the Quality of Life of Patients. Dissertation, Faculty of Internal Medicine, NPMCN; 2008. Available from: <https://www.dissertation.npmcn.edu.ng>. [Last accessed on 2021 Aug 5].
 26. Alfonso M, Richter-Appelt H, Tosti A, Viera MS, Garcia M. The psychosocial impact of hair loss among men: A multinational European study. *Curr Med Res Opin* 2005;21:1829-36.
 27. Passchier J. Quality of life issues in male pattern hair loss. *Dermatology* 1998;197:217-8.
 28. Cash TF. The psychosocial consequences of androgenetic alopecia: A review of the research literature. *Br J Dermatol* 1999;141:398-405.
 29. Cartwright T, Endean N, Porter A. Illness perceptions, coping and quality of life in patients with alopecia. *Br J Dermatol* 2009;160:1034-9.
 30. Zhang M, Zhang N. Quality of life assessment in patients with alopecia areata and androgenetic alopecia in the People's Republic of China. *Patient Prefer Adherence* 2017;11:151-5.
 31. Han SH, Byun JW, Lee WS, Kang H, Kye YC, Kim KH, *et al.* Quality of life assessment in male patients with androgenetic alopecia: Result of a prospective, multicenter study. *Ann Dermatol* 2012;24:311-8.
 32. Goldberg D, Huxley P. *Mental Illness in the Community: The Pathway to Psychiatric Care*. Oxfordshire, England, UK: Psychology Press; 2001. Available from: <https://books.google.com>. [Last accessed on 2021 Oct 22].