Psychological impact and awareness of androgenetic alopecia among Filipino male patients: an observational study in the Ospital ng Maynila Medical Center

Fenny Leets Santoso[1], Benedicto dL Carpio[2], Eileen R. Morales[2], Armelia Andrea L. Torres[2]

[1]Resident, Ospital ng Maynila Medical Center-Department of Dermatology
[2]Consultant, Ospital ng Maynila Medical Center-Department of Dermatology

Correspondence should be addressed to
Fenny Leets Santoso, Ospital ng Maynila Medical Center – Department of Dermatology, Quirino Avenue cor. Roxas Boulevard, Malate, Manila.

Tel: +639396394390 /+6281212489301

E-mail: santoso.fennyleets@gmail.com

Abstract

Background Androgenetic alopecia (AGA) is the most common type of hair loss. Although losing hair is not life-threatening, it can lead to psychological distress.

Objective To investigate the psychological impact using Hospital Anxiety and Depression Scale (HADS) and the awareness among Filipino male patients aged 18 to 65 with androgenetic alopecia.

Methods A cross-sectional study was conducted at the OMMC Dermatology. Psychological impact was assessed using HADS. Age, education, duration of disease, previous investigation experience, previous experience in treating this condition, and satisfaction ratings for the treatment were likewise obtained.

Results 145 Filipino male patients with androgenetic alopecia were included in the study. The risks of anxiety and depression were not statistically associated with severity of AGA (p>0.05). The risk of depression was highest among those with severe AGA. 57% had previous investigation experience and 21% had previous experience in treating the condition, however only 1 or 0.7% was satisfied with the treatment. Age, education, duration of disease, level of awareness and treatment satisfaction and the severity of AGA in Filipino male patients were not statistically associated with anxiety (p>0.05), however, age, education and Hamilton Norwood Classification were statistically associated with depression (p<0.05).

Conclusion Three factors have been found to influence psychological well-being and self-image in AGA patients: age of 50 years and above, lower education level, and a moderate to severe grade of disease according to the Hamilton-Norwood classification. It is hoped that optimal management focusing on these factors can be used to solve one of the mankind's psychologically debilitating hair diseases.

Key words: androgenetic alopecia, male pattern hair loss, psychodermatology

Introduction

Hair protects the scalp against sun exposure, helps maintain the body heat, and facilitates social interaction[1]. Androgenetic alopecia (AGA) or pattern hair loss is the most common type of hair loss. It is androgen-dependent and characterized by a progressive decline in the duration of anagen – an increase in the duration of telogen and miniaturization of scalp hair follicles. Androgenetic alopecia in male or Male Pattern Hair Loss (MPHL) is symmetric and progressive hair loss with some pattern variations. Hamilton and Norwood classified the patterns of male AGA based upon frontoparietal and frontal recession as well as vertex thinning. The most common pattern of male AGA starts on the temples and progresses to affect the vertex area[1, 2].

In Asians, AGA is a common disorder of hair loss, most especially among the male population. The age of onset is between the thirties and forties, but the hair loss starts immediately after puberty and continues progressively[3]. The AGA incidence in Asian men and women is up to 73% of the general population[4].

Although losing hair is not life-threatening, it can lead to psychological, mental, and emotional distress. As a result, it has been reported that mild hair loss has an impact on poorer quality of life. A study by Ng et al. highlighted several AGA-related negative psychological impacts such as anxiety, depression, low self-esteem and feelings of unattractiveness[5].

Most patients with AGA are not aware of their hair loss until they are diagnosed with AGA by their physicians. Some consider AGA as a normal aging process which might lead to unimportance in the treatment of hair loss. The lack of awareness regarding this disease process leads to delayed treatment. However, significant awareness will bring patients to seek consultation from medical health providers or to try different kinds of treatment, especially when faced with psychological pressure and negative social perception about their appearance[6].

The aim of this study is to investigate the psychological impacts on patients with AGA and their awareness of their hair condition. Factors that could influence these impacts will also be investigated.

Materials and Methods

Study design and methods
Study design

This study was a single-center, cross-sectional, descriptive study. The study was conducted at the Outpatient Department of the Ospital ng Maynila Medical Center, Department of Dermatology from July 2019 to November 2019.

Subjects

One hundred and forty-five patients satisfying the inclusion/exclusion criteria were sampled among patients visiting the Outpatient Department of the Ospital ng Maynila Medical Center, Department of Dermatology based on 80% standard normal variation, 5% absolute error or precision, and based on the prevalence rate of AGA in Asian men ranging from 31-73%, proportion population of 57% will be used in this study[6]. Sample size calculation for cross sectional studies/surveys-qualitative variable was used in this study[7]. The inclusion included male patients of 18 to 65 years old who visited the hospital for any treatment of skin disease, but showed clinical hair loss, which was sufficient enough to be diagnosed with androgenetic alopecia, and patients must understand and complete the questionnaires in English or Filipino. The exclusion criteria included patients who were on medications that could cause alopecia, patients with other types of alopecia, and patients who had already been included in this study on their previous consults.

Methods of assessment and measurements

Severity of androgenetic alopecia

Two senior residents of dermatology were assigned to assess the severity of AGA using Hamilton-Norwood Classification. There are seven grades of androgenetic alopecia which will be further classified as: mild (Grade I and II), moderate (Grade IIA, III, IIIA and IV) and severe (Grade IVA, V, VA, VI and VII)[8].

Clinical characteristics

Patients were instructed to fill up a questionnaire about the following characteristics: age, education, duration of disease, previous investigation experience, previous experience in treating this condition, and satisfaction ratings for the treatment. To compare the patient's psychological impact of varying age characteristics, the patients were separated into three groups: a group aged less than 30 years old, a group aged between 30 and 50 years old, and a group aged over 50 years old. To compare the patient's psychological impact of varying education level, the patients were separated into three groups: elementary, secondary, and college. To compare the duration of disease and patient's psychological impact, the patients were separated into three groups: less than five years of AGA, 5 to 10 years of AGA, and exceeding 10 years of AGA. To compare patient's psychological impact and level of awareness, the patients were separated into: patients with awareness of AGA and patients without awareness of AGA. To compare the patient's psychological impact of varying previous treatment satisfaction, the patients were separated into patients with high satisfaction of their previous treatment and low satisfaction of their previous treatment. Additional questions were administered to the following groups: patients who had done research regarding the disease would mention the source (e.g. advertisement, friends, doctor, etc), patients who had been using previous treatments (e.g., medical treatment, herbal shampoo, etc), and patients who had low satisfaction with their previous treatment (e.g., high costs, low subjective effects).

The Psychological Impact was assessed using Hospital Anxiety and Depression Scale (HADS)[9,10] and Hospital Anxiety and Depression Scale-Pilipino Translation (HADS-P)[11,12,13,14].

The HADS is a self-rating scale developed to assess psychological distress in non-psychiatric patients. The HADS was developed by Zigmoid and Snaith in 1983. HADS and its Filipino translation (HADS-P) was utilized in this study. The copyright was given by GL Assessment for this study. This questionnaire includes two types of subscales: an anxiety scale (7 items) and a depression scale (7 items). Each item was answered by the patient on a four-point (0-3) response category, so the scores ranged from 0 to 21 for anxiety and 0 to 21 for depression. A score of 0 to 11 for either subscale was regarded as being in normal range/ no risk of anxiety and depression, and a score of 11 and above indicating 'risk' of anxiety and depression[11].

Statistical analysis

Descriptive analyses of demographic and psychological impact and awareness of androgenetic alopecia among Filipino male patients aged 18 to 65 was done using frequency and percentage for categorical variables. For continuous variables, mean and standard deviation, and range were described. Relationship between demographic characteristics, duration of disease, level of awareness and severity of AGA in Filipino male patients with anxiety and depression were determined using chi square test and analysis of variance. A level of significance was set at alpha less than 0.05.

Ethical consideration

This study was conducted following international and national guidelines on research for human participants such as the

Declaration of Helsinki, International Conference on Harmonization-Good Clinical Practice, the National Ethical Guidelines for Health and Health-Related Research (NEGHHRR) and the Data Privacy Act of 2012 and its Implementing Rules and Regulations and underwent ethical evaluation and approval from the Institutional Review Board of the Manila Central University, Filemon D. Tanchoco Sr. Medical Foundation, Inc. EDSA, Caloocan City 1400.

Informed consent

Patients with AGA based on Hamilton-Norwood classification were selected according to the inclusion and exclusion criteria of the study. Each subject was asked to sign an informed consent prior to commencement of the study at the Ospital ng Maynila Medical Center-Department of Dermatology. The subject was informed regarding the study purpose, its expected length, confidentiality, and any possible risks and benefits involved in participating in the study. Written consent was secured from the subject and if he cannot read, it was signed by a witness to testify that the study had been fully explained and understood by the participant.

Results

There were 145 Filipino male patients aged 18 to 65 with androgenetic alopecia seen at the Outpatient Department of the Ospital ng Maynila Medical Center, Department of Dermatology from July 2019 to November 2019 included in the study.

Demographic characteristics

Baseline demographic and clinical characteristics show the mean age was 39.69 (12.6%) years and ranged from 20 to 65 years. Forty patients (27.6%) were younger than 30 years old, 73 patients (50.3%) were between 30 to 50 years old, and 32 patients (22.1%) were older than 50 years old. Sixty percents of the patients were able to finish tertiary education. More than half of the patients had a duration of condition below 5 years. There were forty-

seven percent patients who had moderate Hamilton Norwood Classification, 35% with mild classification, and 18.6% with severe classification.

Risk of anxiety and depression using the Hospital Anxiety and Depression Scale

Score of 0 to 11 for either subscale was regarded as being in normal range/ no risk of anxiety and depression, and a score of 11 and above indicating 'risk' of anxiety and depression. In our study, table 1 shows the mean score of anxiety was 5.74 (3.2) and depression was 5.67 (3.165). Using chi square test, the risk of anxiety and depression was not statistically associated with severity of AGA with p-value of 0.654 and 0.086, respectively. However, the risk of depression was highest with 18.5% among those with severe AGA as compare to those with moderate and mild AGA with 4.4% and 4% risk of depression only. Those with mild AGA had 8% risk of anxiety (**Table 1**).

Table 1. Risk of anxiety and depression using the Hospital Anxiety and Depression Scale in Filipino male patients

Hamilton Norwood classification	Risk of anxiety (>11)		p value	Risk of depression (>11)		p value
	No	%		No	%	
Mild	4	8.0		2	4.0	
Moderate	4	5.9	0.654	3	4.4	0.086
Severe	2	7.4		5	18.5	

p value = a level of significance was set at alpha less than 0.05

The level of awareness and treatment management of androgenetic alopecia

Fifty-seven patients or 39.3% had previous investigation experience and 18.6% used internet as source of information. Other source of information was advertisement (4.8%), friends (4.8%), and consultation with doctors (9%). Twenty-one patients or 14.5% had previous experience in the treatment of this condition – however, only 1 patient or 0.7%, was satisfied with the treatment. The most common reason for non-satisfaction with the treatment was its ineffectiveness, as cited by 7.6% of patients

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Table 2. Association of demographic characteristic, duration of disease, level of awareness and severity of AGA in Filipino male patients with anxiety and depression

Factors	Anxiety		p value	Depression		p value
	Mean	SD		Mean	SD	
Age group						
<30 years	6.55	3.250	0.165	4.55	3.381	0.008
30-50 years	5.40	3.183		5.77	2.904	
>50 years	5.53	2.940		6.84	3.081	
Education						
Bachelor	5.47	3.216	0.238	4.95	3.194	0.002
Elementary	5.20	3.676		5.8	3.12	
Secondary	6.38	2.931		6.98	2.723	
Duration of condition (years)						
<5	5.58	2.806	0.441	5.27	3.446	0.077
5-10	6.35	4.148		5.62	2.796	
>10	5.50	2.825		6.8	2.511	
Hamilton-Norwood classification						
Mild	6.42	3.488	0.087	4.66	3.166	0.020
Moderate	5.15	3.029		6.21	3.258	
Severe	6.00	2.675		6.19	2.497	
Previous investigation experience						
No	5.43	3.054	0.140	5.65	3.259	0.92
Yes	6.23	3.306		5.7	3.041	
Satisfaction for the treatment						
No	6.59	3.034	0.362	5	3.177	0.562
Yes	7.00	NA		6	NA	

p-value = A level of significance was set at alpha less than 0.05. SD = standard deviation

Association of demographic characteristic, duration of disease, level of awareness and severity of AGA in Filipino male patients with anxiety and depression

Using ANOVA, Table 2 shows that age, education, duration of disease, level of awareness and treatment satisfaction and severity of AGA in Filipino male patients were not statistically associated with anxiety with p-value not less than 0.05. However, age, education and Hamilton Norwood Classification were statistically associated with depression with p-value of 0.008, 0.002, and 0.020, respectively. The mean HADS depression score was highest among patients whose age are above 50 years old and lowest in patients who are less than 30 years old. Those who finished tertiary education had a lower depression score of 4.95 (3.19) compared to the ones with secondary education, having a mean score of 6.98 (2.7). Those with moderate and severe Hamilton Norwood Classification had higher depression scores as compared to ones with mild classification. The duration of disease, level of awareness, treatment satisfaction and severity of AGA

in Filipino male patients were not statistically associated with depression.

Discussion

Androgenetic alopecia or pattern hair loss is the most common type of hair loss[4]. Although the Asian prevalence of AGA is lower than that of Caucasians, AGA is also a common disorder in Asia. According to epidemiologic data from China, India, Korea, Taiwan, and Thailand, it is estimated that 41–73% of Asians develop pattern hair loss at some point in their lives[6]. The age of onset of male AGA is highly variable. Different results have been reported regarding the prevalence of AGA, depending on ethnic groups[5,15]. In this study, the age ranges from 20 to 65 years old, with variable duration of the condition, which is consistent with the other study where an individual can develop pattern hair loss at some point in their lives[6].

A study done by Ng et al. was noted that the association between AGA and psychological disorders was well documented. AGA leads to anxiety and depression, patient's perception on their disease severity determines the severity of the psychological impact[5]. Our study shows that the risk of anxiety and depression were documented, however it was not statistically associated with severity of AGA. Risk of anxiety and depression can be seen in any androgenetic alopecia grade. The risk of depression is highest with 18.5% among those with severe AGA as compare to those with moderate and mild AGA with 4.4% and 4% risk of depression only.

In this study, it was found that age, education, duration of disease, level of awareness and treatment satisfaction and severity of AGA in Filipino male patients were not statistically associated with anxiety, however, age, education and severity of AGA were statistically associated with depression. Our study found that the mean HADS depression score was highest in patients over 50 years old and lowest in patients less than 30 years old, which was in line with a study by Sawant et al[5]. However, in most studies, a greater degree of psychological impact was seen among younger patients. The finding in our study can be explained that among younger patients, the affected areas are much less severe and are thus not readily visible.

In our study, those with tertiary education had lower depression score as compared with secondary education. This is in contrast with a study by Ng, et.al. in which they observed that those who received secondary and tertiary education were remarkably more dissatisfied with their hair condition. The condition in their finding could be due to their increased awareness and self-consciousness about image and the need for high degree of social interaction in these group of patients[5]. A possible explanation for the finding in our study is that higher education will have more understanding and acceptance about their condition.

Those with moderate and severe Hamilton Norwood Classification had higher depression scores as compared to those with mild classification. This is in agreement with a study done by Ng, et.al. which remarked that the association between AGA and psychological disorders was well documented. The study explained that patients with a more severe grade of AGA according to the Hamilton Norwood Classification had a higher risk of depression, and they were psychologically disturbed by their severe hair condition. It explained that those with severe baldness generally appear older and less attractive, thus associated with a poor self-image and low self-respect[5], which leads to the risk of depression[5].

Patients who sought treatment for their hair likely have significant awareness about the condition or they had already tried to obtain information and tried different kinds of treatment available in the market. However, the available treatment in the market might be unproven. The patients must know that a safe and effective treatment is available, and they must understand

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the expected outcome of each form of therapy. Knowledge about AGA may help the misunderstandings and psychological impact about its occurrence, and indirectly influence the patients to seek treatment for their condition[6]. A study reported by Cash et al. and Zhuang et al. discovered that patients who were actively seeking dermatologic treatment were substantially more distressed and anxious compared to nontreatment-seeking group[5]. This is not in line with our study. In this study, more than half of the subjects had previous investigation experience, but only 14.5% had previous experience in treating this condition. This result is not statistically corelated with anxiety and depression. However, since more than half of the subjects had concern about their condition, this could be a good signal that they had actively sought for treatment. Due to the few treatment options, which give low effects, with a high cost and long-term treatments, patients usually would not initiate the medication. Our study found that only 14.5% of the subjects had previous treatment experience with only 0.7% of them expressed satisfaction with their treatment. The most common reason for non-satisfaction with their treatment was its low effectivity, which was expressed by 7.6% of our subjects.

Therefore, to prevent the risk of anxiety and depression in AGA patients, proactive management which covers both the disease process as well as psychological support must be given to the patient. Adequate and comprehensive disease and treatment explanation, prompt referral to a hair specialist, as well as encouragement to start treatment as early as possible are among several proactive management options. The internet is the most common source of information available to patients. Hence, sound and expert-written medical articles by hair specialists need to be made available online.

Limitations to this study include restricted applicability to other variants of alopecia as well as lack of control for presence of other concomitant anxiety and/or depression in our participants.

Conclusion

The health of one's hair is inextricably linked with one's self-image. Androgenetic alopecia, being one of the most common hair diseases, has been correlated with levels of anxiety and depression. Three factors have been found to influence psychological well-being and self-image in AGA patients: age of 50 years and above, lower education level, and a moderate to severe grade of disease according to the Hamilton-Norwood classification. It is hoped that with the elucidation of these factors, an optimal management focusing on these factors can be used to promote a targeted approach in solving one of the mankind's psychologically debilitating hair diseases.

Article Information

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