



## **Factors Influencing Depression in Korean Men with Androgenic Alopecia**

***\*Jung-Won KIM***

*Department of Cosmetology, Changshin University, Changwon-si, Korea*

**\*Correspondence:** Email: 0574tla@naver.com

**(Received 14 Nov 2020; Accepted 22 Nov 2020)**

### **Dear Editor-in-Chief**

Hair is an important physical characteristic that determines an individual's appearance (1). One's perception of someone may change with the shape/characteristics of their hair. Aesthetic pursuits, including getting one's hair permed, colored, or cut, are related to positive changes in a person's attitude, whereas hair loss caused by genetic predisposition or disease is related to negative changes (2).

Male pattern alopecia and its subsequent cosmetic problems can have detrimental effects on a person's psychological wellbeing. As the desire for self-realization proportionally increases according to an individual's social standing, physical appearances play crucial roles in representing one's competence and social life. As social gatherings become more frequent and living standards improve, male pattern hair loss is increasingly associated with social isolation, leading to a loss of confidence and worsening of depression (2).

Only few studies have reported about factors influencing depression among Koreans with hair loss. Therefore, we aimed to identify factors affecting depression in patients with male pattern alopecia and provide basic data for preventing depression and improving mental health among Korean men.

We enrolled 267 Korean men with androgenic alopecia who visited a Beauty & Healthcare Cen-

ter in Busan, Korea. The participants provided informed consent, and all study procedures were approved by Kosin-university, Busan, Korea.

Happiness was assessed using an index based on the classification by Diener (3) and categorized as satisfaction (26–31 points), slight satisfaction (20–25 points), below average satisfaction (15–19 points), and dissatisfaction (5–14 points). As per the Lazarus classification (4), patients with male pattern alopecia were divided into three groups: initial hair loss group, hair loss progression group, and hair loss termination group. Depression was measured using the Beck Depression Inventory questionnaire (5) with a total score of 63 points; those who scored 0–15 and 16–63 points were assigned to the “control group” and “depression group,” respectively. Multivariate logistic regression analyses adjusted for covariate variables, including age and body mass index, were conducted. All analyses were performed using SAS version 9.2 (SAS, Cary, NC, USA),  $P < 0.05$  indicating statistical significance.

Tables 1 and 2 show participant characteristics and factors influencing depression among patients with male pattern alopecia, respectively. Men with androgenic alopecia who were depressed faced excessive difficulties in social life and interpersonal relationships (odds ratio [OR], 5.42; 95% confidence interval [CI]: 1.52–19.28,  $P = 0.011$ ) compared with those who were not



depressed (control group). Participants who were depressed experienced much greater stress caused by hair loss than those who were not depressed (OR, 29.70; 95% CI: 4.18–212.54,  $P < 0.001$ ). Moreover, participants who were depressed were increasingly more likely to be dissatisfied accord-

ing to the happiness index than those who were not depressed (slight satisfaction, OR=3.74 [95% CI: 0.92–15.23,  $P = 0.002$ ]; below average satisfaction, OR=33.69 [95% CI: 7.12–159.36,  $P = 0.004$ ]; and dissatisfaction, OR=112.69 [95% CI: 15.56–816.09,  $P < 0.001$ ]).

**Table 1:** Participant characteristics (n=267)

<i>Variable</i>	<i>Classification</i>	<i>Number of cases</i>	<i>Percentage</i>
Age (yr)	<30	159	59.56
	31–49	54	20.22
	>50	54	20.22
Marital status	Single	122	45.49
	Married	145	54.51
Education level	Under high school	88	33.08
	College	76	28.57
	Over University	103	38.35
House income	<\$2,000/month	79	29.60
	\$2,000–\$3,000/month	82	30.78
	>\$3,000/month	106	39.62
Sleep duration (hours)	<6	103	38.72
	6–7	115	42.86
	>7	49	18.42
Exercise	Participation	140	52.43
	No participation	127	47.57
Smoking	Smoker	216	80.90
	Non-smoker	51	19.10
Drinking	Drinker	162	60.53
	Non-drinker	105	39.47
Subjective health state	Poor	37	13.96
	Normal	154	57.74
	Good	76	28.30
Height(cm)	<170	62	23.22
	170–173	66	24.72
	174–177	59	22.10
	>177	80	29.96
Weight(kg)	<62	63	23.59
	62–69	64	23.97
	70–75	68	25.47
	>75	72	26.97
Body mass index(kg/m <sup>2</sup> )	Normal (<23)	142	53.19
	Overweight (23.0–24.9)	78	29.21
	Obese (≥25.0)	47	17.60

In conclusion, we showed that difficulties in social life and interpersonal relationships, stress caused by hair loss, and dissatisfaction were relat-

ed to depression among men with androgenic alopecia. Therefore, to prevent and treat depression in such men, active measures, including im-

provements in their social and interpersonal relationships via psychological counseling and pro-

curement of professional hair loss treatment, could prove beneficial.

**Table 2:** Factors influencing depression among patients with male pattern alopecia (n=267)

<i>Variable</i>	<i>Classification</i>	<i>Odds ratio</i>	<i>95% confidence interval</i>	<i>P</i>
Age at initiation of hair loss	<20	1.00		
	21–39	1.13	0.38–3.36	0.638
	>40	0.76	0.13–4.51	0.688
Time elapsed since initiation of hair loss	>10 years	1.00		
	5–10 years	1.36	0.42–4.44	0.598
	<5 years	3.04	0.78–11.89	0.085
Degree of hair loss progression	6–7 stage (hair loss termination)	1.00		
	3–5 stage (hair loss progression)	1.04	0.29–3.77	0.243
	1–2 stage (initial hair loss)	3.12	0.66–14.73	0.060
Experience in hospital treatment	Yes	1.00		
	No	1.58	0.58–4.30	0.373
Self-managing execution status	Yes	1.00		
	No	0.95	0.39–2.27	0.901
Difficulties in social life and interpersonal relationships	None	1.00		
	Average	2.00	0.67–5.99	0.735
	Excessive	5.42	1.52–19.28	0.011*
Stress caused by hair loss	None	1.00		
	Average	12.94	1.97–84.84	0.136
	Excessive	29.79	4.18–212.54	<0.001***
Wig wear status	Yes	1.00		
	No	1.55	0.60–4.01	0.370
Happiness index	Satisfaction	1.00		
	Slight satisfaction	3.74	0.92–15.23	0.002**
	Below average	33.69	7.12–159.36	0.004**
	Dissatisfaction	112.69	15.56–816.09	<0.001***

\* $P<0.05$ , \*\* $P<0.01$ , \*\*\* $P<0.001$ ; tested using multivariable logistic regression analysis after adjustment for age and body mass index

## Conflict of interest

The authors declare that there is no conflict of interest.

## References

1. Van der Donk J, Passchier J, Dutree-Meulenberg RO, et al (1991). Psychologic characteristics of men with alopecia androgenetica and their modification. *Int J Dermatol*, 30(1):22-28.
2. Kaliyadan F, Nambiar A, Vijayaraghavan S (2013). Androgenetic alopecia: an update. *Indian J Dermatol Venereol Leprol*, 79(5):613-625.
3. Diener E, Emmons RA, Larsen RJ, et al (1985). The Satisfaction with life scale. *J Pers Assess*. 49(1):71-75.
4. Lazarus RS (1976). *Pattern of adjustment*. New York MCGraw-Hill.
5. Beck A, Steer R, Brown G (1996). *BDI-II, Beck Depression Inventory, version 2*. 2<sup>nd</sup> ed. San Antonio, TX: Psychological Corp.