



Role of Hair Prostheses (Wigs) in Patients with Severe Alopecia Areata

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Dear Editor:

Wigs, one of the treatment modalities in severe alopecia areata (AA), can improve quality of life (QOL) in patients with AA by enhancing their self-esteem and social adjustment¹. However, little is known about the objective benefit of wearing wigs on the QOL of patients with AA. We aimed to objectively evaluate the psychosocial role of the wig in patients with severe AA.

The study was approved by the Institutional Review Board of the Chonbuk National University Hospital (IRB no. CUH-2015-01-002). Subjects for this study were patients with severe AA, defined based on a Severity Alopecia Tool (SALT) score $\geq 50\%$ and at least a 4-week-experience of wearing wigs. Baseline characteristics, burden including economic loss, and psychosocial effects were assessed via questionnaires. Psychosocial effect was evaluated by using the Psychosocial Impact of Assistive Device Scale (PIADS) and Hair Specific Skindex-29 (Hairdex-29) (Supplementary Table 1, 2)²⁻⁴. The data collected in this study were analyzed using IBM SPSS 22.0 (IBM Co., Armonk, NY, USA), and a p -value of <0.05 was considered statistically significant. The Wilcoxon signed rank test and paired t -test were used to examine any changes before and after the use of a wig. Analysis of variance was used to examine the differences in the PIADS and Hairdex-29 score based on patient's profiles including SALT score, type and cost of the wig and duration of wig wearing.

The study recruited 40 patients, including 11 men and 29

women. The details of their demographics and the wig information are shown in Table 1. The result of the PIADS showed not only a significant increase in the total score (1.46 points) after wearing a wig, in comparison to the reference score (0 points), but also a significant increase in the total score of all 3 components of the PIADS: competence (1.46 points), adaptability (1.75 points), and self-esteem (1.50 points) ($p < 0.001$) (Fig. 1A). With respect to patients' characteristics, there was a significantly higher change in the "competence" score after wearing a wig in women (1.73 points) than in men (1.20 points) ($p = 0.007$). Otherwise, there was no significant correlation between the patients' profiles including the characteristics of wigs and the PIADS score.

A decrease in the scores of "symptom scale" (from 2.88 to 2.73 points), "function scale" (from 3.70 to 2.86 points), "emotion scale" (from 4.00 to 3.19 points), and "total score" (from 3.56 to 2.93 points) was observed when the results of the Hairdex-29 before and after wearing a wig were compared. Among these reductions, all, except for the "symptom scale", exhibited a significant difference in the score after wearing a wig ($p < 0.001$) (Fig. 1B). There was no significant correlation between the patient's profiles including the characteristics of wigs and the results of Hairdex-29. The most common negative effect of wearing a wig was high price (23/40, 57.5%), followed by scalp disease from occlusion (16/40, 40.0%), unnatural appearance of the wig (14/40, 35.0%), discomfort with wearing wigs (12/40, 30.0%), and frequent replacement cycles

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Table 1. Demographics and wig information in this study (n=40)

Characteristic	Value
Gender	
Men	11 (27.5)
Women	29 (72.5)
Age, yr (range, 10~64)	32.48±14.58
10~19	12 (30.0)
20~29	7 (17.5)
30~39	7 (17.5)
40~49	7 (17.5)
>50	7 (17.5)
SALT score	76.60±22.51
S3	17 (42.5)
S4	11 (27.5)
S5	12 (30.0)
Monthly income (USD)	
<1,000	2 (5.0)
1,000~3,000	16 (40.0)
3,000~5,000	9 (22.5)
>5,000	7 (20.0)
No answer	5 (12.5)
Sociological activity	
None at all	4 (10.0)
Once or twice a week	22 (55.0)
3 or 4 times a week	8 (20.0)
>5 times a week	6 (15.0)
Personality	
Introverted	7 (17.5)
Ordinary	23 (57.5)
Extroverted	10 (25.0)
Type of wig	
Human hair (ready-made wig)	14 (35.0)
Human hair (custom-made hair)	14 (35.0)
Synthetic hair	12 (35.0)
The average cost of each wig (USD)	
<100	10 (25.0)
100~300	6 (15.0)
300~500	4 (10.0)
500~1,000	4 (10.0)
1,000~1,500	12 (30.0)
>1,500	4 (10.0)
Duration of wig wearing (mo)	
1~3	10 (25.0)
3~6	9 (22.5)
6~12	4 (10.0)
12~24	4 (10.0)
>24	13 (32.5)

Values are presented as number (%) or mean±standard deviation. SALT score: Severity Alopecia Tool (SALT) score, USD: United States dollar.

(7/40, 17.5%) (Plural responses were allowed).

Wigs are widely used as a treatment option for chemotherapy-induced alopecia, advanced androgenetic alopecia, and severe AA^{1,5-7}. A wig worn by a patient with alo-

pecia for treatment purposes is not merely ornamental, but a necessity for daily life, similar to a prosthesis used by a patient who has lost a leg or an eye. Hence, it is called a “scalp or hair prosthesis” to differentiate it from a fashion wig. According to study based on a questionnaire, Jang and Bae⁸ concluded that wearing a wig not only helps with chemotherapy, but also enhances patients’ self-esteem, provides mental stability, and helps patients lead a normal social life. Thus far, only the study by Inui et al.⁹ has evaluated the psychosocial effects of wig in patients with AA, which used PIADS and included female patients only.

In our study, we assessed the psychosocial effects of wearing wigs along with its correlation between the characteristics of wigs and patients through PIADS as well as Hairdex-29, which is widely used tool to assess patient’s QOL in dermatology. The results of the Hairdex-29 also showed that the total score after wearing a wig was significantly lower than that before, which confirms the result of the PIADS and indicates an improvement in the patients’ QOL. The “symptom scale” related to scalp pain, pruritus, and sensitivity did not significantly differ before and after wearing the wig; however, a significant difference was observed in the “functional scale” and “emotion scale.” This suggests that, although wearing a wig does not have a significant effect on disease progression or improvement in the symptoms, it may reduce the symptoms of depression, anxiety, and frustration in patients with hair loss, and may alleviate the constraints that arise in social life and interpersonal relations.

Among the demographics, female gender showed a greater improvement in the “competence” scale of PIADS after wearing a wig. Moreover, when compared with previous Inui’s study which only included women, our result showed slightly lower total PIADS score. This suggests that greater effects of wig wearing can be expected in groups that are vulnerable or more easily influenced by the negative physical appearance changes due to hair loss. The characteristics of wigs including price and type had no significant influences on PIADS or Hairdex-29. Regardless of the specific type or cost of the wigs, it appears that wearing the wig itself has a more psychosocially positive effect on patients with severe alopecia.

In conclusion, wigs have a positive effect on psychosocial aspects in patients with severe AA above their cosmetic effects, proved by objective parameters such as PIADS and Hairdex-29. Among the limitations experienced by patients wearing a wig, the most common complaint was economic burden. Although some countries including America, Australia, and the United Kingdom have governmental support for wigs; South Korea still has no gov-

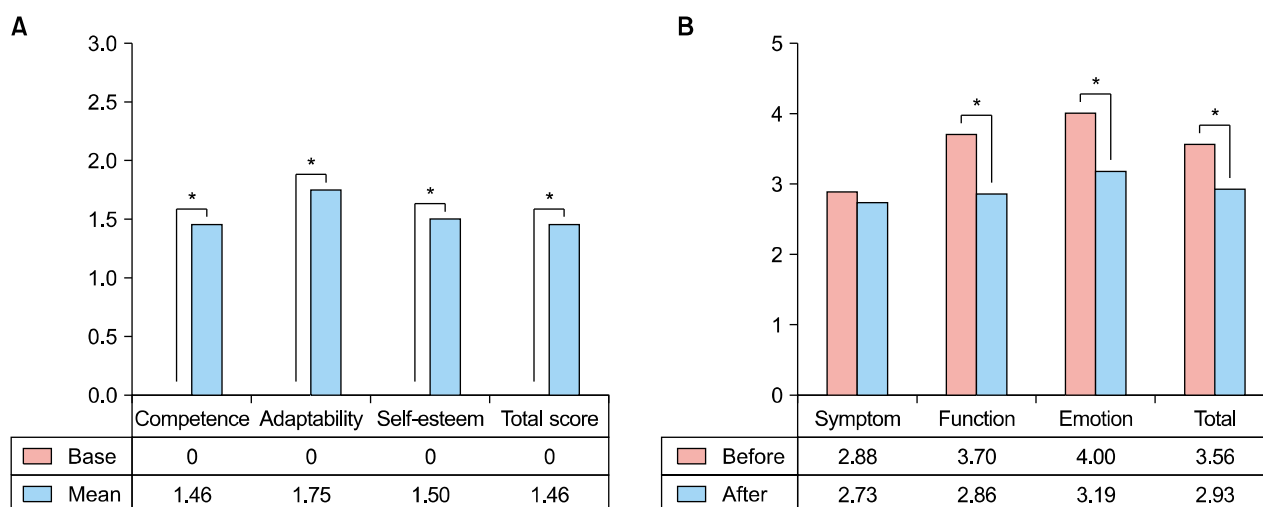


Fig. 1. (A) Psychosocial Impact of Assistive Device Scale (PIADS) score before and after wearing a wig. The score ranged from -3 (maximum negative impact) through zero (no perceived impact) to +3 (maximum positive impact). A higher score on the PIADS represents a positive effect. * $p < 0.001$. (B) Hair Specific Skindex-29 before and after wearing a wig. The score ranged from 1 (never bothered) to 5 (always bothered). A lower score on the Hair Specific Skindex-29 signifies a positive effect. * $p < 0.001$.

environmental wig support program. Changes in awareness and institutional aid are required to support patients with severe alopecia in their attempt to acknowledge wigs as medical assistive devices for severe AA patients.

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SUPPLEMENTARY MATERIALS

Supplementary data can be found via <http://anndermatol.org/src/sm/ad-30-505-s001.pdf>.

CONFLICTS OF INTEREST

The authors have nothing to disclose.

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