

A Decade of Hair Prosthetic Injuries: A Review of United States Emergency Department Cases (2013-2022)

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INTRODUCTION

Hair prosthetics are widely used to improve the quality of life standards for patients suffering from a variety of hair conditions, such as alopecia.¹ The use of hair prosthetics in the setting of alopecia can critically augment a patient's confidence and social assimilation.² Strict care is necessitated while handling hair prosthetics and their fixatives or adhesives; use may cause injury to the hair and scalp.³ However, current epidemiological data on hair prosthetic injury in emergency settings are limited. This study investigates the epidemiology of hair prosthetic injury-related cases in US emergency departments (EDs) from 2013-2022.

MATERIALS AND METHODS

The National Electronic Injury Surveillance System (NEISS), which collects data from a nationally representative cohort of 100 EDs, was queried on 10/29/2024, using keywords "wig," "wigs," "hairpiece," "hairpieces," "toupe," "toupes," "toupee," and "toupees," and demographic data was collected. T-value tests assessed differences between genders and age ($P < 0.05$).

RESULTS

A total of 88 hair prosthetic-related injury cases were analyzed, with a mean age of 34 years (range: 2–84). Most patients were female (94.1%), 10.2% White race, and 53.4% Black race. From 2013–2022, injuries increased by 56.3% overall (Figure 1). White women more frequently presented with hair prosthetic injuries than White men (10.8% vs 0.0%, $P = 0.002$), and race documentation was less frequent in patients aged 35+ compared to younger patients (46.3% vs 25.5%, $P = 0.04$; Tables 1, 2).

The most common diagnoses included dermatitis, lacerations, and contusions, with no variation by age. Lacerations were more frequently documented in women than men (16.9% vs 0.0%, $P < 0.001$). Patients over 35 and women had more varied diagnoses classified as "other" (36.6% vs 10.6%, $P < 0.05$; 24.1% vs 0.0%, $P = 0.00001$). Women more often reported pain from wigs than men (6.0% vs 0.0%, $P = 0.02$).

The most commonly injured body parts included the head, eyes, and ears, with women experiencing significantly more ear

FIGURE 1. Injury Frequency by gender from 2013 to 2022.

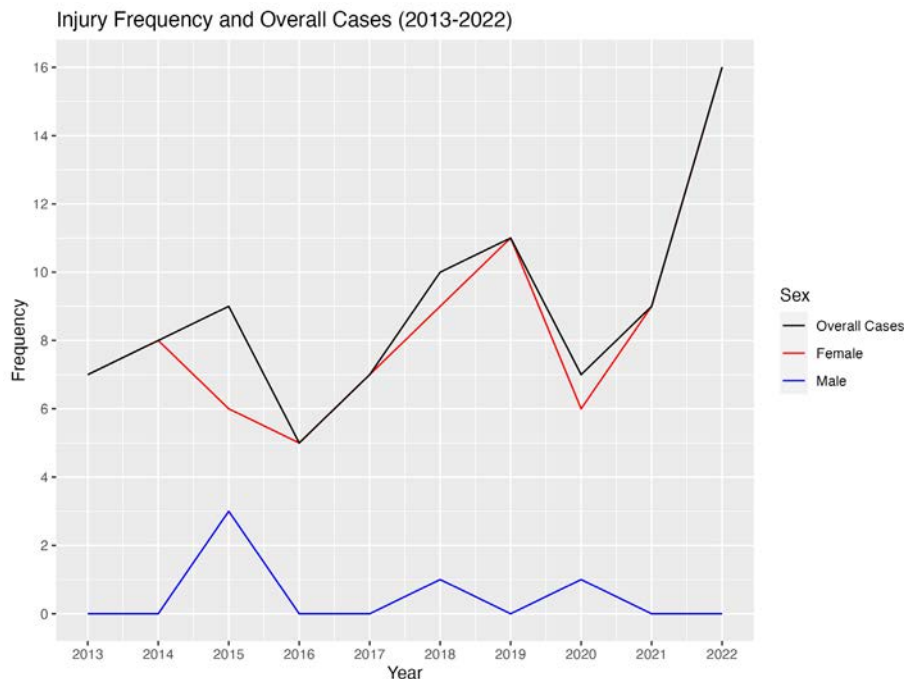


TABLE 1.

Characteristics of Patient Sex, Race, Disposition, Diagnosis, and Injured Body Part by Age				
Characteristics	Age <35 Years (n=47), n (%)	Age ≥35 Years (n=41), n (%)	P-Value	Total
Sex				
Male	3 (6.38%)	2 (4.88%)	0.762	5
Female	44 (93.62%)	39 (95.12%)	0.762	83
Race				
White	5 (10.64%)	4 (9.76%)	0.893	9
Black/African American	29 (61.70%)	18 (43.90%)	0.098	47
Other	1 (2.13%)	0 (0.00%)	0.323	1
Asian	0 (0.00%)	0 (0.00%)	n/a	0
Native Hawaiian/Pacific Islander	0 (0.00%)	0 (0.00%)	n/a	0
Not Reported	12 (25.53%)	19 (46.34%)	0.044	31
Disposition				
Treated/Examined and Released	44 (93.62%)	35 (85.37%)	0.219	79
Held for Observation	1 (2.13%)	1 (2.44%)	0.924	2
Treated and Admitted/Hospitalized	2 (4.26%)	1 (2.44%)	0.638	3
No Injury	0 (0.00%)	3 (7.32%)	0.083	3
Left without being seen	0 (0.00%)	1 (2.44%)	0.323	1
Diagnosis				
Ingestion	2 (4.26%)	0 (0.00%)	0.160	2
Aspiration	1 (2.13%)	0 (0.00%)	0.323	1
Burn, Chemical	0 (0.00%)	1 (2.44%)	0.323	1
Burns Thermal	1 (2.13%)	2 (4.88%)	0.496	3
Contusions, Abr.	6 (12.77%)	7 (17.07%)	0.578	13
Foreign Body	1 (2.13%)	1 (2.44%)	0.924	2
Fracture	0 (0.00%)	1 (2.44%)	0.323	1
Laceration	10 (21.28%)	4 (9.76%)	0.135	14
Internal Injury	1 (2.13%)	1 (2.44%)	0.924	2
Strain, Sprain	1 (2.13%)	0 (0.00%)	0.323	1
Poisoning	2 (4.26%)	1 (2.44%)	0.638	3
Avulsion	1 (2.13%)	0 (0.00%)	0.323	1
Dermatitis	16 (34.04%)	8 (19.51%)	0.125	24
Other:	5 (10.64%)	15 (36.59%)	0.0047	20
Pain (other)	2 (4.26%)	3 (7.32%)	0.549	5
Headache (other)	0 (0.00%)	3 (7.32%)	0.083	3
Eye Irritation (other)	1 (2.13%)	1 (2.44%)	0.924	2
Otagia (other)	0 (0.00%)	1 (2.44%)	0.323	1
Hypotension/Syncope (other)	0 (0.00%)	1 (2.44%)	0.323	1
Scalp Abscess (other)	0 (0.00%)	1 (2.44%)	0.323	1
Allergic Reaction (other)	0 (0.00%)	2 (4.88%)	0.160	2
Irritation (other)	0 (0.00%)	1 (2.44%)	0.323	1
Chemical Exposure (other)	1 (2.13%)	0 (0.00%)	0.323	1
Chemical Otitis (other)	0 (0.00%)	1 (2.44%)	0.323	1
Swelling (other)	1 (2.13%)	0 (0.00%)	0.323	1
Wound (other)	0 (0.00%)	1 (2.44%)	0.323	1

TABLE 1. (CONTINUED)

Characteristics of Patient Sex, Race, Disposition, Diagnosis, and Injured Body Part by Age				
Characteristics	Age <35 Years (n=47), n (%)	Age ≥35 Years (n=41), n (%)	P-Value	Total
Body Part				
Internal	3 (6.38%)	0 (0.00%)	0.083	3
Upper Trunk	1 (2.13%)	1 (2.44%)	0.924	2
Wrist	1 (2.13%)	0 (0.00%)	0.323	1
Knee	1 (2.13%)	0 (0.00%)	0.323	1
Lower Leg	1 (2.13%)	0 (0.00%)	0.323	1
Ankle	0 (0.00%)	1 (2.44%)	0.323	1
Head	11 (23.40%)	17 (41.46%)	0.074	28
Face	12 (25.53%)	7 (17.07%)	0.337	19
Eyeball	4 (8.51%)	6 (14.63%)	0.380	10
Lower Trunk	1 (2.13%)	1 (2.44%)	0.924	2
Hand	1 (2.13%)	0 (0.00%)	0.323	1
Foot	1 (2.13%)	0 (0.00%)	0.323	1
All Parts Body	3 (6.38%)	3 (7.32%)	0.865	6
Mouth	1 (2.13%)	0 (0.00%)	0.323	1
Neck	0 (0.00%)	2 (4.88%)	0.160	2
Finger	3 (6.38%)	0 (0.00%)	0.083	3
Ear	3 (6.38%)	3 (7.32%)	0.865	6
Total	47	41	--	88

P-Values were calculated using t-tests at the 95% confidence level.

TABLE 2.

Characteristics of Patient Age, Race, Disposition, Diagnosis, and Injured Body Part by Gender				
Characteristics	Male (n = 5), n (%)	Female (n = 83), n (%)	P-Value	Total
Age				
≥35	2 (40.00%)	39 (47.00%)	0.790	41
<35	3 (60.00%)	44 (53.00%)	0.790	47
Race				
White	0 (0.00%)	9 (10.80%)	0.002	9
Black/African American	2 (40.00%)	45 (54.20%)	0.599	47
Other	0 (0.00%)	1 (1.20%)	0.320	1
Asian	0 (0.00%)	0 (0.00%)	n/a	0
Native Hawaiian/Pacific Islander	0 (0.00%)	0 (0.00%)	n/a	0
Not Reported	3 (60.00%)	28 (33.70%)	0.349	31
Disposition				
Treated/Examined and Released	4 (80.00%)	75 (90.40%)	0.635	79
Held for Observation	0 (0.00%)	2 (2.40%)	0.159	2
Treated and Admitted/Hospitalized	1 (20.00%)	2 (2.40%)	0.430	3
No Injury	0 (0.00%)	3 (3.60%)	0.083	3
Left without being seen	0 (0.00%)	1 (1.20%)	0.320	1
Treated and Transferred	0 (0.00%)	0 (0.00%)	n/a	0

TABLE 2. (CONTINUED)

Characteristics of Patient Age, Race, Disposition, Diagnosis, and Injured Body Part by Gender				
Characteristics	Male (n = 5), n (%)	Female (n = 83), n (%)	P-Value	Total
Diagnosis				
Ingestion	0 (0.00%)	2 (2.40%)	0.159	2
Aspiration	0 (0.00%)	1 (1.20%)	0.320	1
Burn, Chemical	0 (0.00%)	1 (1.20%)	0.320	1
Burns Thermal	0 (0.00%)	3 (3.60%)	0.083	3
Contusions, Abr.	1 (20.00%)	12 (14.50%)	0.798	13
Foreign Body	0 (0.00%)	2 (2.40%)	0.159	2
Fracture	0 (0.00%)	1 (1.20%)	0.320	1
Laceration	0 (0.00%)	14 (16.90%)	0.000104	14
Internal Injury	1 (20.00%)	1 (1.20%)	0.4009666	2
Strain, Sprain	0 (0.00%)	1 (1.20%)	0.3202524	1
Poisoning	2 (40.00%)	1 (1.20%)	0.1884949	3
Avulsion	0 (0.00%)	20 (24.10%)	0.0000021	20
Dermatitis	0 (0.00%)	1 (1.20%)	0.320	1
Other:	1 (20.00%)	23 (27.70%)	0.725	24
Pain (other)	0 (0.00%)	5 (6.00%)	0.024	5
Headache (other)	0 (0.00%)	3 (3.60%)	0.0830	3
Eye Irritation (other)	0 (0.00%)	2 (2.40%)	0.159	2
Otagia (other)	0 (0.00%)	1 (1.20%)	0.320	1
Hypotension/Syncope (other)	0 (0.00%)	1 (1.20%)	0.320	1
Scalp Abscess (other)	0 (0.00%)	1 (1.20%)	0.320	1
Allergic Reaction (other)	0 (0.00%)	2 (2.40%)	0.159	2
Irritation (other)	0 (0.00%)	1 (1.20%)	0.320	1
Chemical Exposure (other)	0 (0.00%)	1 (1.20%)	0.320	1
Chemical Otitis (other)	0 (0.00%)	1 (1.20%)	0.320	1
Swelling (other)	0 (0.00%)	1 (1.20%)	0.320	1
Wound (other)	0 (0.00%)	1 (1.20%)	0.320	1
Body Part				
Internal	0 (0.00%)	3 (3.60%)	0.083	3
Upper Trunk	0 (0.00%)	2 (2.40%)	0.159	2
Wrist	0 (0.00%)	1 (1.20%)	0.320	1
Knee	0 (0.00%)	1 (1.20%)	0.320	1
Lower Leg	0 (0.00%)	1 (1.20%)	0.320	1
Ankle	0 (0.00%)	1 (1.20%)	0.320	1
Head	1 (20.00%)	27 (32.50%)	0.573	28
Face	1 (20.00%)	18 (21.70%)	0.938	19
Eyeball	1 (20.00%)	9 (10.80%)	0.674	10
Lower Trunk	0 (0.00%)	2 (2.40%)	0.159	2
Hand	0 (0.00%)	1 (1.20%)	0.320	1
Foot	0 (0.00%)	1 (1.20%)	0.320	1
All Parts Body	2 (40.00%)	4 (4.80%)	0.225	6
Mouth	0 (0.00%)	1 (1.20%)	0.320	1
Neck	0 (0.00%)	2 (2.40%)	0.159	2
Finger	0 (0.00%)	3 (3.60%)	0.083	3
Ear	0 (0.00%)	6 (7.20%)	0.0134	6
Total	5	83	--	88

P-Values were calculated using t-tests at the 95% confidence level.

injuries than men (7.2% vs 0.0%, $P=0.01$). Head and eye injuries did not differ significantly across gender or age.

DISCUSSION

In summary, hair prosthetic injury is on the rise in the US for women and overall cases. Given that Black women comprised 53.4% of injuries, efforts to expand culturally competent education on safe prosthetic handling to this population are warranted. It is also important to consider the cultural implications of hair representation and symbolism for women of color, as discrimination and minimal training can worsen outcomes for this subgroup.^{4,5} Area of advocacy includes wig testing, allergy testing, safe removal practices, as well as scalp protectors and cushions.

CONCLUSION

Hair prosthetics are an avenue for patients to address hair changes, improve their self-esteem, and feel empowered over their scalp and hair concerns. However, sub-groups, such as Black women, appear to be disproportionately affected by scalp reactions and prosthetic-related trauma in the ED. Dermatologists are encouraged to increase patient education and preventative measures to minimize prosthetic injury.

DISCLOSURES

The authors have no conflicts of interest.

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