Epidemiology and Burden of Atopic Dermatitis Involving the Head, Neck, Face, and Hand: A Cross Sectional Study from the TARGET-DERM AD Cohort

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Introduction

- Limited evidence exists regarding the prevalence and health-related quality of life (HRQoL) impact of atopic dermatitis (AD) involving the head, neck, face, and hands
- This study estimated the prevalence and HRQoL impact of AD involving these special sites among patients with moderate-to-severe AD

Methods

- The TARGET-DERM AD cohort is an ongoing, longitudinal, observational study launched in 2019 capturing AD patients in 44 community or academic sites in the United States
- Adult, adolescent (13-17 years), and pediatric (1.5-12 years) patients with moderate or severe validated Investigator Global Assessment (vIGA-AD) at enrollment were included in the analysis
- Information on head, neck, face, hand, and other area involvement was gathered at enrollment using the Patient-Oriented Scoring AD (PO-SCORAD)
- HRQoL outcomes were measured using the Patient-Oriented Eczema Measure (POEM) and Dermatology Life Quality Index (DLQI)/ Children's DLQI (CDLQI)

Results

- 85% of participants with moderate or severe vIGA-AD reported head, face, neck, or hand involvement (Table 1)
- At enrollment, approximately 38% of patients were using systemic treatments and the majority (~90%) were using topical treatments
- Prevalent comorbidities included immune system disorders (allergies and hypersensitivities) and asthma
- Participants with head, face, neck, and hand involvement were more likely than those without to have severe vIGA-AD (28.5% vs. 16.3%, p=0.02) and higher median total body surface area (BSA) (15% vs. 10%, p<0.001)
- Head, neck, face, and hand involvement was associated with higher DLQI/CDLQI (odds ratio [OR] 2.09; Figure 1) and POEM (OR=2.51; Figure 3) scores

Figure 1. Association between DLQI/CDLQI and risk factors among patients reporting involvement in a body region
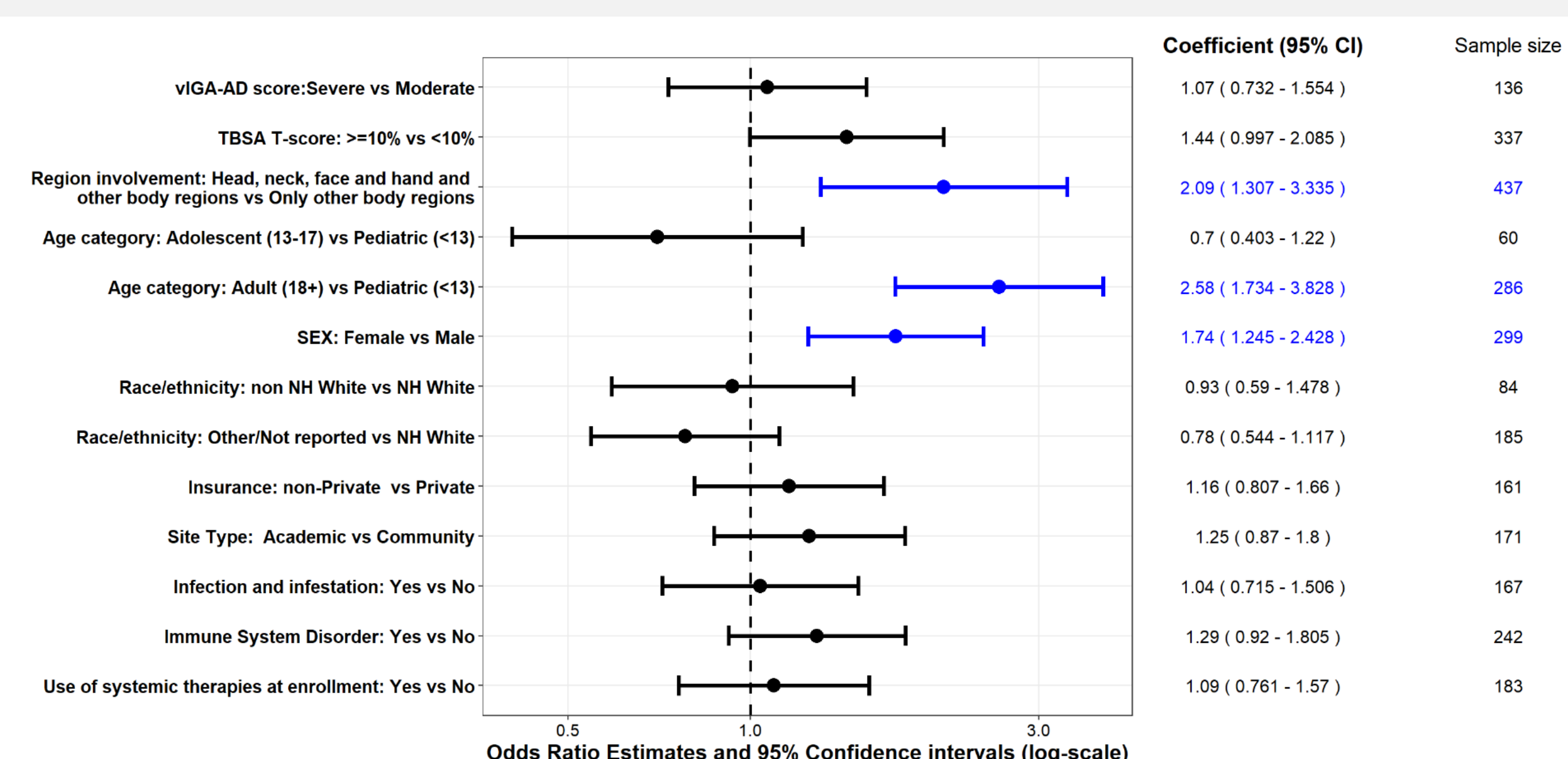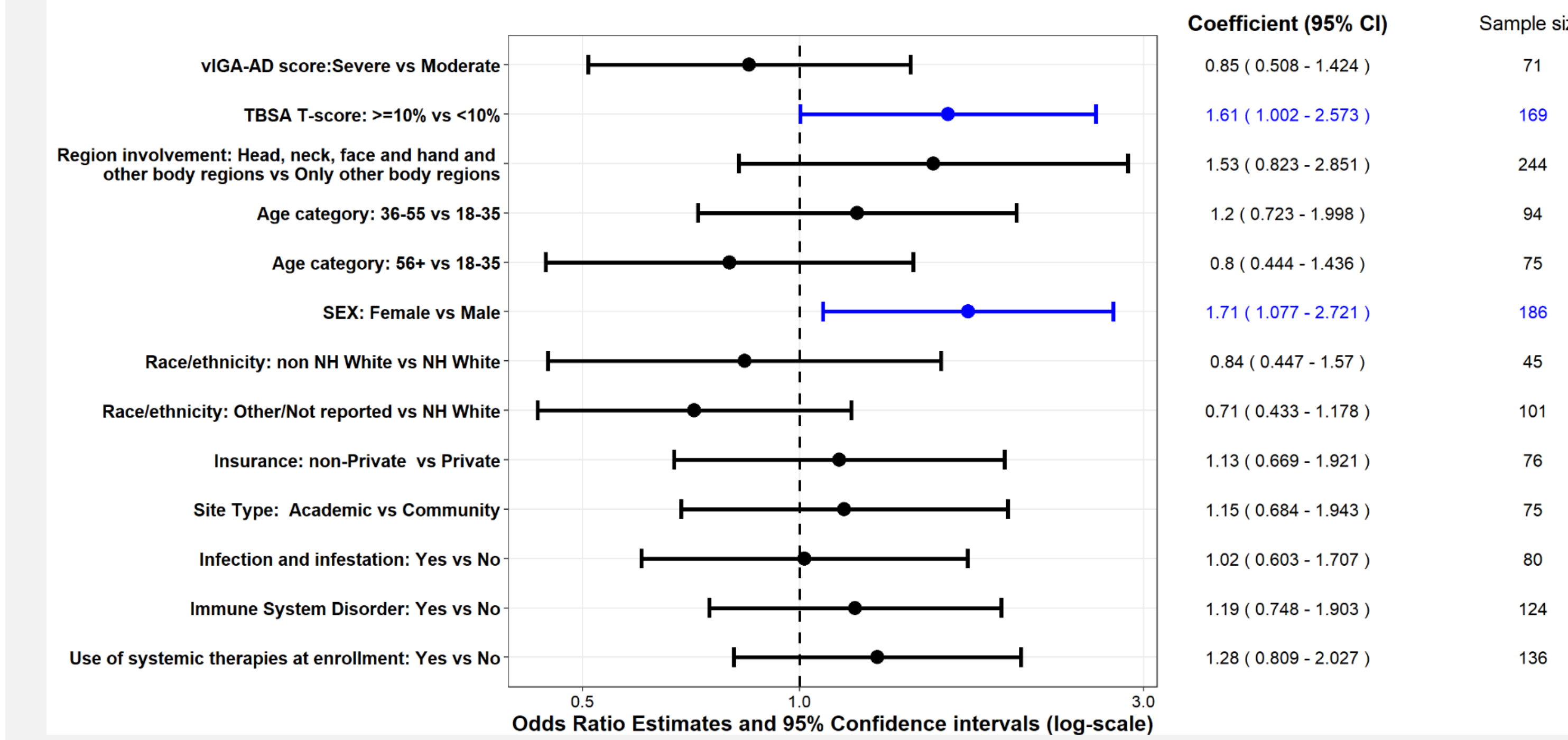

Ordinal logistic model includes age category, sex, race/ethnicity, insurance, site type, vIGA-AD score, tBSA, region involved, history of infection and infestation, history of immune system disorder, and use of systemic therapies at enrollment. Blue font/color indicates a statistically significant effect after adjusting for the other variables in the model. NH stands for Non-Hispanic.

Table 1. Demographics, current therapies, comorbidities, & PROs by AD regions involved

Summary	Head/neck/face[1]/hand and Other areas (N=453)	Only Non-head/neck/face/hand (N=80)	All participants (N=533)	P-value
Patient characteristics				
Age Groups, n (%)				0.3662
Pediatric[2]	68 (15.0%)	8 (10.0%)	76 (14.3%)	
Adolescent[3]	50 (11.0%)	7 (8.8%)	57 (10.7%)	
Adult[4]	335 (74.0%)	65 (81.3%)	400 (75.0%)	
Gender, n (%)				0.3146
Female	254 (56.1%)	40 (50.0%)	294 (55.2%)	
Male	199 (43.9%)	40 (50.0%)	239 (44.8%)	
Race-Ethnicity, n (%)				0.7875
NH White	212 (46.8%)	38 (47.5%)	250 (46.9%)	
Non-White	184 (40.6%)	30 (37.5%)	214 (40.2%)	
Other/Not reported	57 (12.6%)	12 (15.0%)	69 (12.9%)	
Insurance, n (%)				0.7497
Private	286 (63.1%)	52 (65.0%)	338 (63.4%)	
Non-Private	167 (36.9%)	28 (35.0%)	195 (36.6%)	
Site Type, n (%)				0.2407
Academic	156 (34.4%)	33 (41.3%)	189 (35.5%)	
Community	297 (65.6%)	47 (58.8%)	344 (64.5%)	
Clinical Characteristics				
Disease Severity by vIGA-AD, n (%)				0.0227
Moderate	324 (71.5%)	67 (83.8%)	391 (73.4%)	
Severe	129 (28.5%)	13 (16.3%)	142 (26.6%)	
Total BSA				0.0002
Median (n)	15 (453)	10 (80)	15 (533)	
Min - Max	0 - 98	1 - 90	0 - 98	
Systemic Use at enrollment[6], n (%)				0.8481
Yes	175 (38.6%)	30 (37.5%)	205 (38.5%)	
No	278 (61.4%)	50 (62.5%)	328 (61.5%)	
Topical Use at enrollment[7], n (%)				0.3419
Yes	403 (89.0%)	74 (92.5%)	477 (89.5%)	
No	50 (11.0%)	6 (7.5%)	56 (10.5%)	
Patient Reported Outcomes				
Dermatology Life Quality Index (DLQI/CDLQI)				0.4966
Median (n)	5 (255)	5 (51)	5 (306)	
Min - Max	0 - 30	0 - 20	0 - 30	
DLQI/CDLQI Score Category, n (%)				0.6036
n	255	51	306	
No effect at all on patient's life	60 (23.5%)	14 (27.5%)	74 (24.2%)	
Small effect on patient's life	77 (30.2%)	13 (25.5%)	90 (29.4%)	
Moderate effect on patient's life	59 (23.1%)	15 (29.4%)	74 (24.2%)	
Very large or extremely large effect on patient's life	59 (23.1%)	9 (17.6%)	68 (22.2%)	
PROMIS Itch - Mood and Sleep T-Score				0.6306
Median (n)	42.7 (220)	42.7 (44)	42.7 (264)	
Min - Max	30.2 - 68.5	30.2 - 68.5	30.2 - 68.5	
PROMIS-Depression T-Score				0.6067
Median (n)	45.5 (278)	49.0 (52)	47.4 (330)	
Min - Max	35.2 - 79.4	35.2 - 67.5	35.2 - 79.4	
PROMIS-Anxiety T-Score				0.2296
Median (n)	51.2 (278)	51.2 (52)	51.2 (330)	
Min - Max	33.5 - 81.6	33.5 - 71.2	33.5 - 81.6	
Patient-Oriented Eczema Measure (POEM) Score				0.9892
Median (n)	9 (276)	9 (52)	9 (328)	
Min - Max	0 - 28	0 - 28	0 - 28	
POEM Score Category, n (%)				0.4229
n	276	52	328	
Clear or almost clear	47 (17.0%)	7 (13.5%)	54 (16.5%)	
Mild eczema	67 (24.3%)	17 (32.7%)	84 (25.6%)	
Moderate, severe or very severe eczema	162 (58.7%)	28 (53.8%)	190 (57.9%)	
Total PO-SCORAD Score				0.8003
Median (n)	31.0 (249)	32.0 (49)	31.2 (298)	
Min - Max	0.6 - 98.0	0.4 - 81.0	0.4 - 98.0	
NRS_Pain				0.1841
Median (n)	1.0 (222)	1.0 (45)	1.0 (267)	
Min - Max	0.0 - 10.0	0.0 - 7.0	0.0 - 10.0	
NRS_Sleep				0.3222
Median (n)	3.0 (221)	3.0 (45)	3.0 (266)	
Min - Max	0.0 - 10.0	0.0 - 8.0	0.0 - 10.0	
WPAI-GH(Adults)				0.5621
Median (n)	30.0 (83)	20.0 (16)	30.0 (99)	
Min - Max	10.0 - 100	10.0 - 70.0	10.0 - 100	
Comorbidities[8]				
Immune system disorders	204 (45.0%)	35 (43.8%)	239 (44.8%)	0.8317
Infections and infestations	141 (31.1%)	32 (40.0%)	173 (32.5%)	0.1184
Asthma	122 (26.9%)	19 (23.8%)	141 (26.5%)	0.5524
Hypertension	85 (18.8%)	14 (17.5%)	99 (18.6%)	0.7889
Depression	69 (15.2%)	15 (18.8%)	84 (15.8%)	0.4264
Anxiety	53 (11.7%)	13 (16.3%)	66 (12.4%)	0.2551

[1]Participants with face involvement who were over 1.5 years old. [2]Participants with age <=12. [3]Participants with age 13 to 17. [4]Participants with age >= 18. [5]Age calculated based on year of consent minus birth year. [6]Systemic therapies include methotrexate, cyclosporine, dupilumab or phototherapy. [7]Topical therapies include calcineurin inhibitors, corticosteroids, phosphodiesterase inhibitors. [8]Comorbidities included any history of these comorbidities. For the purposes of this table, hypertension, depression and anxiety were not reported for pediatrics or adolescents (their values were very low in these groups.)

Figure 2. Association between DLQI and risk factors among adult patients reporting involvement in a body region

Ordinal logistic model includes age category, sex, race/ethnicity, insurance, site type, vIGA-AD score, history of infection and infestation, history of immune system disorder and use of systemic therapies at enrollment. Blue font/color indicates a statistically significant effect after adjusting for the other variables in the model. NH stands for Non-Hispanic.

Figure 3. Association between POEM and risk factors among patients reporting involvement in a body region
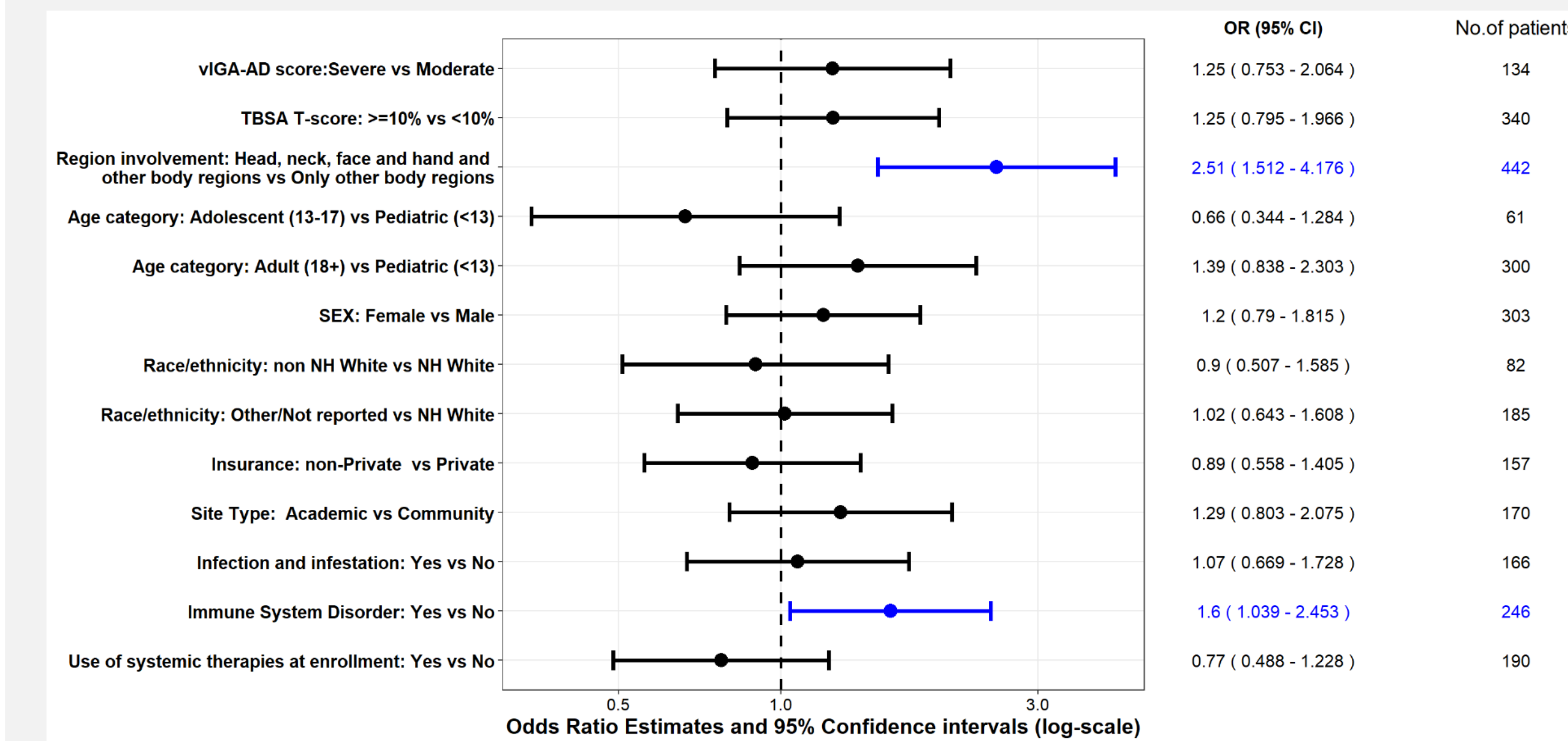
Ordinal logistic model includes age category, sex, race/ethnicity, insurance, site type, vIGA-AD score, history of infection and infestation, history of immune system disorder. Blue font/color indicates a statistically significant effect after adjusting for the other variables in the model. NH stands for Non-Hispanic.

Conclusion:

- **In this real-world study of patients with AD, head, neck, face, and hand involvement was associated with significantly higher impact on HRQoL and may be associated with more severe and extensive disease**
- **These findings highlight the importance of detailed assessment of specific areas affected by AD to personalize treatment approaches to the needs of patients**