



## Psoriatic Disease and Body Weight

- In the United States, approximately 3% or 7.5 million adults are affected by psoriasis (PsO).<sup>1</sup>
- Psoriatic arthritis (PsA) affects up to 30% of individuals with psoriasis, or about 0.6-0.9% of the general population.<sup>2</sup>
- Body mass index (BMI) is strongly associated with an increased risk of developing PsO and PsA among individuals with psoriasis.<sup>3,4</sup>
- While obesity (BMI ≥30) is often recognized as a disease that contributes to increased health care resource utilization (HCRU), obesity's effect on patients with psoriatic disease is not well understood.

## Objective

Describe the association of BMI and HCRU in patients with psoriatic disease

## Methods

### Design

- Longitudinal retrospective cohort analysis utilizing clinical electronic health record (EHR) and linked adjudicated insurance claims data from January 1, 2019, to June 30, 2024.

### Data Source

- The Optum Labs Data Warehouse (OLDW) a de-identified, national, longitudinal, real-world data asset consisting of approximately 130 million patient lives, including administrative claims from a national health insurance provider and clinical EHR data from >50 HCOs.

### Study Population

- Patients with psoriasis receiving ongoing care at an HCO in the OLDW (n=8,405).

### Inclusion/Exclusion Criteria

- Inclusions:** qualifying evaluation and management visits in the index year (2019) and in years 1, 3, and 5 post-index, and at least two diagnoses of PsO on or prior to index.
- Exclusions:** evidence of death, hospice, or palliative care any time prior to or within one year post index.

### Analysis

- Baseline demographics, HCRU, treatments, and comorbidities were analyzed descriptively, both overall and stratified by BMI category.
- HCRU measures (emergency dept (ED) visits per 10 patient-years (PYs), inpatient (IP) stays per 100 PYs, and office visits per PY) were described overall and by BMI group in each time window.
- HCRU counts were modeled as a function of BMI group at 1-, 3-, and 5-years post-index. Propensity score methods were used to adjust for potential baseline confounders.

### References

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## HCRU counts increased as BMI increased, over time and within BMI groups

### Baseline Characteristics of Patients with Psoriatic Disease

	BMI Category							p value
	Overall	18.5-24.9	25-29.9	30-34.9	35-39.9	40+		
n	8,405	1,375	2,549	2,242	1,234	1,005		
Age (median [IQR])	60 [50, 68]	59 [48, 68]	62 [52, 69]	60 [51.25, 68]	59 [49, 66]	57 [49, 65]	<0.001	
Gender (Male, (# (%))	3910 (46.5)	489 (35.6)	1375 (53.9)	1163 (51.9)	540 (43.8)	343 (34.2)	<0.001	
Race (# (%))							<0.001	
Black	363 (4.3)	50 (3.6)	87 (3.4)	83 (3.7)	71 (5.8)	72 (7.2)		
Asian	265 (3.2)	91 (6.6)	104 (4.1)	41 (1.8)	25 (2.0)	<11		
White	7446 (88.6)	1182 (86.0)	2260 (88.7)	2037 (90.9)	1079 (87.4)	888 (88.4)		
Other/Unknown	331 (3.9)	52 (3.8)	98 (3.8)	81 (3.6)	59 (4.8)	41 (4.1)		
Ethnicity (# (%))								
Hispanic	489 (5.8)	50 (3.6)	134 (5.3)	145 (6.5)	77 (6.2)	83 (8.3)		
Not Hispanic	7479 (89.0)	1232 (89.6)	2263 (88.8)	1996 (89.0)	1103 (89.4)	885 (88.1)		
Unknown	437 (5.2)	93 (6.8)	152 (6.0)	101 (4.5)	54 (4.4)	37 (3.7)		
Has PsA (# Yes (%))	3524 (41.9)	575 (41.8)	1079 (42.3)	916 (40.9)	524 (42.5)	430 (42.8)	0.794	
Has any high risk Dx* (%)	6450 (76.7)	784 (57.0)	1914 (75.1)	1820 (81.2)	1052 (85.3)	880 (87.6)	<0.001	
Elixhauser Score (mean (SD))	0.34 (1.25)	0.28 (1.11)	0.32 (1.16)	0.33 (1.22)	0.36 (1.28)	0.51 (1.63)	<0.001	
Prescriptions (# (%))								
Tnf-alpha inhib.	1370 (16.3)	225 (16.4)	429 (16.8)	351 (15.7)	204 (16.5)	161 (16.0)	0.858	
Interleukin inhib.	922 (11.0)	150 (10.9)	226 (8.9)	246 (11.0)	158 (12.8)	142 (14.1)	<0.001	
Corticosteroids (# (%))	1999 (23.8)	291 (21.2)	566 (22.2)	529 (23.6)	327 (26.5)	286 (28.5)	<0.001	
# of biologics (# (%))							0.006	
0	6290 (74.8)	1042 (75.8)	1945 (76.3)	1679 (74.9)	899 (72.9)	725 (72.1)		
1	1938 (23.1)	291 (21.2)	553 (21.7)	529 (23.6)	308 (25.0)	257 (25.6)		
2+	177 (2.1)	42 (3.1)	51 (2.0)	34 (1.5)	27 (2.2)	23 (2.3)		
Laboratory values [median (IQR)]								
C-Reactive Protein (CRP)	3.5 [1.2, 7.8]	1.5 [1, 5]	2.8 [1, 5.7]	4.1 [2, 7.4]	5 [3, 10.5]	8.5 [4.7, 19]	<0.001	
High Sensitivity CRP	3.1 [1, 7.8]	1 [0.3, 2.6]	2.6 [0.9, 4.8]	4.1 [1.2, 8.7]	3.2 [1.6, 8.5]	7.9 [6, 9.6]	0.002	
Erythrocyte Sedimentation Rate (ESR)	12 [6, 25]	9 [4, 17]	10 [5, 21]	13 [7, 25]	17 [8, 30]	21 [11, 34]	<0.001	

\* Diagnoses include hypertension, dyslipidemia, type 2 diabetes, obstructive sleep apnea, and cardiovascular disease

Fig 1. Average number of IP stays for patients with >0 stay by BMI category and time (years)

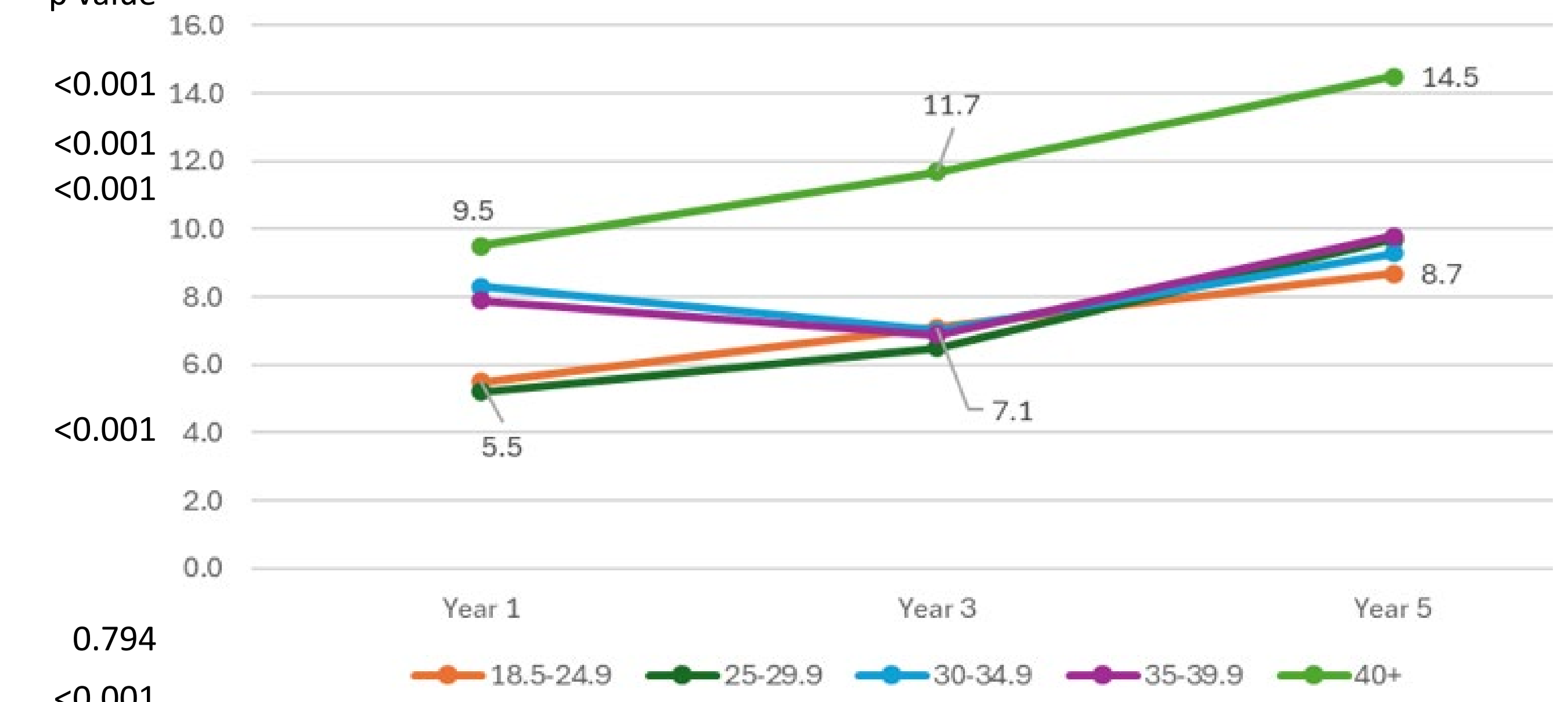
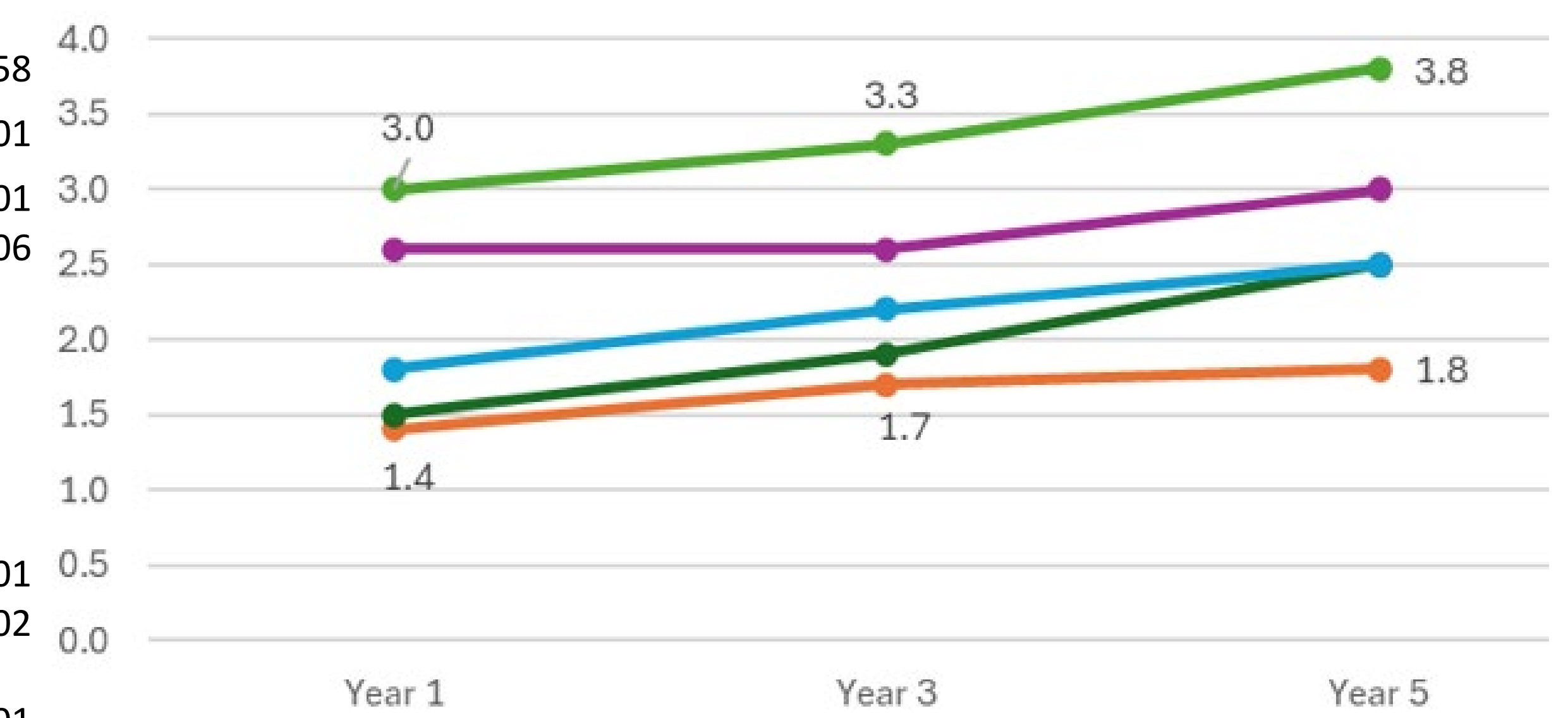


Fig 2. Average number of ED visits for patients with >0 visits by BMI category and time (years)



## Higher BMI was associated with greater IP and ED utilization in the adjusted conditional (>0) model

- Obesity was associated with 32% (95% CI [14%, 53%]) more inpatient admissions in Year 1 and 18% [3%, 35%] more in Year 5 versus patients with healthy weight.
- Overweight was associated with 23% [5%, 43%] more inpatient stays and 17% more ED visits in Years 3 [1%, 35%] and 5 [2%, 36%] versus patients with healthy weight.

Fig. 3: IP visit ratio for patients w/ >0 IP visits by BMI category over time\* (n=1859)

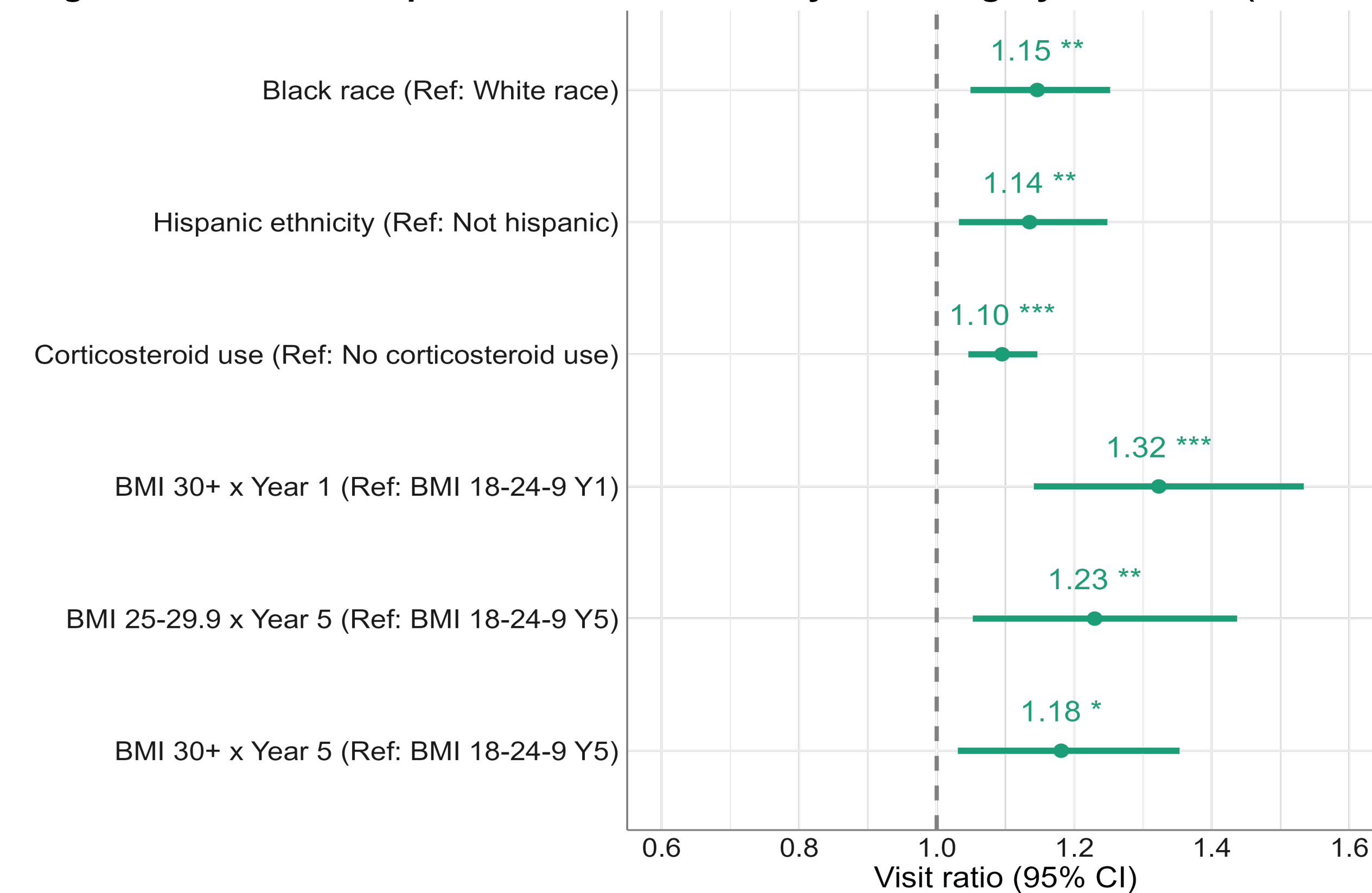
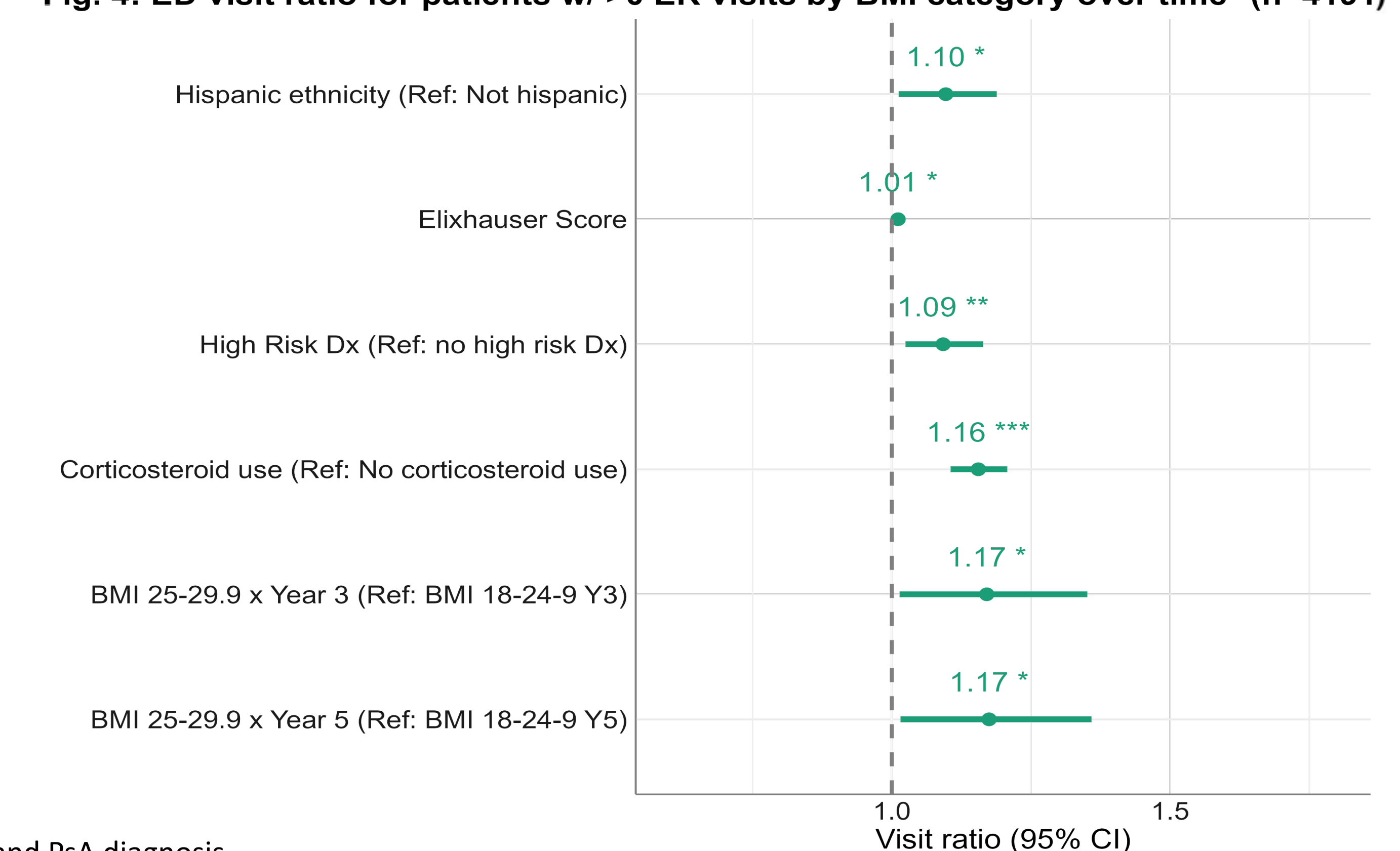


Fig. 4: ED visit ratio for patients w/ >0 ER visits by BMI category over time\* (n=4191)



\*Models were adjusted for age, gender, race, ethnicity, Elixhauser score, biologic use, corticosteroid use, high risk diagnosis, and PsA diagnosis

## Conclusion

- Descriptively, over 80% of patients with psoriatic disease had overweight or obesity, accompanied by elevated inflammatory markers at baseline and an increase in HCRU over time, which persisted when adjusted for confounders
- More holistic approaches to care, e.g., reducing inflammation and BMI, could be an important strategy for decreasing HCRU in patients with psoriatic disease, benefiting patients, providers, and payers.

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