

BACKGROUND

Down syndrome (DS) is the most common chromosomal condition in the United States (1). **Alterations of chromosome 21 may translate to a variety of skin conditions including psoriasis** (2,3). Limited studies of DS and psoriasis cite prevalence rates of 0.5-8%, but published cohorts are ~200 participants (2).

OBJECTIVES

Estimate psoriasis **prevalence** and **demographics** in the DS population to improve understanding of disease burden and distribution.

METHODS

A **cross-sectional analysis using Epic Cosmos** dataset was performed to calculate a period prevalence. Inclusion criteria included at least one encounter with an ICD-10 diagnosis code for DS and at least two encounters for cutaneous psoriasis between January 1st, 2021, and December 31, 2023. Crude prevalences were calculated with associated 95% Confidence Intervals (CI). Odds ratios (OR) and 95% CIs from multivariable logistic regression were calculated to compare prevalence of psoriasis between subgroups of patients, adjusting for age and sex.

RESULTS

The prevalence amongst **pediatric patients (0-17 years) was 0.79%** (95% CI 0.71-0.87) and **adult patients (≥18 years) was 3.08%** (95% CI 2.94 – 3.22) (Table 1). **Adults had approximately 4 times higher odds** of having psoriasis than pediatric patients (OR = 4.03, p-value <.0001) (Figure 1). **Males had about 17% higher odds** of psoriasis than females (OR = 1.17, p-value = 0.0003). **Non-Hispanic Black or African American had the lowest prevalence** of psoriasis (0.76%, 95% CI 0.62 – 0.93).

FUNDING

National Institutes of Health
INvestigation of Co-occurring
conditions across the Lifespan
to Understand Down syndrome
(INCLUDE) Project
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CITATIONS



FIGURE 1. Odds ratios, 95% Confidence Intervals, and p-values from multivariable logistic regression adjusting for age and sex

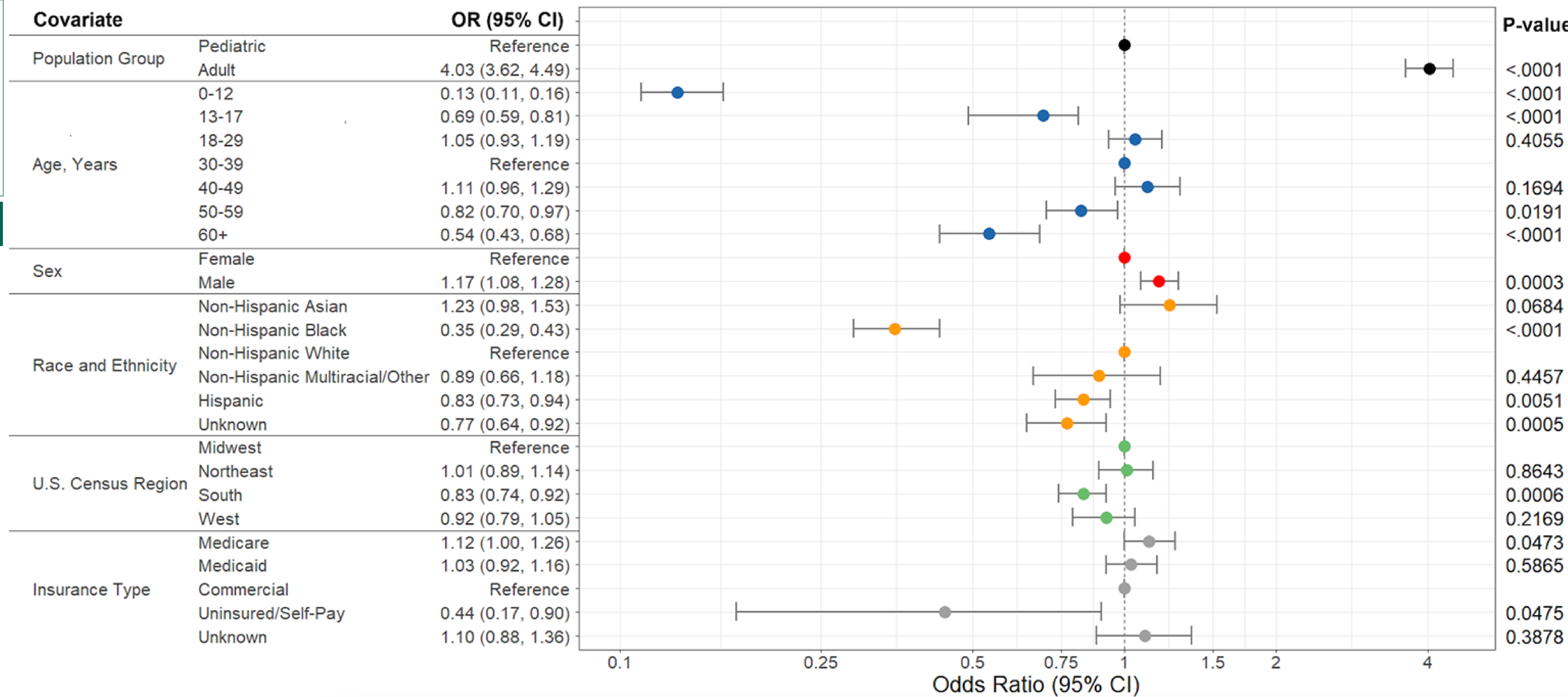


TABLE 1. Prevalence of psoriasis among DS patients

Group	Psoriasis cases	DS population	Crude prevalence % (95%, CI)
Overall population	2,125	107,759	1.97% (1.89, 2.06)
Age category, years			
0-12	180	41,692	0.43% (0.37, 0.50)
13-17	228	10,242	2.23% (1.95, 2.54)
18-29	670	20,046	3.34% (3.10, 3.60)
30-39	418	13,257	3.15% (2.87, 3.47)
40-49	316	9,008	3.51% (3.14, 3.91)
50-59	228	8,655	2.63% (2.31, 3.00)
≥60	85	4,844	1.75% (1.41, 2.18)
Race/ethnicity			
Non-Hispanic Asian	84	3,457	2.43% (1.95, 3.01)
Non-Hispanic Black or African American	103	13,540	0.76% (0.62, 0.93)
Non-Hispanic White	1,475	60,075	2.46% (2.33, 2.58)
Non-Hispanic other (including multiracial)	50	2,860	1.75% (1.31, 2.32)
Hispanic	289	19,833	1.46% (1.30, 1.64)
Unknown	124	7,979	1.55% (1.30, 1.86)
Insurance Type			
Medicare	661	21,420	3.09% (2.86, 3.33)
Medicaid	446	27,554	1.62% (1.47, 1.78)
Commercial (Miscellaneous other)	919	53,249	1.73% (1.62, 1.84)
Uninsured (self pay)	6	824	0.73% (0.30, 1.66)
Unknown	93	4,697	1.98% (1.61, 2.43)

LIMITATIONS

Prevalence estimates can vary depending on the population of interest, methodology, and data source. Medical coding-based data relies upon provider diagnostic accuracy.

DISCUSSION & CONCLUSIONS

Psoriasis is a significant skin condition in people with DS. **The prevalence in individuals with DS may be similar to the general pediatric population (estimated at 1%), and general adult population (estimated at 3%) (4,5).** Psoriasis in people with DS proportionally **affects more adults and is more common in men than women.** Similar to the general population, **Non-Hispanic Black or African American and Hispanic children and adults with DS have lower psoriasis prevalence rates.** These preliminary prevalence data will help inform future epidemiologic research, pathophysiologic exploration, and health policies to improve the lives of patients with DS and psoriasis.

Affiliations

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