



Impact of Socioeconomic Status on Adult Patients with Asthma: A Population-based Cohort Study from UK Primary Care

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Background

- **Socioeconomic status (SES) is known to affect asthma outcomes such as morbidity, mortality and healthcare utilization**
- Suggested reasons for worse asthma outcomes in deprived populations include poorer living conditions and reduced access to specialist care
- UK guidelines: patients with asthma that remains uncontrolled despite standard therapies should be referred to specialists²



Objectives

1. Describe the **socioeconomic disparities** in a UK primary care asthma cohort
2. Identify the **factors** that influence the impact of SES on asthma outcomes
3. Study the impact of SES on **asthma presentation** (e.g., blood eosinophils), **treatment processes** (e.g., respiratory referrals) and **outcomes** (e.g., asthma control and exacerbations)



Historical cohort study

Inclusion criteria

- Aged ≥ 18 years old
- Asthma diagnosis
- ≥ 3 years of data available

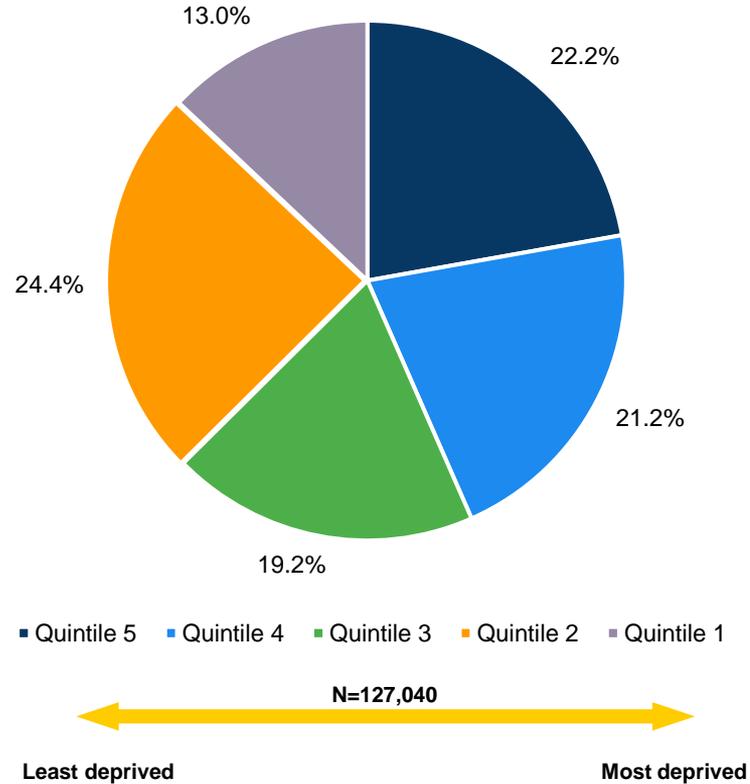
Deprivation quintiles

- Socioeconomic status derived from UK 2011 Indices of Multiple Deprivation scores*:
 - Quintile 5: least deprived
- ↓
- Quintile 1: most deprived

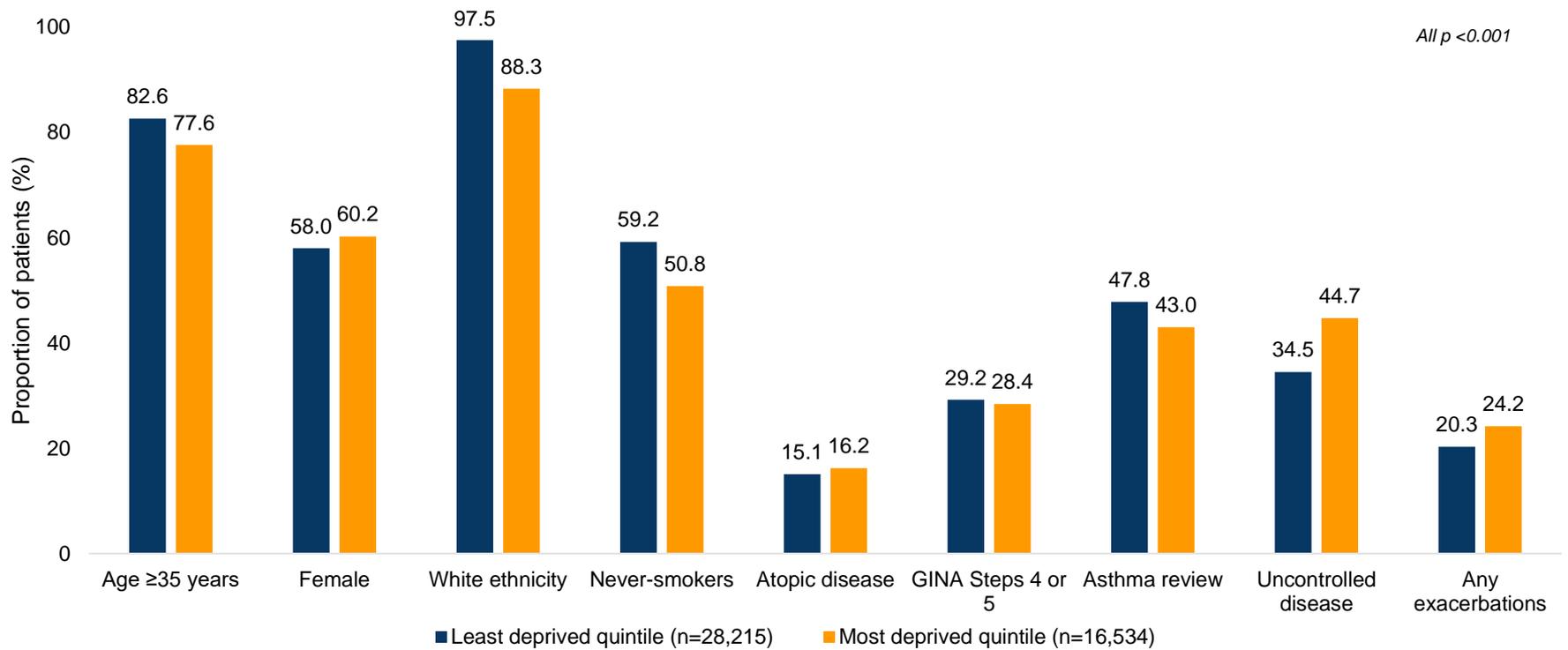
1-year follow-up

Analyses

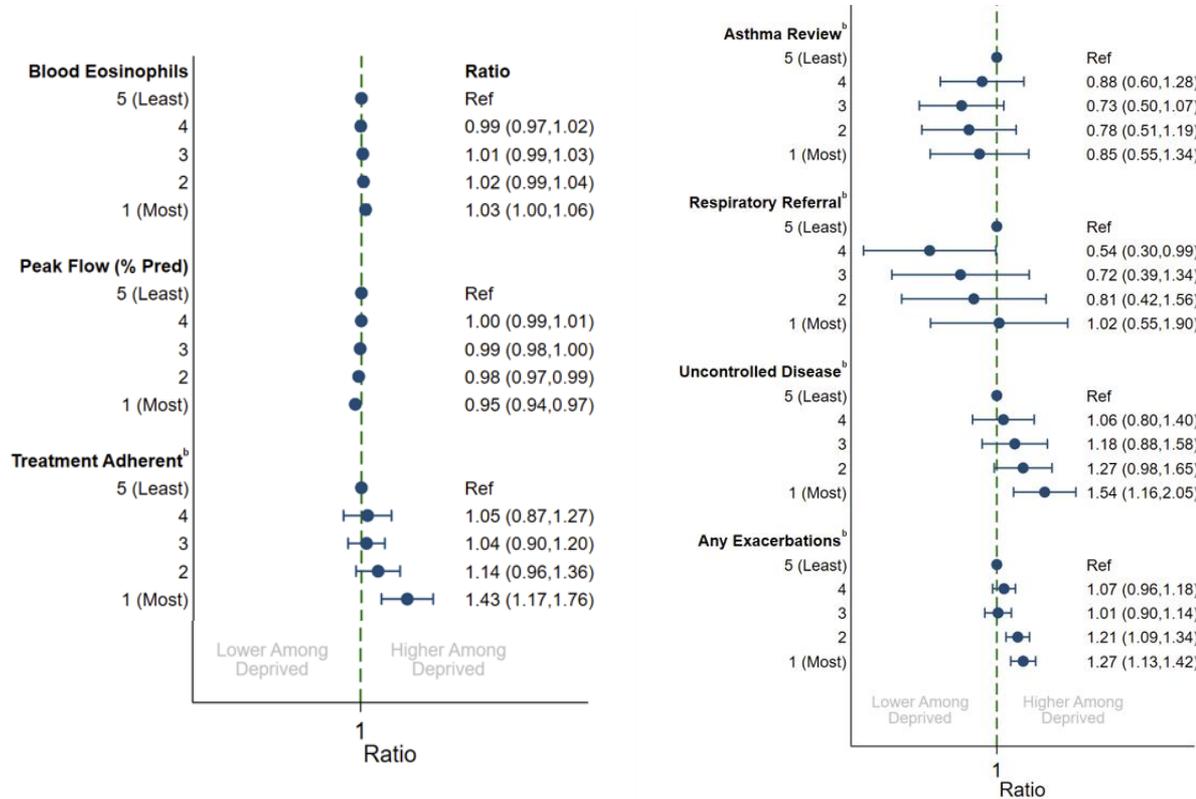
- **Asthma presentation**
 - Blood eosinophils
 - Peak flow
- **Treatment processes**
 - Medication adherence
 - Asthma reviews
 - Respiratory referrals
- **Clinical outcomes**
 - Asthma control
 - Exacerbations
- **Sensitivity analyses:**
 - Impact of demographic factors and asthma severity (≥ 2 exacerbations) on clinical outcomes



Most deprived patients were more likely to have atopic disease and uncontrolled asthma than least deprived patients



Impact of SES on asthma presentations, treatment processes and clinical outcomes in UK primary care^a



Most deprived patients had more uncontrolled asthma and greater likelihood of exacerbations than least deprived patients, but rates of respiratory referrals remained comparable



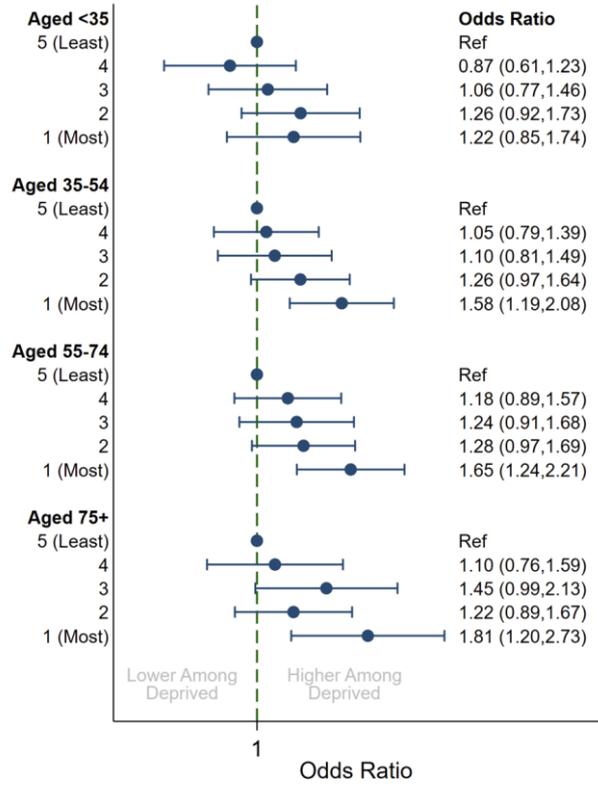
Sensitivity analysis: Similar rates of respiratory referrals between most and least deprived patients remained among those with ≥2 exacerbations



Clinical implication: More deprived patients may have greater need for specialist reviews and phenotype-targeted treatments like biologics

^aAdjusted for year, age (5-year groups) and sex; ^bOdds ratio. Patient numbers: n=45,761 for blood eosinophils; n=71,291 for peak flow; n=102,712 for treatment adherent; n=127,040 for asthma review; n=127,040 for respiratory referral; n=40,078 for uncontrolled disease; n=127,040 for any exacerbations
 SES = Socioeconomic status
 Busby J, Price D et al. *J Asthma Allergy* 2021;14:1375-88.

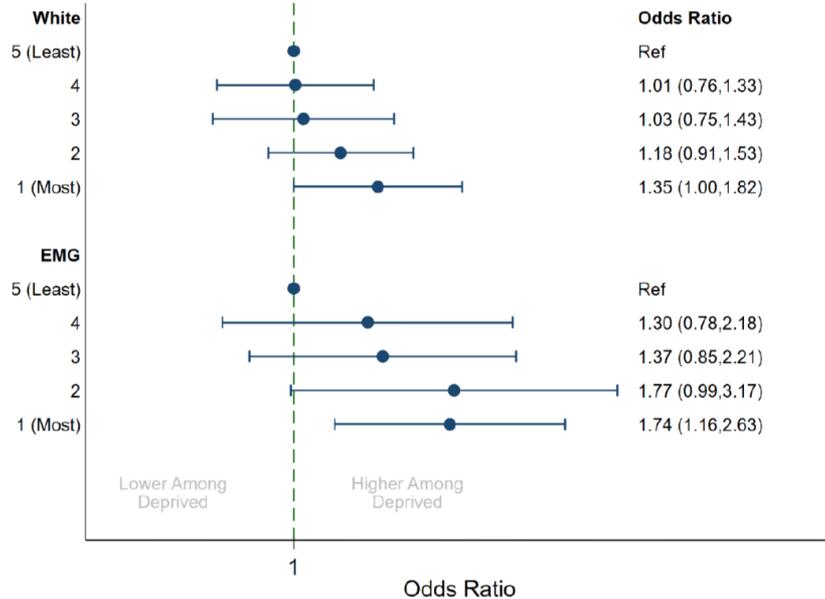
Uncontrolled asthma



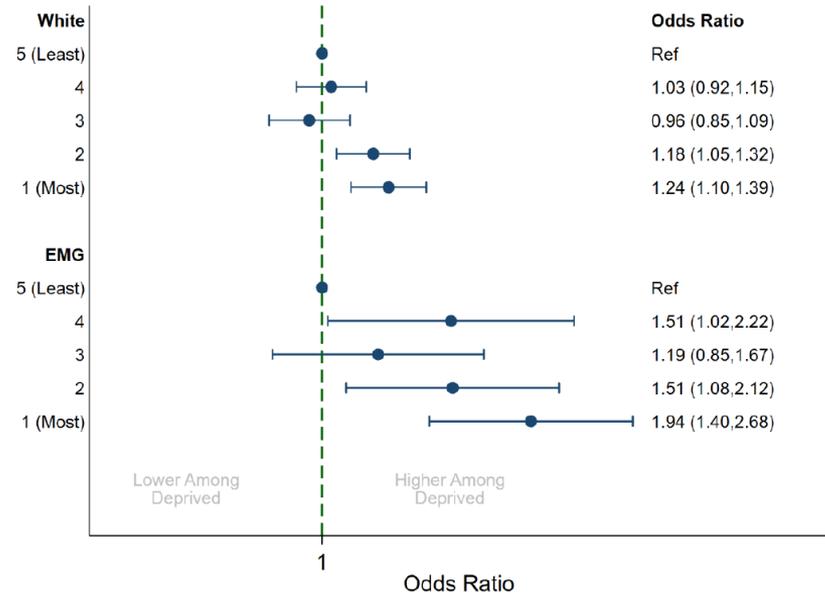
The impact of increased deprivation on asthma control was greater in patients aged ≥75 years than in those aged <35 years

Ethnicity influences the magnitude of SES's impact on asthma outcomes

Uncontrolled asthma



Any exacerbations



The impact of increased deprivation on asthma control and exacerbations was greater in ethnic minority groups than in White patients

Conclusions

- There was evidence of **socioeconomic disparities** in a UK primary care asthma cohort
- **Socioeconomic deprivation has an adverse effect on asthma outcomes**
 - Most deprived patients were more likely to have worse peak flow, uncontrolled disease or an exacerbation during follow-up than least deprived patients
- **Although more deprived patients had more uncontrolled disease, rates of respiratory referrals were similar to those of less deprived patients**
 - More deprived patients may have greater need for specialist reviews and phenotype-targeted treatments like biologics
- **Age and ethnicity influence the magnitude of SES's impact on asthma outcomes**
 - The impact of increased deprivation on asthma control was more pronounced in older patients versus younger patients, and in ethnic minority groups versus White patients
- **Interventions to resolve socioeconomic disparities should be explored, both in the UK and globally, to improve overall asthma outcomes**

Acknowledgements

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- OPCRD has been reviewed and ethically approved by the NHS Health Research Authority to hold and process anonymized data as part of service delivery (Research Ethics Committee reference: 15/EM/0150). Ethical approval for this research study was granted by the ADEPT committee (ADEPT0120). The study was designed, implemented and registered in accordance with the criteria of ENCePP (EUPAS32482).

