

## Introduction

Frailty is a widely recognised clinical syndrome affecting older adults and is linked with a variety of adverse health outcomes, including significant morbidity, mortality and healthcare costs (1,2).

Within the United Kingdom (UK), most data relating to the occurrence of frailty is derived from Caucasian groups.

This study aimed to determine the influence of ethnicity on the occurrence of frailty in a large UK urban conurbation.

We also looked at frailty-related risk of severe illness related to COVID-19 infection.

## Methods

Using data from the Greater Manchester Health Record (GMCR), we analysed primary care electronic medical records of **534,367 men and women aged 60 years** and over who were alive on 1st January 2020.

We assessed frailty using an electronic frailty index (eFI) and categorised subjects as fit, mild, moderate, and severe frailty.

We looked at the occurrence of moderate and severe frailty (eFI  $\geq$  0.25) by age, gender, deprivation level (assessed using the Townsend Index and expressed in quintiles), and ethnicity (based on self-report).

We used logistic regression to examine the association between moderate and severe frailty (eFI  $\geq$  0.25) and ethnicity, adjusted by age, sex and area deprivation (as measured using Townsend Index (3)).

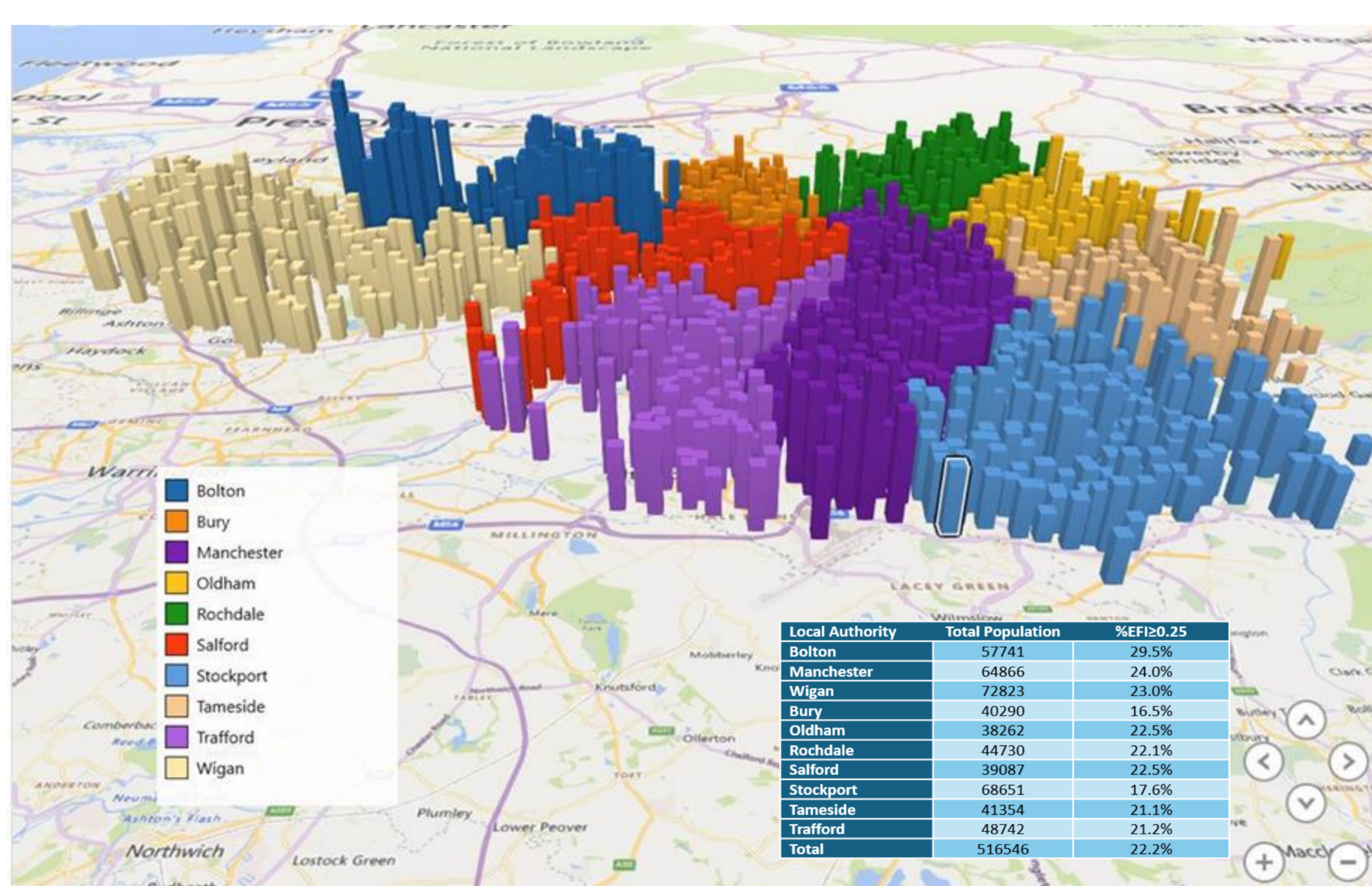
We also looked among those with a first positive COVID test, at the influence of frailty on subsequent admission to the hospital within 28 days

## Results

There was marked variation in eFI for people aged 60 or more by LSOA as well

within Council Boroughs

As well as between Council Boroughs



The majority of subjects were white (84%) with **4.7%** describing themselves as **Asian or Asian British**, and **1.3%** **Black or Black British**. The unadjusted prevalence of moderate to severe frailty across combined ethnic groups (eFI  $\geq$  0.25) was 22.1%.

## References

- Clegg A, Young J, Iliffe S, Rikkert MO, Rockwood K. Frailty in elderly people. Lancet 2013; 381:752–62.
- Hoogendijk EO, Afila J, Ensrud KE, Kowal P, Onder G, Fried LP. Frailty: implications for clinical practice and public health. Lancet 2019; 394:1365–75.
- Townsend P. Deprivation. J Soc Policy 1987; 16:125-146.

## Results

Electronic Frailty Index (eFI) was greater in women than in men (0.17 vs 0.14).

Overall, 6.9% of individuals had evidence of severe frailty; 15.2% moderate, 32.0% mild frailty and 45.9% were frailty-free

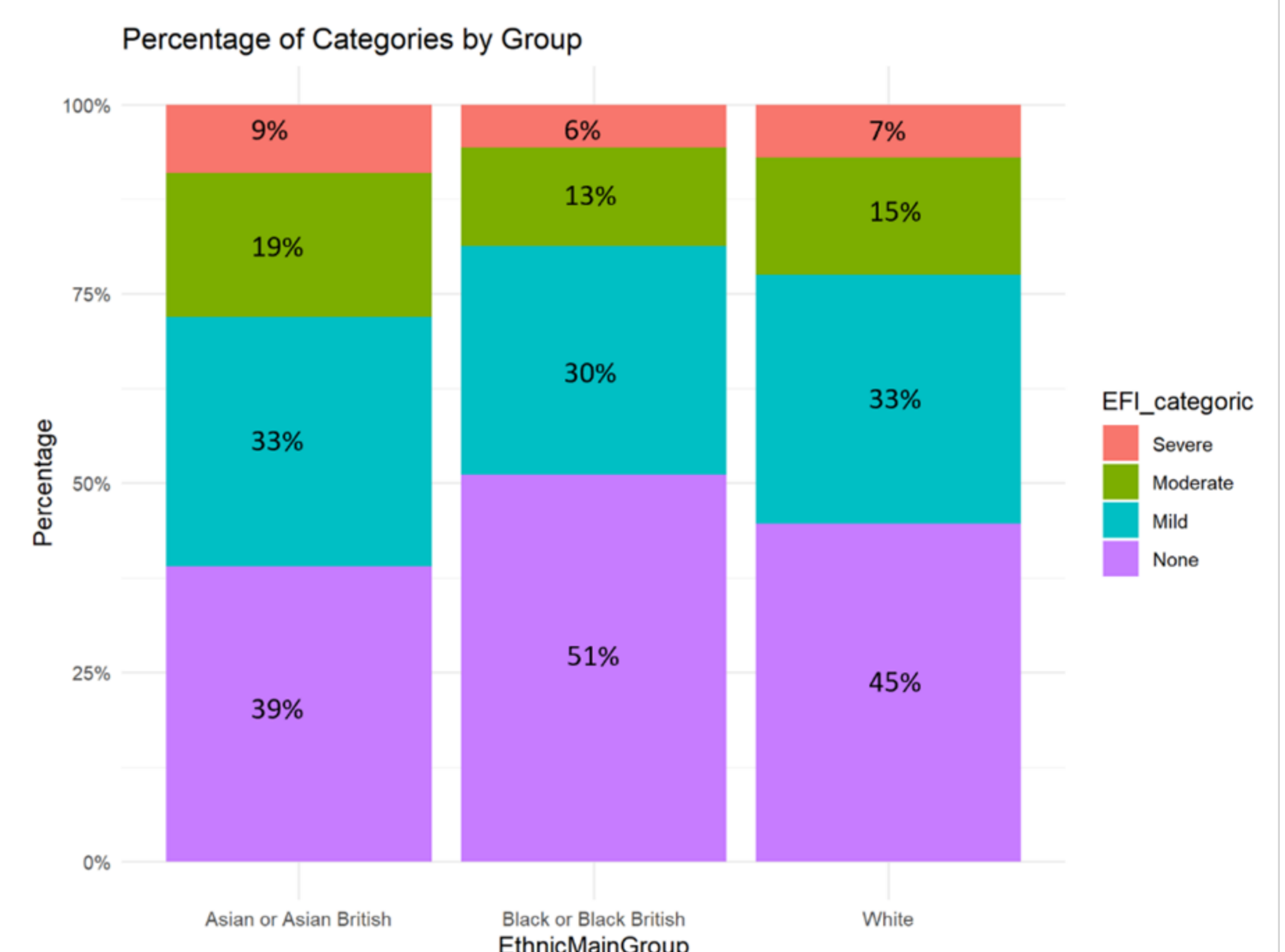
**Table 1: Risk of Frailty, Age, Townsend Index and Ethnicity**

Table 1: Risk of Frailty: by gender, age, ethnicity, Townsend index

|                              | Model 1*          | Model 2*          | Model 3*          |
|------------------------------|-------------------|-------------------|-------------------|
|                              | OR (95% CI)       | OR (95% CI)       | OR (95% CI)       |
| Sex                          |                   |                   |                   |
| Female (Reference)           | 1.0               | 1.0               | 1.0               |
| Male                         | 0.68 (0.67, 0.68) | 0.76 (0.74, 0.77) | 0.75 (0.74, 0.77) |
| Age (years)                  | 1.10 (1.10, 1.10) | 1.10 (1.10, 1.10) | 1.10 (1.10, 1.10) |
| Townsend Index               |                   |                   |                   |
| 1 Least deprived (Reference) | 1.0               | 1.0               | 1.0               |
| 2                            | 1.16 (1.14, 1.19) | 1.16 (1.13, 1.18) | 1.16 (1.13, 1.18) |
| 3                            | 1.37 (1.34, 1.40) | 1.40 (1.36, 1.43) | 1.39 (1.36, 1.42) |
| 4                            | 1.58 (1.55, 1.61) | 1.67 (1.63, 1.70) | 1.63 (1.63, 1.70) |
| 5 Most deprived              | 1.71 (1.67, 1.74) | 2.03 (1.99, 2.07) | 1.96 (1.92, 2.00) |
| Ethnic Group                 |                   |                   |                   |
| White (Ref)                  | 1.0               | 1.0               | 1.0               |
| Asian or Asian British       | 1.35 (1.31, 1.39) | 1.92 (1.86, 1.98) | 1.61 (1.56, 1.66) |
| Black or Black British       | 0.80 (0.75, 0.85) | 0.93 (0.87, 1.00) | 0.73 (0.68, 0.78) |
| Mixed                        | 0.70 (0.63, 0.77) | 0.84 (0.75, 0.93) | 0.75 (0.67, 0.83) |
| Other                        | 0.91 (0.88, 0.94) | 0.97 (0.93, 1.00) | 0.94 (0.90, 0.98) |
| Refused                      | 0.84 (0.82, 0.86) | 0.67 (0.65, 0.69) | 0.66 (0.64, 0.68) |

After adjustment for age, gender, and deprivation, the risk of frailty was higher in Asians (Odds Ratio=1.61; 95% Confidence Intervals = 1.56-1.66) and lower in Black British (OR=0.73; 95% CI 0.68-0.78) compared to White British

**Figure 1: Proportion of frailty by ethnicity**



The proportion with **no** recorded frailty was highest in Black/Black British people

### COVID-19 related hospitalisation

Within the cohort there were 86,844 people who had a positive COVID test recorded in their clinical record. Of these 11.0% had a hospital admission up to +28 days after or up to 4 days before their test

Those with frailty were 61% more likely to require admission to the hospital within 28 days (OR=1.61; 95% CI=1.53, 1.69).

## Conclusion / Take Home Messages

Frailty was found to be more common among those identifying as Asian / Asian British and less common among those identifying as Black / Black British compared to Whites.

We need to understand the causes of this variation, to determine whether ethnicity impacts on clinical outcomes and to begin to identify opportunities for prevention.

.... with a view to reducing the adverse consequences of frailty in our communities.