Abstract P43 Figure 1

develop mutual care objectives between HCP and patient, to establish a therapeutic relationship.

P44 THE IMPACT OF LACK OF PROFICIENCY IN ENGLISH ON ASTHMA CONTROL

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Introduction Health inequalities play a role in poor clinical outcomes for people living with asthma. The UK Severe Asthma Registry has noted this in the differences in disease between Caucasian and Non-Caucasian groups when it comes to accessing severe asthma services and biologics prescribing. Whilst it is acknowledged that there is a difference in disease in terms of possible endo types between these groups, it is also acknowledged that there are cultural and language barriers. The aim of this study is to investigate if there is a correlation between poor asthma control and lack of proficiency in English.

Method Indicators of poor asthma control are the use of oral corticosteroids (OCS) and the over use of short-acting bronchodilators (SABA). The AstraZeneca Respiratory Outcomes Heatmaps tool was used to identify areas with both poor Asthma management (defined as >6 SABA and >3 OCS prescriptions in 2019/20), and compared this with the corresponding ONS Datashine census data for proficiency in English in our local area. A lack of proficiency was defined as those who did not speak English as a first language, and don't speak English well. Statistical analysis was undertaken using non-parametric Spearman's Rho correlation, SPSS version 26.

Results We identified 13,562 patients on the asthma register from 27 local GP surgeries. We found no correlation between excess OCS prescribing and lack of English proficiency - Rho = 0.202, p = 0.312, but there was a significant correlation between lack of English proficiency and >6 SABA inhalers per year - Rho = 0.551, p = 0.003 (significance at 0.05).

Discussion Inequalities are complex and amongst professionals there is a lack of understanding due to a lack of data. We have identified a correlation between a marker of poor asthma

control, and a lack of proficiency in English. The findings from this study will be used to target interventions in the areas identified as hot spots on the heatmaps. Development of multilingual, multimedia resources for those with poor literacy, and those who do not have good English language skills will be invaluable, as so little currently exists.

Please refer to page A191 for declarations of interest related to this abstract.

P45 ASSOCIATIONS BETWEEN EMPLOYMENT AND SOCIO-DEMOGRAPHIC AND HEALTH-RELATED FACTORS, IN PATIENTS WITH SEVERE ASTHMA

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Introduction Poorly-controlled asthma is associated with work absenteeism and loss of productivity. Less than 5% of asthma is stratified as 'severe asthma', which requires high-intensity multi-disciplinary care and is often associated with poor symptom control. Data regarding impact of severe asthma on workability is sparse; cross-sectional studies outside the UK have shown associations with disease severity, and poor physical and mental health status.^{1,2} We aimed to identify socio-demographic and health-related associations with employment in these patients.

Methods We interrogated the Birmingham Regional Severe Asthma Service (BRSAS) Dendrite clinical registry (n=1453 patient records, 2004–21), and extracted baseline data on patients aged 16–64 years, and not in full-time education; variables comprised employment status, socio-demographics (age, gender, ethnicity, index of multiple deprivation (IMD), smoking status), general health (BMI, hospital anxiety and depression (HAD) scale, co-morbidities, atopy), and disease-related factors (pre-bronchodilator FEV₁, asthma control, quality of life, maintenance corticosteroids, eosinophil count, hospital admissions and rescue treatments). We used hypothesis testing and logistic regression to examine the relationship between these independent variables and employment.

Abstract P45 Table 1 Summary of explanatory variables, with hypothesis testing and crude (unadjusted) odds ratios by logistic regression

		Employed (n=548; 53%) ¹	Not employed (n=494; 47%) ¹	Hypothesis testing	Unadjusted ORs (95% CI) reference category=not employed
Age	Median (IQR)	44 (33–52)	45 (37–53)	$p=0.03$	0.98 (0.97–1.00); $p=0.01$
Female gender	Number (%)	367 (67)	383 (78)	$p<0.001$	0.59 (0.45–0.78); $p<0.001$
Ethnicity Caucasian	Number (%)	453 (84)	383 (79)	$p=0.03$	1.43 (1.04–1.96); $p=0.03$
IMD decile (ordinal)	Median (IQR)	5 (2–7)	3 (1–6)	$p<0.001$	1.19 (1.14–1.24); $p<0.001$ (per unit increase)
Current smokers	Number (%)	27 (5)	54 (11)	$p<0.001$	0.42 (0.26–0.68); $p<0.001$
BMI	Median (IQR)	30 (25–35)	33 (28–38)	$p<0.001$	0.96 (0.94–0.97); $p<0.001$
BMI <25	Number (%)	117 (23)	60 (13)	$p<0.001$	2.03 (1.44–2.85); $p<0.001$
Non-asthma related major co-morbidities ²	Number (%)	204 (37)	314 (64)	$p<0.001$	0.34 (0.26–0.44); $p<0.001$
HAD anxiety score (0–21)	Median (IQR)	7 (4–11)	11 (7–15)	$p<0.001$	0.89 (0.86–0.91); $p<0.001$
Abnormal HAD anxiety score (11–21)	Number (%)	113 (26)	187 (52)	$p<0.001$	0.32 (0.24–0.43); $p<0.001$
HAD depression score (0–21)	Median (IQR)	6 (4–9)	10 (7–13)	$p<0.001$	0.83 (0.80–0.86); $p<0.001$
Abnormal HAD depression score (11–21)	Number (%)	80 (18)	171 (48)	$p<0.001$	0.25 (0.18–0.34); $p<0.001$
ACQ7 total score (0–6) (ordinal)	Median (IQR)	3.0 (2.1–3.7)	4 (3.2–4.7)	$p<0.001$	0.52 (0.45–0.59); $p<0.001$
Adequate control (ACQ7 score=0–1)	Number (%)	26 (7)	6 (2)	$p<0.001$	4.12 (1.68–10.14); $p=0.002$
AQLQ total score (0=worse, 7=better) (ordinal)	Median (IQR)	3.9 (3.0–4.8)	2.9 (2.2–3.6)	$p<0.001$	1.84 (1.61–2.10); $p<0.001$
Pre-bronchodilator spirometry (% predicted FEV ₁)	Median (IQR)	80 (58–96)	70 (51–86)	$p<0.001$	1.01 (1.00–1.02); $p<0.001$
Maintenance oral corticosteroids	Number (%)	178 (34)	199 (42)	$p=0.007$	0.70 (0.54–0.91); $p=0.007$
Hospital admissions last 12 months	Median (IQR)	0 (0–2)	0 (0–3)	$p<0.001$	0.93 (0.89–0.97); $p<0.001$
Exacerbations requiring rescue oral corticosteroids last 12 months	Median (IQR)	5 (2–8)	6 (3–10)	$p=0.006$	0.97 (0.95–1.00); $p=0.05$

¹data missing for n=204. ²Includes pre-existing diagnosed anxiety, depression and psychosis. Hypothesis testing undertaken using chi-squared tests (categorical data), Mann-Whitney U-tests (non-parametric continuous data), tau-B (ordinal data). For continuous data, linear assumptions were tested using the Box-Tidwell transformation, prior to univariate logistic regression.

Results Data from 1246 patients were included; median age=44 (IQR=34–52), females=917 (74%), Caucasian ethnicity=1000 (80%), current smokers=97 (8%), median IMD decile=4 (2–7), median BMI=31 (26–35), 1 or more comorbidity=572 (46%), median%predicted FEV₁=74 (54–91). Univariate analyses of independent variables grouped by employment status (n=548 employed; 53%) are shown in the Table; there were no significant associations by disease phenotype (atopy, eosinophilic, non-eosinophilic). Multivariate binary logistic regression showed significant positive associations for IMD decile (OR=1.2, 95%CI=1.1–1.3) and AQLQ score (OR=1.5, 95%CI=1.2–1.9 per digit increase) with employment. Significant negative predictors were female gender (OR=0.5, 95%CI=0.3–0.8), major non-asthma related comorbidity (OR=0.5, 95%CI=0.3–0.7), maintenance oral corticosteroids (OR=0.5, 95%CI=0.3–0.8), and elevated HAD depression score (OR=0.5, 95%CI=0.3–0.8). The model was an adequate fit, explained 34% of the variance in employment (pseudo R²) and correctly classified 70% of cases.

Conclusion When socio-demographic factors are taken into account, asthma-related quality of life, absence of major comorbidity, low treatment burden, and good mental health are associated with employment. However, these may not fully explain workability, and other hitherto unidentified cultural factors should be explored.

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DOES ASTHMA DURING PREGNANCY ACTUALLY FOLLOW THE 'ONE-THIRD' RULE?

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Introduction Traditionally, asthma in pregnancy is thought to follow a 'one-third rule' which states in patients with diagnosed asthma, during pregnancy one-third will see worsening symptoms, one-third will enjoy improved control, whilst one-third will experience no changes to their asthma symptoms.¹

We set out to test this theory using retrospective data analysis of data collected from a specialist obstetric asthma clinic.

Methods We carried out retrospective analysis of data collected from an obstetric asthma clinic over one year from October 2018 to October 2019 to assess whether patient's symptoms were better, unchanged or worse during their pregnancy. Data was reviewed from patients who were in at least their second pregnancy to allow for comparison between the current pregnancy and their earlier pregnancies.

Both subjective and objective symptom control was considered. Subjective control was determined by the patient's impression of their symptom burden, whilst objective control was determined by the number of steroid courses prescribed and the number of hospital admissions.

Results 48 patients were reviewed in the specialist obstetric asthma clinic, 28 of whom were in at least their second

Abstract P46 Table 1 Objective and subjective severity of asthma during pregnancy

Subjective control (compared to previous pregnancies)	Percentage of patients	No of steroid courses	Average number of steroid courses per patient	Number of admissions	Average number of admissions per patient
Better	18% (n=5)	1	0.2	1	0.2
Same	43% (n=12)	7	0.58	3	0.25
Worse	39% (n=11)	11	1	3	0.27