

Investigating socioeconomic and ethnic inequalities in Type 2 Diabetes Prevalence in the UK employing a logistic and decomposition model using data from the UK Household Longitudinal Survey 2009-2023

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Title: Investigating socioeconomic and ethnic inequalities in Type 2 Diabetes Prevalence in the UK: Using Data from the UK Household Longitudinal Survey 2009-2023

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Investigating socioeconomic and ethnic inequalities in Type 2 Diabetes Prevalence in the UK employing a logistic and decomposition model using data from the UK Household Longitudinal Survey 2009-2023

Abstract:

Background: Ethnic inequalities in type 2 diabetes (T2DM) disease burden are well documented in the UK. While considerable evidence exists on the effects of biological factors such as insulin resistance and behavioural determinants including diet and physical activity, important evidence gaps remain regarding the relative contribution of social determinants on T2DM disease burden. We explore the role of the social determinants of health on type 2 diabetes (T2DM) prevalence. Next, we investigate if these social determinants explained observed inequalities in T2DM prevalence between ethnic minority groups and the ethnic majority group in the UK.

Methods: Data came from the UK Household Longitudinal Survey from 2009-2023 (N=101,304). Estimated a logistic model of the relationship between ethnic minority status, the social determinants of health and prevalence of T2DM. Next, a non-linear decomposition approach estimated the impact of social factors on explaining observed difference in T2DM prevalence between ethnic minority groups and the ethnic majority group.

Results: Compared to the ethnic majority group (White British), the odds of T2DM were significantly higher among people identifying as Asian (OR = 2.24, 95% CI: 2.05–2.44), Black (OR = 1.47, 95% CI: 1.30 - 1.66), and Mixed Ethnicity (OR = 1.46, 95% CI: 1.20 - 1.77). Socioeconomic characteristics explain 58% and 21% of the observed variance in T2DM prevalence among identifying as Black and Asian respectively.

Conclusion: Policy needs to look beyond the healthcare sector and address broader structural factors such as the social determinants of health to reduce ethnic inequalities in T2DM. This is particularly important in supporting the NHS 10 year plan prevention agenda.

Keywords: *type 2 diabetes; UK; ethnic minority groups; UK Household Longitudinal Survey; decomposition*

Introduction

Diabetes is a leading cause of morbidity and mortality globally (1, 2). Type 2 diabetes mellitus (T2DM), which accounts for around 90% of diabetes cases in the UK (3) is rising rapidly, driven by increasing rates of obesity, sedentary lifestyles, and other modifiable risk factors (4). In the UK, minority ethnic groups (MEGs) - defined as non-dominant, numerically smaller population with distinct ethnic, linguistic or religious identities (5) bear a disproportionate burden of long-term health conditions such as T2DM compared to the White British population (6). South Asian individuals are over six times more likely, and Black individuals over three times more likely, to develop T2DM than their White British counterparts (7).

Biological factors, such as visceral fat distribution and insulin resistance (7, 8), and behavioural factors including diet and physical activity (9, 10), contribute to these disparities, but they do not fully explain the observed difference (11). Increasingly, attention has turned to the social determinants of health - “the conditions in which people are born, grow, live, work, and age” (12). Research (7, 13) shows a correlation between low income, a component of socioeconomic status and increased T2DM risk. Lower educational attainment is strongly associated with poorer health outcomes, including T2DM (14). Neighbourhood and environmental conditions further influence risk of developing T2DM with a higher prevalence rate in urban, low-income areas (15), areas with greater density of fast-food outlets (16) and lack of access to green space (10).

Systemic racism is when whole systems such as the political, legal, health care, economic, education systems are embedded with written or unwritten policies, entrenched practices, and established beliefs and attitudes that create, condone, and perpetuate inequities in outcomes (17). Systemic racism may increase risk of T2DM by increasing exposure to factors related to the social determinants of health which contribute to increased risk of developing T2DM.

There is a large body of evidence from the United States outlining a correlation between the social determinants of health such as income, educational attainment, and occupation on prevalence of T2DM in MEG populations (18,19). However, the history of racism and how this has been embedded within systems is different between the US and European countries such as the UK. Thus, we would not necessarily expect that systems would contribute to health inequalities in the same way. Context may be important for determining how systems may contribute to health inequalities. Many of the existing studies from the UK and internationally (20, 21, 22) look at individual components of the SDOH separately rather than considering the interdependence of these factors on risk of developing diabetes in MEG populations.

The Covid-19 pandemic highlighted ethnic health inequities in the UK with mortality among MEGs two to four times higher than White British people, which partly stemmed from higher prevalence of chronic conditions including T2DM (13). A cross-sectional analysis of Health Survey for England data linked both lower education and MEG status to higher rates of undiagnosed T2DM (23). A cross-sectional study of >100,000 NHS health check attendees in Birmingham found that deprivation independently predicted T2DM risk, with risk highest where deprivation and ethnic minority status coexisted (20). Similarly, analysis of ~500,000 UK Biobank participants showed that both deprivation and non-European ancestry independently increased T2DM risk, with deprivation exerting a proportionally greater effect among South

Asian and African ancestry groups (21). Longitudinal data from primary care records (~400,000 individuals) demonstrated that South Asian and Mixed-Race groups, as well as those in deprived areas, had higher progression rates from pre-diabetes to T2DM (22).

Despite growing recognition of these disparities, an important gap remains in understanding the extent to which T2DM burden is shaped by these social determinants. Addressing this evidence gap is particularly important to NHS 10 Year Health Plan titled “Fit for the future”, which aims at a shift from disease to prevention as part of health reform. Improved understanding of ethnic disparities in T2DM may inform more equitable prevention strategies, support the identification of high-risk population groups and contribute to the overall effort of addressing inequalities in health outcomes. The aim of our study is therefore, to investigate ethnic disparities in diabetes incidence and prevalence in the UK and if and how the social determinants of health explain these disparities.

Methods

We follow the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guidelines. We used data from waves 1-14 (2009-2023) of the UK Household Longitudinal Study (UKHLS), a nationally representative longitudinal survey that consists of approximately 40,000 households whose members are aged 16 and above. People are asked about a range of topics including their health, employment, neighbourhood, and ethnicity. Surveys are filled in online (24). The UKHLS sampling period for each survey wave is approximately 24 months (25).

We restrict our sample to people who responded to all relevant questions in at least one wave of data collection. We have data on 41,796 people and 101,304 observations across all the 15 years of data used in the analysis.

Outcome Measure

The main outcome variable is T2DM status, which is coded as 1 if the respondent reports being told by a doctor or health professional that they have T2DM within the past year, and 0 otherwise. If a respondent has reported yes to this question for subsequent waves the respondent will have a value of 1 for T2DM.

Explanatory Variables

the main explanatory variable is ethnicity. We created five dummy variables for different ethnic groups. The question asked to respondents is the same question used in the Census for England and Wales, but the ordering of ethnic groups is slightly different (25). In order to maintain large enough sample sizes to detect differences between minority ethnic groups and the majority ethnic group, we combine some ethnic groups. The Black ethnicity dummy includes people who consider themselves Black/Black British from Africa or the Caribbean. The Asian ethnicity dummy includes people who identify themselves as Asian/British Asian from: Pakistan, India, China, Bangladesh, and any other Asian background. The Mixed Ethnicity variable includes people who consider themselves: White and Black Caribbean, White and Black African, White and Asian or any other mixed background. The Other White ethnicity includes people who consider themselves from any other White background or gypsy or Irish Traveller. The base category for all the ethnicity variables are people who consider themselves White British or Irish (the majority ethnic group) (MG). Ethnicity is self-reported.

In all estimation models we include continuous variable for age, household size, and OECD equivalised household income. The index of multiple deprivation (IMD) provides a set of relative measures of deprivation for small geographies in England (lower super output areas - an area of approximately 1000-1500 which can vary in size depending upon population density) based upon the following seven domains: 1) income; 2) employment; 3) education, skills, and training; 4) health and disability; 5) crime; 6) barriers to housing and services; and 7) living environment. The measure is updated approximately every five years. In our analysis we utilised IMD from 2019 (26). IMD is divided into quintiles where quintile 1 are people living in the 20% most deprived area and people in quintile 5 are living in the 20% least deprived quintile. In our estimation models, we include a binary variable that is equal to one if a person is living in one of the 20% most deprived quintile and is equal to zero otherwise. We include binary variables for educational attainment: 1) no qualifications; 2) basic qualifications; 3) some higher qualifications; where the base category is if the person is educated to degree level or higher. The employment variable is binary, with a value of 1 if the respondent is employed and 0 if unemployed/economically inactive. Place of residence is a binary variable with value of 0 for rural and 1 for urban area. Binary variables for type of housing tenure: 1) private rental sector; 2) social rental sector; where the base category for both of the housing tenure variables is owning one's home or having a mortgage on it.

In some model specifications we include binary variables for region: 1) North East; 2) North West; 3) Yorkshire and Humber; 4) East Midlands; 5) West Midlands; 6) East of England; 7) South East; 8) South West; where Greater London is the base category. Finally binary variables for marital status: 1) single; 2) separated/divorced; where the base category for the marital status variables is cohabiting/legally married.

Estimation Approach

We start with descriptive statistics where we estimate the means and standard deviations of all explanatory variables separately by people who have been diagnosed with T2DM and people who have not been diagnosed with T2DM. We use Stata software version 19 for all analyses.

Next, we estimate a multivariable logistic regression to identify the relationship between prevalence of T2DM, and factors related to the social determinants of health such as ethnicity, educational attainment, region of residence, OECD equivalised household income, type of housing tenure, employment status and area level deprivation. This is modelled as:

$$\log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots \dots \beta_n X_n$$

Where p is the probability of a person reporting of T2DM; $\left(\frac{p}{1-p}\right)$ is the odds of a T2DM outcome, β_0 is the intercept, $\beta_1, \beta_2, \beta_n$ are the regression coefficients, and X, X_2, X_n are the predictor variables.

Given that the outcome variable is categorical and binary, a logistic regression model is suitable. We perform a series of goodness-of-fit tests using the “fitstat” command in Stata to ensure that the data fits the model. These include pseudo R-squared to assess the amount of variance in the outcome variable explained by the model, AIC and BIC to assess predictive accuracy. We also assess potential multicollinearity among predictor variables using the variance inflation factor (VIF) values, with VIF values lower than 5 indicating no multicollinearity concerns.

A random effects logistic model is used to control for individual heterogeneity and the fact that we have data on the same people over time. Odds ratios are presented in the results table to ease interpretation, where an odds ratio greater than one suggests increased odds of T2DM and an odds ratio of less than one suggests a decreased odds of T2DM.

Building upon the findings from the main logistic model we employed a non-linear decomposition approach to identify the mediating effect of statistically significant social determinants of health on the observed gap in T2DM prevalence between the majority ethnic group and minority ethnic groups.

Results

Descriptive Statistics

Descriptive statistics for people with and without T2DM are shown in Table 1. Approximately 51% of the T2DM sample were women and 55% of the non-T2DM sample were women. Approximately 77% of the non-T2DM sample identified as White British ethnicity and 71% of the T2DM sample identified as White British.

People who identified as Asian ethnicity comprised 17% of the T2DM sample and 11% of the non- T2DM sample. People who identified as Black ethnicity are 6% of the T2DM sample and 5% of the non- T2DM sample. People who identified as “Other White” ethnicity comprised 4% of the T2DM sample and 2% of the non- T2DM sample. Approximately 52% of the non- T2DM sample was in employment and 38% of the T2DM sample was employed. More people in both the T2DM (17%) and non- T2DM sample (15%) lived in London than in other regions. The mean OECD equivalised income of the non- T2DM sample was 1.91 compared to 1.76 for the T2DM sample. 78% of the non- T2DM sample lives in an urban area and 82% of the T2DM sample lives in an urban area. Approximately 66% of the non- T2DM sample lived in a house with a mortgage or owned out right compared with 64% of the T2DM sample. 18% of the non- T2DM sample lives in social housing compared with 24% of the T2DM sample. Approximately 9% of the non- T2DM sample and 7% of the T2DM sample lives in the private rented sector. The average household size for the non- T2DM sample was just over 3 and it was 2.7 for the T2DM sample. The mean index of multiple deprivation was 2.87 for the non- T2DM sample and 2.61 for the T2DM sample.

Relationship between Ethnicity, Sociodemographic Characteristics and T2DM

Table 2 presents the odd ratios for the relationship between prevalence of T2DM and the social determinants of health. Ethnicity was strongly associated with increased odds of T2DM. In comparison to the White British population, people considering themselves to be Asian had an increased odds ratio of T2DM (OR = 2.24, 95% CI: 2.05–2.44), while people identifying as Black had an increased odds ratio of T2DM (OR = 1.47, 95% CI: 1.30 - 1.66), and those identifying as Mixed Ethnicity also had an increased odd ratio of T2DM (OR = 1.46, 95% CI: 1.20 - 1.77).

People identifying as White ethnicity but not MG did not significantly differ in the odds of T2DM (OR = 0.95, 95% CI: 0.81 - 1.13) compared to the MG population.

Local neighbourhood environment also played a significant role on risk of T2DM, with those living in the most deprived quintile of deprivation had an increased odds ratio of T2DM (OR = 1.29, 95% CI: 1.20 - 1.39). Those living in an urban area had a significantly higher odds of T2DM development in comparison to those living in a rural area (OR = 1.13, 95% CI: 1.04 - 1.23).

In comparison to those with degree-level education, there was an increased odds of T2DM among those with basic qualifications (OR=1.07, 95% CI: 1.00 - 1.15) and for those with no educational qualifications (OR=1.17, 95% CI: 0.84 - 1.62), though the odds ratio for those with no qualifications was not statistically significant. There was no difference in the odds for T2DM between those with some higher education and a higher education degree (OR= 0.99, 95% CI: 0.91 - 1.09). Employment was a protective factor, with those in employment having significantly lower odds of developing T2DM compared to unemployed or economically inactive (OR = 0.85, 95% CI: 0.80–0.91).

Housing tenure was significantly associated with the odds of T2DM prevalence. People living in social housing had a higher odds of developing T2DM in comparison to those who owned property/had a mortgage on their property (OR = 1.41, 95% CI: 1.31 - 1.52) whilst those in private rented accommodation also had increased odds of T2DM (OR = 1.21, 95% CI: 1.09 - 1.34) compared to those who owned/had a mortgage on their property.

Increasing age was associated with higher odds of T2DM (OR = 1.04, 95% CI: 1.04–1.05).

Factors Contributing to T2DM Risk Among Black and Asian Respondents

Building upon the findings in Table 2, we explore what factors explain the observed higher odds ratios in T2DM risk for people identifying as Black, Asian, or Mixed Ethnicity. We decompose the ethnicity odds ratios from the logistic regression in Table 2 to understand how much of the increased odds of developing T2DM for those from Black, Asian or Mixed Ethnicity can be explained by mediators related to structural inequalities that were statistically significant in Table 2: (1) living in the 20% most deprived area as measured by IMD; (2) living in a privately rented home; (3) having basic qualifications; and (4) living in an urban area. In Table 3, we explore observed gap in T2DM prevalence between those identifying as mixed ethnicity and those identifying as MG. The overall impact of the chosen mediators on explaining the observed difference in T2DM prevalence between those identifying as mixed race and White British is - 9.49%. Therefore, these mediators do not explain the observed difference in odds ratios for

those identifying as mixed ethnicity compared to those identifying as MG. In Table 4, we explore the observed gap in T2DM prevalence between those identifying as Black ethnicity and those identifying as MG. Living in the most deprived area has the largest total impact on the confounding of the mediators at 48%, followed by having only basic qualifications, 8% and living in an urban area, 5%. Living in private rental sector has a protective effect -1.1%. The total impact of the confounders on explaining the observed difference in diabetes prevalence between people identifying as Black ethnicity and those MG is approximately 58%. In Table 5, we explore the observed gap in T2DM prevalence between those identifying as Asian ethnicity and those identifying as White British ethnicity. Similar to Table 4, living in the most deprived area has the largest total impact on the confounding of mediators at approximately 15%, followed by having basic qualification at approximately 5% and living in private rented accommodation at approximately 1%. In Table 5, living in an urban area has a suppressor effect of -0.04%. The total impact of the confounders on explaining the observed difference in T2DM prevalence between people identifying as Asian ethnicity and those of MEG is approximately 21%.

Discussion

We build on the literature exploring ethnic inequalities in T2DM prevalence (27,28,29) by investigating ethnic disparities in T2DM prevalence in the UK and if and how the social determinants of health explain these ethnic disparities. We find that people identifying as mixed ethnicity, Black ethnicity and Asian ethnicity have significantly higher prevalence of T2DM. These findings are consistent with much of the literature in this area both in the UK and internationally (9, 11, 14, 15, 20). Further results show that area level deprivation is the most important mediator explaining the observed difference in prevalence between White British and those identifying as Black or Asian ethnicity. For those identifying as Black ethnicity, socioeconomic characteristics explain 58% of the observed gap in T2DM prevalence compared to those identifying as White British. Socioeconomic characteristics explain 21% of the observed gap in T2DM prevalence for those identifying as Asian compared to White British. Different socioeconomic factors play a heterogeneous role in explaining inequalities in T2DM prevalence by ethnicity. Differences in the political system, health system, history and root causes of racism suggest that findings from the US cannot be directly compared to that of the UK (30).

Policy Implications:

Area level deprivation explains most of the inequalities in T2DM between ethnic minority and MG groups reflecting a deficit in access to health promoting assets such as green space, transport, education and skills training, income, crime and poor health. This suggests that policies that promote a healthy environment increasing access to green space, reducing crime, increasing opportunities for active travel and local amenities may contribute to reducing ethnic inequalities in T2DM prevalence. This is particularly timely to consider in light of revisions to the National Planning Policy Framework (31) and the UK government's house building targets (32). New housing development should be designed to support healthy inclusive behaviours and ensure that people living in these new housing developments have access to public transport, green space and access to education and training to reduce ethnic inequalities in T2DM.

Strengths and Weaknesses

Our paper has several strengths. We utilise a large nationally representative dataset with an ethnic minority booster sample that contains information on people over time employing a robust methodology. We make a valuable contribution to the literature by identifying potential mechanisms explaining observed ethnic inequalities in T2DM generating actionable solutions to reducing ethnic health inequalities in T2DM. Our study has some weaknesses. We rely on self-reported measures for T2DM, ethnicity and the social determinants of health which could result in self-reported measurement bias. Because of small sample sizes we combine some ethnicity groups such as people who identify themselves as Asian from Pakistan, India, China, Bangladesh, and any other Asian background which may mask the different experiences and risks of T2DM for these groups. Our sample is not weighted and may not necessarily be nationally representative.

Conclusion

Our findings show that social factors including housing, education, place of residence (i.e. urban or rural), and overall deprivation significantly explain the disproportionate T2DM disease burden among minority ethnic groups in the UK. We therefore recommend that policies aimed at preventing disease and inequality look beyond the health sector to reduce ethnic inequalities in T2DM. Particularly, the quest of the NHS to drive a shift from illness management to prevention need to focus on these non-clinical drivers.

Declarations:

Ethics Approval and Consent to Participate: The University of Essex Ethics Committee has approved all data collection on Understanding Society main study and innovation panel waves.

Consent for publication: Not applicable

Availability of data and materials: The data that support the findings of this study are available from the UK Data Archive but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available

Competing interests: The authors declare that they have no competing interests

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Authors' contributions: HB, RL and FMB developed the research idea. HB cleaned the data, undertook the analysis and drafted the manuscript. FMB and RL commented on the manuscript. All authors read and approved the final manuscript

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Table 1: *Characteristics of study sample with and without T2DM*

Variable	Non-T2DM			T2DM		
	Obs	Mean	SD	Obs	Mean2	SD2
Female	117,081	0.55	0.50	9,584	0.51	0.50
White British	116,969	0.77	0.42	9,581	0.71	0.45
Other White	116,969	0.04	0.19	9,581	0.02	0.15
Mixed race	116,969	0.02	0.14	9,581	0.02	0.13
Asian	116,969	0.11	0.32	9,581	0.17	0.38
Black	116,969	0.05	0.22	9,581	0.06	0.24
Degree-level education	104,502	0.29	0.45	9,252	0.22	0.42
A-level education	117,081	0.13	0.34	9,584	0.11	0.31
GCSE education	117,081	0.27	0.44	9,584	0.22	0.41
No formal education	117,081	0.02	0.12	9,584	0.01	0.12
Employed	117,038	0.52	0.50	9,578	0.38	0.49
North East	117,013	0.04	0.19	9,582	0.04	0.19
North West	117,013	0.10	0.31	9,582	0.12	0.33
Yorkshire & Humber	117,081	0.08	0.28	9,584	0.09	0.29
East Midlands	117,081	0.07	0.26	9,584	0.08	0.26
West Midlands	117,081	0.09	0.28	9,584	0.11	0.31
East England	117,081	0.08	0.28	9,584	0.08	0.29
London	117,081	0.15	0.35	9,584	0.17	0.38
South East	117,081	0.12	0.32	9,584	0.10	0.30
South West	117,081	0.08	0.27	9,584	0.08	0.26
Wales	117,081	0.06	0.23	9,584	0.05	0.22
Scotland	117,081	0.08	0.27	9,584	0.06	0.23
North Ireland	117,081	0.06	0.23	9,584	0.03	0.174
Urban	116,996	0.78	0.42	9,582	0.82	0.39
Household income (OECD)	116,910	1.91	0.67	9,568	1.76	0.69
Mortgage/Own on home	116,553	0.66	0.47	9,540	0.64	0.48
Social rent	116,553	0.18	0.383	9,540	0.24	0.427
Private rent	116,553	0.09	0.29	9,540	0.07	0.26
Household size	117,081	3.03	1.55	9,584	2.69	1.58
IMD	93,939	2.87	1.42	8,253	2.61	1.40

Table 2: Odds Ratios for Factors Associated with T2DM from Multivariable Logistic Regression

VARIABLES	Odds Ratio	95% CI
Black ethnicity	1.47***	1.30 - 1.66
Asian Ethnicity	2.30***	2.11 - 2.51
Mixed Race Ethnicity	1.46***	1.20 - 1.77
Other White Ethnicity	0.95	0.81 - 1.13
Age	1.04***	1.04 - 1.05
No qualifications	1.17	0.84 - 1.62
Basic Qualifications	1.07**	1.00 - 1.15
Some Higher Qualifications	0.99	0.91 - 1.09
Employed	0.85***	0.80 - 0.91
Northeast	0.95	0.81 - 1.11
Northwest	1.06	0.95 - 1.17
Yorkshire & Humber	1.01	0.90 - 1.13
East Midlands	1.02	0.91 - 1.15
West Midlands	1.05	0.94 - 1.16
East of England	0.97	0.86 - 1.09
Southeast	0.89**	0.80 - 0.99
Southwest	0.98	0.87 - 1.11
Single	0.82***	0.75 - 0.90
Separated/Divorced	1.07	0.97 - 1.17
Urban	1.13***	1.04 - 1.23
OECD equivalised household income	1.11	0.91 - 1.37
Private Rental	1.21***	1.09 - 1.34
Social Rental	1.41***	1.31 - 1.52
Household Size	0.95	0.87 - 1.04
IMD 20% most deprived	1.29***	1.20 - 1.39
Constant	0.01***	0.01 - 0.02
Observations	101,304	

Notes: *** p<0.01, ** p<0.05, * p<0.1. Base category for educational qualifications is degree or higher. Base category for regions is London. Base category for marital status is married/cohabiting. Base category for urban is rural. Base category for housing tenure type is home is owned/mortgage. Base category for IMD 20% most deprived is living in quintile 2-5 (40% most deprived to 20% least deprived).

Table 3: Decomposition of difference in likelihood of T2DM Mixed Race and White British

Mediators	Indirect Effect	Standard Error	Contribution to indirect effect	How much of total effect is from the confounding of the mediators
Private Rented	-0.01	0.002	-49.65	4.71
Most deprived	0.03	0.004	183.02	-17.36
Basic Qualifications	-0.01	0.003	-72.76	6.90
Urban	0.01	0.004	39.38	-3.74

Table 4: Decomposition of difference in likelihood of T2DM Black Ethnicity and White British

Mediators	Indirect Effect	Standard Error	Contribution to indirect effect	How much of total effect is from the confounding of the mediators
Private Rented	-0.001	0.001	-1.89	-1.11
Most deprived	0.07	0.01	78.52	46.06
Basic Qualifications	0.01	0.002	14.43	8.46
Urban	0.01	0.01	8.94	5.24

Table 5: Decomposition of difference in likelihood of T2DM Asian Ethnicity and White British

Mediators	Indirect Effect	Standard Error	Contribution to indirect effect	How much of total effect is from the confounding of the mediators
Private Rented	0.01	0.001	7.92	1.69
Most deprived	0.07	0.01	71.76	15.30
Basic Qualifications	0.02	0.002	20.52	4.37
Urban	-0.0002	0.01		-0.04