

Ethnic differences in diet, physical activity and obesity

Vanessa Higgins & Angela Dale
Centre for Census & Survey
Research



Overview

- Aims of project
- Literature
- Exploratory analysis
- Models

Aims of the project

- Use Health Survey for England from 1999 and 2004 (ethnic boosts)
- Analyse ethnic differences in three outcomes:
 - Obesity
 - Diet
 - Physical activity
- Explanatory variables such as gender, age, generation, educational level, type of neighbourhood, length of time since immigration, (diet and physical activity for obesity)
- Household data - parental diet, physical activity, obesity and other characteristics
- Assess change between 1999 and 2004



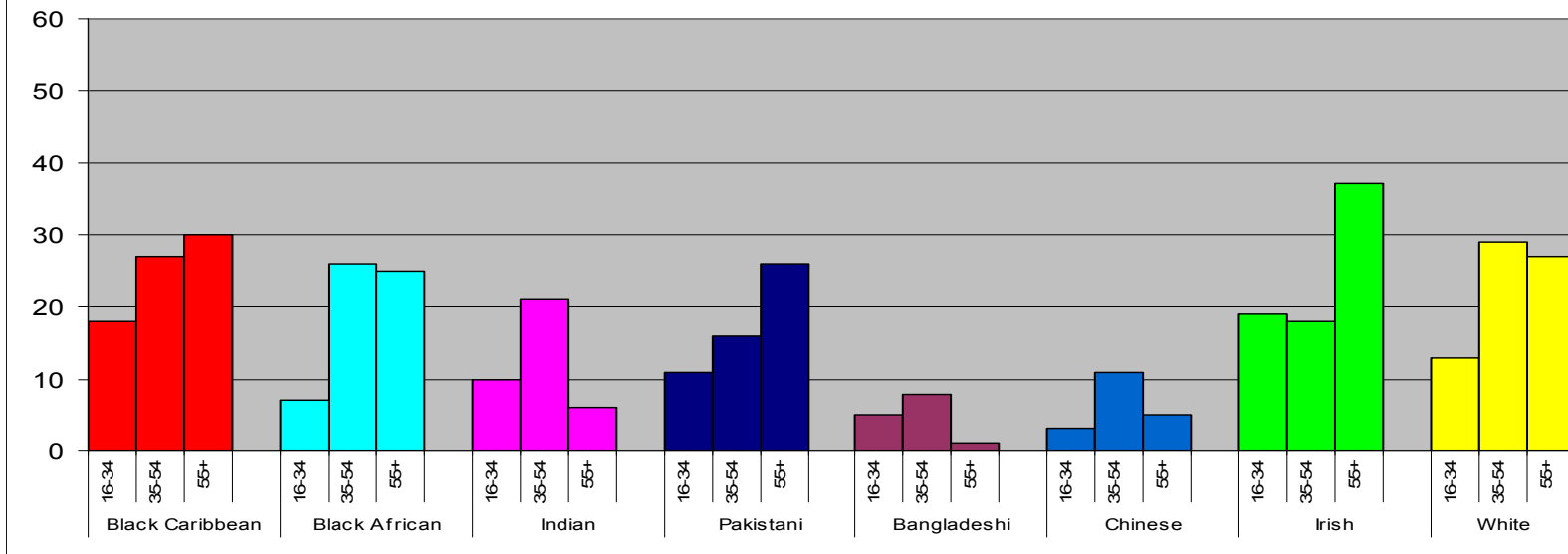
Background

- In England, around a quarter of all adults are obese (2006 HSE data)
- Government estimates that without action this will rise to 60% by 2050
- Children – 16%, estimated rise to 25% by 2050
- Obesity linked to increased risks of diabetes, heart disease, cancer
- Government strategies
 - “Healthy Weight, Healthy Lives”, Jan 2008. Identifies 5 areas for tackling excess weight including promotion of healthy food and physical activity
 - Diet (5 a day; food labelling; restrictions on advertising to children; school-meals)
 - Physical activity guidelines and strategies (5*30mins moderate) (Physical Activity Plan 2005 ; Game plan 2002)
- Some recognition of cultural/ethnic differences in these strategies but need more

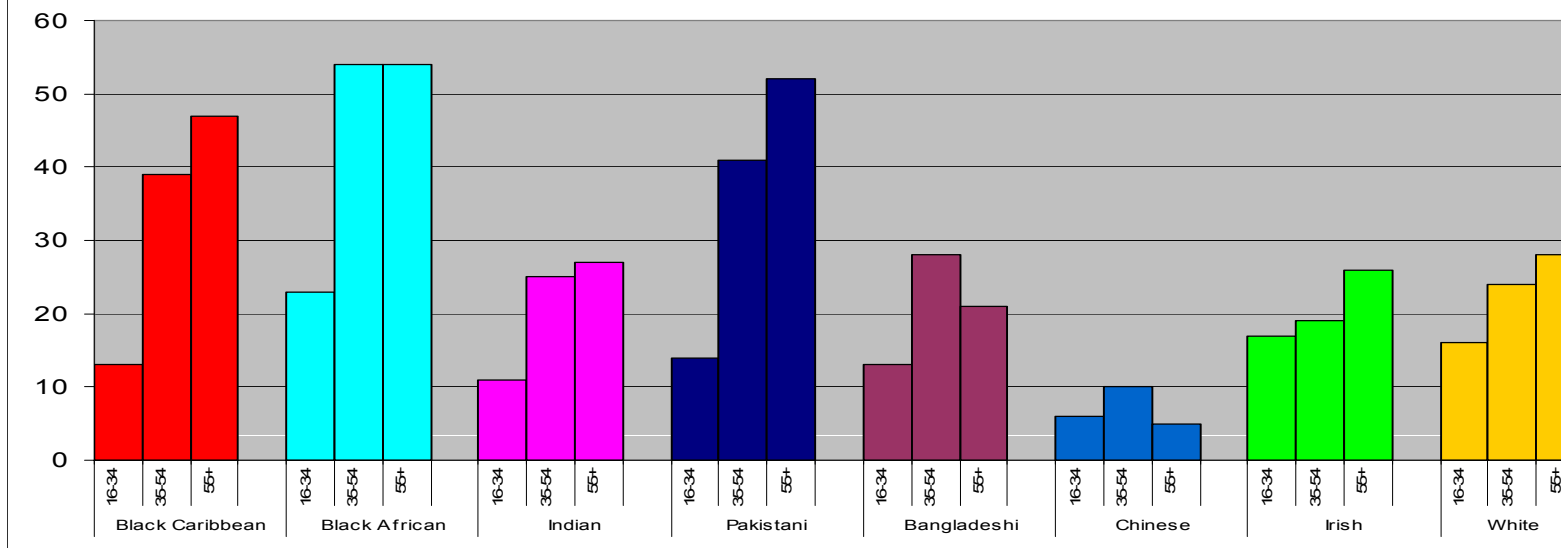
Literature

- Measure of obesity
- Healthier diet among ethnic minorities
- Lower levels of physical activity for some ethnic groups
- Why are we seeing these differences?
 - Cultural beliefs (e.g. significance placed on food, eating together as family, cultural barriers to physical activity)
 - Body image
 - Concept of physical activity
 - Migration
 - Socio-economic confounders

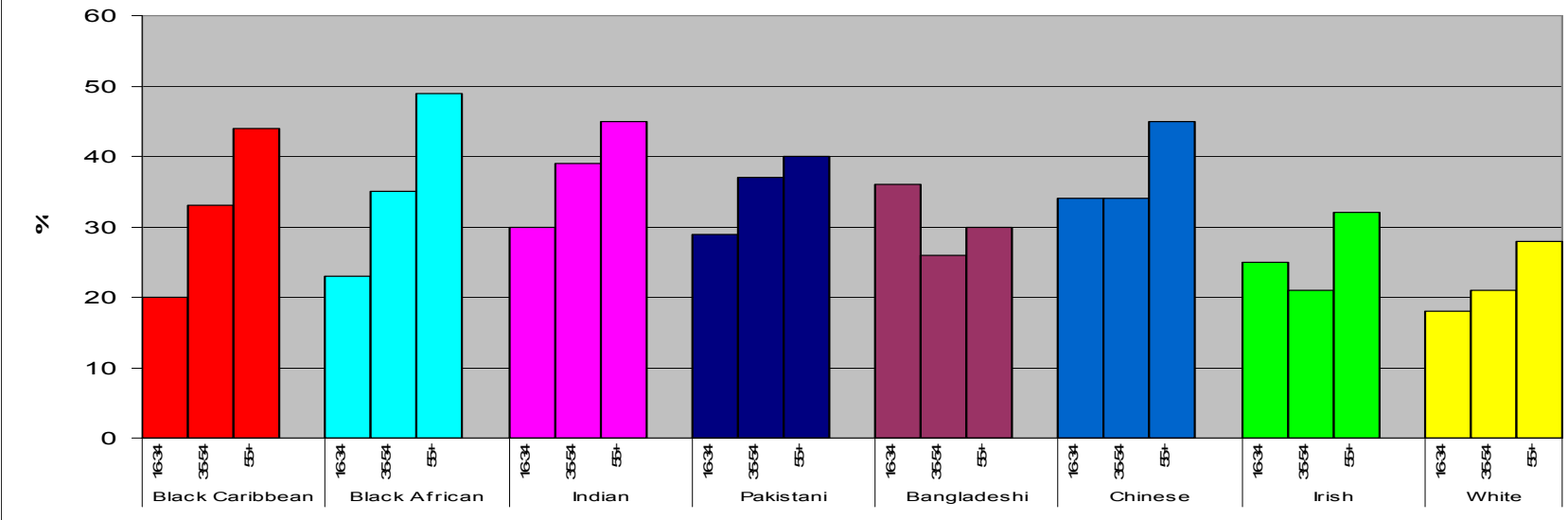
Obesity by agegroup by ethnic group - males age 16+



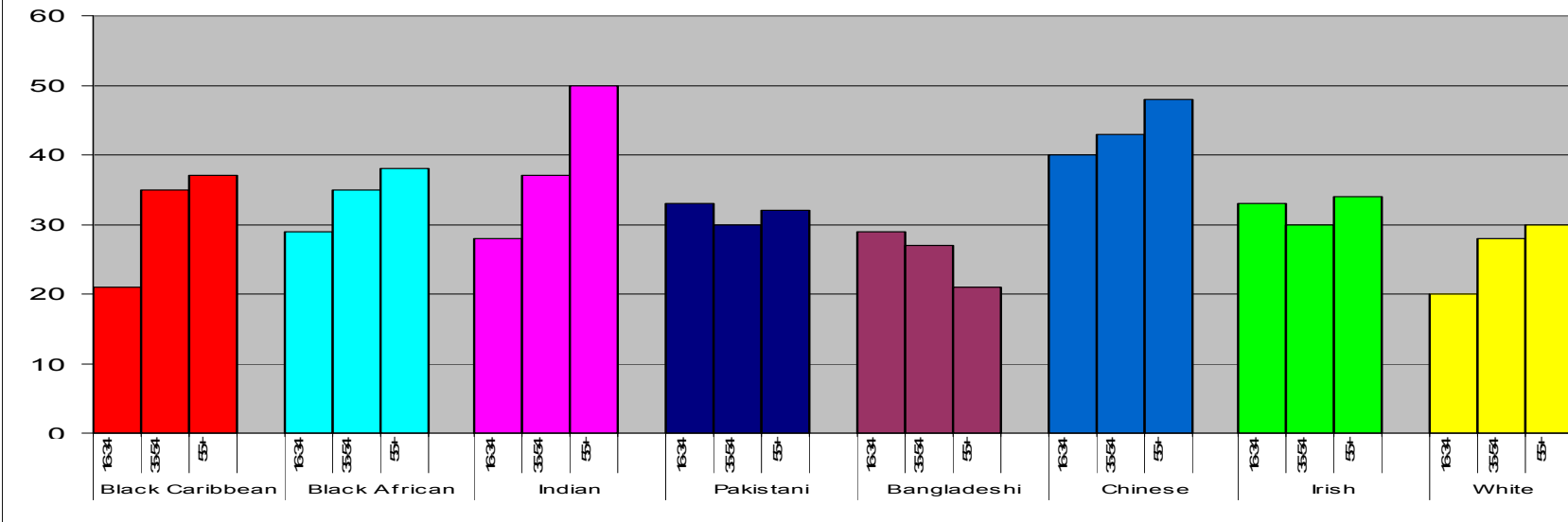
Obesity by age group by ethnic group - females age 16+



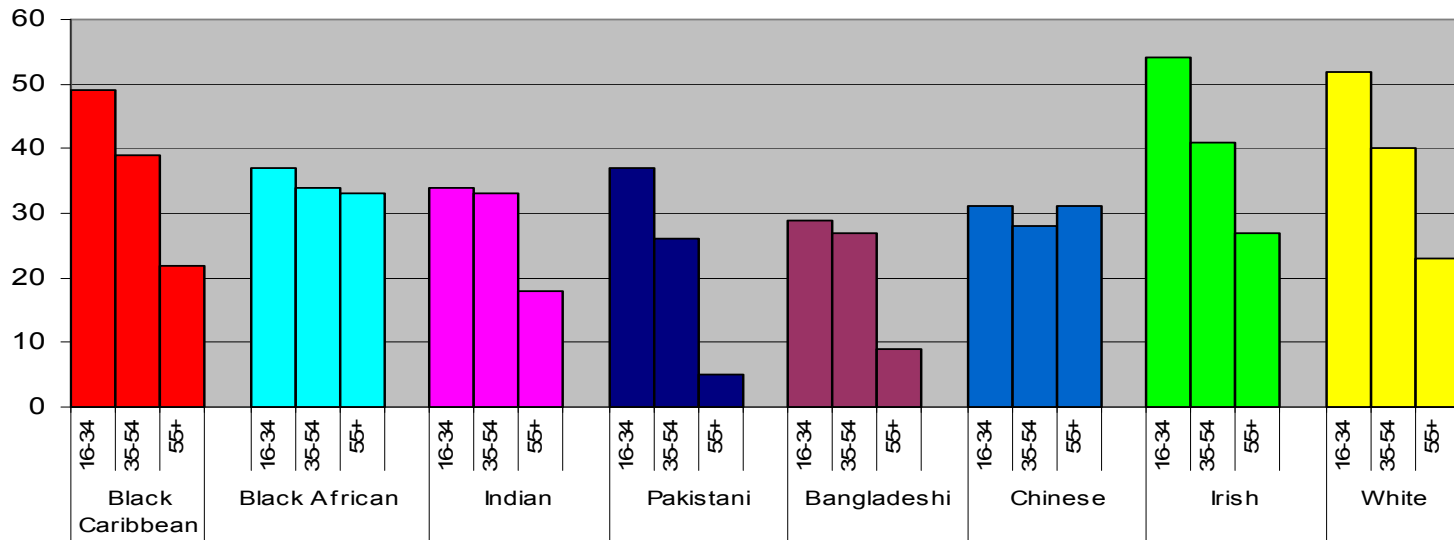
% eating 5-a-day by agegroup by ethnic group - males aged 16+



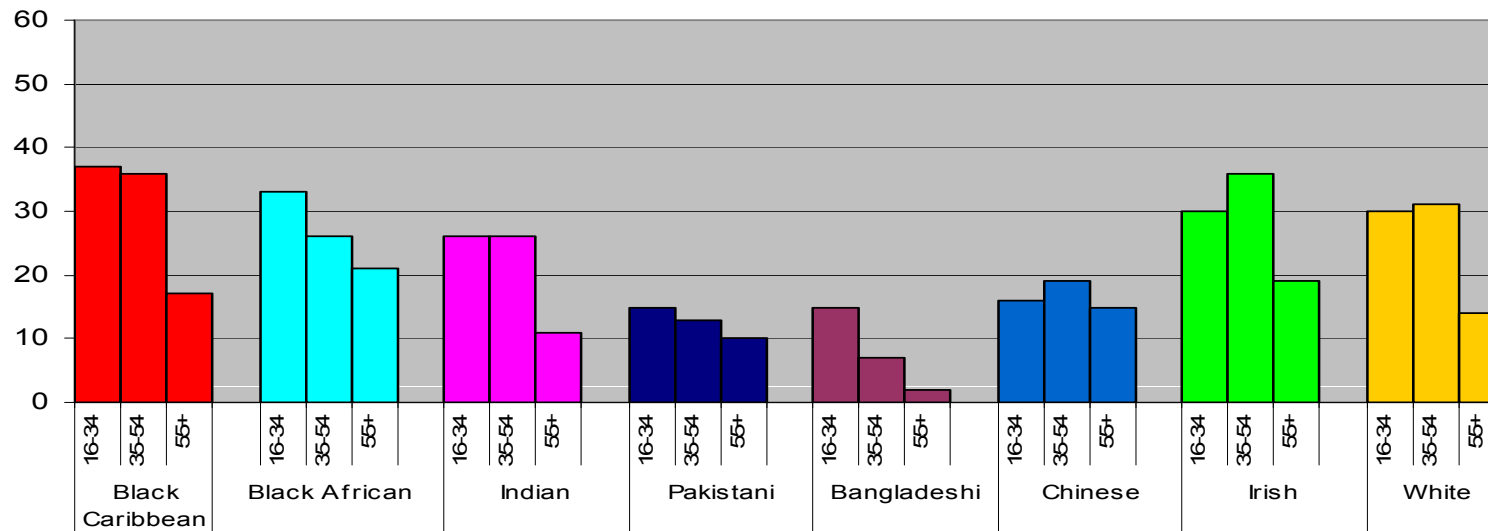
% eating 5-a-day by age group and ethnic group - females age 16+



% meeting physical activity guidelines by agegroup by ethnic group - males age 16+



% meeting physical activity guidelines by agegroup by ethnic group - females age 16+



Logistic regression: variables

Stage 1 : Age

Sex

Ethnic group

Stage 2 : Migrant status

Highest qualification

Economic status

Equivalised income tertiles

Urban indicator

IMD quintiles

This area has good local transport

This area has good leisure facilities for people like me (obesity and physical activity models)

Ease of getting to supermarket (obesity and five-a-day models)

Limiting longstanding illness (physical activity model)

Stage 3 : Meeting physical activity guidelines (obesity model)

Eating 5 day (in obesity model)

Five-a-day (Adults)		Odds	Odds
Age		1.01	1.02
Sex (male)	Female	1.19	1.34
Ethnic groups (White)	Black Caribbean	1.45	1.49
	Black African	1.56	<i>1.35</i>
	Indian	1.85	1.43
	Pakistani	1.64	1.90
	Bangladeshi	1.45	1.95
	Chinese	2.16	1.63
	Irish	1.26	<i>1.04</i>
Migrant status (GB born)	Adult migrant		1.65
	Child migrant		<i>0.97</i>
Highest qualification (Degree)	Higher education below degree		0.73
	A-level equiv		0.75
	O-level/CSE/Foreign/other equiv		0.51
	No qualifications		0.45
Equivilised income tertiles (Highest tertile)	Middle income		0.60
	Lowest income		0.66
IMD quintiles (least deprived)	IMD (4)		0.74
	IMD (5) most deprived		0.69

Physical activity (Adults)		<i>Odds</i>	<i>Odds</i>
Age		0.97	0.98
Sex (Male)	Female	0.55	0.60
Ethnic groups (White)	Black Caribbean	1.10	1.26
	Black African	0.80	0.84
	Indian	0.70	0.71
	Pakistani	0.44	0.52
	Bangladeshi	0.36	0.48
	Chinese	0.53	0.54
	Irish	1.21	1.13
Highest qualification (Degree)	Higher education below degree		1.46
	A-level equiv		1.52
	O-level/CSE/Foreign/other equiv		1.40
	No qualifications		1.56
Economic status (In employment)	Unemployed		0.69
	Retired		0.46
	Other economically inactive		0.48
Illness (No longstanding illness)	Limiting longstanding illness		0.64
	Non-limiting longstanding illness		1.07

Obesity (Adults)		Odds	Odds	Odds
Age		1.01	1.02	1.02
Sex (Male)	Female	0.99	0.96	0.92
Ethnic groups (White)	Black Caribbean	1.43	1.47	1.49
	Black African	1.58	1.77	1.76
	Indian	0.74	0.75	0.72
	Pakistani	1.08	1.03	0.97
	Bangladeshi	0.52	0.43	0.39
	Chinese	0.27	0.34	0.32
	Irish	0.97	0.88	0.88
Highest qualification (Degree)	Higher education below degree		1.24	1.29
	A-level equiv		1.22	1.27
	O-level/CSE/Foreign/other equiv		1.36	1.42
	No qualifications		1.52	1.62
Economic status (In employment)	Unemployed		0.75	0.72
	Retired		0.48	0.45
	Other economically inactive		0.88	0.83
Equivilised income tertiles (Highest tertile)	Middle income		1.28	1.29
	Lowest income		1.21	1.21
Physical activity (No)	Yes			0.69
Eating 5 day (No)	Yes			1.17

Summary

- Exploratory analysis: ethnic differences in BMI obese, fruit and vegetable intake and physical activity – varies with age and sex
- Models:
 - Fiveaday: odds increase with age, female, most ethnic minority grps, adult migrant, degree, higher income, less deprived area
 - Physical Activity: odds increase for younger, male, white, lower level qualifications, employed, no limiting longstanding illness
 - Obesity: odds increase for BC, BA, lower qualifications, lower income, *retired*, those not meeting physical activity guidelines
- Five-a-day not significant indicator of obesity when controlling for other variables
- There's a lot more to understand (separate sex and ethnic models, different outcome measures)
- Household data for parental influences on children
- Change between 1999 and 2004



Thank you!



Our focus groups

- c.25 young women, Pakistani, Muslim, born here or came as child
- **Diet**
 - Generational differences (parents more traditional)
 - Traditional values (fresh food, cooking at home, eating together as family) still important
 - Local market rather than supermarket
 - Schools healthy eating programmes influential to children
- **Physical activity**
 - Generational differences (car access and use for convenience, mother's generation didn't drive)
 - Women restricted from physical sports by parents (puberty). Not appropriate for girls to run around outside. No generational change.
 - Local initiative for girls-only outdoor space unsuccessful
 - Swimming still problem for girls (mixed sex, clothing). Women's sessions popular. Female-only gym popular
 - Dancing very popular but female only

Five-a-day (Adults) – original (leisure included and all quals separate)		Odds	Odds
Age		1.01	1.02
Sex (male)	Female	1.19	1.32
Ethnic groups (White)	Black Caribbean	1.45	1.48
	Black African	1.56	<i>1.33</i>
	Indian	1.85	1.42
	Pakistani	1.64	1.91
	Bangladeshi	1.45	1.92
	Chinese	2.16	1.63
	Irish	1.26	<i>1.04</i>
Migrant status (GB born)	Adult migrant		1.63
	Child migrant		<i>0.96</i>
Highest qualification (Degree)	Higher education below degree		0.73
	A-level equiv		0.75
	O-level equiv		0.54
	CSE equiv		0.38
	Foreign/other		0.51
	No qualifications		0.44
Equivilised income tertiles (Highest tertile)	Middle income		0.61
	Lowest income		0.66
IMD quintiles (least deprived)	IMD (4)		0.74
	IMD (5) most deprived		0.69

Physical activity (Adults) - with orgs13		<i>Odds</i>	<i>Odds</i>
Age		0.97	0.98
Sex (Male)	Female	0.55	0.61
Ethnic groups (White)	Black Caribbean	1.10	1.27
	Black African	0.80	0.91
	Indian	0.70	0.76
	Pakistani	0.44	0.54
	Bangladeshi	0.36	0.54
	Chinese	0.53	0.54
	Irish	1.21	1.15
Highest qualification (Degree)	Higher education below degree		1.49
	A-level equiv		1.62
	O-level equiv		1.48
	CSE equiv		1.64
	Foreign/other		0.87
	No qualifications		1.71
Economic status (In employment)	Unemployed		0.71
	Retired		0.48
	Other economically inactive		0.50
Illness (No longstanding illness)	Limiting longstanding illness		0.69
	Non-limiting longstanding illness		1.07
Member of sports club, gym, exercise or dance club (No)	Yes		1.77

Physical activity (Adults) – dropped orgs13		<i>Odds</i>	<i>Odds</i>
Age		0.97	0.98
Sex (Male)	Female	0.55	0.61
Ethnic groups (White)	Black Caribbean	1.10	1.287
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Highest qualification (Degree)	Higher education below degree		1.45
	A-level equiv		1.52
	O-level equiv		1.40
	CSE equiv		1.48
	Foreign/other		1.01
	No qualifications		1.53
Economic status (In employment)	Unemployed		0.69
	Retired		0.46
	Other economically inactive		0.47
Illness (No longstanding illness)	Limiting longstanding illness		0.63
	Non-limiting longstanding illness		1.07

Obesity (Adults) – original with all quals separate		Odds	Odds	Odds
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	Pakistani	<i>1.08</i>	<i>1.05</i>	<i>0.98</i>
	Bangladeshi	0.52	0.44	0.40
	Chinese	0.27	0.34	0.32
	Irish	<i>0.97</i>	<i>0.89</i>	<i>0.89</i>
Highest qualification (Degree)	Higher education below degree		<i>1.25</i>	<i>0.78</i>
	A-level equiv		<i>1.21</i>	<i>1.3</i>
	O-level/CSE/Foriegn/other equiv		1.29	<i>1.27</i>
	CSE equiv		1.65	1.36
	Foreign/other		<i>1.23</i>	1.75
	No qualifications		1.55	<i>1.28</i>
Economic status (In employment)	Unemployed		<i>0.76</i>	<i>0.72</i>
	Retired		0.48	0.46
	Other economically inactive		<i>0.9</i>	<i>0.84</i>
Equivilised income tertiles (Highest tertile)	Middle income		1.26	1.28
	Lowest income		<i>1.21</i>	1.22
Physical activity (No)	Yes			0.69
Eating 5 day (No)	Yes			<i>1.17</i>

Ethnicity

- To which of these groups do you consider you belong?
 - White
 - Mixed ethnic group
 - Black or Black British
 - Asian or Asian British
 - Any Other group

- White → *were you or either of your parents born in Ireland?*
- Black → *what is your cultural background?* (caribbean, african or other)
- Asian → *what is your cultural background?*
(Indian, Pakistani, Bangladeshi, Indian Caribbean, African-Indian, Other)
- Mixed → *were you or either of your parents born in Ireland?*
→ *what is your cultural background?* (8 categories 'white and xxxx', plus other). Coded to minority group.
→ If other then *what is your (natural) mother's cultural background?*
→ If other then *what is your (natural) mother's cultural background?*
- Other → *what is your cultural background?*
(chinese, japanese, phillippino, vietnamese, other)
- If still 'other' at any of the above then *do you have family origins which are (BC, BA etc)?*
- If still 'other' then describe and coded back. If more than one answer e.g. BC and Bangladeshi then *what is your mother's cultural background (BC, BA etc)? If still other then classed as 'other' (n=143)*

Examples

- Polish - depends on self-classification at first question - white or other
- Iranian – other (would end up at other whichever route took)
- Black Other – other (if not in BA or BC)
- Possible to look at black other, asian other, white other, mixed