

Tables in the project

Table 1: Means, percentages, and 95 percent CIs of the characteristics by latent class memberships in the UK adults (NDNS RP 2008/09-2015/16, sample size = 6155).

Variables	Latent class = 1	Latent class = 2	P value *
Total (%)	66.4 (64.8 , 68.1)	33.6 (31.9 , 35.2)	
Countries (%)			
England	83.1 (80.9 , 85.1)	85.4 (83.0 , 87.5)	0.203
Northern Ireland	3.0 (2.3 , 3.9)	2.3 (1.7 , 3.1)	
Scotland	8.9 (7.2 , 11.0)	7.7 (5.9 , 9.9)	
Wales	5.0 (4.1 , 6.0)	4.6 (3.6 , 6.0)	
Age (years)	47.3 (46.4 , 48.2)	50.1 (49.1 , 51.1)	< 0.001
Sex (%)			
Men	47.3 (45.2 , 49.5)	51.0 (48.1 , 53.9)	0.048
Women	52.7 (50.5 , 54.8)	49.0 (46.1 , 51.9)	
Survey years (%)			
1	13.1 (10.8 , 15.8)	15.0 (12.1 , 18.5)	0.365
2	12.3 (10.1 , 14.9)	11.9 (9.4 , 14.2)	
3	12.0 (9.8 , 14.8)	10.4 (8.2 , 13.1)	
4	13.2 (10.9 , 16.0)	11.4 (9.0 , 14.2)	
5	13.0 (10.8 , 15.7)	13.9 (11.1 , 17.3)	
6	12.0 (9.9 , 14.4)	11.1 (8.8 , 13.9)	
7	12.3 (10.1 , 14.9)	13.5 (10.9 , 16.7)	
8	12.0 (9.9 , 14.5)	12.8 (10.3 , 15.8)	
BMI (kg/m ²)	27.2 (26.9 , 27.5)	27.7 (27.5 , 28.1)	0.007
WC (cm)	92.6 (91.9 , 93.3)	94.2 (93.1 , 95.2)	0.013
Smoking status (%)			
Current	19.8 (18.2 , 21.4)	23.8 (21.3 , 26.5)	< 0.001
Ex-smoker	22.5 (20.8 , 24.2)	28.0 (25.4 , 30.7)	
Never	57.8 (55.7 , 59.8)	48.2 (45.3 , 51.1)	
Current drinking status (%)			
Yes	23.1 (21.3 , 25.1)	11.1 (9.5 , 13.0)	< 0.001
Hypertension (%) †			
Yes	27.4 (25.0 , 29.9)	32.6 (29.3 , 36.1)	0.012
Total energy intake (KJ)	7425.7 (7323.7 , 7527.8)	8149.9 (7997.3 , 8302.7)	< 0.001
Carbohydrate intake (g)	226.0 (222.8 , 229.3)	210 (206.1 , 213.9)	< 0.001
Carbohydrate percent (%) ‡	48.3 (48.0 , 48.6)	40.9 (40.6 , 41.3)	< 0.001
Glucose (mmol/l)	5.13 (5.09 , 5.17)	5.17 (5.11 , 5.22)	0.292
A1C (%)	5.49 (5.47 , 5.52)	5.47 (5.44 , 5.51)	0.264
DM §	4.1 (3.1 , 5.3)	5.9 (4.3 , 8.0)	0.061
Physical activity (hours/day) ¶	1.51 (1.39 , 1.63)	1.64 (1.45 , 1.82)	0.244

Note:

Abbreviations: CI, confidence intervals; NDNS RP, national dietary and nutrition survey rolling programme; BMI body mass index; WC, waist circumference; A1C, haemoglobin A1c; DM, diabetes mellitus.

Variables from the blood tests (glucose and A1C) are weighted by blood sample weights, the others are weighted by individual weights.

Glucose and A1C levels are estimated in subgroups of people without diabetes.

* For continuous variables, the F test was used to determine differences between latent classes. For categorical variables, differences between latent classes were assessed using the adjusted Pearson Chi-2 test for survey data.

† Hypertension was defined as either systolic blood pressure \geq 140 mmHg or diastolic blood pressure \geq 90 mmHg, or under treatment for hypertension.

‡ Carbohydrate percent indicates the percentage of energy from carbohydrate in total energy intake

§ DM was defined by A1C $>$ 6.5%.

¶ Physical activity was calculated as mean time spent at moderate or vigorous physical activity during the survey.

Table 2: Level 1 class selection. (All data, n = 6155, 24483 data points)

N of classes	N of free parameters	log-likelihood	AIC	BIC	aBIC	Entropy	Lo-Mendel-Rubin LRT
1	48	-372017.3	744130.6	744519.7	744367.1	–	–
2	97	-368913.7	738021.4	738807.7	738499.4	0.777	< 0.0001
3	146	-366665.0	733621.9	734805.4	734341.4	0.666	< 0.0001
4	195	-365528.6	731447.1	733027.7	732408.0	0.658	0.8478
5	244	-364901.2	730290.3	732268.1	731492.7	0.648	0.7602
6	293	-363641.8	727869.5	730244.5	729313.4	0.701	0.7632
7	342	-362789.9	726263.7	729035.9	727949.0	0.729	0.7702
8	391	-362047.9	724877.9	728047.2	726804.6	0.737	0.8261

Note:

Abbreviation: N, number; AIC, Akaike information criterion; BIC, Bayesian information criterion; aBIC, adjusted BIC;

Entropy, a pseudo-r-squared index; Lo-Mendel-Rubin LRT, likelihood ratio test comparing q classes models with

q-1 classes models.

Table 3: Means, percentages, and 95 percent CIs of the characteristics by latent class memberships in the UK adults (NDNS RP 2008/09-2015/16, sample size = 6155).

Variables	Latent class = 1	Latent class = 2	Latent class = 3	P value *
Total (%)	28.4 (26.8, 30.1)	7.0 (6.2, 7.9)	64.6 (62.9, 66.2)	
Countries (%)				
England	81.4 (78.5, 84.0)	87.5 (82.9, 91.0)	84.6 (82.5, 86.4)	0.004
Northern Ireland	3.9 (2.9, 5.1)	0.6 (0.3, 1.2)	2.5 (2.0, 3.2)	
Scotland	9.5 (7.4, 12.3)	6.2 (3.5, 10.6)	8.3 (6.7, 10.3)	
Wales	5.2 (4.1, 6.6)	5.7 (3.8, 8.5)	4.6 (3.8, 5.6)	
Age (years)	43.8 (42.4, 45.1)	49.1 (47.2, 50.9)	50.1 (49.3, 50.9)	< 0.001
Sex (%)				
Men	50.6 (47.3, 53.9)	49.6 (43.7, 55.4)	47.6 (45.4, 49.7)	0.273
Women	49.4 (46.1, 52.7)	50.4 (44.6, 56.3)	52.4 (50.3, 54.6)	
Survey years (%)				
1	11.4 (8.8, 14.7)	17.1 (12.4, 23.3)	14.4 (11.9, 17.4)	0.002
2	10.1 (7.8, 13.1)	18.3 (13.3, 24.7)	12.4 (10.2, 15.0)	
3	13.9 (10.8, 17.7)	9.1 (5.7, 14.1)	10.7 (8.6, 13.1)	
4	10.9 (8.5, 13.9)	13.8 (9.7, 19.4)	13.2 (10.9, 16.0)	
5	13.5 (10.6, 17.0)	12.8 (8.4, 19.1)	13.3 (11.0, 16.1)	
6	12.8 (10.1, 16.1)	8.7 (5.7, 12.9)	11.5 (9.5, 13.9)	
7	14.3 (11.5, 17.6)	9.5 (6.5, 13.8)	12.4 (10.2, 15.0)	
8	13.2 (10.5, 16.4)	10.5 (7.4, 14.8)	12.1 (9.9, 14.6)	
BMI (kg/m ²)	27.5 (27.1, 27.9)	27.0 (26.4, 27.6)	27.4 (27.2, 27.6)	0.433
WC (cm)	93.3 (92.1, 94.5)	92.9 (90.9, 95.0)	93.1 (92.3, 93.8)	0.928
Smoking status (%)				
Current	24.1 (21.5, 27.0)	30.0 (24.8, 35.8)	18.8 (17.2, 20.6)	< 0.001
Ex-smoker	20.0 (17.6, 22.6)	27.5 (22.4, 33.2)	25.9 (24.1, 27.7)	
Never	55.9 (52.7, 59.0)	42.5 (36.6, 48.7)	55.3 (53.2, 57.4)	
Current drinking status (%)				
Yes	24.6 (21.7, 27.7)	18.3 (14.0, 23.6)	16.8 (15.3, 18.4)	< 0.001
Hypertension (%) †				
Yes	25.9 (22.3, 29.9)	31.8 (25.3, 39.1)	30.4 (27.9, 32.8)	0.111
Total energy intake (KJ)	6713.8 (6575.7, 6851.8)	9256.0 (8850.8, 9661.2)	7916.9 (7814.0, 8019.9)	< 0.001
Carbohydrate intake (g)	192.9 (188.5, 197.3)	275.6 (263.4, 287.8)	226.9 (223.9, 229.9)	< 0.001
Carbohydrate percent (%) ‡	45.8 (45.3, 46.4)	47.4 (46.5, 48.3)	45.6 (45.3, 45.9)	0.001
Glucose (mmol/l)	5.16 (5.08, 5.23)	5.09 (5.00, 5.18)	5.14 (5.10, 5.19)	0.537
A1C (%)	5.47 (5.42, 5.51)	5.48 (5.42, 5.54)	5.49 (5.47, 5.52)	0.403
DM §	5.9 (4.2, 8.2)	1.1 (0.2, 5.2)	4.7 (3.6, 6.0)	0.053
Physical activity (hours/day) ¶	1.31 (1.14, 1.49)	1.82 (1.44, 2.19)	1.62 (1.49, 1.76)	0.018

Note:

Abbreviations: CI, confidence intervals; NDNS RP, national dietary and nutrition survey rolling programme; BMI body mass index; WC, waist circumference; A1C, haemoglobin A1c; DM, diabetes mellitus.

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* For continuous variables, the F test was used to determine differences between latent classes with Bonferroni correction to account for multiple testing across >2 classes. For categorical variables, differences between latent classes were assessed using the adjusted Pearson Chi-2 test for survey data.

† Hypertension was defined as either systolic blood pressure \geq 140 mmHg or diastolic blood pressure \geq 90 mmHg, or under treatment for hypertension.

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¶ Physical activity was calculated as mean time spent at moderate or vigorous physical activity during the survey.