

Inequalities in obesity in Cambridgeshire & Peterborough (June 2020)

Background

Obesity (BMI ≥ 30) is a major cause of premature mortality and avoidable ill health, increasing risk of diabetes, heart disease, cancer, musculoskeletal problems, depression and dementia. The NHS Five Year Forward View notes that the NHS spends more on bariatric surgery than on intensive lifestyle intervention programmes that have been shown to be effective (1). As outlined in the Foresight Report (2), the causes of obesity are multifactorial with seven cross cutting clusters of themes: physiology, individual activity, physical activity, environment, food consumption, food production, individual psychology and social psychology.

Being overweight or obese may be the only 'lifestyle risk factor' for any given individual, but people with a high BMI are also more likely than others to have other risks such as high alcohol consumption, smoking, and low physical activity.

Additionally, obesity has now been associated with an increased risk factor for the severity of Covid-19 which prioritises even further the implementation of successful intervention to reduce its prevalence in our CCG. More precisely, multiple national studies estimate obesity as a comorbidity to be around 9-11% and was associated with a higher probability of mortality due to Covid-19 (3) (4). According to Docherty *et al*, the survival from symptom onset in obese patients in hospital with Covid-19 was 1.37 (1.16-1.63, $p < 0.001$). The OpenSAFELY analytics platform study instead went even further by showing increasing risk of death with degree of obesity i.e. the higher the BMI the worse the mortality: fully-adjusted HR 1.27 for BMI 30-34.9 kg/m², increasing to 2.27 for BMI ≥ 40 kg/m² (5). Obesity was also reported as a risk factor for treatment escalation in smaller studies in France and New York (6) (7).

Weight loss may reduce the risk of death from COVID-19 (although this has not yet been demonstrated) but losing weight safely certainly reduces the risk of poor health from other causes.

Objective

Our aim is to report the prevalence of obesity in Cambridgeshire and Peterborough and establish whether any inequality is present. More precisely we are assessing whether there is a direct correlation between the deprivation of an area and the prevalence of obesity of that population. Additionally, we reviewed the scientific literature in order to identify possible barriers and facilitators to reduce obesity in our area.

Local picture

In our population household surveys estimate that 60% of Cambridgeshire and Peterborough adults are overweight or obese (8); although estimates for the proportion who are obese are not available from household surveys, GP practice data does include some insight into the proportion who are obese. This GP data is widely considered to be an underestimate of the true adult prevalence, but across the CCG area 8.7% of adults on the practice register are known to be obese (data from 2018/19). This value has increased from 8.5% in 2016/17. The prevalence of child obesity is high at 16.7% of children in year 6 (although lower than the England average which is 20.1% - data for period 2016/17 to 18/19) (9).

Across England as a whole, the prevalence of adult obesity is 9.7% although it might increase up to 60.4% if considering overweight or obese (Ref JSNA). Despite the overall CCG obesity prevalence rate is statistically significantly lower than the national rate, levels of obesity vary across our area with deprivation and geography. There is a clear gradient of practice-level obesity prevalence with deprivation. Practices in our most deprived quintile report 11.4% of adult patients as obese, compared with just 6.6% of practices in our least deprived quintile (Figure 1 above). When practice-level deprivation is plotted against practice-level obesity prevalence, we again see the correlation of increased obesity with increasing deprivation although this data is not statistically significant (Figure 1 below).

Indicator	Deprivation quintiles	Data	Gap
Obesity	Quintile 1 (Most deprived)	11.4	4.8
	Quintile 2	9.6	
	Quintile 3	7.0	
	Quintile 4	8.0	
	Quintile 5 (Least deprived)	6.6	

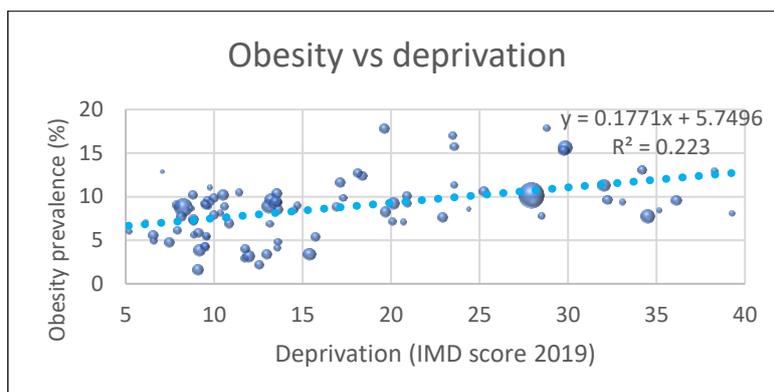


Figure 1: Obesity prevalence in relation to deprivation in Cambridgeshire and Peterborough. It appears that there is a correlation between obesity and deprivation in Cambridgeshire and Peterborough although this data is not statistically significant as the linear trendline for the best fit has a R^2 below 0.4. In the chart below, bubble size is proportional to its total registered population.

There is a striking north-south split across the CCG area (see map in Appendix). South of Huntingdon there is just one GP practice where more than 10% of adults are obese. North of this imaginary line, there are no practices where fewer than 7% of GP patients are obese. In March, Huntingdon and Wisbech, all GP surgeries have more than 10% adults who are obese, as do many practices in Peterborough.

At a national level, people from a black background are more likely to be overweight or obese (73.6% of all black adults) and people from an Asian background are less likely (56.2%), as are people from a Chinese background (35.3%) (10). Data on how obesity varies by ethnicity in Cambridgeshire and Peterborough is not available.

Barriers and facilitators to reducing population prevalence

We know that the drivers of obesity are complex; the Foresight report (2) lays out the factors that affect individual and population weight. Losing weight and then maintaining the weight loss is difficult, but there is evidence about what works. The high proportion of people who are overweight or obese mean that population-level reductions in obesity offer a huge opportunity to improve the health of our population. Recent modelling using Return on Investment tools found that if everyone with a BMI over 30 lost enough weight to reduce their BMI score by 2 points, and maintained that loss for 25 years, the local health system would save £6m and save 48 lives after just three years (data not shown). Longer term savings and health gains are much greater. This is a very optimistic scenario but for contrast, there were greater health gains from this than from a similar model projecting the impact of all smokers in the CCG area undergoing one of the most effective smoking cessation interventions.

The CCG can exert influence over the longer term by working with our local authority public health colleagues who commission local weight management services. We can also work to ensure that NHS staff in our primary and secondary care services are confident and comfortable in discussing the topic and able to advise and refer smoothly, making weight management a much more routine part of healthcare than at present, and we can take steps that mean NHS staff are better able to lead by example and benefit themselves by maintaining a healthy weight.

The NICE evidence-based public health guidance on obesity highlights steps to take to reduce obesity, and many of the recommendations relate to NHS responsibilities, including:

- Offering lifestyle weight management services to overweight or obese staff who would like support (PH42)
- NHS organisations to develop internal policies to help staff and service users achieve and maintain a healthy weight (PH42)
- Ensure patient-facing staff are aware of local provision of weight management services, national sources of advice and information, and the local obesity pathway (PH53)
- GPs and other professionals should identify people eligible for referral to weight management services by measuring BMI and waist circumference (PH53)

Actions

- Make weight measurement the norm in primary care: all primary care encounters to assess adult patient BMI if this is not recorded on the system in the last 6 months, with brief advice / referral if appropriate.
- Support overweight or obese NHS staff in the CCG and our NHS providers to lose weight through provision of on site lifestyle support services (which should also be able to support change in other lifestyle factors)
- Substantially increase the numbers of patients referred to weight management services
- Ensure local GPs and secondary care staff are all aware of local provision
- Recruit 'weight champions' across patient facing services who can deliver local MECC-type training to colleagues to develop confidence in discussing weight and weight loss with patients. (MECC = "Making Every Contact Count")

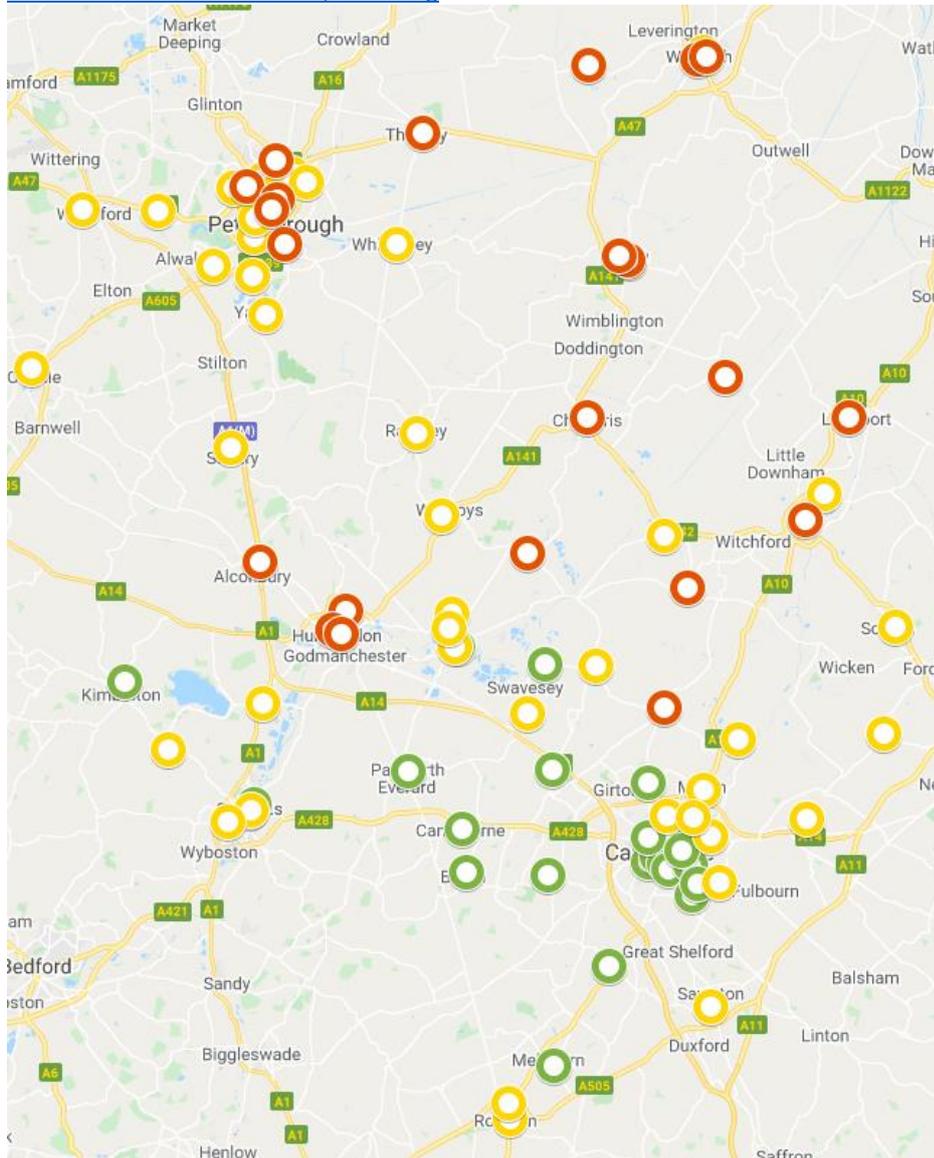
Appendix

Map displaying obesity prevalence in GP practices in Cambridgeshire and Peterborough

Practices with an obesity prevalence below 7% are in green; between 7% and 9.9% are in amber; above 10% are in red

Interactive map available at

<https://www.google.com/maps/d/drive?state=%7B%22ids%22%3A%5B%221hEqnUz6dHday9PuUrLfbI5uya0AQdNZH%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%22115403336437621291928%22%7D&usp=sharing>



Methods

Data for adult obesity in people over 18 derives from NHS Digital QOF data for 2018/19.

In order to assess whether we have inequalities in obesity prevalence in our area, we cross-referenced this data at GP level with the deprivation score of GP practices in our CCG (using the Index of Multiple Deprivation (IMD) score from 2019) (11). GP practices were ranked by their deprivation score (low value, least deprived; high value, most deprived) and then plotted against the adult obesity prevalence.

A linear trendline with the best fit was added (with equation and coefficient of determination, or R-squared) to observe whether there is a directly proportional correlation between changes in obesity prevalence and increased deprivation. Bubble size is proportional to its total registered population in April 2019.

Limitations

We did not have access to QOF data for 2019/20.

References

1. **NHS.** NHS Five year forward view. [Online] 2014. <https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf>.
2. **Government Office for Science.** Foresight Tackling Obesities: Future choices - Project report . [Online] https://www.nutrition.org.uk/attachments/049_Tackling%20obesities%20future%20choices%20summary.pdf.
3. *Features of 16,749 hospitalised UK patients with COVID-19 using the ISARIC WHO Clinical Characterisation Protocol.* **Docherty.** s.l. : medRxiv (preprint), 2020.
4. **ISARIC.** Covid-19 report: 19 May 2020. [Online] https://media.tghn.org/medialibrary/2020/05/ISARIC_Data_Platform_COVID-19_Report_19MAY20.pdf.
5. *OpenSAFELY: factors associated with COVID-19-related hospital death in the linked electronic health records of 17 million adult NHS patients.* . **OpenSAFELY.** s.l. : medRxiv (preprint), 2020.
6. *High prevalence of obesity in severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) requiring invasive mechanical ventilation.* **Simonnet.** s.l. : Obesity, 2020.
7. *Obesity in patients younger than 60 years is a risk factor for Covid-19 hospital admission.* **Lighter.** s.l. : Clin. Infect. Dis., 2020.
8. *Public Health Outcomes Framework Indicator 2.12 (Active People Survey, Sport England), ONS mid-2016 population estimates .* **Public Health England.** 2016.
9. **NHS Digital.** National Child Measurement Programme, England 2018/19 School Year [NS]. [Online] <https://digital.nhs.uk/data-and-information/publications/statistical/national-child-measurement-programme/2018-19-school-year>.
10. **Overweight Adults - active lives adult survey.** [Online] May 2020. <https://www.ethnicity-facts-figures.service.gov.uk/health/diet-and-exercise/overweight-adults/latest#by-ethnicity-over-time>.
11. **Public Health England.** National General Practice Profiles. *Fingertips.* [Online] 2019. <https://fingertips.phe.org.uk/profile/general-practice/data#page/9/gid/2000005/pat/152/par/E38000026/ati/7/are/D81633/iid/93553/age/1/sex/4/cid/4>.

12. National General Practice Profiles. *Fingertips*. [Online] Public Health England, 2015. [Cited: 18 November 2019.] <https://fingertips.phe.org.uk/profile/general-practice/data#page/9/gid/2000005/pat/152/par/E38000001/ati/7/are/B83620/iid/91872/age/1/sex/4>.

Authors: Specialty Registrar in Public Health and the Research Officer of the Clinical Outcomes and Population Health Strategy, Cambridgeshire and Peterborough Clinical Commissioning Group.

June 2020

