

Demographic, clinical and quality of life profiles of children and young people attending 35 NHS Complications of Excess Weight Clinics in England: an observational study

Jamie Matu¹, Tayamika Zabula², Richard Mattock², Julian Hamilton Shield³, Claire Griffiths¹, Emma Madeley², Catherine Homer⁴, Louisa Ells¹, Adam Martin¹

¹Obesity Institute, Leeds Beckett University, Leeds, United Kingdom
²Academic Unit of Health Economics, University of Leeds, Leeds, United Kingdom
³University of Bristol, Bristol, UK; NIHR Bristol Biomedical Research Unit in Nutrition, University of Bristol, Bristol, UK
⁴Sport and Physical Activity Research Centre, Sheffield Hallam University, Sheffield, UK



 J.Matu@leedsbeckett.ac.uk

INTRODUCTION

Living with excess weight in childhood is associated with a plethora of complications, which can persist into adulthood. Early intervention may limit excess weight gain and prevent the onset of associated long-term health conditions. Complications of Excess Weight (CEW) clinics are tier 3 paediatric weight management services, set up in 2021, run across England by the National Health Service. CEW clinics use a holistic approach to treating conditions related to severe obesity in children and young people.

AIM

The aim of this work was to describe the demographic, clinical and quality of life characteristics of children and young people attending 35 CEW clinics across England.

RESULTS

Since 2021, 5,699 patients have been registered at 35 CEW clinics across England. Available data, as of October 2025, is presented for their characteristics (Table 1) and complications of excess weight/comorbidities (Table 2).

Patient characteristics	
Age, years	12.1 (8.4 – 14.5), n = 5658
Sex	
Male	2985 (52.4)
Female	2705 (47.5)
Weight, kg	96.1 (65.2 – 118.4), n=5251
BMI, kg/m ²	36.6 (31.4 – 42.0), n =5229
BMI-SDS	3.72 (3.39 – 4.08), n=4923
Body fat, %	46.2 (41.1 – 51.6), n=3086
Waist circumference, cm	110.0 (96.5 – 123.0), n = 2865
Ethnicity	
Asian or Asian British - Any other Asian background	115 (2.5)
Asian or Asian British – Bangladeshi	86 (1.8)
Asian or Asian British – Indian	65 (1.4)
Asian or Asian British - Pakistani	215 (4.6)
Black or Black British – African	215 (4.6)
Black or Black British - Any other Black background	62 (1.3)
Black or Black British – Caribbean	104 (2.2)
Chinese	15 (0.3)
Mixed - Any other mixed background	159 (3.4)
Mixed - White and Asian	47 (1.0)
Mixed - White and Black African	74 (1.6)
Mixed - White and Black Caribbean	99 (2.1)
Other Ethnic Groups - Any other ethnic group	211 (4.5)
White - Any other White background	390 (8.3)
White – British	2810 (60.1)
White - Irish	12 (0.3)

Data are presented as median (IQR), except n (%) for sex and ethnicity

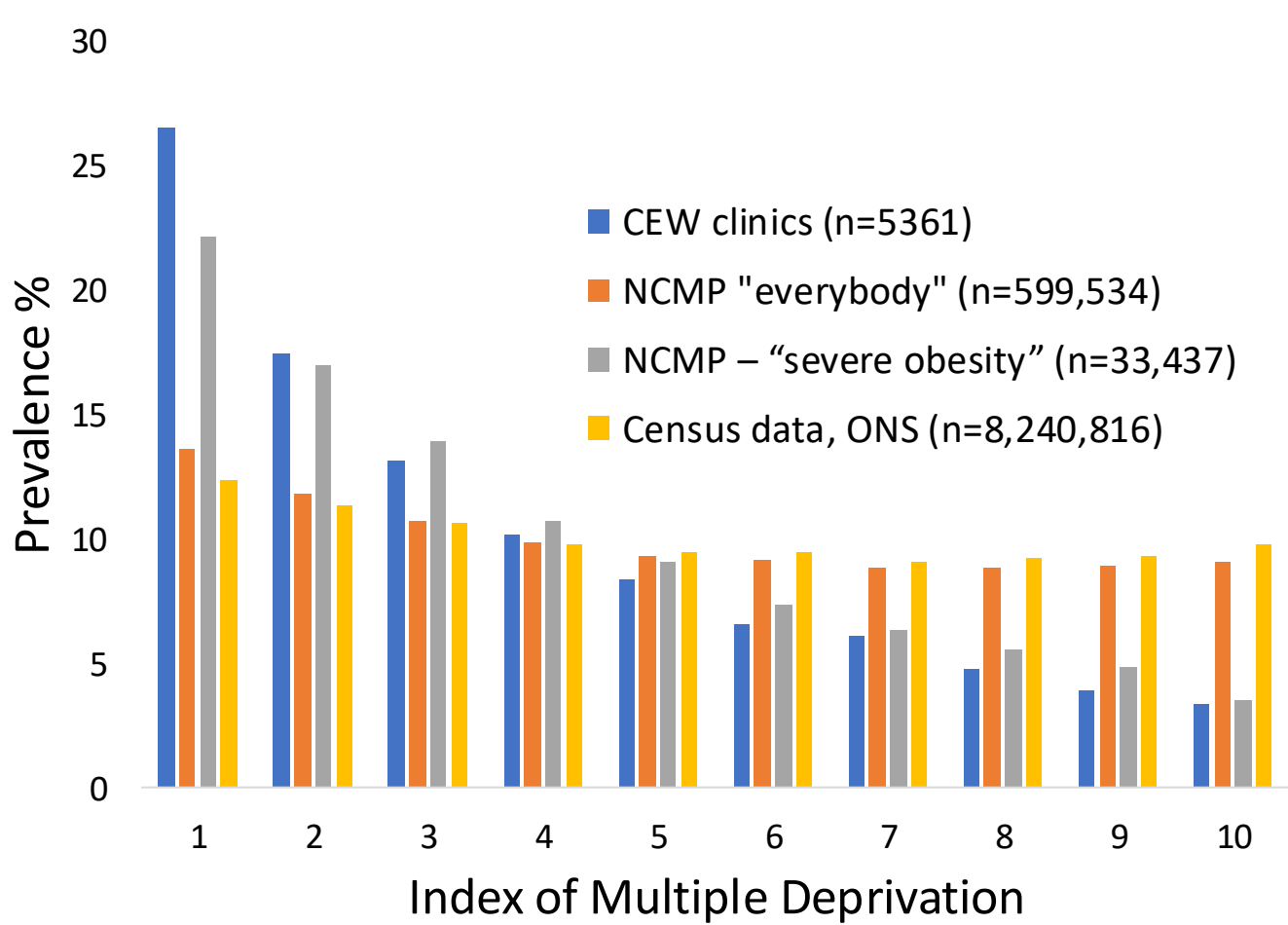
Compared with nationally representative Census data³, children from minority ethnic groups were significantly overrepresented in CEW clinics relative to children of a White ethnicity ($\chi^2 = 171$, $p < 0.001$). The distribution of ethnicities also significantly differed from the 2024/25 NCMP data¹ ($\chi^2 = 80$, $P < 0.001$), with overrepresentation of children identifying as Black ($z = 4.7$), mixed ($z = 4.1$) and other ($z = 2.6$) ethnicities.

The median index of multiple deprivation decile was 3.0 (n=5,361), with 26.5% of children living in the most deprived decile (decile 1) and 3.3% in the least deprived decile (decile 10). The distribution of children attending a CEW clinic differs significantly across deprivation deciles compared to the expected distribution based on Year 6 children measured in the 2024/25 NCMP data¹ ($\chi^2 = 1,359$, $P < 0.001$) and also compared with Census data² ($\chi^2 = 1,704$, $P < 0.001$). Children in the most deprived deciles (1–3) were significantly over-represented in CEW clinics ($z = 5.4$ to 25.6), while those in the least deprived deciles (6–10) were significantly under-represented ($z = -2.5$ to -14.1).

Mean patient and parent reported PedsQL-4.0 total and subdomain scores ranged between 50.7 and 58.7 out of 100, substantially lower than comparison data for the general population.

	Percentage diagnosed (number with complication/ total number assessed*)
Metabolic dysfunction associated steatotic liver disease (MASLD)	29.3 (1339/4572)
Dyslipidaemia	17.5 (247/1411)
Hypertension	17.0 (656/3870)
Obstructive sleep apnoea (OSA)	17.0 (745/4379)
Use of non-invasive ventilation	7.9 (242/3077)
T2DM	6.0 (219/3676)
Idiopathic intercranial hypertension	3.2 (133/4213)
Neurodevelopmental disorders	
Autism spectrum disorder	28.6 (1174/4106)
Learning disability	23.6 (967/4105)
Attention deficit disorder	12.4 (513/4153)
Deliberate self-harm	8.7 (332/3802)
Anxiety	8.7 (349/3992)
Depression	3.9 (152/3897)
Binge eating disorder	1.1 (39/3580)

*Assessment completed prior to, within, or as a result of CEW service



METHOD

The national operation of CEW clinics is ongoing; therefore, data is being collected continuously. Demographic data were collected for patients seen at 35 CEW clinics across England. Outcomes included sociodemographic and anthropometric measurements, prevalence of eight obesity-related complications and seven neurodevelopmental or psychological conditions and health-related quality of life (PedsQL-4.0).

CONCLUSIONS

Clinics are reaching individuals with highly complex medical and neurodevelopmental complications/comorbidities, many of which may be preventable or modifiable through weight loss or early intervention. They also engage disproportionately high numbers of individuals from minority ethnic groups and deprived areas. Future challenges include securing sustainable funding, expanding capacity to meet demand and generating evidence on cost-effectiveness.

ACKNOWLEDGEMENTS

We would like to thank our patient group, the ARROWS, as well as NHS England and Prescribing Services Limited for their help with this work. This study/project is funded by the NIHR Health and Social Care Delivery Research programme (NIHR 158453). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

REFERENCES

- NHS Digital. National child measurement programme, England, 2024/25 school year. 2025.
- Office for National Statistics, Populations by Index of Multiple Deprivation (IMD) decile, England and Wales, 2020. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/adhocs/13773populationsbyindexofmultipledeprivationimddecileenglandandwales2020>
- Office for National Statistics, Ethnicity of children aged 5 to 16 in UK regions, 2020. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/culturalidentity/ethnicity/adhocs/13217ethnicityofchildrenaged5to16inukregions2020>

