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Early childhood TV viewing and subsequent BMI trajectories to mid-adulthood in the 1970 British Cohort Study

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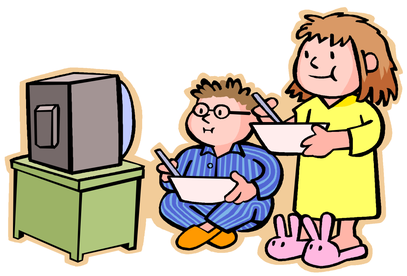
Background

- The obesity epidemic in children and young people is a leading public health concern in the UK and worldwide.[1]
- Excessive time spent watching TV in childhood has been associated with both childhood[2] and adulthood obesity.[3,4]
- However, these studies usually look at childhood TV viewing with only one time point in adulthood[3,4], and not the trajectory of obesity across the life course.
- **The aim of this study was to investigate whether duration of watching TV above recommended thresholds (<2 hours) in early childhood is associated with trajectories of overweight and obesity between childhood and mid-adulthood in the 1970 British Cohort Study (BCS70)**



Methods

- The BCS70 has followed 17,200 people born in Great Britain in one week in April 1970, from birth onwards. Participants with complete BMI data at ages 10, 26-30, 34 and 42 years (n=4174; 2392 ♀) were selected for this study.
- Weight and height were measured at 10 years and self-reported in adulthood. Body mass index (BMI) was calculated (kg/m^2) and classified as "overweight or obese" (OW/OB) or "non-OW/OB" according to Cole et al's[5] cut-points in childhood, and the 25 kg/m^2 cut-point in adulthood.
- Trajectories of OW/OW were computed; those with ≥5% of the sample were kept individually, and those with <5% were collapsed into one as follows:

  (1) Never OW/OB; (2) Early adulthood onset of OW/OB (onset between 26-34 years); (3) Mid-adulthood onset of OW/OB (onset at 42 years)"; (4) Always OW/OB (persistent OW/OB between 10-42 years); and (5) Other trajectories.
- Daily time spent watching TV reported by the mother at 5-years of age, and dichotomised into "<2 hours/day" and "≥2 hours/day".
- Chi-square used to test differences in categorical variables. Multinomial logistic regression used to test the association between TV viewing at 5 years and trajectories of OW/OB for males and females separately.

Results

- Of the 4174 selected participants, 3347 (58% ♀) also had information about TV viewing at 5 years and were included for analyses. Prevalence of OW/OB trajectories and proportion of males/females did not differ between those included and excluded from analyses (p>0.5).
- "Never OW/OB" (40%) and "Early adulthood onset of OW/OB" (31%) were the most common trajectories in females and "Early adulthood onset of OW/OB" (63%) was the most common trajectory in males.
- Significantly more boys watched TV for ≥2 hours per day than girls (figure 1).
- Rates of watching TV for ≥2 hours per day significantly differed between trajectories of OW/OB in both sexes (figure 2).

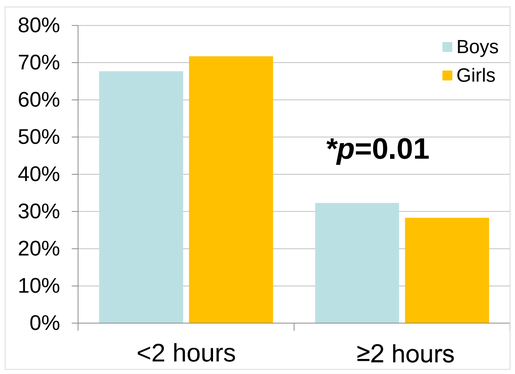


Fig. 1 - Prevalence of watching TV for ≥2 hours by sex.

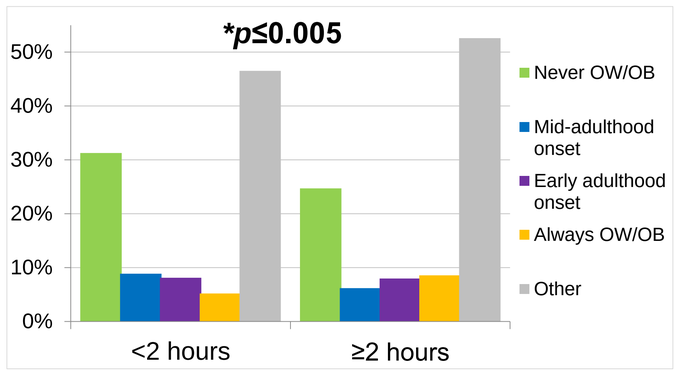


Fig. 2 - Prevalence of watching TV for ≥2 hours by trajectories of OW/OB (overall).

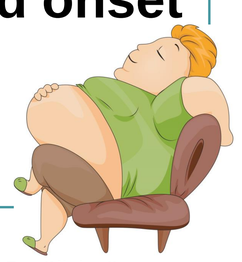
- In univariable analyses, watching TV for ≥2 hours/day significantly increased the risk of being always OW/OB in males and females, and of early adulthood onset of OW/OB and "other" trajectories in females, versus never being OW/OB (all p<0.04; see Table 1).
- After adjusting for childhood socioeconomic status, maternal BMI and education, this increased risk of being always OW/OB in comparison to never being OW/OB remained significant for males, but not females (Table 1).

Table 1 – Results of the multinomial regression models (by sex) predicting trajectories of overweight/obesity.

	Never OW/OB	OW/OB onset at mid-adulthood		OW/OB onset at early adulthood		Always OW/OB		Other trajectories	
		RRR (95% CI)	*p*	RRR (95% CI)	*p*	RRR (95% CI)	*p*	RRR (95% CI)	*p*
Females									
Univariable	*reference*	0.90 (0.61–1.31)	0.58	**1.37 (1.08–1.74)**	**0.01**	**1.74 (1.16–2.61)**	**0.007**	**1.33 (0.93–1.91)**	**0.037**
Multivariable	*reference*	0.84 (0.56–1.24)	0.38	1.10 (0.85–1.43)	0.48	1.38 (0.89–2.12)	0.15	1.17 (0.84–1.63)	0.33
Males									
Univariable	*reference*	0.82 (0.46–1.48)	0.52	1.35 (0.96–1.89)	0.09	**2.52 (1.50–4.24)**	**0.001**	1.39 (0.88–2.20)	0.16
Multivariable	*reference*	0.82 (0.44–1.55)	0.55	1.27 (0.87–1.83)	0.21	**2.45 (1.40–4.27)**	**0.002**	1.40 (0.85–2.30)	0.18

Conclusions

- **Excessive early childhood TV viewing is associated with childhood and early adulthood onset of overweight and obesity, persisting to mid-adulthood.**
- **This represents an important preventive opportunity that requires further study.**



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