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



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Background

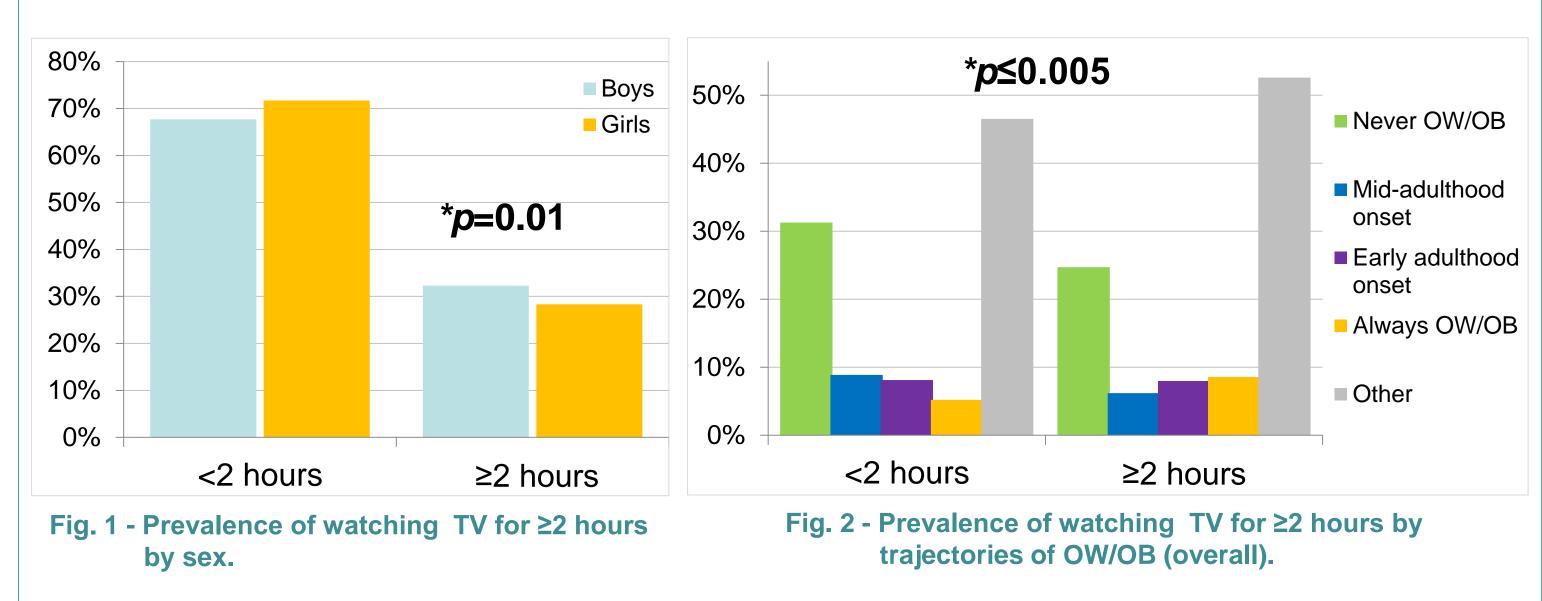
- The obesity epidemic in children and young people is a leading public health concern in the UK and worldwide.¹
- Excessive time spent watching TV in childhood has been associated with both childhood² and adulthood obesity.^{3,4}
- However, these studies usually look at childhood TV viewing with only 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/m²) and classified as "overweight or obese" (OW/OB) or "non-OW/OB" according to Cole et al's⁵ cut-points in childhood, and the 25 kg/m² 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% $\stackrel{\circ}{4}$) 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).



- 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

References:

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.