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 adulthood3,4, 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/Ob 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.

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.

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.](image1)

![Fig. 2 - Prevalence of watching TV for ≥2 hours by trajectories of OW/Ob (overall).](image2)

• 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 boys, but not females (Table 1).

<table>
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<tr>
<th>Table 1 – Results of the multinomial regression models (by sex) predicting trajectories of overweight/obesity.</th>
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<tr>
<td><strong>Females</strong></td>
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<tr>
<td>Never OW/Ob</td>
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<td>RRR (95% CI)</td>
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References


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