Growing Up in Ireland
National Longitudinal Study of Children

Longitudinal Association of ADHD Symptoms and Trait Conscientiousness with Obesity in a Nationally Representative Sample of Irish Youth

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What? Why?

- What?
  - Obesity
  - ADHD
  - Conscientiousness

- Why Obesity?
  - 62% of Irish people are classified as overweight or obese (CSO, 2017).
  - Obesity is costly:
    - Results in numerous chronic diseases from type 2 diabetes to heart disease
    - Associated with numerous mental illnesses and lower psychological wellbeing
    - Costs the Irish state approximately €1.13 billion per annum (Safefood, 2012)

- Why ADHD & Conscientiousness?
  - Each consistently shown to be associated with obesity internationally
  - Little longitudinal research on these factors in adolescents internationally – none in Ireland
  - Existing research does not control for sufficient variety of confounding variables

How?

- **Data**
- Analysis includes only children who took part in **all** 3 waves
- *n* = 6,039

- **Analysis**
- Combination of binary logistic/multiple regressions.
- 3 Models: Effects of variables at 9 years on:
  1. BMI category at 9 years.
  2. BMI category at 13 years.
  3. BMI category at 17 years.

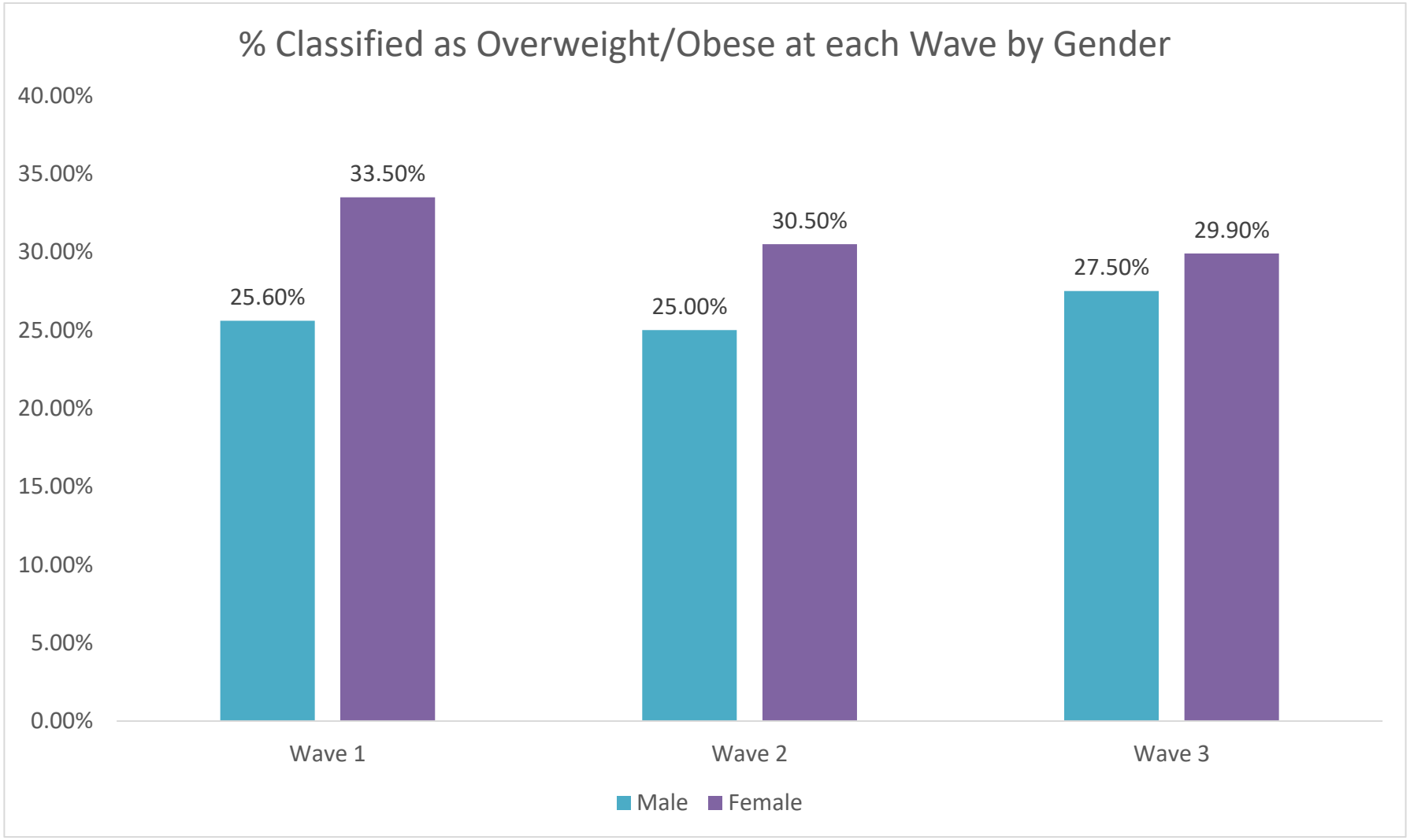
Measurements

- **DV**
  - Obesity (BMI)
    - Healthy weight / Overweight
- **IV**
  - ADHD (SDQ-HI, 0-20)
  - Trait Conscientiousness (TIPI, 0-35)

Caution!

- Previous research paved the way for a careful analysis:
  - Removal of underweight participants
  - Splitting by gender due to gender differences in BMI, Conscientiousness, ADHD symptomology
  - Controlling for confounding parental and socioeconomic variables:
    - Household income
    - Parental smoking
    - Parental drinking
    - Birthweight

Contextual Background



Findings

Gender matters!

Males

1. At age 9 – no significant association between BMI category and either conscientiousness or ADHD, before/after controlling for psychosocial variables.
2. At age 13 – **significant** positive association between BMI category and ADHD before psychosocial factors controlled for, not after.
3. At age 17 – **significant** positive association between BMI category and ADHD before **and** after controlling for psychosocial factors.

Across all age groups, no significant association with conscientiousness was observed.

Females

1. At age 9 – **significant** association between BMI category and **both** conscientiousness and ADHD, before controlling for psychosocial variables, not after.
2. At age 13 – **significant** positive association between BMI category and conscientiousness/ADHD before psychosocial factors controlled for. After control, *only* positive association between BMI and ADHD remained significant.
3. At age 17 – **significant** association between BMI category and **both** conscientiousness and ADHD before **and** after controlling for psychosocial factors.

Key Findings

ADHD

- **Positive** association between ADHD and risk for overweight/obesity for all groups except 9-year old males.
- *However*, after adjusting for significant parental and psychosocial variables, ADHD remained a significant predictor of weight category only for females aged 13/17 years old and males aged 17 years old.

Conscientiousness

- **Negative** association between Trait Conscientiousness and the risk for overweight/obesity for females (all age groups) but not for males of any age group.
- After adjusting for confounding variables, this association remained significant only for females aged 17 years old.

Contribution

- Relationship emerges over time – implications? Early intervention
- Gender difference

Strengths

- Large, nationally-representative longitudinal sample
- Control for confounders (parental/psychosocial)

Weaknesses

- Little insight into exact mechanisms
- Effect size is small – Odds ratios generally less than 1.08 after controlling for confounders

Conclusion

- The ADHD-BMI link emerges in both genders in adolescence.
- Stronger for girls; and emerges earlier (13yrs vs 17yrs for boys) .
- Conscientiousness not a relevant factor after controlling for confounders, except in girls aged 17.

- "Award deficiency syndrome" (Cortese & Vincenzi, 2012)
- Low inhibitory control (Albayrak et al., 2015)
- Inattentiveness – leads to poor dietary planning, excess food intake (Cortese et al., 2015)

- Controlling for gender & age, possible mediation by:
  - Exercise
  - Diet