Prevalence and socio-demographic distribution of eating, physical activity and sedentary behaviours among Australian children in urban and rural communities: An OPAL baseline evaluation

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Background
- Childhood obesity is a significant public health issue worldwide1 with several health consequences2.
- Nearly one quarter of Australian children are overweight (17%) or obese (6%)3.
- Guidelines around diet4 and activity5 are provided by the Australian National Health and Medical Research Council to assist in reducing the risk of non-communicable diseases, including obesity.
- The current adherence by Australian children to these national guidelines is important to assess to enable the development of targeted interventions and to inform policy.

Aim
To describe the prevalence of primary school children meeting recommended guidelines for eating, physical activity and sedentary behaviour and to compare these proportions by socio-demographic distribution.

Method
- Cross-sectional survey of children aged 9-11 years participating in the evaluation (Phases 1-4, 2011-2013) of the Obesity Prevention and Lifestyle (OPAL) program6 in South Australia, Australia.
- Self-reported eating, physical activity and sedentary behaviours were assessed using validated items administered via questionnaire.
- Meeting recommendations was defined as consuming ≥2 serves of fruit, ≥5 serves of vegetables, ≤2 serves of discretionary foods, and participating in >60 minutes of physical activity (PA) and <120 minutes screen time (ST), per day.
- A multilevel mixed effect logistic regression model was used to explore the variation in children’s behaviours between gender, age, locality and socio-economic status (SES).

Results
- Children (n=4637, 51% boys) were aged 10.6±0.9 yrs.
- 15% were overweight and 5% obese.
- 34% more likely (95% CI: 1.14-1.57; P<0.01) to meet ST recommendations
- 26% more likely (95% CI: 1.14-1.57; P<0.01) to meet PA recommendations
- 19% more likely (95% CI: 1.05-1.35; P<0.01) to meet fruit recommendations
- 15% less likely (95% CI: 0.74-0.99; P<0.01) to meet vegetable recommendations

Adherence to recommendations

Multilevel mixed effect logistic regression model
- **Gender**: Girls were:
  - 15% less likely (95% CI: 0.74-0.99; P<0.01) to meet vegetable recommendations
  - 26% less likely (95% CI: 0.65-0.84; P<0.01) to meet PA recommendations
  - 19% more likely (95% CI: 1.05-1.35; P<0.01) to meet fruit recommendations
  - 34% more likely (95% CI: 1.14-1.57; P<0.01) to meet ST recommendations than boys.

- **Age**: Children aged 12-13 years were twice as likely as younger children (9-11 years) to meet vegetable recommendations (OR=2.10; 95% CI: 1.53-2.86; P<0.001).
- **Locality**: Rural children were more likely to meet both PA (OR=1.49; 95% CI: 1.21-1.74; P<0.001) and ST recommendations (OR=1.37; 95% CI: 1.14-1.66; P=0.01) than urban counterparts.
- **SES**: Children at least socio-economic disadvantage performed better than those at greatest disadvantage with regards to healthy eating (fruit and discretionary intake), physical activity and sedentary behaviours.

Discussion
- Our sample performed better than 9-13 year olds from the 2007 Australian National Children’s Nutrition and Physical Activity Survey (ANCNPAS)2 for vegetables (21% v 17% meeting guidelines) and screen time (17% v 7%), but not for fruit (65% v 89%) or physical activity (33% v 40%).
- More than half (56%) of children in the present study consumed more than two serves of discretionary food, however there is no comparative guideline in the ANCNPAS.
- Sub-group differences highlight areas for future intervention:
  - Gender was a significant predictor of all behaviours except discretionary food intake.
  - Locality differences in physical activity and screen time behaviours likely reflect an environment that is conducive of these behaviours in rural areas. Support for better activity and screen time behaviours of urban children is necessary.
- SES differences were found for most behaviours, highlighting that interventions specifically tailored to children from greatest disadvantage are warranted.

Conclusion
There is considerable scope for improving Australian primary school children’s health-related behaviours to be in line with national dietary and physical activity guidelines, particularly in urban children and those at greatest disadvantage.

References