Growing Up in Ireland
National Longitudinal Study of Children

Investigating the "causes of causes" of social inequalities in health in Irish children and adolescents: how do health behaviours become socially patterned?

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An Roinn Leanaí, Comhionannais, Míchumais, Lánpháirtíochta agus Óige
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Presentation Overview

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   - **Background**
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Context

Motivation

- Social gradient in health is particularly pronounced for NCDs.

Context

Motivation

Context

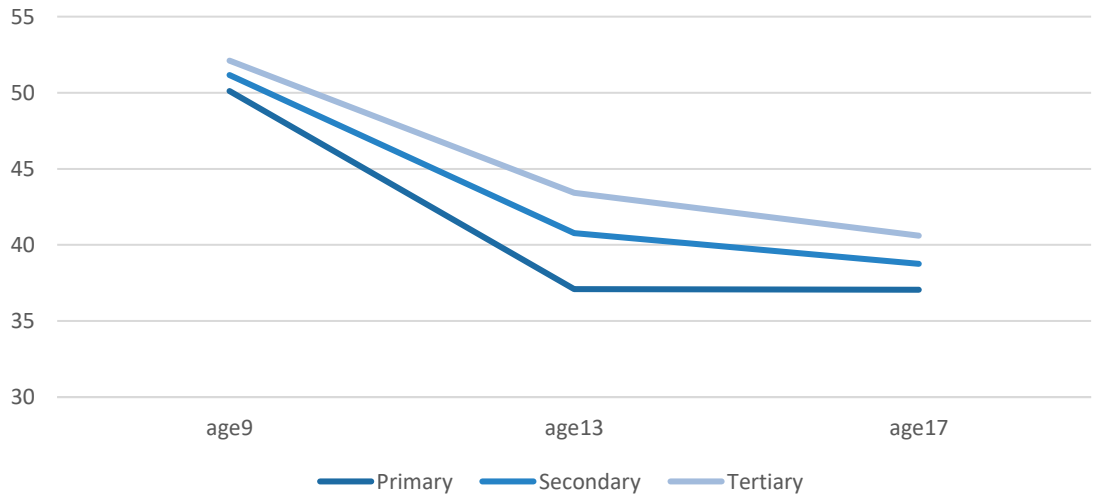
Motivation

Low levels of physical activity

Context

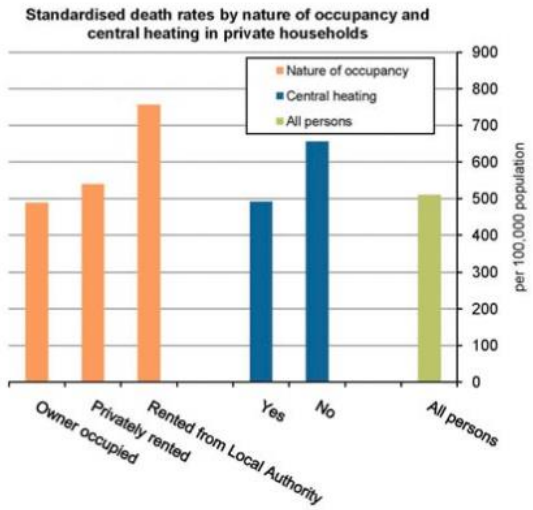
Motivation

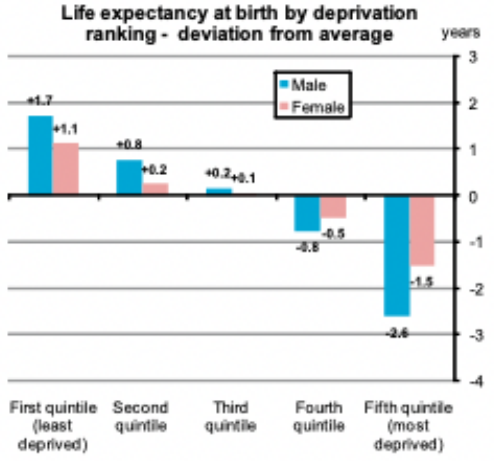
Graph 1: Social gradient in levels of physical activity (by maternal education) in the GUI data.

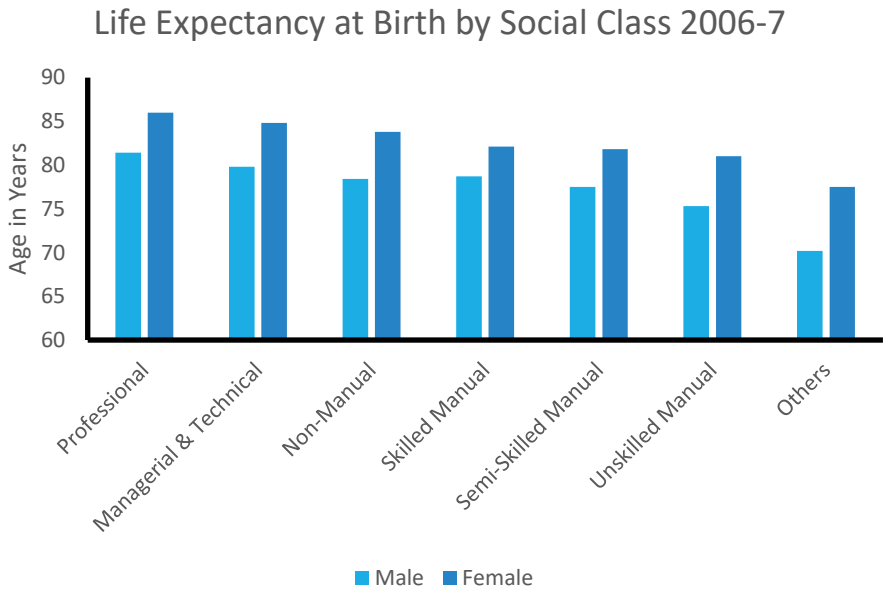


- Physical activity has a proven relationship to disease risk and there is an expanding body of evidence to support the claim that PA benefits every aspect of health (US Physical Activity Guidelines Advisory Committee, 2018).

Context



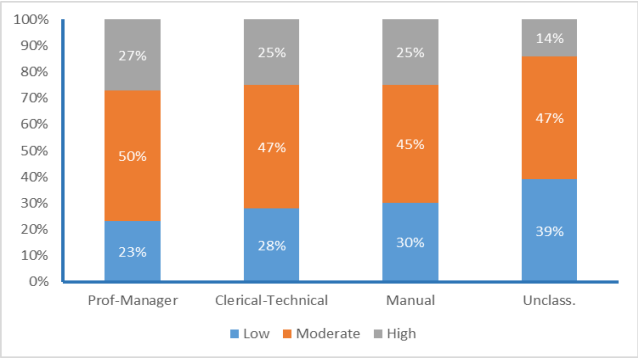




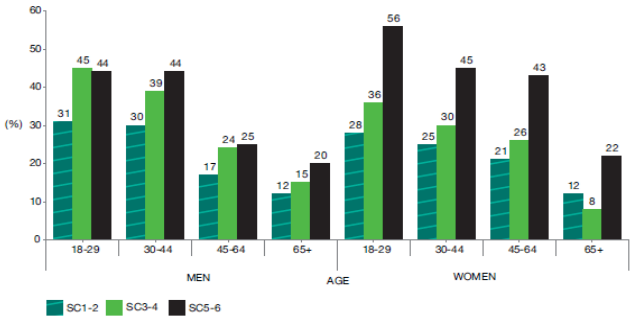
- Graphs displaying the relationship between SEP (measured by occupational class, home ownership status and deprivation rate) and mortality using Irish census data.

Context

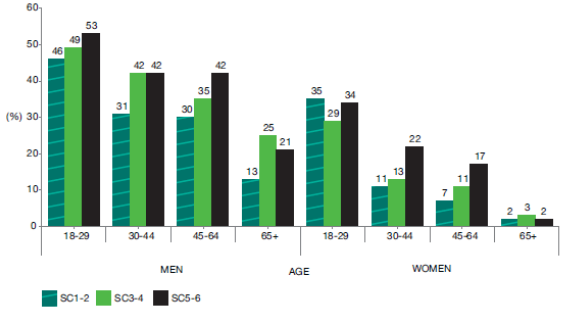
Graph 1: Level Physical Activity by Class



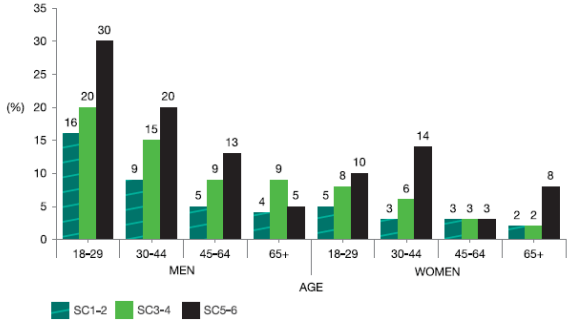
Graph 2: % Smokers by Age and Class



Graph 3: % Eating Fried Food 4+ Times a Week



Graph 4: % Having 6+ Standard Drinks on 1+ Times a Week

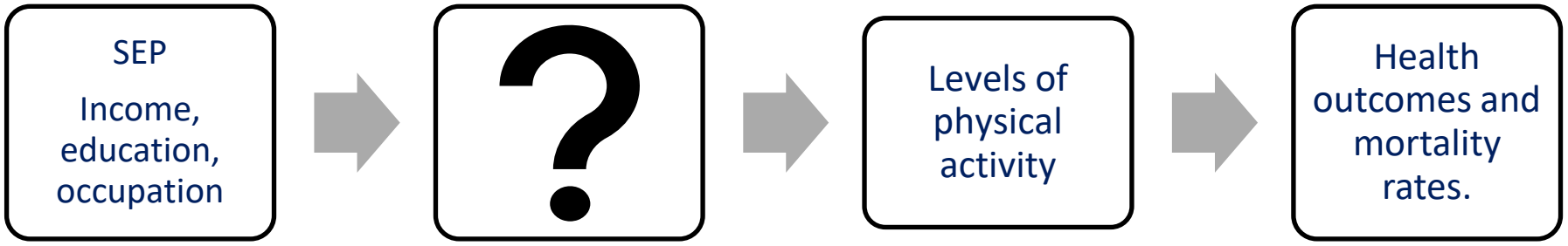


- SLAN survey data showing the social gradient in physical activity, smoking, poor diet and alcohol intake.

Context

Motivation

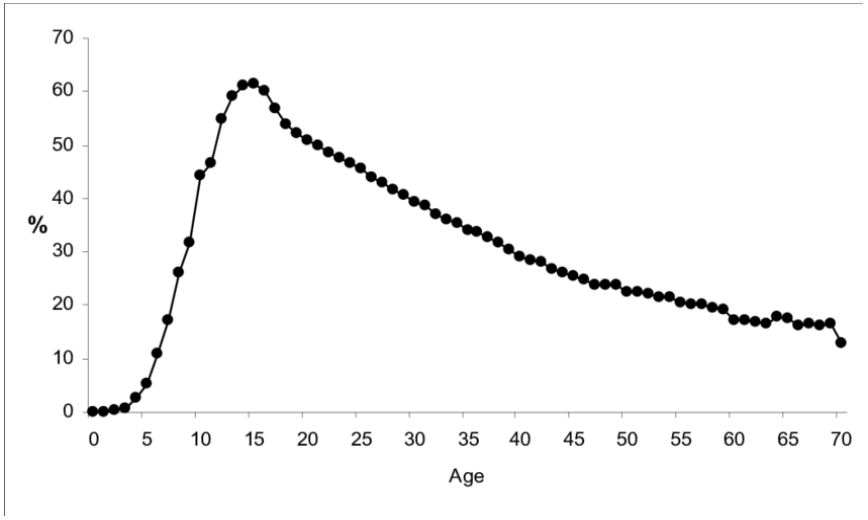
- “Causes of causes” of health inequalities (Marmot & Wilkinson, 2006).



Context

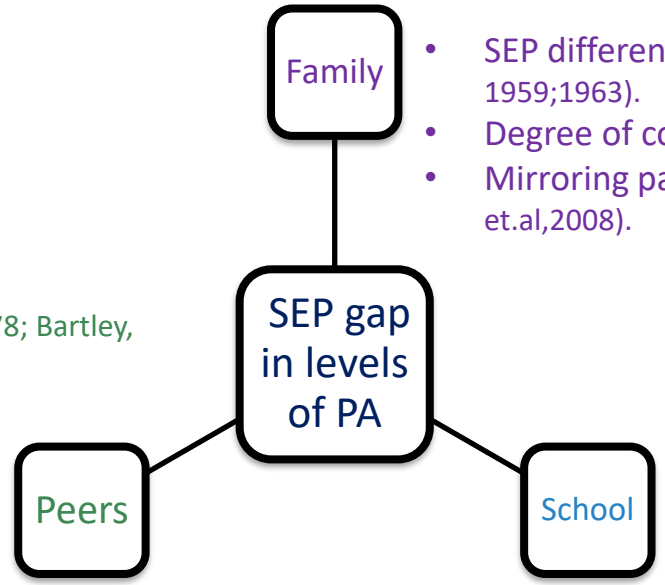
Background

- Healthy Ireland (2019) and The National Guideline on Physical Activity for Ireland (2021).
- Adolescence and physical activity
  - Evidence for tracking (Kwon et.al, 2015; Telama et.al,2006; Tammelin et.al, 2003)
  - Global decline in physical activity in adolescence (Dunmith et.al,2011; Farooq et.al, 2016; Rovio et.al, 2018). "Sports Hill" (Lunn, 2009).



Background contd. & research objectives

To measure the contribution of characteristics of a child's family, peers and school in explaining differences in level of physical activity (PA) by maternal educational attainment.



- SEP differences in parenting style (Kohn, 1959;1963).
- Degree of concerted cultivation (Lareau, 2011).
- Mirroring parent's behaviors (Lunn, 2006; McMinn et.al,2008).

- number of close friends (Kandel, 1978; Bartley, 2017; Donovan & Giles-Corti, 2002).

- Hours spent on homework
- Classification of school sporting facilities

- Degree to which PA is built into the child's life (participation in organised sport, active school commute and sedentary minutes) (Jose et.al, 2011; Hume et.al, 2009; Bohnert & Gracia, 2020).

Methods

Data

- Participants were members of the child cohort (age 9, 13 & 17/18).

Sample

- Analyses were restricted to participants who had available data, at all three waves, on our set of predictor variables.

Dependent Variable

- Leisure Time Exercise Questionnaire (Godin & Shepard, 1985).
  - concurrent validity (Godin, Jobin & Bouillon, 1986)
  - construct validity (Godin & Shepard, 1985; Zelener & Schneider, 2016)
  - test-retest reliability (Sallis, Buono, Roby, et al., 1993; Zelener & Schneider, 2016)

Independent Variable

- Maternal Education Level (proxy: SEP).
  - strong (Fletcher & Hirdes, 1996; Sternfeld, Ainsworth & Quesenberry, 1999) and consistent (Lunn, 2006) predictor of physical activity.

Methods

Analysis - Multilevel Models

- There were eight models representing seven groups of variables and one fully-adjusted model. Models were stratified by sex.

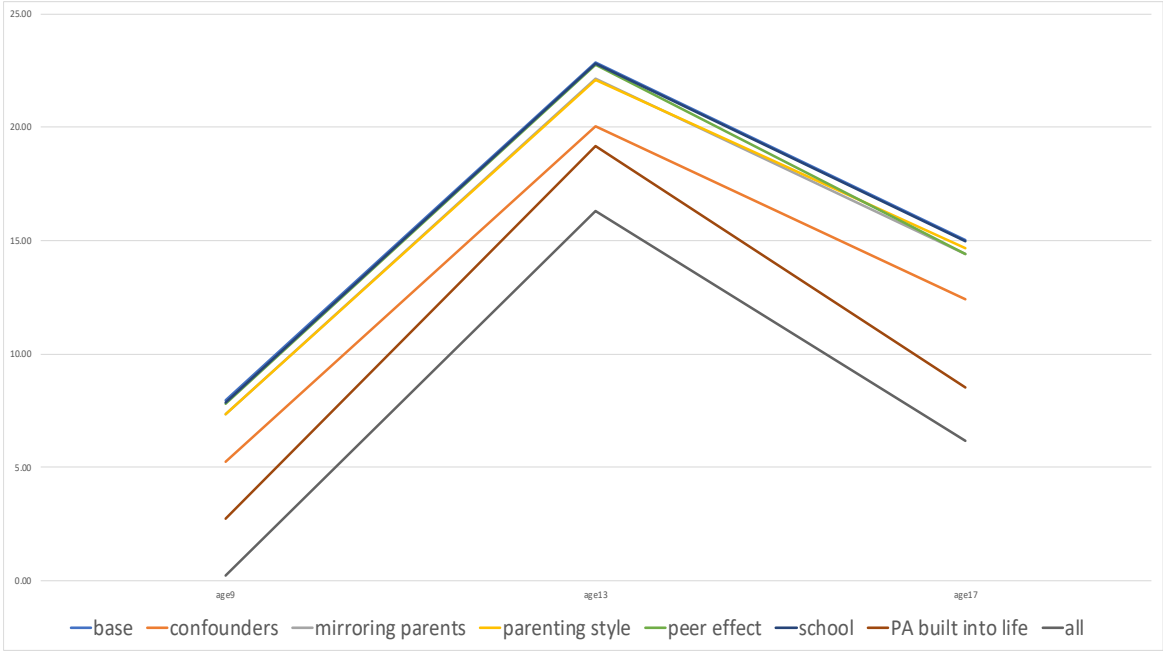
Base model	**maternal education level + age**
Confounders model	base model +health + personality + BMI + body image
Class mirroring model	base model + PCG's physical activity
Class Cultural model	base model + parenting style+ child's structured activities
Peer effect model	base model + number of close friends
School environment model	base model + academic focus + school sports faculties
Physical activity built into life model	base model + organised sport + screen-based sedentary activity + transport from school
Fully adjusted model	

- The base model provided the unadjusted SEP differential at each age. Each subsequent model adjusted for a group of variables, indicating their **contribution** to the SEP differentials.

Results

FEMALES

Graph 2: SEP differential in levels of physical activity between study children whose mothers achieved primary education and study children whose mothers achieved tertiary education for each model

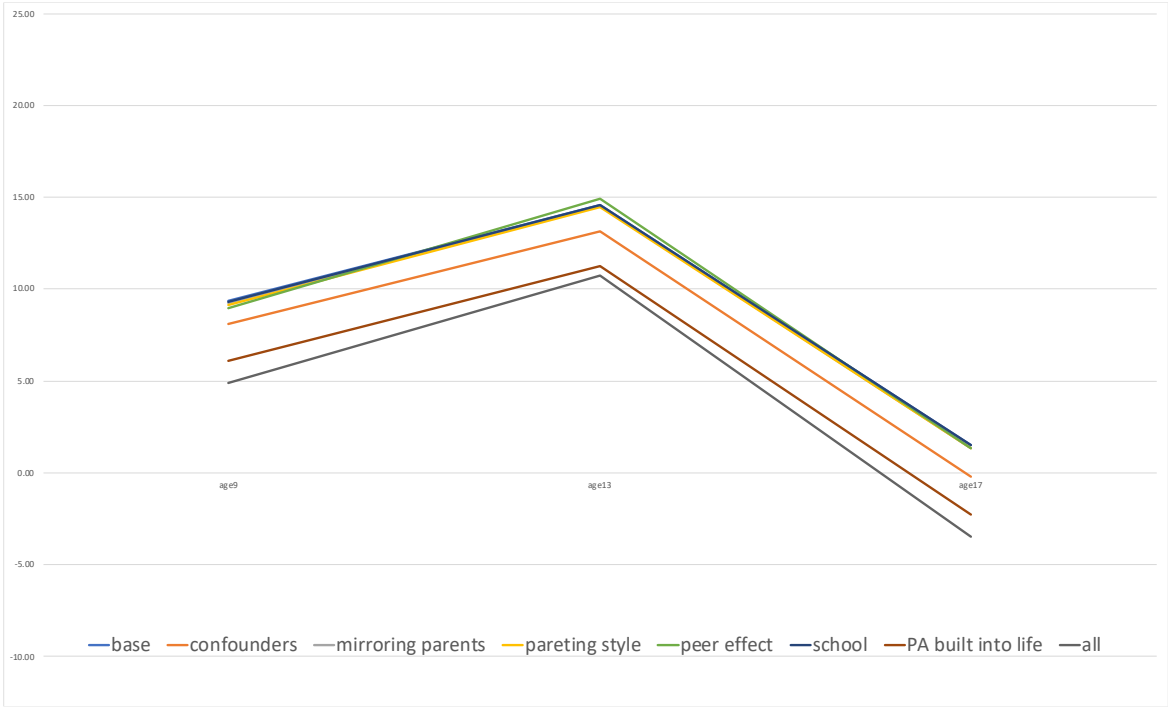


Model	Minutes Explained	% Explained
base	0.00	0%
school activities	0.24	1%
peer effect	0.89	2%
mirroring parents	1.95	4%
parenting style	1.67	4%
confounders	8.10	18%
PA built into life	15.43	34%
all	23.13	50%

Results

MALES

Graph 3: SEP differential in levels of physical activity between study children whose mothers achieved primary education and study children whose mothers achieved tertiary education for each model



Model	Minutes Explained	% Explained
peer effect	0.19	1%
school activities	0.01	0%
base	0.00	0%
mirroring parents	0.31	1%
parenting style	0.49	2%
confounders	4.36	17%
PA built into life	10.33	41%
all	13.27	52%

Key Findings

Key findings

- Home characteristics (or the influence of parents) explains a relatively small proportion of the difference in levels of physical activity between SEP groups.
  - Home characteristics have a stronger impact on females (8%) compared to males (3%).

- Participation in organised sport explains a significant proportion of the SEP differential in levels of physical activity between maternal education groups.
  - Is organized sport a type of “enrichment activity” that parents use to cultivate their children? (McCoy et.al, 2012).

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Thank you!