



**Growing Up**  
**in Ireland**  
National Longitudinal  
Study of Children

# *Growing Up in Ireland*

National Longitudinal Study of Children

**8<sup>TH</sup> ANNUAL RESEARCH CONFERENCE**

**3<sup>RD</sup> NOVEMBER 2016**

**Book of Abstracts**



# Paper presentations

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## Keynote Address

### **Family relationship influences on children's mental health: revisiting the developmental interface between nature and nurture using an array of complementary longitudinal research designs**

#### **Keynote speaker**

**Professor Gordon Harold**

(University of Sussex)

#### **Hogan Mezzanine Theatre**

Rising rates of mental health problems among children and adolescents constitutes an area of significant social, clinical, policy and public health concern. Understanding processes and mechanisms that underlie the development of youth psychopathology (mental health problems) requires theoretical and methodological integration across multiple scientific and practice domains, including developmental science, social science, education, neuroscience, genetics and prevention science. Utilizing state-of-the-art longitudinal research designs to examine early influences on long-term youth outcomes is a critical 'centre piece' in any nation's ambitions to develop evidence-led policies and practices aimed at improving outcomes for today's generation of youth (tomorrow's generation of parents). The primary focus of this presentation is to examine the relative role of early family experiences on children's long-term emotional and behavioural development. Specifically, a complementary array of international longitudinal research designs will be employed to examine the role of early environmental adversity (e.g. inter-parental conflict, harsh parenting practices) in accounting for individual differences in children's mental health (specifically depression, conduct problems, and poor peer/social relationships). Examples of

recent applications of this research to the development of UK-based evidence-led interventions and policy related programmes aimed at reducing psychopathology in the context of high-risk family settings will also be presented, with implications for wider international applications (including Ireland) also discussed.

# Session A

Davin Suite

## The utility of the food pyramid in guiding Irish 5-years-old children into a healthier diet: a *Growing Up in Ireland* study

Maartje Schreurs (UCD)

Silvia Bel-Serrat (UCD)

Mirjam Heinen (UCD)

Celine Murrin (UCD)

### Session A, Davin Suite

**Context:** Trends of childhood obesity have been rising for decades. To counter this effect, increasing physical activity and improving diet from childhood onwards is important. In Ireland, the food pyramid is used to guide populations to a healthier diet, but little is known about the actual effect on improving children's health.

**Methods:** This study focused on whether children consume the recommended amounts of all food groups, using dietary data obtained from the food frequency questionnaire from 5-years-old children (n=8166) participating in the *Growing Up in Ireland* study.

**Results:** Preliminary results show that children, regardless of their weight status, exceeded the recommended intakes for the food groups in the top part of the food pyramid, while most of them consume less than the recommended 6+ portion/day of carbohydrate sources. More specifically, almost all children exceed the recommended intake of maximum 1-portion of fat-, sugar- and salt-rich foods and beverages per day, where obese children were more likely to meet the recommendations compared to non-overweight children (1.3% and 0.5% respectively,  $P=0.013$ ). The opposite was true for fruit and vegetable intake, where overweight and obese children were more likely to eat at least five portions/day compared to non-overweight children (64.3% and 60.5% respectively,  $P=0.017$ ).

**Conclusions:** Overall, children's consumption is not in line with the recommendations of the food pyramid. However, these results are likely to be influenced by under and over reporting of certain foods. Further analysis will account for the level of under- and over-reporting in the sample.

## Combining nutritional data from two surveys to augment dietary intake estimates

M. Crowe (TCD)

M. O'Sullivan (TCD)

O. Cassetti (TCD)

C. McGrath (Hong Kong University)

A. O' Sullivan (UCD)

### Session A, Davin Suite

**Background:** The important role of dietary intake in the development of dental caries and obesity is generally accepted. However, obtaining accurate estimates of dietary intake in children is challenging. Food Frequency Questionnaires (FFQ) are cost effective, but limited, dietary assessment tools for large scale studies. This research explored the augmentation of food intake data from a modified FFQ in the *Growing Up in Ireland* (GUI) survey by unidirectional mapping from the more detailed National Preschool Nutrition Survey (NPNS) which used a 4 day weighed food diary.

**Methods:** Data were derived from the second wave of the GUI infant cohort (n=9,793) and NPNS (n=126) of 3 year old children, both sampled in 2010/2011. Following feature selection of foods, using shallow natural language processing, all of the GUI FFQ categories were mapped, in one direction only, with food groups from NPNS. Frequency of consumptions were defined.

**Results:** Approximately 43% (SD=13) of the food consumption occasions and approximately 33% (SD=15) of the weight of food consumed in the NPNS survey were not covered by the GUI FFQ categories. Potentially cariogenic foods such as fruit juices, smoothies, RTEBC, puddings and added sugar were not covered by the GUI FFQ.

**Conclusions:** This research demonstrates that if a FFQ provides insufficient dietary information for health outcome analysis, it is possible to augment dietary intake values by data-mapping. This provides more detailed information on food consumption patterns with the potential to enhance health outcome analysis. Bootstrapping techniques may be useful for further investigation of food consumption patterns.

# Session B

## Hogan Mezzanine Theatre

## Mothers' perceptions of breastmilk sufficiency and duration of breastfeeding: secondary analysis of the *Growing Up in Ireland* infant cohort dataset

Anne Matthews (DCU)

Susan Gannon (DCU)

### Session B, Hogan Mezzanine Theatre

**Context:** Breastfeeding initiation rates in Ireland are low, and duration of exclusive, or any breastfeeding, falls short of the international public health guidelines. The *Growing Up in Ireland* (GUI) study, asked mothers of 9 month old infants, about their infant feeding choices and patterns. The highest proportion of mothers, (37%), chose "not enough milk/ hungry baby" as a reason for stopping breastfeeding.

**Methods:** Using SPSS version 23, we performed secondary analysis on the anonymised microdata file (AMF) from the GUI study, obtained from the ISSDA. For mothers who did breastfeed, we used t-tests, to examine the difference in duration of breastfeeding, according to various reasons stated by respondents for stopping breastfeeding when they did. Further multivariate analysis of all key factors affecting duration is ongoing.

**Results:** Mothers who cited 'not enough milk/ hungry baby' as a reason for stopping breastfeeding, had a shorter duration (65.5 days, SD 59.55, n=1973) of breastfeeding feeding than those who did not chose that reason (88.5 days, SD 72, n= 3480),  $p < 0.000$ . The difference in duration of exclusive breastfeeding was even greater, 55.06 days (SD 50.28, n= 1433) compared to 94.2 days (SD 64.7, n= 3683,  $p < 0.000$ ).

**Conclusions:** Within the context of consistent international research findings on perceptions of having 'not enough milk' to feed their babies, these results suggest that this is associated with shorter duration of breastfeeding. This reinforces the need to address this prevailing perception of women's bodies being insufficient for their babies' needs through targeted and explicit campaigns and supports.

## The impact of elective caesarean sections on digestive allergies, cardiac issues and respiratory issues in the children's *Growing Up in Ireland* cohort

Tyannah Reed (UCD)

Ricardo Segurado (UCD)

### Session B, Hogan Mezzanine Theatre

**Background:** In Ireland, about 27% of all births are by Caesarean section, about half of which are elective (13%.) Many studies have found long-term health impacts of delivery by Caesarean section in infants, but results are inconclusive. This study aimed to analyse the impact of birth by elective Caesarean section on digestive allergies, cardiac issues and pulmonary issues within the Children's *Growing Up in Ireland* infant cohort.

**Methods:** Infant data by delivery modes aside from elective Caesarean section or normal vaginal delivery were excluded, as well those born before/after 39/40 weeks (full-term.) This left a sample size of 4,040 infants, including data from 9 months and 3 years. The population was analysed using logistic regression for association between delivery mode and digestive, cardiac and pulmonary issues. Confounders controlled for included primary caregiver's education, income and age; infant's gender and whether the infant was ever exclusively breastfed.

**Results:** Infants born by elective Caesarean Section were from a significantly higher socioeconomic group with higher parental ages. There was no significant relationship between elective Caesarean section and digestive allergies, cardiac issues, or asthma (at 9 months.) There was a statistically significant relationship between asthma at 3 years and elective Caesarean with an OR of 1.53 (95% CI: 1.07- 2.19) however, upon adjustment for confounders, the association was no longer significant.

**Conclusions:** Analysis based on infants born in Ireland in 2008 at 9 months and 3 years old showed minimal statistically significant associations between elective Caesarean section and digestive allergies, cardiac and respiratory issues.

# Session C

## Nally Suite

## Socio-emotional outcomes at Age 5 in Ireland: does non-parental childcare make a difference?

Fran McGinnity (ESRI), Helen Russell (ESRI)  
Oona Kenny (ESRI)

### Session C, Nally Suite

**Context:** Amid much debate on the impact of non-parental childcare on child development, there is increasing recognition of the importance of socio-emotional development. Children's ability to regulate emotions, concentrate and interact successfully with peers and others is important not only for their current well-being but also for 'school readiness' and future educational outcomes. Research suggests that Early Childhood Education and Care (ECEC) may have a 'compensatory' effect for children from less advantaged families, for whom socio-emotional outcomes are shown to be poorer.

**Methods:** Based on analyses from three waves of the GUI infant cohort (n=9,000), using the Strengths and Difficulties Questionnaire (Goodman, 1997) reported by both parents and teachers to measure socio-emotional adjustment, this paper using OLS regression modelling to explore two questions. Firstly, is participation in different non-parental care types by age three associated with socio-emotional outcome differences at age five? And secondly, do the effects of non-parental care vary for children from advantaged/ disadvantaged social backgrounds?

**Results & Conclusion:** After controlling for various child, parent, family and neighbourhood characteristics we find small but significant associations between childcare settings and children's socio-emotional development. Home-based settings, that is relative or childminder care, were associated with fewer socio-emotional difficulties and increased pro-social behaviour compared to full-time parental care. Teachers' ratings suggest slightly greater socio-emotional problems for children in centre-based care. Social inequalities in socio-emotional development are evident at age five, and small but significant associations were found, suggesting that centre-based care may be more beneficial for children from disadvantaged socio-economic backgrounds.

These findings have implications for the childcare sector, where considerable policy activity is currently occurring, and also for policy concerning child poverty.

## Different ways of estimating ADHD prevalence rates and the implications for mental health service

Aleksandra Gronostaj-Miara (St. John of God)  
Udo Reulbach (UCD), Blánaid Gavin (UCD)  
Fiona McNicholas (UCD)

### Session C, Nally Suite

**Context:** Epidemiological data and reliable estimates on the prevalence of mental health disorders in youth are of great importance for shaping public policy, planning, and the development of mental health services. However, the rates can vary widely depending on the methods of data collection and definitions of caseness used.

**Methods:** The *Growing Up in Ireland* dataset for Wave 1 of Child Cohort allows for applying a number of different strategies, typically used in epidemiological studies, of assessing ADHD prevalence rate. There is information on the number of children that score in high ranges on a standardised screening tool Strengths and Difficulties Questionnaire Hyperactivity / Inattention scale completed by parents and teachers, where either old or new cut-off points can be used. Furthermore teachers' and parents' reports can be treated separately or combined according to both 'or' and 'and' rules. In addition, primary caregivers were asked to indicate whether the child had ADHD and were subsequently asked if a formal diagnosis was made by a professional.

**Results:** Depending on the criterion used, prevalence assessment of ADHD ranges from 0.83% (71 out of 8568 children at 9 for whom the ADHD diagnosis was made by a professional) to 19% (SDQ old cut-off points with 'or' criterion taking into account parent's and teacher's assessment).

**Conclusions:** Consequences for planning mental health service are discussed along with the evidence that shape policy today.

# Session D

Davin Suite

## The association between weight perception and BMI: report and measurement data from the *Growing Up in Ireland* cohort study of 9 year olds

Frances Shiely (UCC), Hon Yan NG (UCC)  
Elaine M Berkery (UL), Celine Murrin (UCD)  
Cecily Kelleher (UCD), Kevin Hayes (UL)

### Session D, Davin Suite

**Background:** The gold standard for categorisation of weight status is clinically measured BMI but this is often not practical in large epidemiological studies.

**Objectives:** To determine if a child's weight perception or a mother's perception of a child's weight status is a viable alternative to measured height and weight in determining BMI classification. Secondary outcomes are to determine the influence of a mother's BMI on her ability to categorise the child's BMI and a child's ability to recognise his/her own BMI.

**Methods:** Cross-sectional analysis of the GUI cohort study. Variables considered for this analysis are; child's gender, measured BMI and self-perceived weight status, mother's weight perception of the child, measured BMI and self-perceived weight status. Cohen's weighted Kappa was used to evaluate the strength of the agreement between pair-wise combinations of the BMI variables. Cumulative and adjacent categories logistic regression were used to predict how likely a person rates themselves as under, normal or overweight, based on explanatory variables.

**Results:** Mothers are more accurate at correctly classifying their child's BMI ( $\kappa=0.5$ ;CI 0.38-0.51) than the children themselves ( $\kappa=0.25$ ;CI 0.23-0.26). Overweight mothers are better raters of their child's BMI ( $\kappa=0.51$ ;CI 0.49-0.54), compared to normal ( $\kappa=0.44$ ;CI 0.41-0.47) or underweight mothers ( $\kappa=0.4$ ;CI 0.22-0.58). The mother's perception of the child's weight status is not an influencing factor on the child's ability to correctly classify him/herself, but the child's self-perceived weight status influences the mother's ability to correctly classify the child.

**Conclusions:** A mother's BMI classification of her child is a viable alternative to BMI measurement in large epidemiological studies.

## The relationship between obesity and educational performance in Ireland: a panel analysis using the *Growing Up in Ireland* survey

Mimi Xiao (NUIG), Ciaran O'Neill (NUIG)

### Session D, Davin Suite

**Context:** Disparities in educational achievement have been found among children differentiated by obesity status. The extent to which these reflect differences in ability, in industry or exposure to differential expectations among teachers is unclear. In this paper we use two waves of the *Growing Up in Ireland* (GUI) survey to examine relationships between performance in standardised test scores in maths and reading; we control for a range of characteristics related to the child and their educational context.

**Methods:** Using Ordinary Least Squares (OLS), the performance of a cohort of 13 year olds in standardized tests in reading and maths were regressed on a range of explanatory variables. Explanatory variables included previous test score performance, teacher assessment of the child's ability, gender and obesity status as well as household characteristics including primary caregiver education, marital status and income. We compared cross sectional and panel results.

**Results:** Controlling for a range of variables children who were obese were found to achieve higher test scores in reading relative to those who were normal or under-weight. The magnitude of the effect (0.118) while small relative to that associated with previous test performance (0.507) was nevertheless greater than that associated with many socio-demographic and reported behavioural variables. With respect to maths no relationship was found with obese status though those who were overweight were found to perform less well than other children.

**Conclusions:** The relationship between adiposity and educational performance are complex and mutable. The existence of significant effects warrant closer examination.

## Short sleep duration is associated with overweight and obesity in five-year-old children

Gail Nicolson (TCD)  
Lina Zgaga (TCD)

### Session D, Davin Suite

**Background:** Recent studies suggest that short sleep duration may be associated with overweight and obesity in children. The aim of this study is to investigate the relationship between sleep duration and BMI in five-year-old Irish children.

**Methods:** Data from the third wave of the infant cohort of the *Growing up in Ireland* (GUI) study were analysed. After exclusion of children with chronic illness, a nationally representative sample of 7443 was available for analysis. BMI was calculated from height and weight measured at the time of the interview and used to categorise children into normal weight, overweight and obese. Multivariate regression analysis was carried out to determine if shorter sleep duration was associated with overweight and/or obesity. The model was adjusted for: screen time, mother's BMI, mother's smoking and alcohol consumption, and urban/rural dwelling.

**Results:** In this cohort, 79.8% were non-overweight, 15.7% were overweight and 4.6% were obese. The average sleep duration was 11.07, with 29.3% of children sleeping  $\leq 10.5$  hours/day, 33.3% sleeping 10.5-11 hours/day, 19.7% sleeping 11-12 hours/day and 17.6% sleeping more than 12 hours/day. Children who slept  $\leq 10.5$  hours/day were significantly more likely to be overweight/obese (OR=1.38,  $P < 0.01$ ) compared to children who slept more than 12 hours/day. The risk of overweight/obesity was also significantly increased among those who slept 10.5-11 hours/day (OR=1.45,  $p < 0.001$ ) and for those who slept 11-12 hours/day (OR=1.26,  $p < 0.05$ ).

**Conclusions:** The data demonstrated that short sleep duration is associated with overweight/obesity in 5-years-old children. Because sleep duration is a potentially modifiable risk factor, these findings may have important implications in shaping guidelines and policy

decision making with regard to the prevention and treatment of obesity.

# Session E

## Hogan Mezzanine Theatre

## Socio-economic variation in the impact of the Irish recession on the experience of economic stress among families.

Dorothy Watson (ESRI)

### Session E, Hogan Mezzanine Theatre

**Context:** We draw on the GUI data to go beyond income-centred approaches to the impact of the economic crisis by focusing the manner in which pre-recession socio-economic characteristics moderated the consequences of the recession for the economic stress levels of households with children. This allows us to ask whether the recession resulted in a polarisation or a levelling of families' experience of economic stress.

**Methods:** We analyse the GUI data for the 1998 Cohort at ages 9 and 13 to examine changes in the experience of economic stress by characteristics in the first wave (social class, income group and family type).

**Results:** Viewed in absolute terms, we find some support for the argument for polarisation in that while stress levels rose substantially across the board, the largest increases in absolute percentage point terms were observed towards the bottom of the social class and income hierarchies and for lone parents. However, the picture of change over time is different when viewed in relative terms. The increases for the more favoured group were from a much lower base and consequently the pattern of relativities was transformed over time with a reduction in inequality by social class, income quartile and lone parenthood. As a result, we observed a dramatic increase in the socio-economic heterogeneity of economically stressed households.

**Conclusions:** Clearly the absolute increase in economic stress for the most disadvantaged households involves a significant reduction in their quality of life and is concerning in light of the evidence for the short and long-term consequences of childhood poverty and deprivation. However, the substantial restructuring of socio-economic relativities and in the composition of the economically stressed population also raise a range of issues that require further exploration.

## The great recession, household income, and children's test scores

Mark McGovern (Queen's University)  
Slawa Rokicki (UCD)

### Session E, Hogan Mezzanine Theatre

**Context:** The Great Recession had a major impact on the wellbeing and welfare of households worldwide. However, relatively little research discusses how the recession affected children's educational performance. Irish data provide a unique opportunity to examine this question given the extent of the economic contraction Ireland endured during this period.

**Methods:** We use longitudinal data from the *Growing Up in Ireland* study to examine the impact of changes in household income on test scores over the period of the recession, when cohort members were aged 9 and 13. Our outcomes are measured using standardised numerical and verbal aptitude tests. We compare regression results using fixed effects and random effects models. We also investigate effect heterogeneity using quantile regression.

**Results:** Log household income is strongly correlated with test scores in the random effects models, with a unit decrease associated with a reduction of 0.2 standard deviations in verbal and numerical test scores for boys and verbal scores for girls, and 0.1 standard deviations in numerical scores for girls. However, in the fixed effects models the coefficients are attenuated by more than 50%. Quantile results suggest that, for boys, those with high ability are less affected.

**Conclusions:** Although estimates are smaller once time-invariant unobserved characteristics are accounted for, results indicate negative effects of decreases in household income during the Great Recession on children's educational performance. In this paper we estimate the effect of transitory shocks; further data are required to isolate the impact of permanent income.

## Social class variation, the effect of the economic recession and childhood obesity at 3 years of age in Ireland

**Samira Barbara Jabakhanji** (Maastricht University)

**Milena Pavlova** (Maastricht University)

**Wim Groot** (Maastricht University)

**Fiona Boland** (Royal College of Surgeons)

**Regien Biesma** (Royal College of Surgeons)

### Session E, Hogan Mezzanine Theatre

**Context:** Studies have found a social class gradient within overweight prevalence. Additionally, cross-country comparisons report high overweight trends and a change in food consumption patterns in countries affected by the recent economic crisis. This study examines the association of childhood obesity and social class in Irish toddlers during the economic recession.

**Methodology:** Data of the *Growing Up in Ireland* infant cohort (n = 11,134) were used. Data were collected before the height of the recession (2008), at the children's age of 9 months, and post the height of the recession (2011), at 3 years. McNemar's test was used to compare differences, pre and post the height of the recession, in the percentage of overweight and obese children. Additionally, logistic regression models, adjusting for confounders, were used to examine the relationship between social class, effects of the recession and childhood obesity.

**Results:** In 2008, 38.8% of 9 month olds were overweight or obese. This increased to 44.7% by 2011 (World Health Organization criteria). Prevalence increased at different rates for various social classes; from a 3.5% increase in the unskilled to 18.3% in the managerial and technical class (unadjusted). However, adjusting for confounders, there was no difference in prevalence seen across social classes. Increases in overweight were found to be significantly associated with a perceived 'very significant' recession effect on the family.

**Conclusions:** In times of economic downturn, childhood overweight has increased and public health efforts to promote healthy weight are needed at a population level rather than for specific social classes.

# Session F

## Nally Suite

## The association between self-concept and disability among adolescents in Ireland: secondary analysis of the *Growing Up in Ireland* study.

Aoife Gallagher (UL)

Rose Galvin (UL)

Katie Robinson (UL)

Carol-Anne Murphy (UL)

Paul Conway (UL)

Alison Perry (UL)

### Session F, Nally Suite

**Background:** From international population-based studies, a strong association between self-concept and socio-economic status (SES) among adolescents has been demonstrated, with those from lower SES groups showing lower scores in measures of self-concept. However, there are conflicting findings from studies where the self-concept of adolescents with and without disabilities were compared. The overall aim of this study was to determine the association between self-concept and disability among a nationally representative sample of 13 year olds in Ireland.

**Methods:** A cross-sectional analysis of data collected among adolescents from the national *Growing Up in Ireland* (GUI) study was conducted. Data were gathered from the primary caregiver, the adolescents themselves and the Principals of the schools they attended. The prevalence of different disabilities was calculated and differences across the groups of adolescents with and without disabilities were analysed in relation to; gender, SES, school factors and self-concept scores (as measured by the Piers Harris Self-Concept Scales). Special education needs support being received by those adolescents with disabilities, reported by their primary caregiver, was also categorised. The association between self-concept and socio-economic and educational circumstances was examined with logistic regression.

**Results:** Over seventeen percent (17.07%; n=1305) of these 7,525 adolescents had a diagnosis of one or more disability, as reported by their primary caregiver. Adolescents with disabilities were more likely to live in poorer households, to have poorer

health status in addition to their disability, and to have more negative views of school ( $p<0.05$ ) when they were compared to their typically developing (TD) peers. Adolescents with disabilities experienced significantly more episodes of bullying than their TD peers ( $p<0.05$ ). Almost half of adolescents with disabilities did not receive any additional support in school, neither from education nor health professionals, and over 70% did not receive any support outside school. There was a significant association between the presence of a disability and low self-concept scores, reflected across the majority of self-concept scores ( $p<0.05$ ). The scores also differed across disability type.

**Conclusions:** Findings suggest that Irish adolescents with disabilities are more likely to live in poorer households, have poorer health status, have more negative views of school, experience more episodes of bullying and have poorer self-concept compared to other adolescents. Given the complex health, educational and social needs of this population, improving experiences and outcomes is likely to require collaborative working across a range of services across health, social care and education.

## Duration of breastfeeding and the longitudinal impact on adolescent's behaviour problems: the *Growing Up in Ireland* child cohort

Lisa-Christine Girard (UCD)

Orla Doyle (UCD)

Richard Tremblay (UCD)

### Session F, Nally Suite

**Context:** There is mixed evidence from correlational studies that breastfeeding impacts on children's longitudinal development. With few exceptions, less attention has been given to the potential effects on child and adolescent behavioural problems. Our aim is to investigate the longitudinal impact of breastfeeding on behaviour problems.

**Methods:** Participants included ~ 8, 000 families from the GUI, child cohort. Parent-reports were used to collect information on children's externalizing behaviours at nine and 13 years of age. Breastfeeding information was collected via retrospective maternal report. Participants were matched on 16 confounders (i.e., child sex, birth weight, delivery mode, neonatal intensive care visit, sibling status, maternal age, education, working status, ethnicity, partner status, social class, medical card, smoking during pregnancy, drinking during pregnancy, maternal parenting style and paternal parenting style).

**Results:** Prior to matching, breastfeeding was associated with better outcomes for nearly all externalizing behaviours at both age nine and 13. After matching, the only outcomes that remained statistically significant were children's conduct problems (difference score -0.30) and hyperactivity (difference score -0.52) at age nine, providing the child was breastfed at least six months. No statistically significant differences were observed at age 13.

**Conclusions:** While some positive benefits of breastfeeding were found on children's age nine externalizing behaviours; the effect sizes were modest in practical terms. No support was found for statistically significant gains at age 13, suggesting that the observed benefits from

breastfeeding may not be maintained into adolescence.

## The impact of early life stress on psychological symptoms in young adolescents.

Dearbhail Ni Cathain (RCSI)

Mary Cannon (RCSI)

Mary Clarke (RCSI)

### Session F, Nally Suite

**Context:** Many Irish children are exposed to a variety of stressful life events. The link between early life stress and psychopathology is well established. However, the longitudinal impact of stress occurring during the formative years of childhood on children as they approach adolescence, another developmentally important time, merits further investigation.

**Methods:** The data used were from the "*Growing up in Ireland*" child cohort. The outcome, psychological symptoms, was assessed via the Strengths and Difficulties Questionnaire as answered by the child's parents at ages 9 and 13. The child's exposure to early life stress was extracted from the primary caregiver questionnaire at age 9. 13 different stressful events were accounted for in the questionnaire for example: death of a parent and parent in prison. Regression techniques were then used to test the association between abnormal SDQ scores and stressful life events.

**Results:** The analyses found that those exposed to an above average number of stressors were more likely to have an abnormal SDQ score at age 9 and longitudinally at age 13. At 13 the association was stronger than at age 9 for the majority of the events. Girls were more affected psychologically by early life stress than the boys.

**Conclusion:** The psychological impact of exposure to early life stress can be carried from childhood through to adolescence. These psychological symptoms often prelude psychopathologies. Acknowledging the impact of these stresses at such a young age could lead to preventative instead of curative treatment approaches when it comes to mental illness.

# Session G

Davin Suite

## Obesity and mental health—joining the dots

Patrick A Williams (RCSI)  
Mary C Clarke (RCSI)  
Mary Cannon (RCSI)

### Session G, Davin Suite

**Context:** An association between overweight and mental illness has been described in various populations in several countries, but few longitudinal studies have been carried out. With the growing prevalence of mental illness in young people in Ireland, this paper aims to investigate the impact of childhood weight on adolescent psychological functioning in an Irish population.

**Methods:** Waves 1 and 2 of the Child Cohort were used. An association between overweight at age 9 and psychological functioning at age 13 was examined. Univariate and multivariate logistic regression models with odds ratios and 95% confidence intervals were used. A number of important confounders were adjusted for and bullying was examined as a potential mediator of the association between weight and psychological functioning.

**Results:** Children who were overweight at age 9 were significantly more likely to have psychological symptoms at age 13 than those in the lower weight ranges (OR=1.31 95%CI=1.04-1.64). Taking account of confounders, children who were classed by their BMI score as being overweight or obese at age 9 were found to be significantly more likely to have psychological symptoms at age 13 than children who were a healthy weight or underweight (OR: 1.28, 95% CI: 1.02-1.61). There was no evidence that bullying was a mediator of the association.

**Conclusions:** BMI in mid-childhood is predictive of psychological symptoms in early adolescence, although the mechanism behind this association is not clear. This work provides evidence that public health measures aimed at promoting healthy weight in childhood may also have the effect of reducing the prevalence of mental illness in adolescence.

## The prevalence of overweight and obesity in Irish children with phenylketonuria compared with the *Growing up in Ireland* Study

Aoife Fitzgerald (NCIMD)  
Emilie Serve (NCIMD)  
Joanne Hughes (NCIMD)  
Jenny McNulty (NCIMD)

### Session G, Davin Suite

**Introduction:** Phenylketonuria (PKU) is an inherited metabolic disorder. Treatment for PKU is a lifelong low natural protein diet supplemented with synthetic protein. In 2009 a study at NCIMD indicated an increasing prevalence of overweight and obesity in the PKU population. As a result of these findings routine BMI monitoring was implemented and dietary changes were made as appropriate.

**Methods:** A retrospective chart review of Irish children with PKU (n=45) aged 3, 5, 9 & 13 was carried out. The most recent weight and height were collected. Child Growth Foundation LMS growth software was used to calculate BMI z scores. Overweight and obesity were defined using the International Obesity Task Force (IOTF) BMI cut-offs.

The data were compared with:

- ⊙ The 2009 PKU dataset
- ⊙ The *Growing up in Ireland* (GUI) Study

**Results:** There was a slight reduction in the prevalence of overweight and obesity from 2009 to 2015 in the PKU population (Mean IOTF BMI grade 0.48 in 2009 vs. 0.36 in 2015; p=0.455).

The PKU children in 2015 showed comparable prevalence of overweight and obesity to the children in the GUI study (Mean IOTF BMI grade of 0.30 in GUI vs. 0.36 in PKU children; p=0.520).

**Conclusion:** The implementation of BMI monitoring has had a positive impact on the prevalence of overweight and obesity in children with PKU as shown by the slight decrease in the Mean IOTF BMI grade. This prevalence is comparable to that of the GUI study.

## The effect of public health insurance coverage on child health and healthcare utilisation

Valentina Tonei (ESRI)

Anne Nolan (ESRI)

### Session G, Davin Suite

**Context:** In recent years the importance of expanding health insurance coverage in countries without universal healthcare access has been at the centre of the political debate. Public health insurance programs are mainly justified by the aim of reducing inequalities in access to health care, and, in a final instance, improving health of low income families. This goal is particularly important for children because early interventions of health services have been shown to be critical for future health and life outcomes.

**Methods:** This study investigates the effect of public insurance coverage for children on their utilisation of health care services and health. We exploit the variety of information from *Growing Up in Ireland* (GUI) by focusing on different forms of health care (GP visits, specialists or outpatient care and A&E access) and alternative measures of child health (physical health, psychological well-being). To identify the causal effects of interest we employ alternative econometric strategies which exploit the income eligibility criteria for medical card and GP visit card in Ireland and the longitudinal dimension of the data.

**Results:** Our preliminary results show that children whose families benefit from public health insurance (in particular from the Medical Card) have higher healthcare use, but the effects on health are ambiguous. Further research is needed to understand whether this evidence is due to a lower level of health endowment at birth for low-income children (compared to children from high-income families) or an inefficient utilisation of health care services.

# Session H

## Hogan Mezzanine Theatre

## A day in the life of 9 year-olds: exploring patterns in time-use data

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### Session H, Hogan Mezzanine Theatre

**Context:** There are increasing concerns over changes in children's pastime activities, particularly in relation to a recent shift away from outdoor, physically active, unstructured and unsupervised play, to indoor, relatively inactive, structured and organised activities (Gray, 2011; Tremblay et al., 2011, 2015).

**Methods:** This study provides an insight into a typical day in the lives of 9-year olds and investigates if the shifts noted above are reflected in children's self-reported activities. Drawing on data from the time-use diaries of the child cohort, the analysis focuses particularly on pastime activities as well as gender differences and potential relationships with socio-emotional wellbeing and health using bivariate and regression analyses.

**Results:** On a typical weekday during school term-time, children spend roughly 7 hours on school related activities. Out of term and on weekends, children have double the amount of leisure and family time compared to term days. Boys spend more time than girls with physical play and computer/video games; girls in turn spend more time reading, with general play and hobbies. Regarding pastime activities, spending little time with leisure activities (structured and unstructured) and a lot of screen time is associated with more difficulties and a higher probability of being overweight.

**Conclusions:** Results will be contextualised using bio-ecological theory, highlighting in particular the dynamic and complex nature of impacting factor as well as mediating child and family characteristics.

## Disparities in early life investments and children's time use

Slawa Rokicki (UCD)  
Mark McGovern (Queens University)

### Session H, Hogan Mezzanine Theatre

**Context:** Early life investments in children promote skills and capabilities, and subsequently influence a myriad of health, social, and economic outcomes in later life. Participation in activities which foster cognitive and non-cognitive abilities is one measure of these investments. In this article, we examine socio-economic disparities in time use among children in Ireland.

**Methods:** We use children's time use diaries from two waves of the *Growing Up in Ireland* cohort study to describe differences in average time spent on activities at ages 9 and 13. We also investigate differences in the time parents spend with their children and patterns in work/family allotment. We apply poisson regression analysis and derive concentration curves.

**Results:** Children from disadvantaged households spend significantly less time reading and in extracurricular activities than their counterparts, and more on leisure and technology. These gaps widen between ages 9 and 13 for both sexes. For example, at age 13, boys in the lowest household income quintile spend 25 (95% CI 14-37) minutes per day on extracurricular activities, compared to 79 (95% CI 22-135) among boys in the highest quintile. For girls, the corresponding figures are 26 (95% CI 9-43) and 50 (95% CI 37-63).

**Conclusions:** Disparities in time use are a cause for concern in relation to the unequal opportunities facing young children. Given the established association between participation in skill-promoting activities and later outcomes, widening gaps in time use investments by socioeconomic status point to the emergence of cumulative disadvantage.

## Space to act out? Neighbourhood and school influences on behaviour within and outside school

Emer Smyth (ESRI)

James Williams (ESRI)

### Session H, Hogan Mezzanine Theatre

**Context:** There is a large body of international research on the extent to which neighbourhoods and schools influence young people's outcomes, especially academic achievement (Leventhal and Brooks-Gunn, 2000). School experiences have also been found to influence delinquency (Smith, 2006), with some studies indicating that schools and residential characteristics have independent effects on anti-social behaviour (Kim, 2016). Many of these studies have been conducted in contexts where young people typically attend their local school, making it difficult to disentangle school and neighbourhood effects. This paper takes advantage of the extent of active school choice in Ireland to explore the impact of the social profile of the school and of the local area on young people's (mis)behaviour within and outside school.

**Methods:** The paper uses data from the second wave of the GUI child cohort conducted at 13 years of age which collected information from young people on the frequency of their misbehaviour within school and their involvement in theft, vandalism and violent behaviour outside school. Multilevel cross-classified models are used to disentangle school and neighbourhood effects, focusing in particular on the extent to which the concentration of disadvantage in both contexts affects behaviour.

**Conclusions:** While teenagers who 'act out' in school are more likely to engage in anti-social behaviour outside school, school-based misbehaviour (such as being late, being disruptive in class or truanting) is found to be more prevalent, suggesting that young people operate differently in different social arenas.

# Session I

## Nally Suite

## Ethical and practical considerations of interviewing with children

Aisling Murray (ESRI)

### Session I, Nally Suite

The voice of the child or young person is a central tenet of *Growing Up in Ireland* and at this stage of the project, there have been in the region of 23,000 interviews with members of the Child Cohort. In addition, there have been approximately 19,000 sets of cognitive assessments completed with members of the Infant Cohort and we are currently piloting the first full interviews with these children now that they are reaching 9 years of age. Furthermore at every wave of *Growing Up in Ireland* there have been at least two physical measurements of each cohort member.

This presentation will outline the practicalities of carrying out large-scale quantitative surveys with children and young people, the special considerations with regard to younger respondents and the phases that lead up to the roll-out of a study such as *Growing Up in Ireland*. Data users may be interested to hear more about the fieldwork and preparation behind the numbers in the datafile – what it takes to translate the experiences of children and young people into information that can be quantitatively analysed by researchers from multiple disciplines. Researchers who are conducting or planning their own research with children may find it useful to hear more about the *Growing Up in Ireland* process. Please note that this talk will not cover the *Growing Up in Ireland* qualitative interviews on this occasion.

## Attriters and their impact on *Growing Up in Ireland*

James Williams (ESRI)

Sophie Gallagher (ESRI)

### Session I, Nally Suite

Longitudinal attrition and interwave non-response is a common feature of all longitudinal panel surveys. A substantial literature identifies a range of characteristics which may be related to response patterns from one round of a longitudinal study to the next (e.g. Watson and Wooden (2009), Waterton & Lievesley (1987); Laurie et al. (1999), Hill & Willis (2001); and Behr et al. (2005)). Some trends in attrition are directly related to *survey* characteristics (such as length of interview in prior waves and interviewer continuity from one round of interviewing to the next). Attrition has also been associated with *respondent* characteristics including: gender; household composition and size; level of educational attainment; labour force status; income; race / ethnicity and marital status. Using anonymised data from the relevant AMF and RMF *Growing Up in Ireland* files this paper examines the extent to which systematic trends in inter-wave attrition patterns can be identified across the first three waves of the Infant Cohort, completed when the Study Children were 9 months, 3 years and 5 years of age. It further considers the effect of attrition on survey estimates and the extent to which this has been addressed in the longitudinal weights provided with the data.

## Multi-variate techniques using panel data

Richard Layte (TCD)

### Session I, Nally Suite

Cause and effect are natural concepts to most people. In our everyday world we naturally link what has happened before with what happened later and make judgments about whether one event led to the other. But how can we be sure that one event did indeed cause the other? The gold standard for establishing causality is the randomised control trial or RCT, but this isn't always either an ethical or practical option. Instead, researchers often use observational studies such as *Growing Up in Ireland* to assess the relationship between phenomena. These provide naturalistic data that can reflect real world conditions but if we measure X and Y at the same time and the relationship is strong, how do we know that X caused Y and not vice versa? Longitudinal studies follow the same individual or aggregate over time and allow us to test the relationship between causes and effects by observing whether X always proceeds Y. In this talk we examine the logic of observational studies and the different analytical approaches which are available to make the best use of the data which are available.

## The role of the Irish Social Science Data Archive (ISSDA) in the research data lifecycle

Jenny O'Neill (UCD)

### Session I, Nally Suite

**Context:** The Irish Social Science Data Archive (ISSDA) is Ireland's leading centre for quantitative data acquisition, preservation, and dissemination. Based at UCD Library, its mission is to ensure wide access to quantitative datasets in the social sciences and to advance the promotion of international comparative studies of the Irish economy and Irish society. In this way ISSDA plays a pivotal role in the research data lifecycle. The research data lifecycle involves the creation, processing and analysis of data and also the preservation, sharing and reuse of those data.

**Methods:** The social sciences are in the midst of a change in practice towards archiving, sharing and reusing data. Within Ireland the *Growing Up in Ireland* study is helping to drive this shift in culture by actively encouraging other researchers to re-use their data.

**Results:** Sharing and re-use of data is not simply about complying with funder or institutional requirements. Sharing data demonstrates the complexity of the original research and re-using those data shows the diversity of different but connected research topics. By allowing the data to be re-used new insights are being provided that could not have been anticipated in the initial research design.

**Conclusions:** By facilitating not only the preservation, sharing and reuse of data ISSDA allows the research data lifecycle to begin anew by the processing and analysing of those data again but this time through a new lens – in fact an unlimited number of new lenses.



**Growing Up  
in Ireland**  
National Longitudinal  
Study of Children

