A SUMMARY GUIDE TO

WAVE 4

OF GROWING UP IN IRELAND'S

COHORT '98 (CHILD COHORT)

AT 20 YEARS OF AGE

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1   INTRODUCTION

1.1   INTRODUCTION

This document provides the reader with a brief summary of the fourth wave of data collection for Cohort '98 (formerly referred to as the Child Cohort) when they turned 20 years of age. This guide will also provide an overview of the microdata files (Research and Anonymised) from this wave of *Growing Up in Ireland* data collection.

Growing Up in Ireland- the National Longitudinal Study of Children, is the first project of its kind undertaken in Ireland. *Growing Up in Ireland* aims to describe the lives of children and young people and to identity key factors that help or hinder their development. A two-cohort longitudinal design was adopted. Cohort '98 recruited and interviewed 8568 9-year-olds and their families in 2007/2008. Cohort '08 (formerly referred to as the Infant Cohort) recruited and interviewed the families of 11,134 9-month-olds in 2008. As the project is longitudinal in nature, both cohorts are being interviewed on a number of occasions. Cohort '98 and their parents / guardians were interviewed previously when the young people were 9, 13, 17 and recently at 20 years of age (subject of this report). The families of cohort '08 were interviewed at 9 months, 3, 5, 7 (postal survey) and 9 years of age. This cohort is currently being interviewed in 2021 as they turn 13 years of age. A series of reports, summary key findings and peer reviewed papers on data collected to date have been produced from both cohorts.

Cohort '98 consist of 8,568 young adults who were born between 1st November 1997 and the 31st of October 1998. The first wave of data collection took place between August 2007 and May 2008, between August 2011 and March 2012 for the second wave and between April 2015 and August 2016 for the third wave. Data collection for the current wave of *Growing Up in Ireland* (aged 20) took place between August 2018 and June 2019 and resulted in a complete data set of 5,190 cases.

This report describes in detail the background, design, instruments, and procedures used only in respect of Wave 4 of Cohort '98. Wave 1, 2 and 3 of this cohort (and Cohort '08) are the subject of another set of reports. The focus here is on the sample design and response rate, the nature and content of the questionnaires and other instruments, along with a broad overview of the dataset.

1.2   BACKGROUND

Growing Up in Ireland provides important input to the implementation of The National Children's strategy- a major national plan for children, published in 2000 by the Department of Health and Children. The principal objective of the study is to provide evidence-informed research into children and young people's well-being. This increased understanding of the determinant and drivers of well-being and its change and transformation over time will be used to assist in policy formation and in the design and delivery of services for young people and their families.

Growing Up in Ireland is funded by Government through the Department of Children, Equality, Disability, Integration and Youth (DCEDIY). It is overseen and managed by the DCEDIY in association with the Central

Statistics Office (CSO). Detailed recommendations for the design of a National Longitudinal Children's Study were first presented in a paper entitled Design of the National Children's Strategy – Longitudinal Study of Children (Collins, 2001). The current study stems from a Request for Tender[1] which was issued by the then Department of Health and Children in December 2004. After an assessment and evaluation process throughout 2005 and early 2006, work on the project began in April 2006 by a research consortium led by the Economic and Social Research Institute (ESRI) and Trinity College Dublin (TCD).

The study provides an immense amount of information on young people and their families and explores the following key domains of young people's lives: health and physical development educational/cognitive development, socio-emotional and behavioural well-being and economic and civic participation. By gathering comprehensive data on young people's development throughout childhood and into adolescence and adulthood the study will provide a statistical basis for evidence informed policy formation and applied research across all aspect of young people's development-currently and into the future.

Growing Up in Ireland has nine specific objectives as outlined below:

1. To describe the lives of Irish children, to establish what is typical and normal as well as what is atypical and problematic

2. To chart the development of Irish children over time, to examine the progress and wellbeing of children at critical periods from birth to adulthood.

3. To identify the key factors that, independently of others, most help or hinder children's development.

4. To establish the effects of early childhood experiences on later life.

5. To map dimensions of variation in children's lives.

6. To identify the persistent adverse effects that lead to social disadvantage and exclusion, educational difficulties, ill health and deprivation.

7. To obtain children's views and opinions on their lives.

8. To provide a bank of data on the whole child.

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[1] REQUEST FOR TENDER (RFT) FOR PROPOSALS TO UNDERTAKE A NATIONAL LONGITUDINAL STUDY OF CHILDREN IN THE REPUBLIC OF IRELAND, ISSUED BY THE NATIONAL CHILDREN'S OFFICE OF THE DEPARTMENT OF HEALTH AND CHILDREN AND THE DEPARTMENT OF SOCIAL AND FAMILY AFFAIRS, DECEMBER 2005, P.20.

9. To provide evidence for the creation of effective and responsive policies and services for children and families.

Full details on the underlying theoretical and conceptual framework can be found in Greene et al (2010) [2]

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[2] Available at http://www.esri.ie/growing-up-in-ireland/growing-up-in-ireland-official-publications-from-the-child-cohort/

2   THE SAMPLE AND DATA

2.1   INTRODUCTION

This chapter considers the methodology and sample design for Wave 4 of Cohort '98 at 20 years of age. Consideration is given to the composition of the longitudinal sample, followed by discussion of the levels of inter-wave attrition and procedures for statistically reweighting the data to ensure that they are representative of the population.

2.2   COMPOSITION OF THE LONGITUDINAL SAMPLE

As noted in Thornton et al. (2016) *Growing Up in Ireland* is a longitudinal study based on a fixed panel design. This means that the project follows the children and their families who were recruited into the study at 9 years of age for re-interview on several subsequent occasions. In respect of Cohort'98 this involved re-interviewing the 9-year-olds and their families at 13, 17 and subsequently at 20 years of age. After the initial sample selection at 9 years of age, no additions were made to the sample. By 20 years of age the sample represents the Young Adults (formerly referred to as the Study Children, or Young Persons) and their families who were resident in Ireland at 9 years of age and who continued to live in the country when they were 20 years old. There are, of course, young adults who lived in Ireland at 20 years of age but who were not resident at 9 years of age. These are effectively new 'entrants' to the country since the recruitment of the sample. This group of young adults is not part of the longitudinal population under consideration in the fixed panel design of the study.

At Wave 1 of the project a total of 8,568 9-year-olds and their families were interviewed. All of these families were approached for re-interview when the Study Child was 13 years old. A total of 7,525 families participated in the study when the Study Child was 13 years of age, giving a response rate of 89 per cent. A further 665 families refused to participate at that time. 101 13-year-olds (and their families) no longer lived in Ireland when approached for interview and so are excluded from the target population – they are no longer growing up in Ireland and so do not form part of the longitudinal population.

At the third round of interviewing, when the study children were aged 17/18 years, a total of 8,277 families were issued to field interviewers. Families who had been interviewed in the first wave of the study (when the Study Child was 9) but who had not participated in the next consecutive wave were invited to be interviewed in the 17/18-year wave of fieldwork. The Study Team did not attempt to re-interview families for whom there was no valid address or where the family had explicitly requested not to be approached in further waves of the study. In total there were 6,216 completed households at Wave 3, representing a response rate of 76 per cent. For an additional 215 households, an interview was secured with the parent(s) but not the 17/18-year-old themselves.

For Wave 4 (at age 20) the Study Team approached all previous participants unless the family had previously definitively refused to be contacted in future waves of the study or was not eligible (i.e. the whole family had moved abroad or the young adult was sadly deceased). In total, contact details for 7,925 20-year-olds were issued to interviewers in Wave 4. Questionnaires were completed by 5,190 20-year-

olds (the main respondents in this wave), which represented 65 per cent of the cases issued to interviewers.

2.3   DIFFERENTIAL INTER-WAVE ATTRITION

Non-response is a feature of all sample surveys. It is highly undesirable, especially if it is found to be non-random or concentrated in certain sub-groups of the target sample. Non-response from one round to another in a longitudinal survey is referred to as inter-wave attrition. As discussed in detail in Thornton & Williams (2016), it may be mitigated by implementing tracking procedures aimed at tracing respondents who change address between successive interviews, to try to keep them included in the sample. The types of tracing procedures used with Cohort'98 at 20 years of age include proactive and retrospective tracing methods (Lynn, 2009).

Proactive forward tracing refers to procedures put in place to update contact addresses or other information prior to a round of fieldwork. Retrospective tracing methods are those put in place after fieldwork in the second or subsequent rounds of the survey, after it has been identified (usually by an interviewer) that the participant has changed address since his/her previous interview. In previous waves, the GUI team recorded alternative contact information on at least one of the parent's close friends, family members or work associates. These contacts were only contacted if the respondent had moved address between subsequent interviews. This is an example of proactive tracing procedures. Due to changes in data protection guidelines between the 17/18 year and 20-year waves, however, this was not implemented in the latter wave.

With regards to retrospective tracing procedures used in this study, if an interviewer came across a family that was no longer resident at the address previously provided, they attempted to obtain the location of the family's new address from either the current resident or a neighbour at the previous known address. In doing this, the interviewer told the current occupier or neighbour that s/he wished to track the family who had previously participated in a survey, but did not divulge that it was the *Growing Up in Ireland* study or the nature or content of the project in question. New addresses located in this manner by field interviewers were passed back to Head Office for reallocation to field staff.

To assess the extent to which non-response at 20 years was systematically associated with family or other characteristics, Table 2.1 summaries response rates at 20 years of age by a selection of background characteristics when the Study Child was 17/18 years of age (or, for those not responding at age 17/18, the most recent wave available).

Table 2.1: Background characteristics of completed sample at age 20 compared to target sample (those followed from age 9, excluding those deemed ineligible at age 20)

		A. N Cases at 20yrs	B. % of Completed Sample	C. % of Target Population
Young Adult Gender	Male	2495	48%	51%
	Female	2695	52%	49%
Parent 1 Education (most recent wave)	Lower 2nd level or less	552	11%	24%
	Upper 2nd level	1868	36%	42%
	Diploma/certificate	1091	21%	16%
	Degree or higher	1679	32%	19%
Household Social Class (most recent wave)	Professional	857	17%	9%
	Managerial / technical	2110	41%	32%
	Other non-manual	1038	20%	21%
	Skilled manual	562	11%	15%
	Lower skilled / never worked	623	12%	22%
Income Quintile (most recent wave)	1st (Lowest)	674	13%	22%
	2nd	817	16%	21%
	3rd	1025	20%	19%
	4th	1156	22%	19%
	5th (Highest)	1475	29%	19%
Family Type	One-parent	757	15%	22%
	Two-parent	4433	85%	78%
Family size at age 9	Only Child	410	8%	10%
	One Brother/sister	1677	32%	32%
	Two Brothers/sisters	1864	36%	32%
	3+ Brothers/sisters	1239	24%	26%
Parent 1 economic status (most recent wave)	Work, Full time	2718	52%	43%
	Work, Part time (20)	883	17%	18%
	Other	1589	31%	39%
Parent 2 economic status, most recent wave	Work	4165	80%	68%
	Other	268	5%	10%
	No SCG present	757	15%	22%
Drumcondra reading score at age 9, quintiles	Lowest	679	13%	21%
	2nd	821	16%	21%
	Middle	997	20%	20%
	4th	1186	23%	19%
	Highest	1402	28%	19%
All 20-year-olds		5190	100%	100%

The completed sample at age 20 years was broadly representative of the overall target sample in terms of gender and family size at age 9. However, substantial disparities are evident in terms of the other

background characteristics presented in Table 2.2. In general, those from more advantaged backgrounds are over-represented in the completed sample. For example, 11 per cent of the completed sample were in the lowest Parent 1 education category (lower 2nd level or less) and 32 per cent were in the highest category (degree), whereas the relative percentages in the target population were 24 per cent and 19 per cent, respectively. By definition, 20 per cent of the completed sample should be in each of the income quintile groups; in reality, 13 per cent were in the lowest income quintile and 29 per cent were in the highest income quintile. Also, in the target sample 43 per cent of Parent 1 and 68 per cent of Parent 2 were in full-time employment, whereas the respective figures in the completed sample were 52 per cent and 80 per cent. These disparities point to an association between (non-) response and family background characteristics and highlight the need for reweighting of the data.

These differences between the target and completed samples reflect patterns of attrition and non-response that are not unusual in longitudinal samples. Watson and Wooden (2009) found that, in the Australian HILDA panel survey, on average, attrition is higher among males, younger respondents, minority groups, one-parent and non-marital households, less-educated families, the economically inactive, and low-income families. An understanding of these patterns informs the reweighting procedures that statistically adjust the data for systematic non-response or attrition, prior to analysis.

2.4   REWEIGHTING THE DATA

As noted above, the longitudinal sample at Wave 4 is made up of Young Adults and their families who participated in the study at 9 years of age and who were continuing to live in Ireland when they were 20 years old. Given the fixed sample design, young adults who were living in Ireland at 20 years of age but who were not resident in the country at 9 years were not included in this population. Equally, it does not include those who were resident in Ireland at 9 years of age but who had emigrated out of the country by 20 years and who, accordingly, were no longer growing up in Ireland. The statistical re-adjustment of the data must take account of the population to which we are weighting, the study's design as well as response / non-response patterns in successive rounds. With four waves of data now available, analysts can focus on children and families who participated at 9, 13, 17/18, and 20 years of age or the subset who participated at various combinations of these ages. The full sample of 8,568 Wave 1 participants breaks down in terms of response patterns at Waves 2, 3, and 4 as set out in Table 2.2 below.

These response patterns mean that there are 8,568 children and their families available for analysis in cross-section at 9 years of age. If one is interested in transitions from 9 years to 20 years of age, one can use 5,190 cases for analysis (the combination of subgroups marked A and B above). If the focus of investigation is longitudinal child development tracking observations from 9 years, 13 years, 17/18 years of age and 20 years of age, then 4,729 cases are available for analysis (sub-group B in Table 2.2).

Table 2.2: Breakdown of Study Children/Young people and their families according to participation at 9 years, 13 years and 17/18 years of age

File Option	Participated at:	No. of Study Children / Young People
	Responding at age 9 only	807
A	Responding at ages 9 and 20 only	59
	Responding at ages 9 and 17/18 only	89
A	Responding at ages 9, 17/18 and 20 only	88
	Responding at ages 9 and 13 only	1,172
A	Responding at ages 9, 13 and 20 only	314
	Responding at ages 9, 13 and 17/18 only	1,310
B	Responding at ages 9, 13, 17/18 and at age 20	4,729
	Total	8,568

In preparing the Wave 4 data, two sets of weights were calculated. The first set was generated for use in analysis based on the 4,729 Young Adults and their families who took part in all 4 Waves. The second set of weights was generated for use in analysis of 20-year-olds who were also interviewed at 9 years of age – the slightly larger group of 5,190 cases.[3]

The initial survey weight at wave 1 was designed to take account of non-response at the school and family level and adjust the responses to be representative of the population of 9-year-olds as a whole. This weight took account of 11 child or family characteristics and four school characteristics (because 9-year-olds were sampled in schools) (Williams et al., 2009). Population figures were taken from the Census of Population for child and family characteristics and from Department of Education school listings for school characteristics. In subsequent waves, new weights were derived which were the product of the initial weight and a weight to adjust for differential attrition across groups (see, for example, Thornton et al., 2016). The construction of the analysis weight for the 20-year data consists in carrying forward the earlier weight (which controls for initial non-response and attrition up to the 17/18-year wave) and adjusting it for attrition between the 17/18-year and 20-year waves. The Study Team used the GROSS software, as in previous rounds of *Growing Up in Ireland*.[4] This has been used extensively by the Economic and Social Research Institute (ESRI) since 1996. GROSS uses a minimum information-loss algorithm to fit a sample distribution of characteristics (as shown in column B of Table 2.1) to population 'control totals' (the figures for the 'Target population' in column C of Table 2.1). An iterative procedure

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[3] BOTH SETS OF WEIGHTS ARE USED IN THE DESCRIPTIVE REPORT ON 20-YEAR-OLDS (SEE MCCLINTOCK ET AL., FORTHCOMING).

[4] SEE, FOR EXAMPLE, GOMULKA, J., 1992. "GROSSING-UP REVISITED", IN R. HANCOCK AND H. SUTHERLAND (EDS.), MICROSIMULATION MODELS FOR PUBLIC POLICY ANALYSIS: NEW FRONTIERS, STICERD, OCCASIONAL PAPER 17, LSE. GOMULKA, J., 1994. "GROSSING UP: A NOTE ON CALCULATING HOUSEHOLD WEIGHTS FROM FAMILY COMPOSITION TOTALS". UNIVERSITY OF CAMBRIDGE, DEPARTMENT OF ECONOMICS, MICROSIMULATION UNIT RESEARCH NOTE MU/RN/4, MARCH 1994.

is used, allowing marginal of characteristics that are associated with one another to be fitted simultaneously.

The sample weights for the 20-year phase of Cohort '98 were constructed by taking the weight from the previous wave as the initial weight, then calculating an adjustment factor for the carried-forward weight for each case so that the weighted sample distribution matches that of the population in terms of the characteristics used in the construction of the weights.

These characteristics were those shown in Table 2.1 above:

- Young Adult's gender

- Level of education of Parent One

- Family type

- Number of children at age 9 (1-2, 3, 4+)

- Household Social Class

- Household equivalised income quintile

- Work status of Parent One (and Parent Two, where present)

- Young Adult's Score (quintiles) on the Drumcondra Reading Test when they were 9 years old

The characteristics were measured at the most recent of the earlier waves of interviewing (usually the 17/18-year wave), apart from number of siblings and Drumcondra Reading score, both of which were measured in the first wave at age 9. The weights were truncated to avoid giving undue influence on results to individual cases (or a small number of cases) and to avoid excessively large sampling variances.[5] The distributions of the weighted samples are within one percentage point of the target population for all the characteristics used in the weighting scheme.

Using the survey weights means that the data are fully representative of the population of young adults who were resident in Ireland at nine years of age and were still living there at 20 years of age. By necessity, the results are not generalizable to the group of 20-year-olds who moved to Ireland between the ages of nine and 20 years, as *Growing Up in Ireland* is based on a fixed panel design and does not supplement the sample between waves. This approach is one commonly taken in longitudinal studies internationally.

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[5] THE WEIGHTS WERE TRUNCATED TO ONE-FIFTH OF THE MEAN AT THE LOWER END AND 5 TIMES THE MEAN AT THE HIGHER END.

Weighted data can therefore be used to capture prevalence and patterns in the population of 20-year-olds overall but cannot be used to capture the experience of recent immigrants.

The two sets of weighting factors on the 20-year AMF/RMF files are as set out in Table 2.4 below.

Table 2.3: Weighting and Grossing Factors included on the 20-year AMF & RMF

20-year-olds participated at:	No. of 20-year-olds	Weighting Factor
9 years and 20 years	5190	WGT_20YRa
All 4 waves	4729	WGT_20YRb

3 INSTRUMENT DEVELOPMENT AND PILOTING

3.1 INSTRUMENT DESIGN

This chapter describes the various groups of experts and others who had input into the development of the instruments and procedures used in Wave 4 of the Cohort '98 of **Growing Up in Ireland**. The questionnaires were developed by the Study Team along with the input from two International Advisors, the Scientific Advisory Group, and through consultations with a number of young people.

The Scientific Advisory Group (SAG) is a non-executive group that is made up of approximately 50 experts from a range of fields, drawn from many of the third level and related institutions in Ireland. The Scientific Advisory Group was heavily involved in the development of the content of the questionnaires, instruments and procedures.

Two International Advisors who had been involved with the Centre for Longitudinal studies in Britain and who have worked on a number of similar longitudinal studies including the National Child Development Study (NCDS), German Family Panel PAIRFAM ("Panel Analysis of Intimate Relationships and Family Dynamics") and the "ESRC 16-19 Initiative" provided significant advice to the study team at wave 4 of **Growing Up in Ireland**. The two International Experts contributed very substantially in terms of input and suggestions regarding procedures and protocols for all aspects of the study, including design and coverage; sample composition; approaching the families; securing informed consent etc. as well as on the substantive issues around content, scales, modules, topics and questions.

The Young Persons Consultative Process involved four focus groups with young people aged 20. Participants in the focus groups were recruited from different backgrounds and were at a range of 'life-stages' (e.g. in education or in the labour market). Two focus groups were recruited from students in Trinity College. Two more groups, comprising young adults in further education/training or in the labour market, were recruited with assistance from SOLAS and the City of Dublin Education & Training Board. This component was included to ensure that the views of young adults from across as broad a range as possible of social backgrounds were included in the development of the study. These focus groups were important in the development of this phase of the study by identifying the main issues impacting young people today and to address the operational aspects of interviewing 20-year-olds such as how to maximise an honest and full response.

After the pilot study, a focus group was conducted involving six participants from the pilot. This considered the content of the survey as well as the operational and other procedures. Several changes were implemented as a result, such as: the street names of illicit drugs were updated; a question on the degree of liberalism versus conservatism was removed as this was deemed 'too binary'; the question on political party preference was altered to incorporate an option to vote for individual candidates rather than political parties. Other changes implemented as a result of the piloting process – such as the debriefing of interviewers – are detailed in the main 20-year pilot report (O'Mahony et al., 2021).

Members of the Study Team also met with other relevant stakeholder groups and feedback from these meetings was incorporated into the development of the instrumentation and in the design of the project in general.

In developing the instrumentation, the Study Team synchronised, as far as possible, with other longitudinal child cohort studies, in order to enable later comparison as well as to draw on the experiences and lessons learned by them.

3.2   PILOTING THE INSTRUMENTS.

The pilot of the 20-year data involved interviews with young adults aged 20 and their Parent/Guardian. Interviews took place in the home and were completed on a Computer Assisted Personal Interview (CAPI) and Computer Assisted Self Interview (CASI) basis. Once the interview was completed the 20-year-old participant was given an URL link to an on-line survey. The survey contained questions on the interview process and the survey content, along with suggestions on how it could be modified and improved for the main phase. A similar survey was also completed by the survey interviewers. A focus group was also held with pilot participants to discuss issues related to the content and administration of the questionnaire. Any suggestions made in the focus group and the surveys were considered and modifications were made to the main phase of the study.

4   SURVEY INSTRUMENTS

4.1   INTRODUCTION

Data collection at Wave 4 involved a home-based interview with the young adult and one of their parents (frequently, but not necessarily, their mother). Given the now adult-status of the 20-year-olds, the Young Adult could be interviewed in a separate household to their parent. In contrast to data collection at age 9, 13, and 17 years, there was no school-based phase for this wave of data collection. This wave was the first time that the young adult could have moved out from the family home and set up home somewhere else. In this case we interviewed the young adult in their new household. In a small number of cases the Parent did not complete a questionnaire but the young adult did. Table 4.1 below records the numbers of Young Adults and Parents who completed their questionnaires.

Table 4.1: Numbers completing Young Adult and Parent Questionnaires

	Not completed	Completed
Young Adult Main Questionnaire	0	5190
Young Adult Sensitive Questionnaire	37	5157
Parent 1 Main Questionnaire	303	4887
Parent 1 Sensitive Questionnaire	407	4783

4.2   THE HOUSEHOLD INSTRUMENTS

The household-based questionnaires used with Cohort '98 in *Growing Up in Ireland* at 20 years were divided into sections of questions according to the topic. Interviews were conducted with Parent 1 - the person who provides the most care and is most knowledgeable about the Young Adult (usually his/her mother or mother figure; and the Young Adult him- or herself). The various sections in this phase of Fieldwork are outlined in Table 4.2 below

Young Adult	
	Module/Section
CAPI Interview (Main questionnaire)	
	HC: Young Adult's Address & Household Composition
	A: Activities, Identity and Becoming an Adult
	B: Attitudes to Politics and Society
	C: Locality
	D: Health
	E: Diet and Exercise
	F: Secondary School
	G: Current Status / Event History
	H: Questions for those Currently in Further / Higher Education or Training

	J: Attitudes to Work and Perceived Skills
	K: Income and Expenditure
CASI (Sensitive questionnaire)	
	A: Peer Relationships
	B: Health Risk Behaviour
	C: Gender Identity and Intimate Relationships
	D: Sexual Experiences
	E: Pregnancy
	F: Victim of Crime and Bullying
	G: Self-esteem, Concept, and Life Satisfaction.
	H: Family Relationships
	J: Mental Health
	K: Self-harm
	L: Coping and Support
	M: Contact with Criminal Justice System
	N: Leisure Activities and Internet Use
	O: Reflections on Childhood
Parent 1	
	Module/Section
CAPI Interview (Main questionnaire)	
	XA: Young Adult Address
	A: Household Composition
	B: Parent's Health
	C: Family Context
	D: 20-year-olds Emotional Health and Well-Being
	E: Parent's Socio-Demographics
	F: Parent's Background Characteristics
	G: Household Income
	H: Neighbourhood/Community Involvement
CASI (Sensitive questionnaire)	
	A: Relationship to Young Adult
	B: Current Marital Status
	C: Parental Alcohol Screen
	D: Parental Smoking and Drugs
	E: Parental Emotional Well-being
	F: Parental and Relatives' Trouble with Gardaí
	G: Parent's Relationship with Young Adult

The self-complete questionnaire contained some questions which could be deemed as very sensitive; therefore, prior to commencing the self-complete questionnaire, the Young Adult was made aware of

what the questionnaire entailed. The Young Adult was given an opportunity to opt out if they were not happy with the content or to skip any questions if they did not wish to answer.

In addition to the questionnaires the interviewers recorded Parent 1's weight (and height if not recorded at previous waves) and the height, weight, blood pressure and waist circumference of the Young Adult. A medically approved mechanical SECA 761 weighing scales was used for recording the weights, a Leicester measuring stick was used to record the heights and an Omron M2 Basic Monitor was used to record blood pressure and heart rate. Waist circumference was measured using the ergonomic perimeter measure (medically approved SECA 2011717009 waist tape).

Waist circumference was recorded in this cohort for the first time in this wave when the Young Adult was aged 20. This measurement allows for classification of risk of cardiovascular and metabolic disease and can be compared to gender-specific World Health Organization guidelines' norms. Waist circumference provides an independent prediction of risk of disease, based on the measurement of abdominal adipose tissue. It can predict cardio-vascular disease risk in the absence of an elevated BMI (Janssen, Katzmarzyk, & Ross, 2004).

Interviewers were provided with two tapes and a laminated instruction card to help them demonstrate the correct position of the measurement tape. The 20-year-old was asked to locate their bottom rib and the top of the hip bone (iliac crest) then to position the tape between these two points. Once in the correct position, the respondent tightened and fixed the tape with a button press; thus allowing the interviewer to read the measurement from the tape with minimal physical contact.   The measurement tape was placed over one layer of light clothing rather than bare skin. The interviewer demonstrated this procedure on themselves using one tape while the 20-year-old used the second tape.

The Young Adult also completed a one-minute Semantic Fluency test, where they had to name as many types of fruit as possible in one minute. The interviewer timed the test and recorded the number of unique fruits named.

5   FIELDWORK AND IMPLEMENTATION

5.1   INTERVIEWER TRAINING

Fieldwork was carried out by the ESRI's national panel of interviewers. All interviewers received in-depth training prior to commencing work on the project. This included the following modules:

1. Background and objectives of the study

2. Detailed review of the content of all questionnaires

3. Familiarisation with, and practice on, using the Computer Assisted Personal Interview system (CAPI)

4. Fieldwork procedures.

5. Adult and Young Adult measurements (height, weight and blood pressure) and GPS co-ordinates

6. Instruction and practice in the administration of the direct Young Adult assessment, including instruction on how to use the Dictaphone for the Semantic Fluency Test.

7. Child protection guidelines and incident reporting.

8. Ethics

9. Summary of other documentation used in the administration of the survey

5.2   VETTING

Growing Up in Ireland was carried out under the Statistics Act (1993). This is the same legislation as is used, for example, to carry out the Census of Population. Interviewers were appointed 'Officers of Statistics' for the purpose of this project. This included a confidentiality clause on non-disclosure of information which was recorded in respect of any family or young adult to any unauthorised person, for any purpose.

In addition to being appointed Officers of Statistics, all interviewers (as well as all staff involved in the project) were security vetted by the Garda National Vetting Bureau (GNVB).

5.3   INTERVIEWING GUIDELINES ON INTERVIEWS WITH ADULTS AND YOUNG ADULTS

The importance of privacy and confidentiality for both the parents and the Young Adult was impressed upon the interviewers. Strict guidelines were given in relation to interviewing the Young Adult. At previous waves of the study interviewers were told to never be left alone with the study child. However, as the Young Adult is now considered an adult at the age of 20, the interviewer was told they could be alone with the Young Adult. Nonetheless, the interviewer was instructed to never be alone with underage individuals in any participant's residence during fieldwork.

5.4   CONTACTING A HOUSEHOLD

Information about the fourth phase of the study was sent to the families who had taken part at previous waves in advance of first contact from the interviewer. Interviewers then made a face-to-face visit to the household to organise an appointment to carry out the interview at a time that was convenient for the family and the Young Adult. Inclusion in the fourth wave of the study was on an opt-out basis. As the Young Adults were now over the age of 18, they were able to provide informed consent for themselves which is in contrast to previous waves where parents were required to give informed consent for themselves and their child. Therefore, each individual (parent and 20-year-old) consented to their own participation only.

5.5   FOLLOW UP/TRACING INFORMATION

Due to changes in data protection guidelines between the 17/18 year and 20-year waves, interviewers were no longer able to collect alternative contact details of people outside of the household to aid with tracing of families in subsequent waves. Instead, interviewers made sure to update any relevant contact information (household address, email, and telephone numbers) for the Parents when checking the household grid. The Young Adult's email and mobile number was also recorded, with a view to assisting the study team in tracing the respondent if he/she moved address.

5.6   INCIDENTS

A detailed **_Growing Up in Ireland_** Child Welfare and Protection protocol was developed by the Study Team. One aspect of this involved an incident report system. All incidents were immediately reported by interviewers to their Field Support Contact at Head Office and a detailed Incident Report Form was completed. Given that interviews often took place outside office hours during the week and also at weekends, interviewers were provided with an emergency telephone number that could be used to contact the Study Team on a 24-hour, 7 days a week basis. Interviewers were instructed that in extreme circumstances, where a child or other vulnerable person was thought to be in immediate danger, they should use their own discretion and contact the Gardaí if necessary, without recourse to the Study Team.

6   STRUCTURE AND CONTENT OF THE DATA FILE

6.1   INTRODUCTION

This section outlines the structure of the Research Microdata File (RMF) and Anonymised Microdata File (AMF) and provides a brief explanation of how the two data files differ in content. An overview is given of variable naming conventions and id codes used. It gives some details on the household grid, the definition of Parent 1 and the procedures involved for twins. The variables relating to the statistical weights, derived variables, physical measurements and scaled measures are described. Finally, the coding and editing and forward feed from previous waves are discussed.

The Study Team would advise that the data are used in conjunction with the Questionnaire Documentation. This is probably the easiest way to get a broad overview of the topics included in the data file. Researchers should however note that for the purposes of preparation and anonymization there may be differences in value labels between the questionnaires and the data files and not every question from the questionnaire is included in the data file. This is especially true for the AMF.

6.2   THE STRUCTURE OF THE DATA FILES

The AMF is a publicly available anonymised dataset, while the RMF is a more detailed dataset, access to which is subject to appointment as an Officer of Statistics by the Central Statistics Office. The case-base is the Young Adult (the 20-year-old). This means that the user does not have to be concerned about matching questionnaires within the family. Blocks of variables appear in the data set in the following order (variable prefixes are shown in brackets):

- Young Adult Main Questionnaire (cq4)

- Young Adult Sensitive Questionnaire (cq4s)

- Household Grid (p1xxW4, p2xxW4)

- Parent Main Questionnaire (pc4)

- Parent Sensitive Questionnaire (pc4s)

- Standardised Scale Scores (w4)

- Physical Measurements (w4)

- Derived Variables (w4)

6.2.1   DIFFERENCES BETWEEN ANONYMISED (AMF) & RESEARCH (RMF) MICRODATA FILES.

To protect the anonymity of respondent's names, dates of birth and open text variables were removed from both types of file. In addition, some variables with a higher risk of being disclosive were either

removed or had their values banded into larger groups so that frequencies with low cell counts are not visible. In some cases, this was achieved by either bottom or top coding (or both) of outlying cases. In others, continuous scores have been grouped into categories.

The above is particularly true of the AMF, with far more variables being top and/or bottom coded, or re-categorised. In addition, some potentially disclosive variables which appear on the RMF have been removed from the AMF, and information particularly likely to be sensitive in nature (i.e. the majority of the variables in the sensitive questionnaire) has been removed from the AMF.

The user should therefore note that not every question from the questionnaires is included in the data files, particularly in the case of the AMF. A list of variables included in each data file is available via the accompanying summary data dictionary.

6.3   VARIABLE NAMING

Variables for Wave 4 of Cohort '98 are prefixed with 'pc4' for the Parent, and 'cq4' for the Young Adult. The '4' indicates that the data came from the forth wave of the project. For example, question b1 from the Parent Main Questionnaire has the variable name 'pc4B1'. An 's' is included in the variable name if the question was from the sensitive questionnaire, for example, question A1 from the Young Adult Sensitive Questionnaire was 'cq4SA1'.

Exceptions to the aforementioned variable naming conventions are variables from the household grid (ya_p2ageW4), derived variables (PG1statW4) and total variables from the scaled measures (w4cq_AUDIT_total), as well as direct measurements, i.e. physical measurements (w4intchildbmi).

6.4   IDENTIFICATION CODES

Each household has a unique identification code, which is the same at all waves to enable matching of the data files where necessary. The sequence of identification codes runs from 300 to 1,113,400 and is indicated by the variable 'id'.

6.5   THE HOUSEHOLD GRID

The household grid contains information on members of the household i.e. who lives in the household, their person number on the grid, gender, relationship to both Parent 1 and the Young Adult, age and principal economic status. This information was collected at the previous wave of the study and was fed forward for review and update (as appropriate) by Parent 1 at the beginning of the interview at Wave 4. For ease of reading, the household grid variables are prefixed with the person number. For example, the variable indicating the sex of the person on line 1 of the grid is 'P1sexW4' where 'W4' indicates Wave 4 data. Details were recorded such that Parent 1 (usually the mother) was always on line 1, the Study Child (now young adult) was always on line 2, and the Secondary Caregiver (if relevant) was on line 3. The Study Child's twin or triplet etc. was on lines 4, 5 as appropriate unless there was no Secondary Caregiver, in which case they were on lines 3, 4.

At Wave 4, Parent 1 from Wave 3 was asked to check that the information recorded on the household gird was correct and still valid, and if not, to correct/or update the information. New members of the household could be added to the grid and others removed (as relevant).

The variables labelled 'P1xxW4' etc. represent the information collected at Wave 4 including any corrections.

In families in which Parent 1 at Wave 3 had become Parent 2 at Wave 4 (and hence would not be completing the Wave 4 Parent Questionnaire), s/he was asked to review (and correct if necessary) the grid information which s/he had provided at the previous wave, before handing over to the new Parent 1 to complete the rest of the survey. This was done to meet the guarantees of confidentiality of information which were given to respondents at the previous three waves. At the previous waves the respondents were told that no-one would have sight of the information that they provided in the course of their interview, including the information contained in the household grid. In a small number of families where the Parent 1 from Wave 3 was no longer resident in the household or was unable to complete the household grid, a completely new household grid was filled out by the new Parent 1 at Wave 4.

As noted, where there is a Parent 2, s/he will be person 3 on the household grid. However, not all persons on line 3 of the household grid are Parent 2. For example, in a one-parent family the third person will be another household member (other than the Parent 1 or Young Adult). A variable has been included in the database to highlight whether or not a partner of Parent 1 (by definition Parent 2) is resident in the household (w4partner).

In real terms, this was the first occasion that the 20-year-old respondent could legitimately be excluded from the household grid in the parental home. However, to maintain consistency across waves, the 20-year-old is retained as person 2 on the household grid and the variable 'p2residentw4' has been included in this wave which identifies if the 20-year-old is resident at the parental address. The options are 'Parental address is the only address', 'Parental address is the main address but has other temporary or part-time address', and 'Non-parental address is the main address'.

Details obtained in the household grid, such as dates of birth, gender and relationships are very important in terms of derived variables. Consequently, some editing of the information took place where it was clear from relevant details on the body of the questionnaire that this was appropriate. There are, however, a few minor outstanding anomalies between the information given on the interviewer administered household grid and that given in the Parent 1 Sensitive questionnaire (self-completed on CASI).

The reader should note that (for anonymization purposes) exact dates of birth have been removed from the archived file and replaced with age in years.

Question pc4A9a sought to establish whether the Young Adult had any other full, half, step, or adoptive brothers or sisters living outside of the parental household. If so, the Parent was asked to provide the sibling's sex, date of birth and relationship to the 20-year-old. These questions were asked to establish the birth order of the Young Adult and to ascertain a more accurate picture of family size.

6.5.1 YOUNG ADULT HOUSEHOLD GRID

If the young adult has moved out of the parental home to form another household, they were interviewed in their new household and filled out a household grid for this household.

6.5.2 DERIVED VARIABLES ON HOUSEHOLD GRID

For confidentiality reasons, only some of the variables from the household grid are provided on the data files, and a number of derived variables that are based on the household grid are included instead. These include counts of the number of people in the household engaged in each economic activity (numbers not yet at school; numbers in school; numbers working; unemployed; retired; engaged in home duties and other activities); and derived variable counts of the number of children in the household who are under 18; over 18; younger than the young adult and older than the young adult. These counts have also been created for siblings of the young adult who are not living in the household. These are included in more detail in section 6.9 'Derived Variables' and also in the derived variable document.

6.6 THE PARENT INTERVIEW

Parent 1 was self-identified within the home as the person who provides the most care to the Young Adult and is most knowledgeable about him/her. In most cases, this was the Young Adult's mother though in a small proportion of cases the Young Adult's father identified himself as Parent 1. As noted above, in some cases the Parent One and Parent Two from Wave 3 had swopped roles between waves. This is flagged by the variables 'pg1statph4' and 'pg2statph4' (note that more detailed information on the inter-wave swopping of roles is provided in the RMF).

6.7 TWINS

In households where there were 20-year-old twins and triplets, the parent respondent completed a main interview on CAPI and answered the young-adult-related questions in respect of one of the twins. They then completed a twin module on CAPI for the second Young Adult; in the case of triplets, a module was also completed on the third Young Adult. The latter modules repeated only the young-adult-related questions, this time to be answered in relation to the second twin or triplet. It did not repeat the parent-related questions on parent health status and lifestyle, socio-demographic characteristics etc. Subsequent to the interview, a data record was constructed for each non-singleton Young Adult to include common questions relating to the Parent him/herself as well as the Young Adult specific questions in respect of each of the non-singletons in question.

Young adults who were 'non-singleton' participants in the study completed a full set of instrumentation, the same as their 'singleton' peers. All non-singleton children (those with twins, triplets, etc.) are coded

as 'w4nonsingleton' in the file. A total of 162 'nonsingleton' (either twin or triplet) households took part in this wave of fieldwork.

6.8   WEIGHTING VARIABLES

In line with best practice in sample surveys the data have been reweighted or statistically adjusted to ensure that the sample is wholly representative of the population from which it has been drawn. By doing this one ensures that the structure of the completed sample is in line with the structure of the population along key socio-demographic and other dimensions.

The data file contains two weighting factors. The weighting factor to be used in analysis based on the most complete 20-year sample of 5,190 Young Adults who participated at age 9 and age 20 is WGT_20YRa. This weighting factor (WGT_20YRa) incorporates the structural adjustment of the completed sample to the population, whilst maintaining the total completed sample size of 5190. WGT_20YRa provides the user with the same structural breakdown of the data and can be used in significance testing and data modelling. The weighting factor which should be used with the sample of 4,729 cases who participated at 9 years, 13 years, 17/18 years and 20 years of age (all 4 waves) is WGT_20YRb.

The variables xxwave1, xxwave2, xxwave3 and xxwave4 indicate if the case has data for each of the waves. A value of one indicates participation at the relevant wave. In the 20-year data file xxwave1 and xxwave4 are equal to 1 for all cases, as all cases in this file have completed both Wave 1 and Wave 4. Frequencies of these indicator variables are outlined below.

Table 6.1: Frequency distribution of 'xxwave' variables

Variable name	Value	N
xxwave1	1 0	5190 0
xxwave2	1 0	5043 147
xxwave3	1 0	4817 373
xxwave4	1 0	5190 0

6.9   DERIVED VARIABLES

In addition to some of the derived variables mentioned above (e.g. 'w4_partner', 'PG1statW4' and 'PG2statW4'), a number of variables were derived to provide additional information on the circumstances of the household. These variables pertain to response at each wave of the survey; social class; household income; and family composition. A number of other variables were derived to summarize the information recorded in relation to parent and young adult long-term illnesses; and details of the young adult's Leaving Certificate subjects and points achieved.

A detailed description of the derived variables on the data files can be found in the 'Derived variables in wave 4 of *Growing Up in Ireland*'s Cohort '98 (Child Cohort) at 20 years of age' document.

6.9.1   VARIABLES DERIVED FROM THE HOUSEHOLD GRID

Household type (w4hhtype4)

These derived variables give an indication of family composition. This is based on whether or not the Parent 1 is married/cohabiting or is living alone with children and the number of children in the household. The household type has been calculated based on the number of children under the age of 18.

W4partner

W4partner indicates if Parent 1 has a partner living in the household.

W4nonsingleton

This denotes a household where the young adult is a twin or triplet

W4region8code

This variable gives the area where the Parent 1 household coded to 8 areas in Ireland. (Border; West; Midlands; Mid-East; Dublin; South-East; South-West; Mid-West)

Counts on Household Grid relationships (Parent 1 and Young Adult)

These variable gives counts on the household grid relationships for both the Young Adult and Parent 1. The Young Adult relationship count variables are: pc4cFull_sibling; pc4cHalf_sibling; pc4cOther_sibling; pc4cGrandparent; pc4cOther_relative; pc4cOther_non_relative count the relationships between the Young Adult and other members of the family. E.g. pc4cFull_sibling counts the number of full siblings the Young Adult has currently living in the household. The Parent 1 relationship count variables are; pc4mChild; pc4mOther_child.

Counts on Household Grid economic activity

These variable gives counts on the household grid relationships for all household member. They count the number of people in a household engaged in each economic activity. These variables are; pc4Not_yet_at_school; pc4Education; pc4Working; pc4Unemployed; pc4Retired; pc4Home_duties; pc4Other. E.g. pc4Not_yet_at_school counts the number of members of the household who are not yet at school.

Counts on Household Grid Age of other children in relation to the Young adult

These variable gives counts on the household grid of the number of people in the household who are younger than the Young Adult; older than the Young Adult; Younger than 18; older than 18. This also

includes siblings of the Young Adult who are not living in the household currently. The variables are; pc4Younger_than; pc4Younger_than18; pc4Older_than; pc4Older_than18; pc4ext_Younger_than; pc4ext_Younger_than18; pc4ext_Older_than; pc4ext_Older_than18.

6.9.2   YOUNG ADULT HOUSEHOLD GRID

If the Young Adult has moved out of the family home, either temporarily or permanently, they were interviewed in their new household and they filled out a modified household grid for their new household. Cq4gridsex gives us the gender makeup of the Young Adult's new household. There are count variables to provide the number of relatives; old friends; new friends and non- relatives in the household. These variables are cq4gridrel; cq4gridfriendold; cq4gridfriendnew; cq4gridnonrel. There are also counts for the number of people in the house who are at work; in education or engaged in some other activity. These variables are; cq4grideduc; cq4gridwork; cq4gridother. The variable cq4gridincshare counts the number of the household members who share income for household bills.

6.9.3   EQUIVALISED INCOME (W4EQUIVINC; W4EINCQUIN; W4EINCDEC)

In order to make meaningful comparisons across households of their income, household size and structure must be taken into account. This is done by creating an 'equivalised' household income. The equivalence scales assigned a weight of 1 to the first adult in the household, 0.66 to each subsequent adult (aged 14+ years living in the household) and 0.33 to each child (aged less than 14 years). The sum of these weights in each household gives the household's equivalised size – the size of the household in adult equivalents.

6.9.4   HOUSEHOLD CLASS (HSDCLASSW4; CQCLASSW4; CQ4J2CLASS)

The Social Class of Parent 1 and the Young adult is derived from their occupation. In the course of their interview, Parent 1 was asked to provide details on their occupation, from current, or previous employment outside the home (the latter in situations in which the respondent was unemployed or retired at the time of their interview). Parent 1 was also asked about the current occupation of his/her partner. On this basis it is possible to generate a social class classification for Parent 1. The "validly no social class" category refers to situations in which Parent 1 has had no occupation outside the home and so cannot (by definition) be assigned to a social class code. It does not refer to situations in which the information on occupation is missing or not recorded for any reason.

Social class at age 20 was also calculated for the Young Adult's current economic status if they had commenced full-time employment (cqclassw4) and their expected social class at age 30 (cq4J2class).

6.10 PHYSICAL MEASUREMENTS – HEIGHT, WEIGHT AND BODY MASS INDEX (BMI)

Height and weight measurements were recorded by the interviewer in the course of the household interview for the Parent and the Young Adult. Weight was recorded using a medically approved weighing scale (SECA 761 flat mechanical scales). Height was recorded using a standard measuring stick (Leicester portable height measure). Measures of height were standardised – converted to inches and divided by

2.54 – to be recorded in centimetres, while weights were computed into kilograms. The Young Adult's systolic and diastolic blood pressure and heart rate was also recorded using an Omron M2 Basic Monitor, and their waist circumference was measured using the ergonomic perimeter measure (medically approved SECA 2011717009 waist tape).

6.10.1 HEIGHT

The height of the Young Adult was recorded by the interviewer electronically on the CAPI programme (w4intchildcms). The height of Parent 1 was also recorded at this wave if it had not been recorded previously. Otherwise, the height of Parent 1 was forward fed from the most recent wave they participated in (w4intpcgcms).

6.10.2 WEIGHT

The weight of Parent 1 and the Young Adult (w4intpcgkgms and w4intchildkgms) was recorded electronically on the CAPI programme (by the interviewer). The data collected was edited to remove clearly implausible outliers.

6.10.3 BMI

BMI scores for Parent 1 was derived from the recorded heights and weights (w4intPCGBMI). The BMI score was also recoded into the following categories – underweight, normal weight, overweight and obese (w4intPCGBMI_CAT). These correspond to the Garrow-Webster cut-off points.

BMI scores for the Young Adult were also derived from the recorded height and weight measures (w4intchildbmi) and were recoded into categories – underweight, normal weight, overweight and obese (w4intchildbmi_CAT). As the 20-year-olds are now adults the Garrow-Webster cut-offs points were also used.

Note that for the AMF, the height and weight measurements were top-and-bottom coded, and BMI was subsequently re-calculated on these revised values. This has resulted in small differences between the calculated BMI for some cases on the AMF and RMF.

6.10.4 BLOOD PRESSURE & HEART RATE

The systolic and diastolic blood pressure of the Young Adult was recorded electronically on the CAPI programme (w4intchildsys1, w4intchilddia1, w4intchildsys2, w4intchilddia2). The Young Adult's heart rate was also recorded (w4intchildHR1, w4intchildHR2). The data was edited to remove clearly implausible outliers arising from miscoding.

6.10.5 WAIST CIRCUMFERENCE

Waist circumference of the Young Adult was recorded in this wave for the first time (w4intchildWC). This was measured by the respondent themselves and was included in wave 4 as increased waist circumference can be used as an indicator of risk of cardiovascular and metabolic disease.

6.11 SCALED MEASURES USED IN THE STUDY

A number of scaled measures were used in *Growing Up in Ireland* and scored by the research team using protocols provided by the authors. These are briefly described below. Psychometric information for the scales used recorded in this 20-year wave of fieldwork are included in Appendix A (Parent Completed Scales) and Appendix B (Young Adult Completed Scales).

6.11.1 TEN ITEM PERSONALITY INVENTORY (TIPI)

Parent 1 and the Young Adult's personality were measured using the Ten Item Personality Inventory (Gosling, Rentfrow & Swan, 2003). The scale was completed by Young Adult in the Young Adult Main Questionnaire, and by Parent 1 in the Parent Main questionnaire. The scale contained ten items measuring the five aspects of personality - Openness to Experience, Agreeableness, Conscientiousness, Extraversion and Neuroticism.   Each personality dimension consisted of two statements with two descriptors for each. Both responses were then added up and divided by two to reveal the score for that measure:

- Extraversion (w4pc_extravert, w4cq_extravert)

- Agreeableness (w4pc_agreeable, w4cq_agreeable)

- Conscientiousness (w4pc_conscientious, w4cq_conscientious)

- Emotional Stability (w4pc_emotstab, w4cq_emotstab)

- Openness (w4pc_openness, w4cq_openness)

6.11.2 AUDIT

The AUDIT (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) is a screening tool developed by the World Health Organization (WHO) to determine if a person's alcohol consumption may be harmful. A total score of the items is calculated to determine the likelihood of hazardous or harmful alcohol consumption, and alcohol dependence (w4cq_AUDIT_total). The scale was self-completed by the Young Adult.

6.11.3 USE OF ILLICIT DRUGS CAGE QUESTIONNAIRE

The Young Adult's drug use was measured using an incorporated modified version of the CAGE questionnaire. The questions focus on Cutting down, Annoyance by criticism, Guilty feeling and Easing of withdrawal symptoms (CAGE). Answers options include binary 'yes/no' options. Higher scores indicate problematic drug use.   A total score greater than 2 or more is considered clinically significant (w4cq4_CAGE).

6.11.4 ROSENBERG SELF-ESTEEM SCALE (ROSENBERG, 1965)

The Young Adult's self-esteem was measured using the Rosenberg Self-Esteem scale (Rosenberg, 1965). The scale was included in the Young Adult self-complete survey. The Rosenberg Self-Esteem scale

contains six items rated on a four-point scale. Higher scores are indicative of higher global self-esteem (w4cq_selfesteem_total).

6.11.5 NETWORK OF RELATIONSHIP INVENTORY WITH MOTHER/FATHER.

Questions on the Young Adult's relationship with their mother and father are taken from measures used by the German PAIRFAM study (Thonnissen et al, 2014). The Young Adult reported on four dimensions of their relationship with their parents: 'intimacy', 'admiration' and 'conflict'. Each subscale comprised of two items rated on a five-point scale. All questions were asked separately about mothers and fathers (mother: w4cq_mintimacy, w4cq_madmiration, w4cq_mconflict and w4cq_munreliability father: w4cq_fintimacy, w4cq_fadmiration, w4cq_fconflict and w4cq_funreliability)

6.11.6 CES-D DEPRESSION SCALE

The Centre for Epidemiological Studies Depression scale (CESD-8) is a widely used self-report measure that was developed specifically as a screening instrument for depression in the general population, as opposed to be a diagnostic tool that measures the presence of clinical depression. *Growing Up in Ireland* used the 8-item short version of the CES-D and provides a total score for both Parent 1 and the Young adult. This scale was included in the Parent and Young Adult self-complete survey (w4cestot_PCG, w4cestot_YP).

Also included in the file is a variable (w4cesd_pcg, w4cesd_yp) which categorised respondents into 'depressed' or 'not depressed'. It is again noted that this is based on the CED-D8 screening tool and does not purport to be a clinical measure.

6.11.7 DEPRESSION AND STRESS SCALE (DASS) - STRESS SUBSCALE

Stress at age 20 years of *Growing up in Ireland* was measured using the DASS stress subscale. The DASS stress subscale contains seven items and is sensitive to levels of chronic non-specific arousal (w4cq_DASS_stress). It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient (Henry & Crawford, 2005).

6.11.8 DAS (DYADIC ADJUSTMENT SCALE)

The quality of the couple's relationship was indexed using the short form of the Dyadic Adjustment Scale (DAS-4) (Sabourin, Valois, & Luisser, 2005). This scale contained 4 items and is used as a means of categorising marriages as either distressed or adjusted. A general satisfaction score is generated from the sum of all items and was included in the Parent self-complete questionnaire (w4pc_DAS).

6.11.9 REACTIVE-PROACTIVE AGGRESSION QUESTIONNAIRE (RPQ)

The Reactive-Proactive Aggression Questionnaire (RPQ), was included for the first time at age 20 years. It was included in the Young Adult Self-complete questionnaire. This scale has 23 items which can be used to calculate 'proactive aggression' (w4cq_Proactive_tot) e.g. 'used physical force to get others to

do what you want' and 'reactive aggression' (w4cq_Reactive_tot) e.g. 'yelled at others when they have annoyed you'. Subscale scores were combined for a total aggression score (w4cq_Aggression_tot).

6.11.10 ENERGY AND VITALITY INDEX

Four positively-toned items on feelings of wellness were included in the Young Adult self-complete questionnaire for the first time at this wave. This scale was divided into two subscales and total scores for each were calculated. This includes an Energy fatigue subscale (w4cq_Energyfatigue_tot) and an emotional well-being subscale w4cq_EmotionalWellBeing_tot)

6.11.11 HAZARDOUS DRINKING (FAST ALCOHOL SCREENING TEST)

The FAST alcohol screening test is a short screening tool for alcohol misuse. It consists of four items and is completed by the Parent, slightly different questions are asked of males and females – females are asked how often they have six or more drinks on one occasion and males are asked how often they have eight or more drinks).

It produces a total score and a categorisation of 'hazardous' or 'not hazardous':

- Parent 1 drinking class according to FAST (w4fastclasspcg)

- Parent 1 total on FAST for males (w4fastotm)

- Parent 1 total on FAST for females (w4fastotf)

6.12 CONSISTENCY CHECKS

The CAPI questionnaires principally contained closed questions, with an extensive set of range and cross-variable consistency checks (both hard and soft)[6]. This meant that much of the coding and data checking was effectively dealt with as the interview took place. With a fourth wave of data there is a possibility of longitudinal inconsistencies, as well cross-sectional inconsistencies within waves. For some key variables such as marital status these were checked and edited to provide more consistency where appropriate. However, there remains a small number of inconsistencies where it was not possible to make a judgement on an appropriate edit. In such cases the data were recorded on the AMF/RMF as they were returned from the field, with a view to the analyst interpreting any such information as they saw fit, in light of their analysis.

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[6] HARD EDIT CONSISTENCY CHECKS IN A CAPI PROGRAM REFER TO CROSS-VARIABLE CONSISTENCY CHECKS WHICH MUST BE RESOLVED BY THE INTERVIEWER IN THE FIELD AT THE TIME OF ADMINISTRATION. UNTIL THE INCONSISTENCY IS RESOLVED BY THE INTERVIEWER IT WILL NOT BE POSSIBLE TO CONTINUE ADMINISTERING THE QUESTIONNAIRE. IN CONTRAST, A 'SOFT' EDIT CONSISTENCY CHECK IS ONE WHICH SIGNALS AN APPARENT INCONSISTENCY OR EXTREME VALUE FORM A RESPONDENT'S ANSWER TO A QUESTION OR SET OF QUESTIONS. THE EXTREME VALUE MAY OR MAY NOT BE CORRECT. IF THE INTERVIEWER ADMINISTERING THE SURVEY FEELS THAT IT IS A VALID VALUE, ALBEIT EXTREME, S/HE CAN SUPRESS THE SOFT CHECK AND CONTINUE ADMINISTERING THE SURVEY.

6.13 CODING AND EDITING

In some situations, open questions were needed to capture verbatim responses that would have been difficult to pre-code. Where relevant, these open-ended responses were coded into separate categorical variables after the interview. Other questions did have a pre-defined coding frame but also had an 'other-specify' option for those responses which did not fit into any of the pre-coded categories - again answers were recorded on a verbatim basis by the interviewer. In this instance responses to these questions had to be recoded with additional categories. The newly coded responses for additional codes or variables appear in the RMF dataset. All verbatim text from the original responses has been removed from the AMF and RMF as a safeguard to protecting the respondent's identity. In terms of overall editing of the data, regular checks were carried out on the data as they were returned from the field and inconsistencies dealt with on an on-going basis.

If a respondent answered that they had taken 'spanglers' in question B33f on the Young Adult Self-Complete questionnaire, all their answers for B33 were deleted, as 'spanglers' was included as a non-existent control to test for respondents who simply ticked 'yes' to random drugs in the list.

A programming error in Blaise meant that not everyone who should have answered J9 and J10 on the Young Adult Self-Complete questionnaire were routed in to answer these questions. These variables have been excluded from the data files to avoid under-reporting unmet needs in this area.

Another routing error in Blaise, meant that not all respondents who should have answered K12-K14 on the Young Adult Main questionnaire were routed in to answer them. This routing error only affected the first half of fieldwork and was fixed up for the remainder of fieldwork. Those who were erroneously not asked, were sent a paper questionnaire with the missing questions and asked to return them by post. This captured a good proportion of the missings, but he missing cases for these variables remain higher than would usually be found in GUI data. As the missingness is due to a routing issue, it should be reasonably missing at random, but analysts should bear this in mind when interpreting any results.

6.14 FORWARD FEED FROM PREVIOUS WAVES

To reduce interview time at Wave 4 some variables were fed forward from the previous wave and not asked again in the course of the interview unless, for example, they were missing or a new respondent was completing the interview for the first time. Where Parent 1 and Parent 2 from wave 3 had swopped roles, the appropriate information was exchanged. The variables that were fed forward from Wave 3 include the household grid information, parent's highest level of education and parent's height.

7   ETHICAL CONSIDERATIONS

Ethical considerations in research, particularly research involving children and young people, are of critical importance. The Study Team identified a number of ethical issues at age 20 of *Growing Up in Ireland* and implemented procedures to deal with them, while remaining mindful of its obligations under the relevant Acts in Irish legislation. This chapter summarises the pertinent parts of legislation and describes the ways in which ethical guidelines were put into practice. The primary concern at all times was the protection of the participants in the study.

Procedures relating to child protection were informed by the Children First: National Guidance 2011 and 2017 published by the (then) Department of Children and Youth Affairs and by the Children First Act 2015 which was commenced in full on 11 December 2017 (Department of Children and Youth Affairs, 2017). Even though all study participants were now adults rather than children, interviewers were still briefed on child protection awareness in the event they encountered, for example, the 20-year-old's younger siblings or even the 20-year-old's own children. In addition to the full module of training provided by *Growing Up in Ireland* staff, prospective interviewers were requested to complete an online training module developed by Tusla (the State agency with responsibility for child welfare). All interviewers, as well as other staff working on *Growing Up in Ireland*, were security-vetted by the Garda National Vetting Bureau (GNVB).

All work in Wave 4 of Cohort '98 was carried out under ethical approval granted by a dedicated and independent Research Ethics Committee convened by the Department of Children and Youth Affairs, especially for *Growing Up in Ireland*. The Research Ethics Committee was very rigorous in its review and consideration of all the materials and procedures used in the project.

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9   APPENDICES

9.1   APPENDIX A   PARENT COMPLETED SCALES

Table 9.1: PARENT COMPLETED SCALES

Name of Scale	Questionnaire	Subscale name	Mean (SD)	Range	Cronbach's alpha
Parent Ten-Item Personality Inventory on self	PCG Main questionnaire F10	Extraversion	4.66 (1.45)	1-7	.520*
		Agreeableness	5.62 (1.05)	1-7	.204*
		Conscientiousness	5.97 (1.06)	1-7	.295*
		Emotional Stability	5.06 (1.31)	1-7	.473*
		Openness to Experience	5.20 (1.21)	1-7	.359*
Dyadic Adjustment Scale	PCG Self complete questionnaire S11-S12	DAS	16.43 (3.16)	0-21	.700
Fast alcohol screening test (FAST)	PCG Self complete questionnaire S16a–S16e	Male parent FAST	1.19 (1.52)	0-12	NA
		Female parent FAST	1.04 (1.34)	0-10	NA
Centre for Epidemiological Studies Depression scale (CES-D)	PCG Self complete questionnaire S21	Parent CES-D	2.59 (3.29)	0-24	.840

Note. Statistics in this appendix are based on unweighted data.

*Subscales with small numbers of items (2-3 items) do not produce reliable Cronbach's alpha figures. These scores should be viewed with caution. Suggest correlation with related measures be used for your own validation purposes.

9.2   APPENDIX B   YOUNG ADULT COMPLETED SCALES

Table 9.2: YOUNG ADULT COMPLETED SCALES

Name of Scale	Questionnaire	Subscale name	Mean (SD)	Range	Cronbach's alpha
Young Adult Ten-Item Personality Inventory on self	YA Main Questionnaire A20	Extraversion	4.83 (1.40)	1-7	.656*
		Agreeableness	4.97 (1.07)	1-7	.244*
		Conscientiousness	5.21 (1.19)	1-7	.444*
		Emotional Stability	4.73 (1.40)	1-7	.656*
		Openness to Experience	5.44 (1.03)	1-7	.281*
AUDIT questionnaire	YA Self complete Questionnaire B9-B25	AUDIT	10.29 (5.15)	1-34	.765
CAGE questionnaire	YA Self complete Questionnaire B36-B40	CAGE	0.76 (1.11)	0-4	.692

Rosenberg Self-Esteem Scale	YA Self complete Questionnaire G1	Self esteem	11.65 (3.47)	0-18	.854
Network of Relationships Inventory	YA Self complete Questionnaire H1-H6	YA – Mother intimacy	6.25 (1.99)	2-10	.843
		YA – Mother Admiration	8.37 (1.62)	2-10	.810
		YA – Mother Conflict	5.18 (1.51)	2-10	.846
		YA – Father intimacy	5.24 (1.95)	2-10	.834
		YA – Father Admiration	7.94 (1.85)	2-10	.842
		YA – Father Conflict	4.85 (1.64)	2-10	.882
Centre for Epidemiological Studies Depression scale (CES-D)	YA Self complete Questionnaire J1	YA CES-D	4.55 (4.75)	0-24	.885
Depression and Stress Scale (DASS) - stress subscale	YA Self complete Questionnaire J2	DASS stress	5.12 (4.30)	0-21	.881
Energy and Vitality Index	YA Self complete Questionnaire J11	Energy Fatigue	61.62 (20.57)	0-100	.784*
		Emotional Well being	65.04 (19.47)	0-100	.796*
GUI developed Coping mechanisms scale	YA Self complete Questionnaire L1	Social	9.89 (1.59)	3-12	.423*
		Medical	2.77 (1.22)	2-8	.519*
		Stimulant	3.21 (1.54)	2-8	.666*
		Avoidant	4.74 (1.66)	2-8	.557*
		Self-care	5.92 (1.50)	2-8	.425*
		Strategize	9.59 (2.01)	3-12	.771*
Reactive-Proactive Aggression Questionnaire (RPQ)	YA Self complete Questionnaire M1	Proactive regression	0.88 (1.87)	0-23	.790**
		Reactive aggression	4.74 (3.34)	0-22	.813
		Overall aggression	5.62 (4.65)	0-42	.858**
Semantic Fluency	YA Cognitive test phase	Test scores	14.66 (3.83)	1-33	NA

Subscales with small numbers of items (2-3 items) do not produce reliable Cronbach's alpha figures. These scores should be viewed with caution. Suggest correlation with related measures be used for your own validation purposes.

** In the RPQ aggression scale, the Proactive aggression scores had a notably low average. This means than many variables (Starting physical fights on purpose etc.) were almost universally answered as 'Never' leading to a lack of variability on some items. This can cause problems with calculation of Cronbach's alpha despite the scale working as intended. Alpha values should be treated with caution.