



The Longitudinal Study of Australian Children
Annual statistical report 2016

Australian Institute of Family Studies

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Foreword

I am pleased to introduce the seventh volume of the Annual Statistical Report series for *Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC)*. This report, produced by the Australian Institute of Family Studies, aims to provide valuable insights into family functioning and child development for researchers, policy-makers, and those who provide services and support, as well as the community at large.

Using six waves of LSAC data, this report discusses ways in which Australian children's experiences and environments affect their prospects and progress, from birth to 15 years old. Opportunities and challenges faced by adolescents are addressed in chapters on the employment of young teens, and how child and family characteristics are associated with patterns of employment; their career aspirations and the types of jobs they see themselves doing as adults. Another section of the report investigates the association between parents' drinking and the drinking of their 14–15 year old children, exploring how this relationship differs by the gender of the parents and their adolescent. The report also casts light on the prevalence of self-harm and suicidal behaviour among 14–15 year olds, the risk factors associated with these behaviours and the extent to which poor socio-emotional health earlier in life is associated with self-harm and suicide attempts. Involvement of teens in informal care for others and the impact of these caring activities on their academic achievement is also discussed in detail. Family functioning is the focus of a chapter on children's home experiences over a ten-year time period, according to the age at which their mother had her first child. For the first time in this series, the report includes a chapter on aspects of school life by examining differences in teaching practices according to the year level of the student and characteristics of the school, teacher and class as reported by teachers' themselves.

We hope that results of our research will prove useful to interested readers. We further hope that the wealth of information provided here will encourage others to use the LSAC data, both now and in the future.



Anne Hollonds
Director
Australian Institute of Family Studies

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We also gratefully acknowledge the enormous contribution of the families and teachers who participated in the study.

For more information about the study, see the LSAC website <www.growingupinaustralia.gov.au>.

This report uses unit record data from *Growing Up in Australia: The Longitudinal Study of Australian Children*. The study is conducted in partnership with the Australian Institute of Family Studies, with advice being provided by a consortium of leading researchers at research institutions and universities throughout Australia. The Australian Bureau of Statistics (ABS) conducts the data collection.

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This report has been compiled and written by staff at the Australian Institute of Family Studies.¹ The views expressed in this report are those of the individual authors and should not reflect those of DSS, AIFS or the ABS.

¹ Ben Edwards is now working at the ANU Centre for Social Research & Methods. Jacqueline Homel is working at Griffith Criminology Institute, Griffith University. Gary Zhenyu Zhang is now working at Macquarie University.

Introduction and overview of LSAC data



1.1 Introduction to the report

Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC) is Australia's first nationally representative longitudinal study of child development. The purpose of the study is to provide data that enable a comprehensive understanding of development and life-course trajectories within Australia's current social, economic and cultural environment. The longitudinal nature of the study enables researchers to examine the dynamics of change through the life course as children develop, and to go beyond the static pictures provided by cross-sectional statistics. The study thereby gives policy-makers and researchers access to quality data about children's development in the contemporary Australian environment.

The study was initiated and is funded by the Australian Government Department of Social Services (DSS), and is conducted in partnership with the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). A consortium of leading researchers and experts from universities and research agencies provide advice to the study.

The purpose of the LSAC Annual Statistical Report series is to provide a snapshot of some of the data from the study and to address policy-relevant questions about aspects of Australian children's lives and development. The reports make use of the longitudinal nature of LSAC data to describe the dynamics of change as children develop, and how their families and lives change as they grow older. Previous volumes have covered a wide range of topics, including children's screen time, the body image of primary school children, children's primary school attendance, access to preschool education and parenting practices. A full list of topics covered by past volumes is given at the end of the report.

This is the seventh volume in the LSAC Annual Statistical Report series. There are now six waves of LSAC data, with the older children in LSAC aged 14–15 years at the sixth wave. Many of the chapters presented in this report focus on the circumstances of these older children: chapters 3 and 2 look at employment experiences and career aspirations, chapter 6 examines deliberate self-harm, chapter 4 looks at alcohol use and chapter 5 focuses on young carers. Other chapters make use of the longitudinal data to examine changes in children's family circumstances across waves: chapter 8 analyses how families vary according to the age of mothers when first children were born, and chapter 7 examines teaching practices in primary schools.

The remaining subsections, below, provide a brief overview of LSAC and present information about the characteristics of the sample. The analytical chapters then follow.

1.2 LSAC overview and study design

LSAC is following two cohorts of children who were selected from across Australia. The B ("baby") cohort was aged 0–1 years at the beginning of the study (born between March 2003 and February 2004); and the K ("kindergarten") cohort was aged 4–5 years at the beginning of the study (born between March 1999 and February 2000).

The first wave of data collection took place in 2004, with subsequent main waves every two years. This report includes data collected from these main waves, up to Wave 6, which was conducted in 2014. In covering the first six waves of the study, this report includes data on children between the ages of 0 and 15 years. Table 1.1 (page 2) summarises the ages and sample sizes for the two cohorts across these waves of the study. Note that from Wave 3 there is data on children of the same age from both cohorts at different time points. This is a particular feature of LSAC known as an "accelerated cross-sequential" design.

Table 1.1: Age ranges and numbers of children, B and K cohorts, Waves 1–6

	Wave 1 (2004)	Wave 2 (2006)	Wave 3 (2008)	Wave 4 (2010)	Wave 5 (2012)	Wave 6 (2014)
B cohort	0–1 year 5,107	2–3 years 4,606	4–5 years 4,386	6–7 years 4,242	8–9 years 4,085 a	10–11 years 3,764
K cohort	4–5 years 4,983	6–7 years 4,464	8–9 years 4,331	10–11 years 4,169	12–13 years 3,956	14–15 years 3,537

Notes: This table presents the numbers of children who responded at each wave.

1.3 Respondents and collection methods

The use of multiple respondents in LSAC provides a rich picture of children’s lives and development in various contexts. Across the first six waves of the study, data were collected from:

- parents of the study child:
 - Parent 1 (P1)—defined as the parent who knows the most about the child (not necessarily a biological parent);¹
 - Parent 2 (P2), if there is one—defined as another person in the household with a parental relationship to the child, or the partner of Parent 1 (not necessarily a biological parent); and
 - a parent living elsewhere (PLE), if there is one—a parent who lives apart from Parent 1 but who has contact with the child (not necessarily a biological parent);
- the study child;
- carers/teachers (depending on the child’s age); and
- interviewers.

In earlier waves of the study, the primary respondent was the child’s Parent 1. In the majority of cases, this was the child’s biological mother, but in a small number of families this was someone else who knew the most about the child. Since Wave 2, the K-cohort children have answered age-appropriate interview questions, and from Wave 4 they have also answered a series of self-complete questions. The B-cohort children answered a short set of interview questions in Wave 4 for the first time. As children grow older, they are progressively becoming the primary respondents of the study.

A variety of data collection methods are used in the study, including:

- conducting face-to-face interviews:
 - on paper; and
 - by computer-assisted interview (CAI);
- filling in self-complete questionnaires:
 - during interview (paper forms, computer-assisted self-interviews (CASI) and audio computer-assisted self-interviews (ACASI);
 - on leave-behind paper forms;
 - on mail-out paper forms; and
 - on Internet-based forms;
- physically measuring the child, including height, weight, girth, body fat and blood pressure;
- directly assessing the child’s vocabulary and cognition;
- completing time use diaries;
- conducting computer-assisted telephone interviews (CATI); and
- linking to administrative or outcome data (e.g. Medicare, MySchool).

The interviews and questionnaires include validated scales appropriate to the children’s ages.

¹ The terms “Parent 1” and “Parent 2” are used for consistency and are not intended to suggest that one parent’s relationship with their child is more important than the other parent’s relationship. For separated families in which both parents provided care for the child, the interviewer in Wave 1 worked with the family to identify who the child’s Parent 1 was for the purposes of data collection. Where possible, the same parent has been kept as P1 in subsequent waves.

1.4 Sampling and survey design

The sampling unit for LSAC is the study child. The sampling frame for the study was the Medicare Australia (formerly Health Insurance Commission) enrolments database, which is the most comprehensive database of Australia's population, particularly of young children. In 2004, approximately 18,800 children (aged 0–1 or 4–5 years) were sampled from this database, using a two-stage clustered design. In the first stage, 311 postcodes were randomly selected (very remote postcodes were excluded due to the high cost of collecting data from these areas). In the second stage, children were randomly selected within each postcode, with the two cohorts being sampled from the same postcodes.

A process of stratification was used to ensure that the numbers of children selected were roughly proportionate to the total numbers of children within each state/territory, and within the capital city statistical districts and the rest of each state. The method of postcode selection took into account the number of children in the postcode; hence, all the potential participants in the study Australia-wide had an approximately equal chance of selection (about one in 25). See Soloff, Lawrence, and Johnstone (2005) for more information about the study design.

1.5 Response rates

The 18,800 families selected were then invited to participate in the study. Of these, 54% of families agreed to take part in the study (57% of B-cohort families and 50% of K-cohort families). About 35% of families declined to participate (33% of B-cohort families and 38% of K-cohort families), and 11% of families could not be contacted (e.g., because the address was out-of-date or only a post office box address was provided) (10% of B-cohort families and 12% of K-cohort families).

This resulted in a nationally representative sample of 5,107 0–1 year olds and 4,983 4–5 year olds who were Australian citizens or permanent residents. This Wave 1 sample was then followed up at later waves of the study, with sample numbers and response rates for each of the main waves presented in Table 1.2.

Table 1.2: Response rates, main waves, B and K cohorts, Waves 1–6

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
B cohort						
Number of responses	5,107	4,606	4,386	4,242	4,077 ^b	3,764
Response rates of Wave 1 (%)	100.0	90.2	85.9	83.0	80.0	73.7
Response rates of available sample (%) ^a	–	91.2	88.2	86.0	83.5	83.9
K cohort						
Number of responses	4,983	4,464	4,332 ^c	4,164 ^c	3,952 ^c	3,537
Response rates of Wave 1 (%)	100.0	89.6	86.9	83.6	79.4	71.0
Response rates of available sample (%) ^a	–	90.9	89.7	87.2	83.6	80.5
Total						
Number of responses	10,090	9,070	8,718	8,406	8,029	7,301
Response rates of Wave 1 (%)	100.0	89.9	86.4	83.3	79.7	72.3
Response rates of available sample (%) ^a	–	91.1	89.0	86.6	83.5	82.2

Notes: This table refers to the numbers of parents who responded at each wave. Percentages based on weighted data using the Wave 6 data release. ^a The available sample excludes those families who opted out of the study between waves. ^b B cohort: different numbers of parents and their children responded at Wave 5 (there were eight cases where a child interview was completed and the main interview with the parents was not). ^c K cohort: different numbers of parents and their children responded at Wave 3 (in one case a parent interview was completed and the interview with the study child was not); Wave 4 (in five cases a child interview was completed and the main interview with the parents was not); and Wave 5 (in four cases a child interview was completed and the main interview with the parents was not).

1.6 Analyses presented in this report

This report includes data from the first six main waves of the study, though given the breadth and depth of topics included in the study, chapters in this report do not necessarily use data from all six waves and/or both cohorts.

Each chapter addresses a series of policy-relevant questions using descriptive statistical analyses. In answering these questions, chapters generally take one or more of the following approaches:

- *comparisons between subpopulation groups* (see section 1.7 for examples of possible groups) on the various aspects of children’s environments and development; and
- examinations of *trends across waves* as children get older.

Sample weights (for the study children) have been produced for the study dataset in order to reduce the effect of bias in sample selection and participant non-response (Cusack & Defina, 2014; Daraganova & Siphthorp, 2011; Misson & Siphthorp, 2007; Siphthorp & Misson, 2009; Soloff et al., 2005; Soloff, Lawrence, Misson, & Johnstone, 2006). When these weights are used in the analysis, greater weight is given to population groups that are under-represented in the sample, and less weight to groups that are over-represented in the sample. Weighting therefore ensures that the study sample more accurately represents the sampled population.

These sample weights have been used in analyses presented throughout this report. Cross-sectional or longitudinal weights have been used when examining data from more than one wave. Analyses have also been conducted using Stata® *svy* (survey) commands, which take into account the clusters and strata used in the study design when producing measures of the reliability of estimates. Statistical indicators that are used in this report are given in Table 1.3.

Table 1.3: Statistical indicators in tables and graphs

Indicator	Notes
***	Significance level $p < .001$
**	Significance level $p < .01$
*	Significance level $p < .05$
ns	Not statistically significant
I	Confidence interval

1.7 Commonly used LSAC terms

There are some terms used throughout the analyses of LSAC that are useful to understand:

- Parent 1 is defined as the child’s primary caregiver or the parent who knows the child best. The majority of Parent 1 respondents were mothers (i.e., at all waves, more than 95% of Parent 1 respondents have been women and the majority of Parent 2 respondents have been men).
- Parent 1 for each study child was defined by the family at Wave 1. At subsequent waves, the preference, where possible, has been to retain the same person as Parent 1 to maintain the longitudinal consistency of the data. However, if Parent 1 no longer resides with the child or is temporarily away, Parent 2 of the previous wave becomes Parent 1. If both Parent 1 and Parent 2 do not reside with the child or are temporarily away, then a new Parent 1 (the best person to ask about the child’s health, development and care) is assigned. Thus, Parent 1 and Parent 2 are sometimes not the same person in each wave, with different parents or guardians potentially occupying different roles at each wave.
- Unless specifically noted, all references to the child’s “household” or “family” are to those of Parent 1, and do not include any other household or family the child may have with a parent living elsewhere. Similarly, unless specified in the chapter, any reference to “parents” is to Parent 1 and Parent 2, not to parents living elsewhere. In some chapters, data are reported for mothers and fathers rather than for Parent 1 and Parent 2.

A list of terms relating to LSAC that are often used in this report is presented in Table 1.4 (page 5).

Table 1.4: Glossary of LSAC terms

Term	Description
B cohort	The younger group ("baby" cohort) of study children, aged: <ul style="list-style-type: none"> ▪ 0–1 years in Wave 1 (2004); ▪ 2–3 years in Wave 2 (2006); ▪ 4–5 years in Wave 3 (2008); ▪ 6–7 years in Wave 4 (2010); ▪ 8–9 years in Wave 5 (2012); and ▪ 10–11 years in Wave 6 (2014).
K cohort	The older group ("kindergarten" cohort) of study children, aged: <ul style="list-style-type: none"> ▪ 4–5 years in Wave 1 (2004); ▪ 6–7 years in Wave 2 (2006); ▪ 8–9 years in Wave 3 (2008); ▪ 10–11 years in Wave 4 (2010); ▪ 12–13 years in Wave 5 (2012); and ▪ 14–15 years in Wave 6 (2014).
LSAC	<i>Growing Up in Australia</i> : The Longitudinal Study of Australian Children. A nationally representative longitudinal birth cohort study that commenced in 2004. Data are being collected from study children and their parents, carers and teachers, and through linkage with other national datasets.
Parent 1	The child's Parent 1 (P1) is defined as the child's primary caregiver, or the parent who knows the child best, as determined. In the majority of cases, this is the child's biological mother, but is sometimes the father or another guardian.
Parent 2	The child's Parent 2 (P2) lives in the same household as Parent 1 and is usually the partner of Parent 1. In most cases, this is the child's biological father, but can be the mother, another partner of Parent 1 or another guardian.
Parent living elsewhere (PLE)/non-resident parent	The child's parent who lives in a different household to Parent 1.
Study child (or child)	The sampling unit for LSAC is the study child, so "child" refers to the child selected for inclusion in the study. Data collected and reported relate to this child.
Wave	Periods of data collection: <ul style="list-style-type: none"> ▪ Wave 1 in 2004 (B cohort were 0–1 years, K cohort were 4–5 years); ▪ Wave 2 in 2006 (B cohort were 2–3 years, K cohort were 6–7 years); ▪ Wave 3 in 2008 (B cohort were 4–5 years, K cohort were 8–9 years); ▪ Wave 4 in 2010 (B cohort were 6–7 years, K cohort were 10–11 years); ▪ Wave 5 in 2012 (B cohort were 8–9 years, K cohort were 12–13 years); and ▪ Wave 6 in 2014 (B cohort were 10–11 years, K cohort were 14–15 years).

1.8 Key variables and subpopulation groups

Each of the chapters of the Annual Statistical Report includes information about the data and the variables used in that chapter. However, there are some variables that are commonly used in LSAC research, in these chapters and elsewhere. They are presented here in Tables 1.5 (page 6) and 1.6 (page 8). The percentages shown in these tables are based on weighted data (as described in section 1.6, page 4).

Child characteristics

Key child characteristics at the first six waves are summarised in Table 1.5 (page 6). They are:

Child gender

Parent 1 reported the child's gender at Wave 1.

Child birth order

At each wave, the birth order of the study child was determined based on the number of younger siblings and older siblings in the household. The birth order of the study child was classified as the oldest child, middle child or twins, youngest child or only child in the household.

Table 1.5: Child characteristics, B and K cohorts, Waves 1–6

Subpopulation categories	B cohort						K cohort					
	Wave 1 0–1 years (%)	Wave 2 2–3 years (%)	Wave 3 4–5 years (%)	Wave 4 6–7 years (%)	Wave 5 8–9 years (%)	Wave 6 10–11 years (%)	Wave 1 4–5 years (%)	Wave 2 6–7 years (%)	Wave 3 8–9 years (%)	Wave 4 10–11 years (%)	Wave 5 12–13 years (%)	Wave 6 14–15 years (%)
Child gender ^a												
Boys	51.1	51.1	51.1	51.1	51.2	51.3	51.2	51.3	51.3	51.2	51.8	51.4
Girls	48.9	48.9	48.9	48.9	48.8	48.7	48.8	48.7	48.7	48.8	48.2	48.6
<i>n</i>	5,107	4,606	4,386	4,242	4,085	3,764	4,983	4,464	4,331	4,169	3,956	3,537
Child birth order												
Oldest child	0.2	19.6	29.1	31.4	33.2	34.1	28.8	31.4	32.9	34.6	36.3	38.1
Middle child/Twin	1.8	13.1	19.6	21.7	22.3	22.0	18.4	20.5	21.4	21.5	20.5	18.8
Youngest child	58.9	47.4	39.9	37.4	35.6	34.1	41.4	38.5	37.1	35.3	33.7	31.1
Only child	39.1	19.9	11.4	9.5	9.0	9.8	11.5	9.6	8.6	8.6	9.5	12.0
<i>n</i>	5,107	4,606	4,386	4,242	4,077	3,759	4,983	4,464	4,331	4,164	3,951	3,526
Main language spoken at home by child ^a												
English	87.2	87.9	87.0	86.8	89.2	87.6	86.0	85.2	86.1	85.9	88.7	86.8
Not English	12.8	12.1	13.0	13.2	10.8	12.4	14.0	14.8	13.9	14.1	11.3	13.2
<i>n</i>	5,104	4,603	4,384	4,239	4,084	3,763	4,983	4,464	4,331	4,164	3,956	3,537
Child Indigenous status ^a												
Indigenous	4.9	5.1	4.9	5.2	4.4	3.7	3.9	3.7	3.7	3.8	2.9	2.6
Non-Indigenous	95.1	94.9	95.1	94.8	95.6	96.3	96.1	96.3	96.3	96.2	97.1	97.4
<i>n</i>	5,107	4,606	4,386	4,242	4,085	3,764	4,981	4,462	4,329	4,167	3,954	3,535
Child has a disability or medical condition ^b												
Yes	–	5.9	8.6	5.4	4.1	5.1	–	11.1	7.7	6.2	4.7	4.3
No	–	94.1	91.4	94.6	95.9	94.9	–	88.9	92.3	93.8	95.3	95.7
<i>n</i>	–	4,606	4,386	4,242	4,047	3,695	–	4,464	4,331	4,164	3,913	3,454
Child weight status ^c												
Underweight	–	5.3	6.5	5.4	5.1	6.9	5.2	5.1	5.5	5.9	6.7	6.5
Normal weight	–	71.3	69.7	73.8	71.1	67.3	74.2	75.2	69.5	65.6	65.7	64.9
Overweight or obese	–	23.4	23.8	20.8	23.9	25.7	20.6	19.7	25.0	28.5	27.5	28.5
<i>n</i>	–	4,522	4,324	4,181	3,998	3,574	4,934	4,423	4,289	4,018	3,803	3,276

Notes: Percentages based on weighted data using the Wave 6 data release. ^a Recorded at Wave 1. ^b Questions about whether the study child had a disability or medical condition were asked differently in Wave 1 so these data are not included here. Further, differences in the prompt cards for these questions in Waves 3 and 4 mean that the disability data should not be compared across waves. ^c Weight status is based on body mass index. It was not calculated at Wave 1 for the B cohort.

Main language spoken at home by child

At Wave 1, Parent 1 respondents were asked whether they mainly spoke English or a language other than English at home. Languages were classified according to the Australian Standard Classification of Languages (Australian Bureau of Statistics [ABS], 2005), and these were summarised into English or non-English languages.

Child has a disability or medical condition

At each of Waves 2 to 5, Parent 1 respondents were asked whether each household member had a medical condition or disability that had lasted six months or more, while being shown a prompt card with a list of conditions such as sight problems; hearing problems; blackouts, fits or loss of consciousness; difficulty learning or understanding things; and difficulty gripping things.

Child weight status

At each wave (except Wave 1 for the B cohort), interviewers measured the children's weight and height, and these measurements were used to calculate children's body mass index (BMI). The children were then classified as overweight or obese (Cole, Bellizzi, Flegal, & Dietz, 2000), underweight (Cole, Flegal, Nicholls, & Jackson, 2007) or of normal weight. Children in the B cohort at Wave 1 were not measured because of the technical difficulties of measuring infants' height and weight. Instead, study child's birth weight and length were recorded.

Child Indigenous status

Parent 1 respondents identified at Wave 1 whether the study child was of Aboriginal and/or Torres Strait Islander background. These results were summarised into a measure of whether the child was Indigenous or non-Indigenous.

Parent and family characteristics

The parent and family characteristics at the first six waves are summarised in Table 1.6 (page 8).

Household structure

The household structure was classified using the demographic information of Parent 1's and Parent 2's gender, relationship to the study child and presence at each wave. The "two-biological parent" households refer to children's primary households that include two biological parents (a mother and a father). The "single-biological parent" households refer to children's primary households in which the study child lived with one biological parent only (Parent 2 was absent at the wave). Most of the single parents were single mothers (97%). The "one biological and step-parent" households include households where the study child lived with a biological parent and a step, adoptive or foster parent—the vast majority of these children lived in households with a biological mother and a step-father.

The "two non-biological parents" and "one non-biological parent" households include those headed by adoptive parents, grandparents or other relatives, and foster parents. The "biological and other parents" household refer to children's primary household where there was a biological parent and an unrelated adult or a relative to the study child (e.g., grandparent). This "unrelated adult" was usually the cohabiting (e.g., legal spouse, rather than married) partner to the biological parents.

Family socio-economic position

The measure of family socio-economic position (SEP), developed by Blakemore, Strazdins, and Gibbings (2009), uses information about combined annual family income, educational attainment of parents and parents' occupational status to summarise the social and economic resources available to families. The standardised SEP scores have been divided into quartiles and summarised into the lowest 25%, the middle 50% and the highest 25%. From Wave 2 onwards, the SEP variable is calculated based on the ANZSCO (Australian and New Zealand Standard Classification of Occupations) occupation standard, which was introduced in 2006. SEP measures based on the previous occupation standard (ASCO) are available in the dataset for Waves 1 to 4.

Table 1.6: Parent and family characteristics, B and K cohorts, Waves 1–6

Subpopulation categories	B cohort						K cohort					
	Wave 1 0–1 years (%)	Wave 2 2–3 years (%)	Wave 3 4–5 years (%)	Wave 4 6–7 years (%)	Wave 5 8–9 years (%)	Wave 6 10–11 years (%)	Wave 1 4–5 years (%)	Wave 2 6–7 years (%)	Wave 3 8–9 years (%)	Wave 4 10–11 years (%)	Wave 5 12–13 years (%)	Wave 6 14–15 years (%)
Household structure												
Two biological parents	88.9	85.7	82.3	78.6	76.5	73.8	81.7	79.0	75.2	72.3	72.0	68.4
Single biological parent	10.4	13.1	14.0	15.8	15.9	17.2	14.7	16.7	16.7	18.3	18.0	19.8
Biological parent and step-parent	0.2	0.5	2.0	3.3	4.6	5.1	2.3	2.9	4.4	5.2	6.6	7.6
Other	0.5	0.7	1.7	2.4	3.0	3.8	1.2	1.5	3.8	4.4	3.4	4.1
<i>n</i>	5,107	4,606	4,386	4,238	4,077	3,759	4,983	4,464	4,331	4,150	3,952	3,526
Family socio-economic position^a												
Lowest 25%	28.6	30.9	31.3	32.9	30.7	31.4	28.6	30.3	31.5	32.1	30.0	31.3
Middle 50%	48.9	48.0	47.8	46.8	47.8	48.1	50.0	48.8	48.8	48.4	49.3	38.6
Highest 25%	22.5	21.2	20.9	20.3	21.5	20.5	21.4	20.9	19.7	19.6	20.7	20.1
<i>n</i>	5,092	4,585	4,367	4,215	4,036	3,707	4,965	4,458	4,327	4,124	3,907	3,439
Number of siblings in the household												
None	39.1	19.9	11.4	9.5	9.0	9.8	11.5	9.6	8.6	8.6	9.5	12.0
One	36.4	47.3	46.3	43.6	42.5	42.5	47.5	43.9	42.5	42.5	43.4	44.3
Two or more	24.5	32.8	42.3	46.9	48.5	47.7	41.0	46.5	48.9	48.9	47.1	43.7
<i>n</i>	5,107	4,606	4,386	4,242	4,077	3,759	4,983	4,464	4,331	4,164	3,951	3,526
Main language spoken at home by Parent 1												
English	83.1	83.7	83.1	82.8	85.6	83.7	82.5	81.6	82.7	82.6	84.8	83.6
Not English	16.9	16.3	16.9	17.2	14.4	16.3	17.5	18.4	17.3	17.4	15.2	16.4
<i>n</i>	5,107	4,606	4,386	4,238	4,077	3,759	4,983	4,464	4,328	4,146	3,952	3,526
Parent 1's country of birth												
Overseas	23.2	22.7	23.2	23.4	22.0	22.3	25.8	26.3	25.9	25.8	24.6	25.1
Australia	76.8	77.3	76.8	76.6	78.0	77.7	74.2	73.5	74.1	74.2	75.4	74.9
<i>n</i>	5,107	4,606	4,386	4,242	4,077	3,759	4,982	4,463	4,327	4,159	3,952	3,526
Parent 1's education level												
University degree or higher	29.1	28.3	29.6	30.0	33.4	32.2	24.1	24.4	25.1	25.8	28.7	28.1
Less than university degree	70.9	71.7	70.4	70.0	66.6	67.8	75.9	75.6	74.9	74.2	71.3	71.9
<i>n</i>	5,107	4,606	4,386	4,242	4,085	3,764	4,983	4,464	4,331	4,164	3,956	3,537

Subpopulation categories	B cohort						K cohort					
	Wave 1 0-1 years (%)	Wave 2 2-3 years (%)	Wave 3 4-5 years (%)	Wave 4 6-7 years (%)	Wave 5 8-9 years (%)	Wave 6 10-11 years (%)	Wave 1 4-5 years (%)	Wave 2 6-7 years (%)	Wave 3 8-9 years (%)	Wave 4 10-11 years (%)	Wave 5 12-13 years (%)	Wave 6 14-15 years (%)
Both parents' education level												
At least one parent has a university degree (or higher)	37.5	36.9	38.4	38.9	42.4	41.8	33.9	34.3	35.0	35.3	38.8	38.3
Neither parent has a university degree	62.5	63.1	61.6	61.1	57.6	58.2	66.1	65.7	65.0	64.7	61.2	61.7
<i>n</i>	5,104	4,604	4,385	4,240	4,075	3,756	4,979	4,463	4,329	4,163	3,948	3,522
Parent 1's employment												
Employed	47.6	55.5	61.0	64.3	71.1	75.0	55.3	63.9	70.9	72.3	76.9	78.9
Unemployed	3.4	3.3	2.3	3.2	3.1	3.2	4.3	3.4	2.9	2.8	2.9	2.8
Not in the labour force	49.0	41.3	36.7	32.6	25.8	21.8	40.4	32.7	26.1	25.0	20.2	18.3
<i>n</i>	5,096	4,606	4,383	4,233	4,070	3,754	4,972	4,463	4,330	4,162	3,948	3,468
Jobless family												
No	87.0	87.4	89.0	89.1	90.6	91.0	86.7	89.1	91.1	89.9	91.4	91.7
Yes	13.0	12.6	11.0	10.9	9.5	9.0	13.2	10.9	9.0	10.1	8.6	8.3
<i>n</i>	5,104	4,606	4,383	4,240	4,077	3,754	4,977	4,463	4,330	4,166	3,950	3,468
Region of residence												
Metropolitan	66.5	62.6	64.9	63.6	62.8	62.0	63.7	65.9	62.9	62.4	62.0	61.5
Non-metropolitan	33.5	37.4	35.1	36.4	37.2	38.0	36.3	34.1	37.1	37.6	38.0	38.5
<i>n</i>	5,107	4,606	4,378	4,231	4,079	3,756	4,983	4,464	4,324	4,163	3,952	3,527
Neighbourhood disadvantage												
Disadvantaged	27.5	31.1	30.8	30.3	28.7	33.1	28.2	31.0	30.8	30.2	30.5	29.9
Non-disadvantaged	72.5	68.9	69.2	69.7	71.3	66.9	71.8	69.0	69.2	69.8	69.5	70.1
<i>n</i>	5,107	4,606	4,386	4,240	4,077	3,764	4,983	4,464	4,331	4,168	3,951	3,536

Notes: Percentages based on weighted data.

Number of siblings in the household

At each wave, Parent 1 provides details about all household members, including the study child's siblings. Siblings include biological, adopted, foster, step- and half-siblings. Children may also have siblings who do not live in their household but these siblings are not included here.

Main language spoken at home by Parent 1

The language spoken by Parent 1 is classified using the same approach described for the study children above.

Parent 1's country of birth

Parent 1 is grouped into "Australian born" or "born overseas" based on their country of birth provided at Wave 1.

Parents' education level

At each wave, Parent 1 respondents are asked about the highest qualification held by each of the parents. This information is used to categorise parents into those who have a university degree (or higher) and those who don't. Comparisons are made for Parent 1 respondents only, and for both parents together (families in which at least one parent has a university degree, versus families in which neither parent has a university degree).

Parents' employment status

At each wave, Parent 1 reported their employment status as "employed (includes full-time and part-time employment)", "unemployed" or "not in the labour force". Jobless family was derived using Parent 1 and Parent 2's employment status. Jobless family refers to two-parent families where both parents were unemployed or not in the labour force, and single-parent families where Parent 1 was unemployed or not in the labour force.

Region of residence

Families' postcodes are used to link to ABS Census data, which identifies whether they live in a metropolitan area (capital city statistical divisions) or non-metropolitan area (the rest of the state outside the capital city statistical divisions).

Neighbourhood disadvantage

Neighbourhood disadvantage was measured using the Socio-Economic Indexes for Areas (SEIFA)—Disadvantage. Those families living in areas in the lowest 25% SEIFA index of disadvantage are considered to be living in an area of socio-economic disadvantage.

The LSAC data documentation provides more information about these items and the study itself.

1.9 References

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The career aspirations of young adolescent boys and girls

2

Jennifer Baxter

2.1 Background

While vocational or career development is thought to begin in childhood and to develop further through adolescence and young adulthood (Gottfredson, 1981; Super, 1980), at 14–15 years, young people are likely to be starting to think about themselves as future workers, with vocational aspirations and goals becoming part of their growing self-identity (Erikson, 1968). The primary focus of this chapter is on describing the types of jobs adolescents at 14–15 years tell us they would like to have in the future. Our specific focus is therefore on adolescents' *desired* jobs, which we refer to as career or occupational aspirations.

While many adolescents at this age may still be working out their preferred future occupation, it is likely that their aspirations are starting to be shaped, not only by their interests, but also by an awareness of their own abilities and the perceived prestige and difficulty of certain careers (Creed, Conlon, & Zimmer-Gembeck, 2007; Gottfredson, 1981). Nevertheless, they may not have a full appreciation of the types of jobs available to them, with children's and adolescents' job aspirations tending to fall within a fairly narrow set of occupations, not all of them realistic (City & Guilds, 2015; Mann, Massey, Glover, Kashefpadkel, & Dawkins, 2013).

We do not know from LSAC to what extent adolescents themselves expect to be able to enter their desired occupations. Existing research in this area tells us that adolescents often *expect* to enter jobs that are of a lower status than the ones they aspire to (Furlong & Biggart, 1999). A significant proportion of adolescents aspire to higher status or “professional” jobs—more so than is likely to eventuate, as has been shown to be the case for Australian youth (Beavis, Curtis, & Curtis, 2005; Gemici, Bednarz, Karmel, & Lim, 2014; Sikora & Saha, 2011). Also, among younger adolescents and children, a disproportionate number desire to enter more glamorous or “fantasy” occupations, such as film star and professional sports player. To what extent adolescents' career aspirations are grounded in reality is expected to vary, depending on adolescents' level of career maturity (Auger, Blackhurst, & Wahl, 2005; Super, 1980), with aspirations and expectations likely to become more reality-based as they grow (Furlong & Biggart, 1999; Gottfredson, 1981).

In this chapter, adolescents' desired jobs are classified within a framework that allows analyses of the broad categories of jobs to which adolescents aspire, such as professional jobs or technical and trade jobs. Research on career aspirations of children and adolescents often focuses on aggregated data such as this, but here we enrich this focus by using league tables of the most commonly reported jobs identified by adolescents within the groups of interest. This approach was used by Furlong and Biggart (1999) and Kelly (1989), and is especially useful for exploring gender differences. Australian research on career aspirations is largely drawn from the Longitudinal Study of Australian Youth (LSAY) (e.g., Gemici et al., 2014; Sikora & Saha, 2011), from data collected when adolescents were aged 15 years about their *expected* career at age 30 years. This analysis of

LSAC builds on this work by presenting a more descriptive account of career aspirations of girls and boys at 14–15 years.

We expect that some adolescents at 14–15 years will not yet know what they want their career path to be. Uncertainty in career aspirations is not necessarily viewed as a concern, as it may lead adolescents to experiment with different fields, build up a range of skills and learn about being flexible in the labour market (Schoon & Polek, 2011; Staff, Harris, Sabates, & Briddell, 2010). In the review on career uncertainty by Schoon and Polek (2011), the authors concluded that the effects of uncertainty on outcomes are likely to vary depending on several things, including the imminence of key transition points in education, and “the individual characteristics of the adolescents themselves, and the support available from parents and the wider social context” (page 68). This paper explores some of these factors, by providing an analysis of characteristics related to 14–15 year olds being uncertain of future careers.

Exploring factors that explain variation in occupational aspirations is one contribution of this chapter. A characteristic of special interest is gender (Furlong & Biggart, 1999; Super, 1980), given the gender differences in subject choice at school and in occupations within the labour market (Justman & Méndez, 2016). There is considerable evidence that from a young age the occupational aspirations of boys and girls are quite different, such that, at adolescence, each tends to aspire to “gender traditional” occupations (City & Guilds, 2015; Patton & Creed, 2007). The career aspirations of boys and girls are compared, and analysed separately throughout this chapter.

We expect that adolescents’ career aspirations will be related to their educational expectations and academic abilities (Creed et al., 2007; Furlong & Biggart, 1999; Gemici et al., 2014), although some adolescents may have aspirations that do not line up well with these characteristics (Beavis et al., 2005). Some may also have an awareness that these *aspirations* are different from the occupations they more realistically expect to take up.

Previous research indicates adolescents quite often do not understand what education or training would be needed to enter their desired occupation, with mismatches in adolescents’ expected educational pathways and expected occupations (Beavis et al., 2005). We explore the mismatch between children’s educational expectations and career aspirations with these LSAC data, and also gain some insights on adolescents who foresee themselves leaving school early but who have not formed any ideas about what work they might do as adults.

In linking academic skills and career choice, we expect that better results will be linked to higher aspirations (Beavis et al., 2005; Creed et al., 2007; Gemici et al., 2014), as adolescents who are more able in academic skills are expected to aspire to those occupations that require greater cognitive capabilities rather than being more manual or routine in nature (Gottfredson, 1981). Those who are proficient in particular aspects of academic skills (e.g., maths) are likely to desire jobs in occupations that draw upon those skills, although these associations may be different for girls and boys (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). Some early analysis of the link between academic skills and career aspirations is presented here, measuring academic skills using children’s Year 9 NAPLAN results.

While the academic characteristics described above may represent intrinsic characteristics of adolescents, some characteristics may be encouraged and supported by parents, such that parental characteristics and/or the broader family environment may be important in setting the scene for adolescents’ career aspirations (Flanagan & Eccles, 1993; Gemici et al., 2014; Jodl, Michael, Malanchuk, Eccles, & Sameroff, 2001; for a review, see Frigo, Bryce, Anderson, & McKenzie, 2007). Links between family and child aspirations have most often been explored in relation to family socio-economic status. Typically, higher aspirations are apparent in higher socio-economic status families, with this generally considered to be a consequence of adolescents having aspirations for the completion of higher levels of education in conjunction with aspirations for careers that require such levels of education (e.g., Schoon & Polek, 2011). To understand the meaning of socio-economic differences in adolescents’ career aspirations, more comprehensive analytical methods are needed than can be presented in this chapter. Here, the differences according to socio-economic status are presented to provide some insights on the degree of variation at this age.

As adolescents at 14–15 years are starting to make educational decisions that could affect their future pathways through study and work, having access to people to talk to about career aspirations may be of value. Parents can play an important role in this (Young, 1994), as young people gain much of their

help with career planning from family and friends (Rainey, Simons, Pudney, & Hughes, 2008). There is only sparse research that specifically explores outcomes associated with parental engagement in adolescents' career planning (Morgan, 2012). However, some evaluations of parent-focused programs have highlighted their value in providing support to parents, to enable them to help guide their children's education and employment transitions (e.g., Bedson & Perkins, 2006). This chapter includes analyses of child reports of who they talk to about plans for the future, and parent reports of talking to adolescents about the future and about future jobs or courses adolescents should take, to provide an overview of some ways adolescents may be exploring their options.

2.2 Research questions

With a large nationally representative sample of young adolescents, LSAC provides an opportunity to answer the following questions related to adolescents' career aspirations.

1. What sorts of jobs do 14–15 year old adolescents see themselves doing as adults?
2. How do career aspirations vary by the gender, educational experiences and aspirations of the young person, and by their family's socio-economic characteristics?
3. Are 14–15 year olds talking to others about their future careers?

2.3 Data and methods

Occupational aspirations

The focus of this chapter is the K cohort, Wave 6 data, when the LSAC study children were aged 14–15 years. Most adolescents at this age were asked about their career aspirations ($n = 3,378$). They were first asked the question: "As things stand now, do you know what career or occupation you would like to have in the future?" with response options of "yes", "no", and "don't know".¹ Overall, 59% of adolescents said they knew what job they would like to have, 14% answered "no" and 27% "don't know". The "no" and "don't know" categories are combined for this chapter, being those adolescents who do not yet know their desired occupation.

For adolescents who said they knew what job (i.e., career or occupation) they would like to have, they were asked what their desired occupation was. Answers were captured as text and were coded into categories for this paper. The classification used here was based on the Australian and New Zealand Standard Classification of Occupations (ANZSCO) (Australian Bureau of Statistics, 2013), with modifications to suit these data.² The coding framework is shown in Table 2.1 (page 14), including examples of actual responses. The classification loosely reflects skill levels of particular jobs, with higher skilled jobs at the top of the classification and lower skilled jobs at the bottom. Compared with the original ANZSCO coding, however, many of the occupations within the broad categories (e.g., within professional and manager) are at the same skill level, and the created group of "performing arts and production" includes a diverse range of skill levels. Many ANZSCO categories for lower skilled jobs were collapsed into a miscellaneous category given small numbers selecting them (see Appendix Table 2.A, page 33).

¹ These data were not available for 159 adolescents whose parents did not consent for them to be asked this module of questions. A small number (10) answered "yes" but then indicated that they did not know when asked their desired occupation. They were recoded to "don't know".

² Responses were initially coded to the sub-major group level (two digits). However, insufficient numbers selecting certain occupations even at the major group level (one digit) necessitated collapsing major and sub-major group categories. Some additional changes were implemented to better match the occupations listed by adolescents. As a result, the classification is based on but does not fully reflect ANZSCO. For example, according to ANZSCO, the occupations of dancer and actor fit within the professional "arts" category, but they have been reclassified into a new "performing arts and production" category that is placed in the classification near "sports", as it seemed that girls' selection of occupations such as "ballet dancer" and "actor" should be coded in a similar way to boys' selection of "professional football player". It was not always possible to determine with certainty to which classification a response belonged, given insufficient detail in some responses. For example, a response of "engineer" could mean a professional engineer, to be classified in the "professional" group, or a specific type of engineer, such as automotive engineer, which would be coded as "technician and trade". In this case, general responses of "engineer" were coded to the category of "professional". Some stated occupations were clearly identified (e.g., physiotherapist, journalist, lawyer, architect, hairdresser, mechanic) while some were very general (e.g., "something to do with animals"; "something with computers"). Responses were matched to the category that best fit the response given.

A number of adolescents stated that their desired occupation was one that might typically be considered to be a “glamorous” or “fantasy” occupation, for example soccer player, actor, TV music host, circus acrobat and interspace emperor. These occupations were coded to the category that best matched their nominated job, but this means desired occupation does include a mix of realistic and aspirational jobs.³ No attempt was made to specifically identify “fantasy” jobs, as some adolescents may indeed be able to enter the prestigious or glamorous job they mentioned. Even among adolescents aspiring to jobs such as doctors, pilots and veterinarians, for some these jobs may be a fantasy and for others they may become a reality.

Table 2.1: Coding of desired jobs in LSAC

Occupation group	Examples of common responses
Professional/manager	
Doctor, dentist or other health professional (excluding nurses)	Doctor, physiotherapist, dentist
Legal or social professional	Lawyer, criminologist, counsellor, psychologist, social worker
Engineering and transport professional	Engineer, civil engineer, pilot, air force pilot
Veterinarian (Vet)	Veterinarian
Science professional	Marine biologist, forensic scientist
Nursing professional	Nurse, midwife
Education professional	Teacher, primary school teacher, dance teacher, PE teacher, music teacher
Information and communications technology (ICT) professional	Information technology, computer programmer, game designer/ developer
Professional design, planning or architect	Graphic designer, architect, interior designer
Business professional or manager	Accountant, business, banker, stockbroker, hotel manager, family business, business management
Media, literature or arts professional (not performing arts)	Journalist, author, photographer, artist
Technician and trade	
Automotive and engineering	Mechanic, diesel fitter, engineer mechanical, boilermaker
Construction	Carpenter, builder, plumber, construction
Electrics and communication	Electrician, electrical engineer, electronics
Animals and agriculture	Zoologist, agriculture, farmer, veterinary nurse
Other technical and trade	Fashion designer, trade, cabinetmaker, chef
Service and miscellaneous	
Health and welfare support and care	Paramedic, occupational therapist, speech therapist, child care worker, aged carer
Protective services	Police officer, army, air force
Personal service	Beautician, hairdresser, flight attendant, make-up artist
Miscellaneous	Retail, administration officer, banker, boat skipper, real estate agent, truck driver, hospitality
Sports and performance arts	
Sports	Personal trainer, professional soccer player, basketball player, footballer
Performance arts and production	Actor, musician, dancer, audio producer

The distribution of coded responses is shown in Table 2.2 (page 15). Adolescents sometimes indicated that they had more than one desired occupation (e.g., “school teacher or physiotherapist, vet”), and the first column of numbers allows for multiple occupation responses. However, for the purposes of this analysis, adolescents were coded to only one occupation, that being the one

³ Categories that appeared to have a disproportionate number of “fantasy” selections were ICT professionals (including “games developer”, “Youtuber”, “blogger”), sports jobs (e.g., professional AFL player, professional skateboarder, stunt car driver), and in performing arts (e.g., actor, ballet dancer), but they appeared across various occupations (e.g., fashion designer, rocket scientist, heart surgeon, military sniper). As noted in the text, for some children these may be realistic but it is assumed that they are “fantasy” since they represent only a very small percentage of actual jobs in the labour market.

higher up on the list, as presented in this table.⁴ The result of this classification of desired jobs is also shown in Table 2.2, with sample sizes for each occupation in the second column and weighted percentages in the final column.

Table 2.2: Adolescents' desired jobs, overall sample numbers, K cohort, Wave 6

Occupation group	Overall sample size allowing for multiple responses	Sample size based on coding of "higher" occupation (mutually exclusive)	Percentage (weighted)
Professional /manager	1,190	1,190	35.0
Doctor, dentist or other health professional ^a	186	186	5.3
Legal or social professional	148	142	4.2
Engineering and transport professional	165	163	4.9
Vet	73	73	2.0
Science professional	131	110	2.9
Nursing professional	63	60	2.0
Education professional	144	130	3.8
ICT professional	112	97	3.2
Professional design, planning or architect	117	103	3.2
Business professional or manager	50	39	1.2
Media, literature or arts professional ^b	95	87	2.3
Technician and trade	357	277	9.4
Automotive and engineering	94	73	2.5
Construction	83	76	2.8
Electrics and communication	59	37	1.3
Animals and agriculture	69	51	1.6
Other technical and trade	67	40	1.1
Service and miscellaneous	313	249	8.1
Health and welfare support and care	75	57	1.8
Protective services	130	99	3.2
Personal service	75	64	2.4
Miscellaneous (e.g., sales, clerical)	37	29	0.8
Sports and performance arts	269	201	6.2
Sports	106	84	2.8
Performance arts and production	166	117	3.4
Total with stated occupation	1,917	1,917	58.7
Unknown desired occupation	1,400	1,400	41.3
Total	3,317	3,317	100.0

Notes: ^a Not including nursing professional (and midwife); ^b Not including performing arts and production.

Some comparison is also made to the occupations of employed persons in the current labour market, using information collected by the Australian Bureau of Statistics (ABS) in February 2016. The ANZSCO coded data were reclassified to match, as best as possible, the classification used to analyse the LSAC data. These aggregate data are shown alongside the LSAC data in Appendix Table 2.A (page 33).

⁴ This is consistent with coding to the occupation with the highest prestige, but given the uncertainty about coding some adolescents' responses, this is not as precise a measure as might be attained if analysing actual occupations.

Other characteristics of adolescents and families

Differences between boys and girls are explored throughout, first overall and then for the range of variables described below, with all analyses presented by child sex. Statistical tests are used to compare responses across categories, but multivariate methods have not been used to test for associations.⁵ Therefore, in exploring the associations between career aspirations and each of the variables described below, we cannot identify which are the factors that are most important in explaining differences across groups of adolescents. This is especially the case since each of the education variables and the measure of socio-economic status are correlated to some extent (as shown in Appendix Table 2.B, page 34). The variables examined are:

1. Adolescents' expected educational qualifications, as captured from the children themselves at 14–15 years. This measures how far they expect to go in their education. This information is also collected from parents, but it was especially relevant for these analyses to consider children's expectations in light of their career aspirations, to see where there were mismatches between the two.
2. Adolescents' academic achievement, using Year 9 NAPLAN results in numeracy, reading and writing, which were matched to the LSAC data for approximately 3,540 of the adolescents (numbers varying slightly across different NAPLAN measures).
3. Family socio-economic status, based on the socio-economic position (SEP) variable (see chapter 1, page 7), dividing families into four SEP quartiles.

Talking about the future

Information on the support that adolescents receive regarding subject choice and career information is also explored in relation to the above information on career aspirations. This includes:

- adolescents' responses to the question, "When you talk about your plans for the future, would you say you talk to your ..." (parents, friends, teachers, school guidance counsellor, other). Possible responses are "yes" or "no" to each of these.
- primary carer responses to the following: "How often do you talk to study child about ..." (his/her plans for the future, future jobs, courses he/she should take at school). Possible responses to each are "Never/Almost never", "Rarely", "Sometimes", "Often" and "Always/Almost always".

These data are analysed by child gender, with some analyses by educational expectations and occupational aspirations.

2.4 Results

Adolescents' career aspirations compared to the current labour market

Among the 14–15 year olds in LSAC, 59% said they knew what career or occupation they would like to have, 14% said they did not know, and another 27% did not know how to answer the question.

The desired occupations were quite varied (Table 2.3, page 17), although a majority (35% overall; 60% of those stating an occupation) stated an occupation classified as professional or manager. A smaller proportion overall said they desired to work in trades or technical jobs (16% of those with a stated occupation), and fewer again said they desired to work in jobs classified here as "service or miscellaneous" (14% of those with a stated occupation). In particular, within this category "miscellaneous" captures those that said they desired to work in jobs such as sales, administration or hospitality, and the number in this category was very small. Another 11% of those with a desired occupation named a job in sports or performance arts/production.

The distribution of these occupations is quite different to that of currently employed men and women (Appendix Table 2.A, page 33). The LSAC responses are much more skewed toward the

⁵ This would require a more sophisticated approach than can be easily presented here. While there are numerous other child and family variables that may be of interest that are not explored here, the literature suggests that the educational and socio-economic status ones that have been included are expected to be the most relevant.

professional jobs than is reflected in the labour market, with 60% of those in the LSAC sample who knew what occupation they desired selecting a professional occupation, compared to 35% employed in these jobs in the current labour market. Differences were marked for specific professional jobs, with the aspirations exceeding current patterns in all but “business professionals and managers”, which represents 19% of occupations in the labour market but captured the responses of just 2% of the LSAC desired occupations.

Very few in LSAC (14% of those stating an occupation) said they wanted one of the jobs coded here into “service and miscellaneous”. This category includes sales, hospitality, clerical, labourers and so on, which in sum make up 49% of the current labour force (see Appendix Table 2A, page 33). Interestingly, the percentage for “technician and trade” jobs in LSAC is not very different to that of the current distribution (16% of desired occupations in LSAC and 15% of jobs in the current labour market). There is also mismatch between desired and actual occupations for “sports and performance arts” jobs, which make up 11% of the desired occupations and just 1.3% of the labour market.

Table 2.3: Career aspirations of 14–15 year old boys and girls

	Boys %	Girls %	All %	All % of those with stated occupation
Professional/manager	32.5	37.7	35.0	59.7
Doctor, dentist or other health professional	3.7	7.1	5.3	9.1
Legal or social professional	2.5	5.9	4.2	7.1
Engineering and transport professional	8.5	1.1 [#]	4.9	8.3
Vet	0.7 [#]	3.4	2.0	3.4
Science professional	3.0	2.7	2.9	4.9
Nursing professional	0.2 [#]	3.9	2.0	3.4
Education professional	1.6	6.1	3.8	6.4
ICT professional	5.9	0.3 [#]	3.2	5.4
Professional design, planning or architect	3.1	3.4	3.2	5.5
Business professional or manager	1.7	0.6 [#]	1.2	2.0
Media, literature or arts professional	1.7	3.1	2.3	4.0
Technician and trade	15.8	2.6	9.4	16.0
Automotive and engineering	4.8	0.1 [#]	2.5	4.3
Construction	5.2	0.2 [#]	2.8	4.8
Electrics and communication	2.4	–	1.3	2.1
Animals and agriculture	1.6	1.7	1.6	2.8
Other technical and trade	1.7	0.5 [#]	1.1	1.9
Service and miscellaneous	5.7	10.7	8.1	13.9
Health and welfare support and care	0.3 [#]	3.5	1.8	3.1
Protective services	3.6	2.8	3.2	5.4
Personal service	0.8 [#]	4.0	2.4	4.0
Miscellaneous (e.g., sales, clerical)	1.1	0.4 [#]	0.8	1.3
Sports and performance arts	6.6	5.7	6.2	10.5
Sports	3.7	1.8	2.8	4.7
Performance arts and production	2.8	4.0	3.4	5.8
Total with stated occupation	60.5	56.7	58.7	100.0
Desired occupation not known	39.5	43.3	41.3	–
Total	100.0	100.0	100.0	
<i>n</i>	1,798	1,739	3,537	1,917

Notes: [#] Relative standard error is > = 25%. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Wave 6

Adolescents' career aspirations by gender

Boys were somewhat more likely than girls to know their desired occupation (61% compared to 57%), but gender differences were considerably more apparent when looking at the types of jobs desired.⁶ Within the broad classifications, girls were more likely than boys to aspire to a professional/manager job or one in the service and miscellaneous category, with boys more likely than girls to aspire to a technician or trade job. Differences were apparent also when looking in more detail at the types of jobs nominated by girls and boys, as shown in Table 2.3 (page 17) and in the “top ten” occupations of girls and boys presented in Table 2.4 (page 18). For example, looking at boys' preferred jobs:

- The most nominated set of jobs desired by boys was the engineering and transport professional (14% of boys who had nominated a desired occupation) but this was rarely mentioned by girls. “Engineering” may include those thinking about a trade job (e.g., electrical engineer) but did not provide sufficient detail for this to be coded as a trade job.
- One in ten boys who stated a desired occupation referred to a job in ICT, and this also was rarely mentioned by girls. This category captures general responses that indicated wanting to work in information technology or as a computer programmer, as well as responses such as “games developer”, “Youtuber” and “Apple genius”.
- Technician and trade jobs were commonly named by boys, specifically in construction and in the automotive trades (9% and 8% respectively of those naming a desired occupation).
- Sports jobs were also in the “top ten” for boys but not girls. These included jobs such as personal trainer, as well as ones such as professional footballer that are possibly more aspirational, given their rarity as jobs in the labour market.

Table 2.4: Top ten ranked occupation categories of 14–15 year old boys and girls who stated a desired occupation

Boys (% of the 1,006 boys stating an occupation)	Girls (% of the 911 girls stating an occupation)
Engineering and transport professional (14%)	Doctor, dentist or other medical professional (13%)
ICT professional (10%)	Education professional (11%)
Construction technical/trade (9%)	Legal or social professional (11%)
Automotive technical/trade (8%)	Personal service (7%)
Sports (6%)	Performance arts and production (7%)
Doctor, dentist or other health professional (6%)	Nursing professional (7%)
Protective services (6%)	Health and welfare support and care (6%)
Professional design, planning or architect (5%)	Professional design, planning or architect (6%)
Science professional (5%)	Vet (6%)
Performance arts and production (5%)	Media, literature or arts professional (5%)

Notes: Rankings and percentages are based on weighted data. Occupations in bold are those that only appear on this gender's list.

For girls, the top-named occupation (doctor, dentist or other health professional) was also in the boys' top ten. Also on both lists were performance arts and production (5% of boys and 7% of girls who named a desired occupation) and professional design, planning or architect (5% of boys and 6% of girls).

Occupations that were only in girls' top ten were:

- Education professionals (that is, teachers and early childhood education workers) and legal or social professionals (e.g., lawyer, psychologist). Each was selected by 11% of the girls who had named a desired occupation.
- Another 7% of girls identified jobs classified as “personal service”, which included hairdresser and beautician.
- Nursing (including midwifery) was selected by 7% of girls and another 6% selected jobs under health and welfare support and care, which included child care and aged care work.
- Another 6% of girls specifically referred to vet as their preferred occupation.
- Media, literature or arts jobs were identified as the preferred occupations of 5% of the girls who had named a desired occupation.

⁶ The proportion with known versus unknown desired occupation varied significantly by gender ($p < .05$), with differences in the distributions in the broad and detailed occupation groupings shown in Table 2.3 (page 17) also significant ($p < .001$).

Many of these gender differences reflect the gendered nature of occupations in the current labour market (see Appendix Table 2.A, page 33). For example:

- Of all employed *men*, 2.1% are in engineering and transport professional jobs, compared to 0.2% of employed women.
- Of all employed *men*, 3.0% are ICT professionals, compared to 0.8% of employed women.
- Of all employed *men*, 23% are in technician and trades jobs, compared to 5% of employed women.
- Of all employed *women*, 5% are nursing professionals, compared to 0.6% of employed men.
- Of all employed *women*, 6.4% are education professionals, compared to 2.3% of employed men.
- Of all employed *women*, 9.1% do health and welfare support and care jobs, compared to 1.6% of employed men.

In further analyses, below, findings for boys and girls are presented separately to explore how career aspirations vary across other characteristics. In the following subsections, links between education and career aspirations are explored. The education variables included are expected level of education and educational achievement, using selected Year 9 NAPLAN results. After these subsections, differences by family socio-economic position are explored. See section 2.3 (page 13) for a description of these variables.

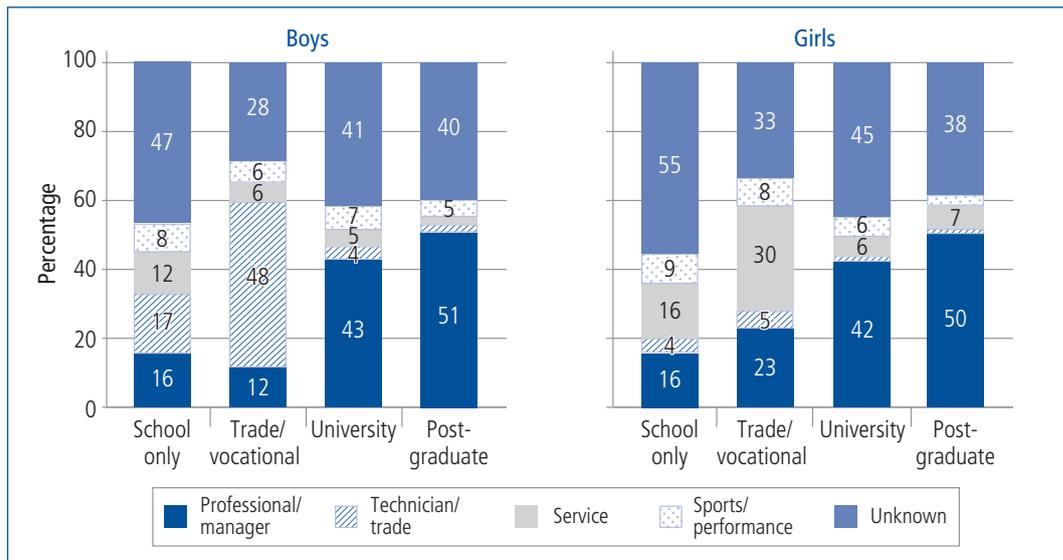
Career aspirations by educational expectations

The existing research leads us to expect that youth with higher educational expectations would have aspirations for higher status jobs, and so we explore here how educational expectations and career aspirations are related.

Overall, of the 14–15 year old boys, 21% expected to complete school only, 22% expected to complete a trade or technical qualification, 27% expected to complete a bachelor degree and 39% expected to complete post-graduate qualifications. Of the 14–15 year old girls, 18% expected to complete school only, 12% expected to complete a trade or technical qualification, 37% expected to complete a bachelor degree and 33% expected to complete post-graduate qualifications.⁷ Differences in boys' and girls' occupational aspirations, broadly classified, are shown according to their educational expectations in Figure 2.1 (page 20) and the “top ten” occupations within each category, shown in Table 2.5 (page 20). The bold text in the table indicates differences by educational expectations, within gender.

- Relatively high percentages of boys and girls who expected to achieve no post-secondary qualifications were undecided about their desired career (47% of boys and 55% of girls). Among those who expected to only complete secondary education and had ideas about what they wanted to do, there were mixed desired careers.
 - For boys, the top occupation within this education group was ICT professional. The actual responses of these boys indicated that many of these boys desired to work in the design or development of computer games.
 - For girls, the top three occupations were performance arts and production, protective services and health and welfare support and care.
- Adolescents were most likely to know what occupation they wanted if they expected to achieve a trade or vocational qualification. This is likely to be a reflection of adolescents understanding that they would enter a specific job through an apprenticeship or vocational training. Some may already have commenced or be about to commence this training through school-based vocational subjects. In particular, for boys, 48% of those expecting to achieve a trade or vocational qualification reported that their desired job was a technician or trade job (such as electrician, diesel mechanic or carpenter). Various trade jobs were represented in the “top ten” or boys with this educational expectation. For girls with this educational expectation, a relatively high percentage were thinking about a job falling in the category of services or miscellaneous. “Personal service” was ranked first for girls who expected to achieve a trade or vocational qualification, which includes hairdressing and beautician.

⁷ This is somewhat different to parents' reports, with parents less-often expecting adolescents will achieve a post-graduate qualification (10% for boys and 11% for girls), with more expecting adolescents to achieve a university qualification (48% of boys and 64% of girls).



Source: LSAC K cohort, Wave 6

Figure 2.1: Career aspirations of boys and girls by child's educational expectations

Table 2.5: Top ten ranked occupation categories of boys and girls who stated a desired occupation, by child's educational expectations

Highest expected education		
Up to secondary education (n = 175 boys, n = 114 girls)	Trade/vocational qualification (n = 230 boys, n = 117 girls)	University or post-graduate qualification (n = 598 boys, n = 679 girls)
Boys		
ICT professional (16%) Protective service (12%) Sports (10%) Construction (10%) Automotive and engineering (9%) Animals and agriculture (7%) Other jobs (7%) Performance arts and production (6%) Engineering and transport professional (5%)	Automotive and engineering (24%) Construction (24%) Electrics and communication (11%) Other technical and trade (7%) Sports (6%) Engineering and transport professional (5%) ICT professional (5%) Protective service (5%)	Engineering and transport professional (21%) Doctor, dentist or other health professional (11%) ICT professional (10%) Science professional (8%) Legal or social professional (7%) Professional design, planning or architect (7%) Sports (5%) Performance arts and production (5%) Business professional or manager (5%) Education professionals (4%)
Girls		
Protective service (12%) Performance arts and production (12%) Personal service (11%) Health and welfare support and care (10%)	Personal service (25%) Health and welfare support and care (14%) Media, literature or arts professional (10%)	Doctor, dentist or other health professional (16%) Legal or social professional (13%) Education professional (13%) Nursing professional (8%) Vet (7%) Performance arts and production (6%) Professional design, planning or architect (6%) Science professional (6%) Media, literature or arts professional (5%) Health and welfare support and care (4%)

Notes: Rankings and percentages are based on weighted data but occupations are only presented in the "top ten" if the sample size for that occupation was at least 10. As a result, fewer than 10 occupations are sometimes listed. Occupations in bold are those that only appear on the list for this education group, within gender.

Source: LSAC K cohort, Wave 6

- Many of the adolescents saw themselves as completing post-graduate qualifications, and for some adolescents this may be linked to particular career aspirations. Adolescents with post-graduate aspirations were the most likely to desire professional and managerial jobs. Adolescents expecting to achieve a university degree were similar to those expecting to achieve higher qualifications, with a large proportion desiring a professional or manager job. There was also a large proportion uncertain about their future career within those with expectations for university qualifications (including those expecting to reach post-graduate level).
 - For boys, the top main categories of professional jobs desired by those expecting university qualifications were engineering and transport professional, doctor, dentist or other health professional, and ICT professional but with a number of other occupation groups also desired (see the boys' top ten).
 - For girls, there were similarities with boys in the top ten listed occupations, with doctor, dentist or other health professional at the top of the list. Girls expecting this level of education, however, rarely nominated engineering and transport professional jobs or ICT professional jobs. The main significant difference for girls was in reference to education professional, which was also on the top ten list for boys but was nominated by a smaller percentage compared to girls.
- Jobs in sports were in the top ten for boys in all the categories, and jobs in performance arts in the top ten for boys and girls across all groups of educational expectations, except those expecting to achieve trade or vocational qualifications. Within sports, “glamorous” jobs such as “professional football player” were common across all categories, and likewise within performance arts and production, jobs such as musician and actor were common (for boys) and actor or dancer (for girls), regardless of their educational expectations.

Career aspirations by academic achievement

We also expect that adolescents' career aspirations will vary with their current academic achievement. Here we look at this using Year 9 NAPLAN results, including results for numeracy, reading and writing. The distribution of each of the NAPLAN scores of all adolescents in LSAC was divided into quartiles, so we could compare those with the lowest achievement (in the bottom 25% of the distribution of the NAPLAN score), those in the middle (in the middle 50% of the distribution of the NAPLAN score) and those with the highest achievement (in the top 25% of the distribution of the NAPLAN score).⁸ Some adolescents were excluded, as Year 9 NAPLAN scores had not been matched to them, such that these analyses are based on approximately 1,739 girls and 1,798 boys (numbers vary slightly according to which NAPLAN score is used).

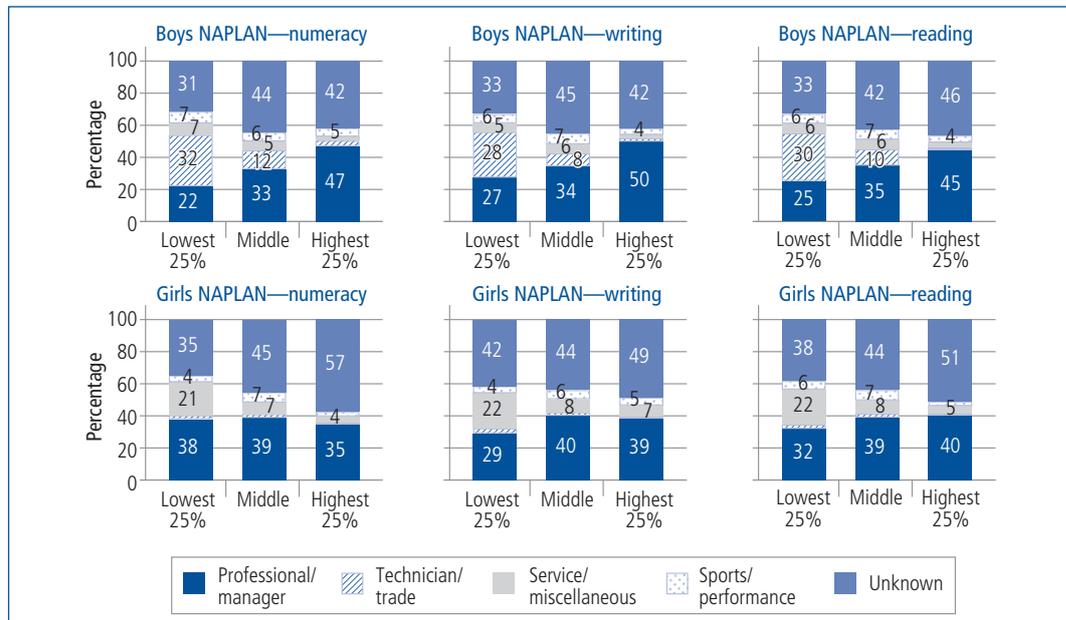
Career aspirations, broadly classified, are shown by each achievement measure in Figure 2.2 (page 22), and information about the top ten occupations for those in the highest and lowest quartiles is shown in Table 2.6 (page 23). As adolescents' educational expectations (described in the previous section) are correlated with this measure of academic achievement, we will not describe the findings in the same level of detail as was described above.⁹

Looking at the broad occupational aspirations, there were different associations for boys and for girls. For boys, higher achievement on any of the NAPLAN scores was associated with being more likely to aspire to a professional or manager job, and less likely to aspire to a technician or trades job. Compared to boys with higher or average achievement, boys with the lowest scores were the least likely to have an unknown career aspiration, instead having a much higher likelihood of saying they would like a technician or trades job compared to other achievement levels. Boys with higher scores on reading, but not numeracy or writing, were more likely than other boys to have an unknown career aspiration.

⁸ The distribution of NAPLAN scores for writing did not allow the scores to be divided to give 25% in each group, instead resulting in 28% in the lowest “quartile” and 21% in the highest “quartile”. For numeracy and reading the distributions were close to 25% in each category.

⁹ For example, of those who expected to achieve only school qualifications, 5% were in the highest quartile for numeracy; of those who expected to achieve trade or vocational qualifications, 6% were in the highest quartile; of those who expected to complete a bachelor degree, 27% were in the highest quartile; and of those who expected to achieve post-graduate qualifications, 38% were in the highest quartile.

For girls, Figure 2.2 shows that, unlike for boys, the likelihood of desiring a professional or manager job did not increase with higher achievement scores for numeracy. Those with lower reading or writing scores were less likely than other girls to aspire to a professional or manager job but, even for these measures, a significant proportion of girls with low scores aspired to a professional job. Girls with lower NAPLAN scores more often said they would like a job in services or miscellaneous compared to other girls (and compared to boys). Girls with the highest achievement were the most likely to say they did not know what career they would like to have, compared to those with average or lower scores. This was especially marked for the numeracy findings.



Source: LSAC K cohort, Wave 6

Figure 2.2: Career aspirations by Year 9 NAPLAN results

Table 2.6 (page 23) shows the “top ten” occupations for boys and girls within each NAPLAN grouping. The detail is shown for each of the NAPLAN tests, and the bold text compares the occupations of those with the lowest scores within each of the tests to those with the highest scores for boys and then for girls. That is, the bold text does not indicate whether or not there are differences between boys and girls, and does not compare across the NAPLAN tests.

Looking separately at boys and girls, many of the occupations on the list of those with lower achievement scores are the same, regardless of which test is considered, and this is the case also for those with higher achievement scores. Some of the differences according to test type are due to small sample sizes precluding filling out more detail (e.g., for boys with higher writing scores and girls with higher numeracy scores). Interestingly, for girls’ NAPLAN reading scores, many of the occupations were on both lists for low and high achievers, suggesting that numeracy and writing results for girls are more useful indicators of girls’ general career aspirations.

Across the different tests, the top ten occupations for boys in the lowest 25% of any of the NAPLAN scores were virtually the same as those that appeared on the top ten for boys who expected to achieve a secondary school or trade or vocational qualification. Similarly, the top ten for boys in the upper 25% of the NAPLAN distribution was virtually the same as that for boys expecting to achieve a university qualification (see Table 2.5, page 20). As noted above, there were some differences across test types, but in all three tests the top two occupations for those with lower scores were automotive and engineering, and construction, and the top two for those with higher scores were engineering and transport professional, and doctor, dentist or other health professional.

For girls with the highest achievement scores, the top ten occupations mirror those of girls expecting to gain university qualifications (see Table 2.5). Across all the tests this includes doctor, dentist or other health professional, and legal or social professional. The finding that girls with *lower* NAPLAN scores often aspire to professional and manager jobs is seen in the top ten of their occupations including many of the professional occupations, with education professional, and legal or social professional appearing on the lists of those with lower scores on any of the tests.

Table 2.6: Top ten ranked occupation categories of boys and girls who stated a desired occupation, for the bottom and top achievement groups

Boys—NAPLAN numeracy		Boys—NAPLAN reading		Boys—NAPLAN writing	
Bottom quartile (n = 202)	Top quartile (n = 221)	Bottom quartile (n = 280)	Top quartile (n = 158)	Bottom quartile (n = 327)	Top quartile (n = 118)
Automotive and engineering (15%) Construction (15%) ICT professional (9%) Engineering and transport professional (8%) Electrics and communication (7%) Protective service (6%) Sports (6%) Performance arts and production (5%) Animals and agriculture (5%) Other trades (5%)	Engineering and transport professional (27%) Doctor, dentist or other health professional (15%) ICT professional (8%) Science professional (8%) Legal or social professional (7%) Professional design, planning or architect (6%) Sports (5%) Business or manager (5%)	Construction (15%) Automotive and engineering (14%) Engineering and transport professional (11%) ICT professional (10%) Electrics and communication (6%) Sports (6%) Other trades (5%) Animals and agriculture (5%) Protective service (4%) Education professional (3%)	Engineering and transport professional (21%) Doctor, dentist or other health professional (14%) ICT professional (10%) Science professional (10%) Legal or social professional (10%)	Automotive and engineering (15%) Construction (12%) ICT professional (12%) Engineering and transport professional (11%) Electrics and communication (6%) Other trades (5%) Sports (5%) Protective service (5%) Animals and agriculture (5%) Performance arts and production (4%)	Doctor, dentist or other health professional (21%) Engineering and transport professional (18%) Science professional (12%)
Girls—NAPLAN numeracy		Girls—NAPLAN reading		Girls—NAPLAN writing	
Bottom quartile (n = 235)	Top quartile (n = 121)	Bottom quartile (n = 172)	Top quartile (n = 196)	Bottom quartile (n = 144)	Top quartile (n = 197)
Health and welfare support and care (12%) Personal service (12%) Education professional (12%) Legal or social professional (10%) Nursing professional (9%) Media, literature or arts professional (7%) Doctor, dentist or other health professional (6%) Protective services (6%) Professional design, planning or architect (5%) Vet (5%)	Doctor, dentist or other health professional (20%) Legal or social professional (17%)	Personal service (15%) Health and welfare support and care (13%) Education professionals (9%) Nursing professional (8%) Legal or social professional (7%) Doctor, dentist or other health professional (7%) Media, literature or arts professional (6%) Professional design, planning or architect (6%) Protective services (6%)	Legal or social professional (19%) Doctor, dentist or other health professional (15%) Vet (8%) Education professional (7%) Media, literature or arts professional (7%) Science professional (6%) Professional design, planning or architect (5%) Nursing professional (5%)	Personal service (15%) Health and welfare support and care (14%) Education professionals (13%) Legal or social professional (9%) Health and welfare support and care (7%) Education professional (7%) Vet (6%) Science professional (6%)	Doctor, dentist or other health professional (19%) Legal or social professional (14%) Performance arts and production (9%) Media, literature or arts professional (9%) Health and welfare support and care (7%) Education professional (7%) Vet (6%) Science professional (6%)

Notes: Rankings and percentages are based on weighted data, but occupations are only presented in the “top ten” if the sample size for that occupation was at least 10. As a result, fewer than 10 occupations are sometimes listed. Occupations in bold are those that only appear on the list for this NAPLAN group, within NAPLAN test and within gender.
 Source: LSAC K cohort, Wave 6

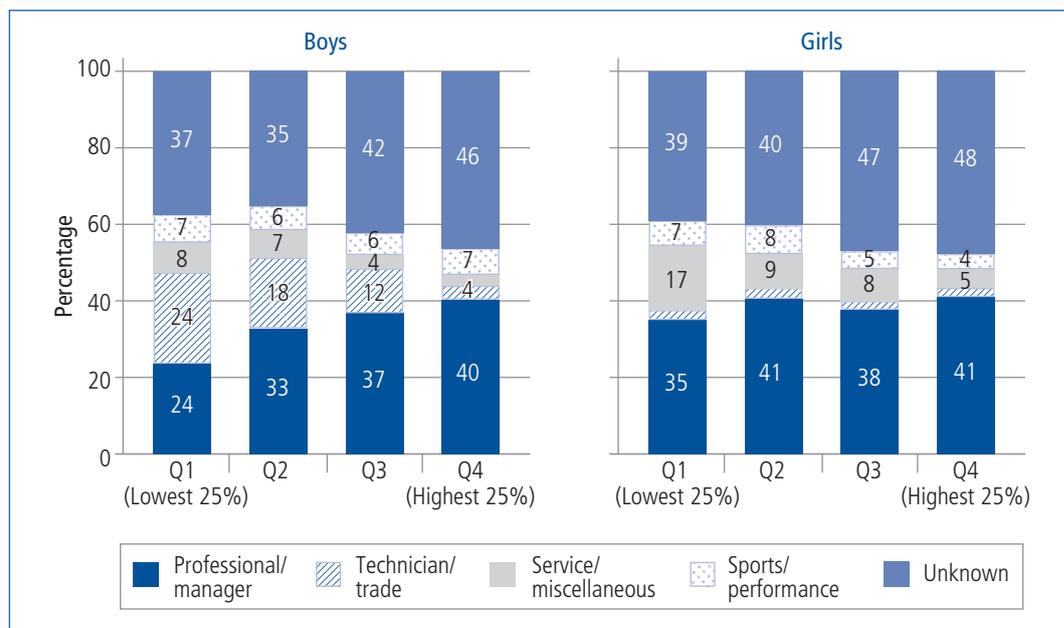
If the original responses are examined in more detail, however, there are some differences in the types of professional jobs that are desired according to NAPLAN results. For example:

- Around half of the girls aspiring to “educational professional” with lower NAPLAN scores specifically referred to teaching art, drama, physical education or early childhood education. The higher achieving girls mention these jobs also but were somewhat more likely to refer to more general teaching jobs.
- Within the category “legal or social professional” jobs in psychology, criminology and counselling were commonly mentioned by all, including those with lower NAPLAN scores. Among those with higher NAPLAN scores, more referred to working in legal jobs.

Career aspirations and family socio-economic status

Moving beyond measures of the adolescents themselves, here we show how adolescents’ career aspirations vary according to family socio-economic status. While this is useful for assessing how aspirations vary across socio-economic status groups, it will not be possible from these descriptive analyses to determine whether findings reflect socio-economic status itself, or differences in educational expectations and outcomes across these groups.¹⁰ Appendix Table 2.A (page 33) shows that these educational variables differ across the socio-economic status groups we use here. In particular, within higher socio-economic status families the majority of adolescents expected to achieve university qualifications. Therefore, when looking at the occupational aspirations of adolescents in high socio-economic status families, the findings are almost exactly the same as those found in analysing the occupational aspirations of adolescents expecting to reach university education.

The broad categories of adolescents’ career aspirations are shown in Figure 2.3, by gender and quartiles of family socio-economic position. The top ten occupations for boys and girls in low and high socio-economic status families are shown in Table 2.7 (page 25). For boys and girls, Figure 2.3 shows that adolescents in families of *lower* socio-economic position (quartile one or two) were generally more likely than those in higher socio-economic status families to know the career or occupation they wanted to do. This largely relates to the higher likelihood of the selection of technician or trade jobs by boys and service or miscellaneous jobs by girls in lower socio-economic status families. The same findings have been seen above in looking at occupational aspirations by educational expectations and academic outcomes.



Source: LSAC K cohort, Wave 6

Figure 2.3: Career aspirations of 14–15 year old boys and girls by family socio-economic position

¹⁰ Of course, other factors not explored in this chapter (e.g., parents’ occupations) may also contribute to adolescents’ aspirations, and help explain variation by family socio-economic status.

Table 2.7 Top ten ranked occupation categories of 14–15 year old boys and girls who stated a desired occupation, for lowest and highest family socio-economic position (SEP)

Boys Lowest quartile family SEP (n = 245)	Boys Highest quartile family SEP (n = 221)	Girls Lowest quartile family SEP (n = 255)	Girls Highest quartile family SEP (n = 213)
Automotive and engineering (15%) Construction (12%) Engineering and transport professional (10%) ICT professional (9%) Sports (7%) Protective service (7%) Electrics and communication (5%) Performance arts and production (5%) Professional design, planning or architect (4%)	Engineering and transport professional (14%) Doctor, dentist or other health professional (13%) Legal or social professional (10%) Science professional (9%) ICT professional (8%) Sports (7%) Manager/business (6%) Performance arts and production (6%) Professional design, planning or architect (5%) Media, literature or arts professional (5%)	Personal service (12%) Education professional (11%) Doctor, dentist or other health professional (11%) Health and welfare support and care (9%) Legal or social professional (8%) Nursing professional (7%) Professional design, planning or architect (6%) Performance arts and production (6%) Protective service (6%) Vet (6%)	Doctor, dentist or other health professional (21%) Legal or social professional (11%) Vet (8%) Education professional (8%) Professional design, planning or architect (8%) Media, literature or arts professional (7%) Performance arts and production (7%) Science professional (6%)

Notes: Rankings and percentages are based on weighted data, but occupations are only presented in the “top ten” if the sample size for that occupation was at least 10. As a result, fewer than 10 occupations are sometimes listed. Occupations in bold are those that only appear on the list for this socio-economic status group, within gender.

Source: LSAC K cohort, Wave 6

Preferring a professional or management job was common in all socio-economic status quartiles, and this increased with socio-economic status for boys. For girls, however, the association between socio-economic status and preferences for professional jobs was less clear. In the analyses of academic outcomes, above, we showed that lower-achieving girls (using NAPLAN scores) were almost as likely as higher-achieving girls to aspire to professional jobs, and this socio-economic status finding reflects that same association. As such, when we look at the types of jobs desired by girls in low socio-economic status families, we also see the sorts of professional jobs described above. Looking into these results in more depth, as before, it is apparent that subtle differences in girls’ responses do seem to suggest some differences between low and high socio-economic status families, even if the broad categories have similar percentages nominating particular occupations.

Who are 14–15 year olds talking to about their future careers?

For young people, there are various ways that they can develop insights about their possible career futures and learn about what options in education and employment may be available to them. Some of this learning may be done in the family home if parents offer up advice and/or adolescents seek out the opinions of their parents about these topics. Of course, as is the case on a wide range of subjects, at adolescence, these young people may be talking more to others in their lives than they are talking to parents. Peers and teachers are other possible sources of information and, on the subject of career planning, some may have access to school resources specifically directed at providing career advice. Research undertaken in the UK by City and Guilds (2015), with a sample of young people aged 14–19 years, showed that young people had different sources of information about their job of choice including hearing about it from school (30% of them) and seeing it in the media (28%). One in five of them said that the job was suggested by their parents (21%), 16% by a teacher or lecturer and 14% by a career advisor.

Here we present some findings about who the 14–15 year olds in LSAC are talking to about their future as a means of gaining insights on who they may be talking to regarding their career aspirations. The 14–15 year olds were asked who they talk to about plans for the future, and specifically asked whether they talk to parents, friends, teachers, school career counsellors or others. Overall:

- most boys (88%) and girls (86%) said that they talk to their parents;
- talking to peers was more common for girls (75%) than for boys (63%);

- talking to teachers was similar for boys (29%) and girls (32%);
- a little over one in ten boys and girls (12–13%) talked to school guidance or career counsellors; and
- a small percentage (3–4%) talked to other people. This largely reflected adolescents reporting talking to other family members, such as siblings and grandparents.

These percentages did not differ significantly for boys and girls, except in relation to talking to peers. Combining the above information, 99% of the 14–15 year olds in LSAC reported that there was someone that they talked to about their plans for the future.

The child's primary carer (typically the mother) was also asked a number of questions about how often they talked to the child about future work-oriented subjects. Specifically, they were asked about talking about his or her plans for the future; about future jobs he/she might have; about what courses he/she should take in school and how these courses will prepare him/her for these future jobs. It was not entirely clear what a response of "always/almost always" meant in response to these questions, relative to a response of "often", as both captured having frequent discussions, and so these categories have been combined as "often to always".

Table 2.8 (page 27) shows that:

- Very few parents reported rarely or less often talking to the adolescents about any of these future work-oriented topics.
- About two-thirds of parents of girls reported frequently (often to always) talking to them about their plans for the future, with the proportion slightly less than this for parents of boys. Another 29% of parents of girls and 32% of parents of boys sometimes talked to them about their plans for the future.
- Findings were similar for talking to 14–15 year olds about future jobs they might have, and there were no significant differences according to whether parents had a girl or a boy. Slightly more parents reported rarely or less often talking to their child about future jobs, compared to how often they talked about their son/daughter's plans for the future more generally.
- The percentage of parents reporting to rarely or never talk to their son/daughter about possible school courses was a little higher than the percentages for the other items, with slightly fewer saying they often to always talk to their child about this.

Were adolescents more or less likely to be talking to others if they knew what career they wanted to have? Looking just at adolescents' reports of who they talk to about their plans for the future:

- Girls who knew what career they wanted were a little more likely to talk to *parents* (88% talked to parents) than were other girls (86%). For boys, this difference was not apparent.
- Boys who knew what career they wanted were more likely to talk to *friends* (65%) compared to those who did not know (58%). This finding was not apparent for girls.
- Boys and girls who knew what career they wanted were more likely to talk to *teachers* (33% and 36% respectively) compared to those who did not know (23% and 26% respectively).
- Girls who knew what career they wanted were more likely to talk to *school career guidance counsellors* (14%) than were other girls (10%). This finding was not apparent for boys.

Taking this further, if we examine whether adolescents were talking to others according to their expected educational qualifications, as well as whether they know what occupation they would like, we find that there are some adolescents who may be in need of further help to make a successful transition from school to work. Looking at adolescents' reports of whether they talk to their parents and whether they talk to either teachers or career guidance counsellors, Figure 2.4 (page 27) shows that:

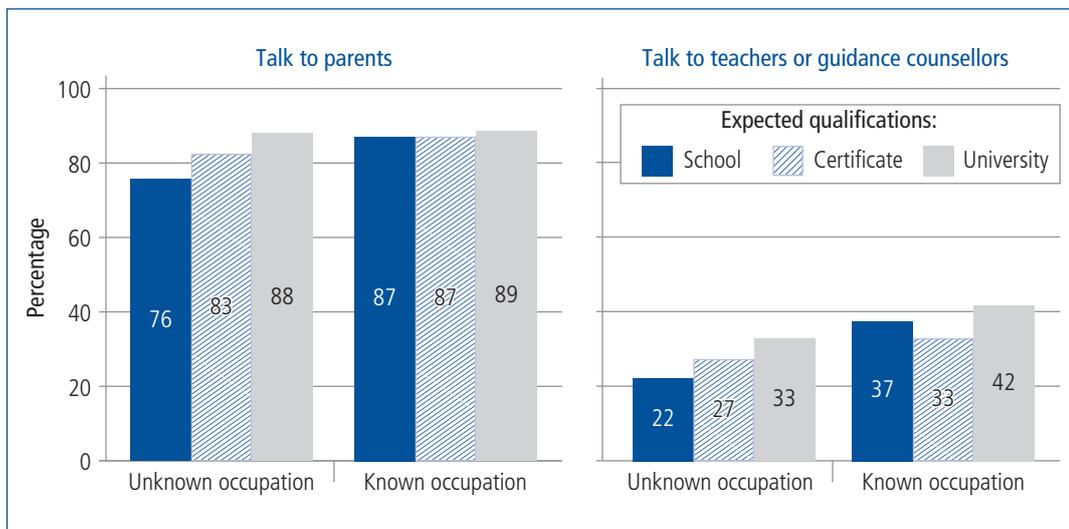
- Among adolescents who know what career they would like to have, regardless of what educational expectations are, almost nine in ten adolescents are talking to their parents about their future. Further, the same proportion of youth who are uncertain about their career aspiration, but expect to complete university qualifications, are talking to their parents.
- However, one in four of those who do not know what future job they might like and expect to complete no further education after secondary school are not talking to their parents. These youth are also less likely than others to report that they talk to teachers or career guidance counsellors.

Table 2.8: Whether parents talk to 14–15 year old boys and girls about future work-oriented subjects

Frequency of talking to study child about ...	Boys (%)	Girls (%)
Talk about his/her plans for the future?		
Rarely or less often	4.2	3.2
Sometimes	31.7	29.0
Often to always	64.1	67.9
Total	100.0	100.0
Talk about future jobs he/she might have?		
Rarely or less often	5.9	5.7
Sometimes	33.0	31.7
Often to always	62.2	62.6
Total	100.0	100.0
Talk about what courses he/she should take in school and how these courses will prepare him/her for these future jobs?		
Rarely or less often	9.2	6.8
Sometimes	31.9	31.4
Often to always	58.9	61.7
Total	100.0	100.0
<i>n</i>	1,706	1,661

Notes: The distribution of boys was significantly different to that of girls ($p < 0.01$) for talking about plans for the future and talking about what courses should be taken. Differences were not statistically significant for talking about future jobs. Percentages may not total 100.0% exactly due to rounding.

Source: LSAC K cohort, Wave 6



Source: LSAC K cohort, Wave 6

Figure 2.4: Talking to parents and teachers about plans for the future, by educational expectations and whether desired career is known

2.5 Summary and discussion

Overview of 14–15 year old boys' and girls' career aspirations

Six in ten 14–15 year olds were able to say what career they would like to have in the future, with the proportion slightly higher for boys compared to girls. This proportion is similar to that found in other studies in Australia and elsewhere among similarly aged children (Beavis et al., 2005).

Throughout this chapter we found marked gender differences in career aspirations, consistent with findings from other studies (City & Guilds, 2015; Furlong & Biggart, 1999; Patton & Creed, 2007;

Schoon & Polek, 2011). The career aspirations are consistent with gender stereotypes, and with the gendered nature of subject selection in school and employment in different occupations (Justman & Méndez, 2016). Differences were apparent at the aggregate level, with some key findings:

- Girls were somewhat more likely to desire a professional job than were boys.
- Boys were much more likely to report desiring a trade or technical job, compared to girls.
- Girls were more likely to aspire to a job in personal services (or miscellaneous), which includes such jobs as hairdresser and beautician.

Significant differences emerged when we looked in more detail at the types of jobs girls and boys aspired to. The “top ten” tables allowed us to be more specific about this. Key findings were:

- Within professional jobs, both boys and girls often mentioned doctor, dentist or other health professional or other medical jobs, and jobs as vets or in science and nature. Working as a professional designer, planner or architect was also in the “top ten” of boys and girls.
- Within professional jobs, boys were most likely to say they wanted to work in ICT or as an engineering and transport professional. Girls rarely stated these occupations as their desired jobs.
- For girls desiring a professional job, the key difference was in the percentage expressing their desire to work as education professionals (teachers, including early childhood education teachers), legal and social professionals (lawyers as well as counsellors), nursing professionals, or media, literature or arts professionals. These occupations were not in the “top ten” for boys.

A number of the adolescents desired “glamorous” or “fantasy” occupations. This was most apparent in the proportion of adolescents aspiring to sports or performing arts and production jobs (11% of those with a desired occupation). Desiring such jobs was found across the range of socio-economic status and educational categories the adolescents were grouped into, so is perhaps a reflection of desires among adolescents at this age. While we have not explored it here, such desires may reflect adolescents’ interests and abilities in these areas, which are also likely to contribute to other adolescents’ desires to work in jobs of a specific, and perhaps less realistic, nature such as (for boys) “computer games developer” and (for girls) “fashion designer”. There were quite marked gender differences in relation to these jobs, which are consistent with gender norms.

A majority (60%) of those who stated a desired occupation aspired to a professional or managerial job: a proportion in line with several other studies (Beavis et al., 2005; Sikora & Saha, 2011) but in excess of the proportion employed in such jobs in the current labour market, as shown in the comparison to occupations in the current labour market. This suggests that the career aspirations of adolescents will not translate into reality for all—an observation that has been made about youths’ career aspirations in Australia and elsewhere (Baird, Burge, & Reynolds, 2008; Sikora & Saha, 2011). As in other studies, in these LSAC responses very few adolescents aspired to work in lower status jobs (such as in retail, hospitality or manufacturing), while it is likely this will be the career outcome for some (Beavis et al., 2005). The analyses of occupations in the current labour market showed that almost half of employed people work in jobs here classified as “services or miscellaneous”. These captured the job aspirations of only 14% of the 14–15 year olds who knew what occupation they desired.

The analyses by the education and socio-economic status variables showed that those with higher educational aspirations, higher achievement or higher family socio-economic status very often desired a professional job, if they knew what career they wanted. This is consistent with much research showing socio-economic status differences in children and adolescents’ career aspirations. We did not attempt to determine the underlying cause or explanation for these differences. The types of jobs these higher socio-economic status (or higher achieving) adolescents aspired to were quite diverse and differed for boys and girls, as discussed above.

Desiring a professional job was less likely for girls and boys who did not expect to gain a university education and, for boys, was less likely for those with poorer achievement scores and lower family socio-economic status. For girls, these associations were weaker, which we found was to some extent explained by girls with lower socio-economic status or lower achievement scores also saying they would like professional jobs. However, when the detailed responses of girls were analysed it appeared that the jobs they aspired to were subtly different to those of girls with higher socio-economic status or achievement scores. For example, within “education professional” jobs, girls from lower socio-economic status families more often referred to early childhood education teaching or teaching art, drama or physical education, rather than referring to general school teaching.

It was common for boys to say that they would like to work in a trade or technical job in the future, and this was strongly associated with boys saying they expect to achieve a trade or vocational certificate or diploma as their highest educational qualification. No doubt, these expectations and aspirations are linked with boys often having some understanding of the pathway into a particular trade job. The same could be said of girls who have aspirations to work in particular service jobs that would require a certificate or diploma.

There was, however, a mismatch between educational expectations and career aspirations for some adolescents, most apparent here for 14–15 year olds who aspired to jobs that they would not be able to achieve with the level of education they expected to reach. This has been observed in other research, including Australian research (Beavis, 2006). As found previously, some young people appear to have insufficient information about the labour market and about the pathways they need to take in order to achieve their desired jobs. Of course, with these LSAC data focused on *desired* jobs rather than expected jobs, it could be that the 14–15 year olds are already aware that they could not expect to enter their desired occupation. As we do not have information about expected occupation, we cannot make this assessment. (For analyses of occupational expectations, refer to LSAY publications, e.g., Gemici et al., 2014.)

In LSAC, career aspirations have been collected from age 14–15 years (Wave 6). These aspirations may have been shaped at much earlier ages, perhaps influenced by children's interests and abilities as well as their perceptions of available jobs as viewed through gender norms, parents' occupations or the local area labour market (Furlong & Biggart, 1999; Porfeli, Hartung, & Vondracek, 2008). Other characteristics of the child, family, parenting and parent–child relationships may also play a role in shaping adolescents' career aspirations (Frigo et al., 2007; Gemici et al., 2014; Jodl et al., 2001; Rainey & Borders, 1997). In future analyses, we can expand the examination of career aspirations at 14–15 years to consider whether there is variation according to factors such as these. While we cannot look back to earlier ages in the LSAC data, we will be able to track career aspirations as the children grow, as LSAC continues to capture this information. It will be most interesting to explore whether aspirations become defined or more realistic as these young people continue through the education system. In Furlong's longitudinal study, they noted a tendency for lower status jobs to become nominated more as children grew up to age 16, with a decline in the mention of higher status jobs (Furlong & Biggart, 1999). This decline may indicate children moving to more realistic career desires as they grow. In research by Mann et al. (2013), the preferred jobs of the older children in their study (the 17–18 year olds) were more realistic than those of the younger children (13–14 year olds), for whom the top-rated occupation was actor/actress. This research suggests that to some extent the LSAC children at 14–15 years may not yet all have realistic expectations about their possible future jobs.

Previous research indicates that having higher career aspirations as youth is related to later achievement of greater success (in terms of prestige and wages), relative to aspirations for lower prestige jobs, even after taking account of a range of other confounding factors (Super, 1980). Having unrealistic aspirations or uncertain aspirations has also been linked to poorer outcomes (Sabates, Harris, & Staff, 2011; Staff et al., 2010). Whether career aspirations at 14–15 years, later predicts labour market outcomes will be a research question for future waves of LSAC. If these aspirations change significantly to become more realistic at 16–17 years, it may be that the aspirations at 16–17 years are a better indicator of later outcomes.

Adolescents who do not know what career they desire

Overall, four in ten 14–15 year olds did not know what career they would like to have in the future, with this proportion a little higher for girls than boys. These adolescents with uncertain career plans will include those who have multiple options in mind and have not settled on a particular path sufficiently to identify a specific occupation. It will also include those who really have not yet identified an occupation, or possible set of occupations, that they feel will suit them. It may be that some have insufficient information about the types of jobs that are possible, given their interests and skills. Some, however, may simply not yet be thinking about their future in this way—being focused on more salient aspects of their lives such as their school and post-school education choices (Staff et al., 2010).

As discussed in the introduction, to what extent having an unknown career aspiration is a problem is likely to depend on child characteristics, sources of support and whether there are key transition

points emerging, for which having some career plan may be helpful (Schoon & Polek, 2011). Many adolescents at this age would be beginning to make subject choices that can enable or limit their post-secondary education options. Adolescents are likely to be thinking about their career aspirations, if they have any, or relying on their interests and perceived abilities when choosing school subjects (Tripney et al., 2010). In the absence of career aspirations, basing decisions on interests and abilities, in itself, may not be problematic, given that future occupations are also likely to be related to these characteristics. The career uncertainty may actually be beneficial, as it means adolescents might explore a range of options, rather than being locked into one pathway that for various reasons may prove unsuccessful. It may be a less positive experience, however, for adolescents who are less motivated to explore different options, who are less certain about their own abilities, whose school outcomes are poorer, or who do not have access to supports that could help them identify career options (Schoon & Polek, 2011; Staff et al., 2010).

From these analyses of LSAC there were groups of adolescents more likely than others to be uncertain in their career aspirations. A large proportion (around half) of those expecting to complete no education after school were uncertain in their career future. Ensuring they have access to resources and supports to help them identify some options will be important in their remaining years of secondary school. Girls and boys who expected to achieve a trade or technical qualification were least likely to say that they did not know what career they wanted, no doubt because their qualification is related to the occupation they would like to follow. About four in ten of those expecting to achieve a university qualification did not know what career they wanted. This is similarly reflected in the analyses by adolescents' achievement scores, with higher scoring adolescents generally the most likely to be uncertain of their career aspiration. This was especially marked for girls who had high numeracy scores. This could indicate a lack of awareness of the types of jobs that might be available, but also it could indicate that these adolescents are considering a range of options. Again, it could also indicate that these adolescents are more focused on their education at this time, and have not yet devoted a lot of thinking to where this education could take them.

Tracking the career aspirations and outcomes of these adolescents as they grow, relative to those with a career aspiration at 14–15 years, will be a useful direction for research with future waves of LSAC.

Are 14–15 year olds talking to others about their future careers?

While talking to people is not the only way that adolescents may develop their career plans, it is one mechanism by which adolescents may be helped to see appropriate career options, should they be having difficulty deciding on which way to steer their education prior to leaving study and joining the workforce. It may be especially useful, then, for those who are undecided about career options, or who have a career aspiration that may be difficult to meet unless particular education (or other) steps are taken. These analyses showed that 14–15 year olds are most likely to talk with parents about their plans for the future, and most adolescents had some degree of communication with parents on this subject. This no doubt is one way that parents at least guide adolescents' career aspirations, although the transmission of values and broad educational aspirations through the family environment is also likely to be important in thinking about how parents might affect adolescents' thinking about possible future pathways (Frigo et al., 2007).

According to an evaluation of career development services for young people (15–24 year olds) by Rainey et al. (2008, page 16), parents “were viewed as the ‘hidden client’ in career development services as they support the young person and seek to influence the decision-making process.” The need to develop and implement career-planning programs that are inclusive of or directed to parents has been recognised through previous Australian and international evidence (Bedson & Perkins, 2006). In particular, programs directed at low socio-economic status families are thought to be beneficial, providing a means of helping parents to guide at-risk children into a positive pathway (Bedson & Perkins, 2006). The finding from these LSAC data that showed that children least likely to be talking to parents and to teachers or school counsellors were those with unknown career aspirations who expected to complete no post-school education also suggests a need for programs that may improve these communication channels, or provide access to other means of support. More broadly, career guidance programs aimed at young people at risk of dropping out of school early can have an important role in helping these young people improve their outcomes (Sweet & Watts, 2004).

Adolescents may be drawing on other resources to gain information about their possible career futures. For example, career information is often provided as printed material for distribution or

making available at schools (Rainey et al., 2008; Sweet & Watts, 2004). In UK research, there has been some discussion about the fact that children do not often have information on possible occupations direct from employers, yet this may be a means of educating children about the breadth of realistic career pathways (City & Guilds, 2015; Mann et al., 2013). Of course, the Internet is also a source of information (Rainey et al., 2008; Sweet & Watts, 2004), including various sites specifically designed to provide career guidance to young people (and older). LSAC did not collect information about these sources of career information.

Identification and classification of occupational aspirations

To prepare the LSAC data for this publication, a first step was the classification of adolescents' responses about desired occupations, which were captured as text strings. There are different ways this classification might be done (see, e.g., a different classification of occupational aspirations in Patton & Creed, 2007), and given the focus of this analysis was on exploring career aspirations in the context of educational and socio-economic variables, a decision was made to structure the classification around ANZSCO, which groups occupations according to skill levels and specialisations. In future work with these data, with additional coding, it may be possible to use other frameworks or to examine the occupational prestige of adolescents' career aspirations.

The quality of the final data, as classified, is of course dependent on the information collected. In regard to this occupational data, there were some challenges because adolescents did not always provide sufficient detail to allow accurate coding of occupations. However, this may simply reflect that some adolescents are not sufficiently clear about their career futures to allow the identification of exact jobs. Well-known jobs were often mentioned, including “glamorous” ones and ones that are commonly portrayed in the media. In fact, the range of possible jobs is quite likely not known by many adolescents at 14–15 years, no doubt making it difficult for them to identify a particular job they might aspire to. It may be, for example, that there is less awareness among girls of the types of jobs available as engineers or more generally available to those who excel in science and maths. Among boys there may be less awareness of the types of jobs available to those who excel in arts. The quite gendered findings may therefore, in part, reflect different levels of awareness of types of jobs in the labour market by gender.

Key implications and conclusion

There are a few key implications arising from the research presented in this chapter.

- Providing boys and girls with information about potential jobs that suit a range of interests and skills may help them identify possible future careers. This information could challenge gender stereotypes, but should equip adolescents with realistic options, given the range of jobs available in the labour market and the likely educational qualifications of boys and girls.
- Acknowledging that it is not a problem for adolescents to be undecided of their career path, adolescents should be encouraged to explore their skills and interests, looking for future work opportunities that might also suit the values they hold as important. It is important they have access to resources and supports to promote this, particularly for those about to enter the labour market or to make important choices in their education pathway.
- Parents are important supports to adolescents as they develop their ideas and plans for a future career. Some parents may not be well equipped to do this, and may need additional support themselves to help their adolescents find a successful career path.
- Schools can also be where children find out about possible career options. Advice and information given here may be especially valuable for children who will complete their education at secondary school. It also may be valuable for informing children with different sets of skills and interests about a range of realistic education and career pathways.

Understanding the career aspirations of this cohort of adolescents is especially important given that they will be planning for jobs within a labour market that is more insecure and unstable than that of their parents' generation (Rainey et al., 2008). Ensuring adolescents have access to good information and to supports and resources will help these adolescents identify the range of jobs that may be suitable to them and the pathway that will help them achieve their aspirations, or to modify their aspirations to suit their skills and interests and the nature of the labour market.

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2.7 Appendix

Table 2.A: Comparison of occupations in the labour force to the desired occupations of 14–15 year olds

	Occupations in the labour force at February 2016 (ABS) % of employed			14–15 year olds' desired occupations (LSAC) % of those with a stated occupation		
	Males	Females	All	Boys	Girls	All
Professional/manager	34.6	36.4	35.4	53.6	66.6	59.7
Doctors, dentists and other health professionals (excluding nurses)	1.7	2.8	2.2	6.0	12.7	9.1
Legal or social professionals	1.3	2.8	2.0	4.1	10.5	7.1
Engineering and transport professionals	2.1	0.2	1.2	14.1	1.9 [#]	8.3
Veterinarians	0.0	0.1	0.1	1.1 [#]	6.0	3.4
Science professionals	0.8	0.8	0.8	5.0	4.8	4.9
Nursing professionals	0.6	5.0	2.7	0.3	6.8	3.4
Education professionals	2.3	6.4	4.2	2.6	10.8	6.4
ICT professionals	3.0	0.8	2.0	9.7	0.6 [#]	5.4
Professional design, planning or architect	1.1	0.9	1.0	5.1	6.0	5.5
Business professionals and managers	21.3	15.8	18.8	2.8	1.1 [#]	2.0
Media, literature, arts professionals	0.4	0.6	0.5	2.7	5.4	4.0
Technicians and trades workers	23.0	4.6	14.5	26.1	4.3	15.9
Automotive and engineering	5.8	0.2	3.2	8.0	0.2 [#]	4.3
Construction and building	7.4	0.3	4.1	8.6	0.4 [#]	4.8
Electrics and communication	4.6	0.3	2.6	4.0	0.0	2.1
Animals and agriculture	1.6	1.2	1.4	2.6	2.8	2.7
Other technical/trade	3.6	2.6	3.2	2.8	0.9 [#]	1.9
Services and miscellaneous	41.0	57.9	48.8	9.5	18.8	13.9
Health and welfare support and care	1.6	9.1	5.1	0.5 [#]	6.2	3.1
Protective service workers	1.7	0.4	1.1	5.9	4.9	5.4
Personal service and travel workers	0.4	1.4	0.8	1.3 [#]	7.1	4.0
Miscellaneous (e.g., sales, clerical, labourers, production workers)	37.3	47.0	41.8	1.8	0.6 [#]	1.3
Sports and performance arts	1.4	1.1	1.3	10.8	10.3	10.6
Sports	0.9	0.9	0.9	6.2	3.3	4.8
Performance arts and production	0.5	0.2	0.4	4.7	7.0	5.8
Total employed	100.0	100.0	100.0	100.0	100.0	100.0

Notes: The ABS occupation estimates (classified using ANZSCO) were matched as best as possible to the classifications used for LSAC. See footnote 2 for a description of some of the ways the classification used for LSAC differs to the ANZSCO classification.

Source: LSAC and ABS 6291.0.55.003 – Labour Force, Australia, Detailed, Quarterly, Feb 2016 EQ08 – Employed persons by Occupation unit group of main job (ANZSCO), Sex, State and Territory, August 1986 onwards.

Table 2.B: Indicators of child education by family socio-economic status

Child	Boys			Girls			All children
	Low SES	Middle SES	High SES	Low SES	Middle SES	High SES	All
Child expects to reach university education (%)	36.2	58.4	86.5	56.8	72.9	87.3	63.4
High NAPLAN numeracy (%) ^a	13.8	24.5	46.7	7.2	15.9	35.6	21.7
High NAPLAN reading (%) ^a	10.0	16.4	41.2	14.9	23.5	46.9	22.8
High NAPLAN writing (%) ^a	5.3	11.9	24.8	16.5	23.9	40.9	18.9

Notes: Low socio-economic status is quartile 1, middle socio-economic status is quartiles 2 and 3 and high socio-economic status is quartile 4. ^a The NAPLAN percentages are calculated only over those children with a NAPLAN score matched to LSAC. All differences by family SEP within gender were statistically significant ($p < .001$).

Teen employment experiences

3

Jennifer Baxter and Diana Warren

3.1 Introduction

Many young people work part-time while they are still in school, including doing casual jobs such as babysitting, working in a family business, and working for wages outside school hours. Little is known, however, about how teens fit their employment around their school hours, and to what extent this varies across demographic groups. This chapter will explore this using Wave 6 of the K cohort in LSAC, to focus on the employment participation of 14–15 year olds. Wave 5 information is also incorporated to explore to what extent children were working at 12–13 years. Throughout the chapter these young people at 12–13 and 14–15 years are referred to as teens.

It is generally acknowledged that part-time employment can be beneficial to school students, through the positive effects on their independence (in terms of income and a sense of autonomy or responsibility, for example) and the potential for them to acquire new skills (Marsh, 1991; Stern & Briggs, 2001). However, it may also pose risks for children's academic outcomes if a significant amount of time is spent in employment (Vickers, Lamb, & Hinkley, 2003). This may be because work time encroaches too much on time that children would be undertaking schoolwork. By exploring which teens are working, how much and when they are working, we aim to contribute to the research evidence on to what extent teens are balancing their study commitments with those of employment.

To explore this, it is valuable to focus on those who are just beginning their journey of combining work with study. For many this will occur from around 15 years, which is the age at which restrictions on employment are lifted in most jurisdictions of Australia, although regulations continue to govern the type, times and amount of work children may do while they are still undertaking compulsory education.¹ The main source of research on the employment of 15 year olds in Australia has been the Longitudinal Surveys of Australian Youth (LSAY), in which Year 9 students (who are around 15 years old) across a number of birth cohorts have been asked about their employment participation (e.g., Anlezark & Lim, 2011; Vickers et al., 2003). In LSAY, in 2009, 41% of 15 year olds (average age 15.7 years) who answered the employment questions were classified as employed at the time of the study.²

The Australian Bureau of Statistics (ABS) also produces information relevant to this age group. The Labour Force Survey captures employment information for all persons aged 15 years and over. From publication of these data for 15–19 year olds in full-time school (not tertiary study), in

¹ See <workplaceinfo.com.au/resources/employment-topics-a-z/child-employment-laws>.

² See <www.lsay.edu.au/popups/cohort_table.php?info=2009_3_1&filter1=0&filter2=0>. Overall, 17% had not stated their labour force status. They are excluded from the calculation.

March 2016, 32% were employed (29% of boys and 37% of girls).³ These estimates are produced monthly, showing variation across the year. For example, in the year to March 2016, the highest employment rate was 36% in December 2015 and the lowest was 29% in August 2015. From the ABS 2011 Census of Population and Housing (the Census), which was conducted in August, the estimated percentage employed among 15–19 year old school students was 35%. Among 15-year-old students, it was lower than the estimate from LSAY, at 18% (16% boys and 21% girls).⁴

Differences in estimates across data collections are likely to reflect different data collection and recruitment methodologies and different reference periods. In the Census and the Labour Force Survey employment information is based on work in *the previous week*, while the LSAY question more generally asks about having a current job, business or farm.

None of these data sources provides information about the employment of young people under the age of 15. In all jurisdictions of Australia, the employment of children younger than 15 is permitted, although under stricter conditions than for those aged 15 and over.⁵ A survey on child employment (of 5–14 year olds) was conducted by the ABS in 2006 (ABS, 2007), and captured any sort of work (including casual work or work for a family business) done in the previous year. This survey found that 2% of 5–9 year olds and 11% of 10–14 year olds had done some work in the previous year. While this publication included some useful information about children's jobs, the aggregation of information for all employed 5–14 year olds (sometimes disaggregated into 5–9 years and 10–14 years) made it difficult to assess how employment might matter to children at different points in their school life.

This chapter will explore the employment of teens at 12–13 and 14–15 years, by looking at the percentage who worked in the previous year, using Waves 5 and 6 of the LSAC K cohort. We explore how child and family characteristics are associated with patterns of employment, contributing to the fairly sparse Australian literature on this topic. In addition to the child employment publication by the ABS, previous research includes Biddle's (2007) analysis of the 2001 Census to explore the employment participation of 15–19 year old students, and their likelihood of working long hours. This included specific analysis by single years of age, allowing examination of the employment of 15 year olds. The characteristics of teens' employment was covered in research by Anlezark and Lim (2011) using the LSAY cohort aged 15 years in 2003, in research on whether combining work and study affected post-school outcomes. Previously, analyses by Vickers et al. (2003) examined a similar question using an earlier (1995) cohort of LSAY, and also included some analyses of which teens were employed and the characteristics of employment. Smith and Wilson (2002) reported on findings from a study of student employment conducted in NSW and South Australia in 2000. A report on student employment by Robinson (1996) used data from Youth In Transition (the precursor to LSAY), in which students were aged 15 years in 1990. Robinson (1999) also used these data to analyse the effects of part-time work on students, with a significant focus on students' reasons for employment.

Some findings from this research are:

- **Age:** Employment participation among school students increases with age from age 15 years (Anlezark & Lim, 2011; Robinson, 1996). Smith and Wilson (2002) found a slightly different trend for older school students, reporting lower participation rates at Year 12 compared to Year 11, which seemed to reflect withdrawal from employment by some Year 12 students who wished to focus more on their schooling.
- **Gender:** Most evidence points to female students aged 15 years or older having higher employment participation rates compared to males (Anlezark & Lim, 2011; Biddle, 2007; Robinson, 1996). However, in the LSAY Year 9 cohort of 1995, the employment rates were slightly higher for boys than girls (Vickers et al., 2003). Also, in the analyses of child employment by the ABS (2007), the proportion working in the previous year was higher for boys (12.7%) than for girls (9.5%) in the 10–14 years age group.

³ ABS (2016). Labour Force, Australia (Catalogue 6202.0). Table 15. Labour force status for 15–24 year olds by Educational attendance (full-time) and Sex. Downloaded 11 May 2016. Data for single year ages is not published from the labour force survey.

⁴ Derived from the ABS 2011 Census one per cent Confidentialised Unit Record file.

⁵ See reference cited in footnote 1.

- *Region*: Findings are not consistent across all studies, nor even within studies (e.g., Robinson, 1996). Biddle found that differences by remoteness were not statistically significant for 15 year olds, but at ages 16 and 17 years, the proportion employed was highest in major city areas, declining with increased remoteness. However, the ABS found lower rates of child employment in capital cities compared to other areas of Australia, and Vickers et al. (2003) also found that employment rates were lowest among students living in urban areas, compared to rural or remote areas. This was found again in later analyses of LSAY by Anlezark and Lim (2011), in which employment rates were highest in remote areas of Australia. Smith and Wilson (2002) also found that rural students were more likely to work than students in urban areas; and while informal work was more common in rural than urban areas, higher rates of employment in rural areas were not explained entirely by higher rates of informal work.
- *Socio-economic status*: Research typically finds students' employment rates are lower in lower socio-economic families, as measured by family or household wealth or income (Biddle, 2007; Robinson, 1996; Vickers et al., 2003). Biddle also found lower rates of employment among students living in jobless households. Anlezark and Lim (2011) found that the association between family socio-economic status and teens' employment varied by age and gender of the children. Smith and Wilson (2002) found that children from higher socio-economic status families seemed to be more likely to work in *informal* jobs, while those in lower socio-economic status families were the most likely to have "ordinary" paid jobs.
- *Culture and language*: Indigenous students generally have lower employment rates than non-Indigenous students. Further, children from non-English speaking backgrounds are less often employed than English-speaking students. For a comprehensive analysis of employment according to ethnic origin, refer to Robinson (1996).

Differences in findings across years are likely to reflect changes in school student employment, with rates of employment higher now than they were prior to the 1990s, and trends also affected by more teens completing secondary school than was the case in previous decades (Biddle, 2007; Robinson, 1996).

A key contribution of this chapter is that we look at informal employment as well as work for an employer, and explore how participation in different types of work varies across different teens. In examining informal work, we will include teens' reports of working for themselves, their family or someone else, other than an employer.⁶ Informal work may be undetected in some of the previous research on teen employment, given more precise definitions of employment applied, so we can explore whether a more inclusive measure allows us to see different patterns of participation.

Some of the abovementioned research has explored the characteristics of employment, with the greatest focus being on the number of work hours. Generally, students at around 15 years have quite low average weekly work hours (Robinson, 1999; Smith & Wilson, 2002). Anlezark and Lim (2011), for example, reported that in Year 9 the average work hours were 10.9 hours per week, with 17% of all working Year 9 students working 15 hours or more per week. The ABS (2007) survey of child employment also found that on average children worked few work hours during school terms, with 45% of children aged 10–14 years working 1–2 hours per week, 28% working 3–5 hours, 15% working 6–9 hours and 11% working 10 hours or more. We will be exploring work hours in this chapter, along with information about whether teens work in school holidays or school terms, on weekdays or weekends, and the times of day they work. This information is especially valuable for learning about how teens fit their work around their school commitments.

Information on teens' reasons for employment reveals that they are predominantly motivated to work by their own financial goals to earn some spending money and gain financial independence (ABS, 2007; Robinson, 1999). This is not the only motivation however, as some teens work to help with a family business, to gain experience or skills, or have other reasons such as wishing to help others (ABS, 2007; Robinson, 1999). Here we examine whether reasons for employment differ for those in different types of employment and for children with different characteristics. We extend

⁶ The definition of informal employment that is endorsed by international agencies encompasses the types of work these teens are likely to be doing in their employment for someone other than an employer. The accepted definition includes, for example, "own-account workers and employers employed in their own informal sector enterprises" and "contributing family workers" (Husmanns, 2004). In the paper by Smith and Wilson (2002), informal work included children working for themselves or "other paid work", not including paid work for an employer.

this by also examining whether teens earn a wage or salary from their employment (some do not, for example those working for a family business), and if so, how much they earn.

A significant focus of the literature on teens' employment has been concerned with whether this employment is associated with poor academic results or problem behaviours. While a popular view is that teen employment is character building, providing opportunities for teens to learn about the world of work and to develop a sense of responsibility, it has been theorised that teen employment may be related to adverse outcomes for children for a range of reasons. The two main reasons put forward in the literature are the zero-sum hypothesis (teens will have less time for school work or other productive activities if they are employed) and the precocious maturity hypothesis (teens will be exposed too early to adult roles and behaviours) (see, for example, Marsh & Kleitman, 2005; Monahan, Lee, & Steinberg, 2011; Schoenhals, Tienda, & Schneider, 1998). Findings from empirical research are diverse, such that debate continues on whether and in what circumstances teens' employment might adversely affect academic or behavioural outcomes. An important factor, it appears, is the intensity of work (measured with different thresholds across studies), with outcomes typically not varying when teens work shorter hours, but sometimes reported to be negative for longer work hours. From the Australian research, for example, Vickers et al. (2003) found that working more than five hours per week in Year 9 was negatively associated with Year 12 completion. Other Australian research on school and post-school outcomes has varied a little in its findings, but with negative associations typically found for those working longer hours (Anlezark & Lim, 2011; Robinson, 1999).

Much of the international research is focused on teens older than those covered in this LSAC analysis, and will no doubt be useful to explore when analysing later waves of the LSAC data. A significant challenge for all of this research is that pre-existing characteristics of children (such as poor school performance or anti-social behaviour) may *lead to* them focusing more on employment than on school, and, in turn, the literature could overstate claims of employment being the cause of children's poorer outcomes (Lee & Staff, 2007; Monahan et al., 2011; Paternoster, Bushway, Apel, & Brame, 2003). Undertaking a full analysis of the links between teen employment and children's academic or social emotional outcomes is beyond the scope of this paper and will be best explored with future waves of the study. As a precursor to possible future work, here we present some evidence of the selection into employment of children with different characteristics, comparing measures of academic results (at Years 5 and 7, and Year 9) and social emotional wellbeing (at ages 10–11 years and 12–13 years, and 14–15 years) according to teen's employment at 14–15 years. The inclusion of measures of social emotional wellbeing is a particular contribution to the literature that has been given scant attention in the existing research.

The research questions we aim to answer in this chapter are:

1. How common is it for teens to work at 15 years and younger?
2. When and how much are teens working?
3. Which teens are doing some paid work?
4. Why are teens working, and what are the financial gains to their working?
5. How does social emotional wellbeing and academic achievement vary according to teens' employment at 14–15 years?

To contribute to this analysis of LSAC we also provide some information about children's occupations from the ABS child employment survey and about 15 year olds' occupations as derived from the Census. We will present this information before the LSAC analyses, as it helps to put some of the LSAC findings into context.

After a description of the LSAC data and methods used, the results are organised as follows. First, the overview of employed teen's occupations, from the ABS data, is shown in section 3.3. Turning to the LSAC data we then begin by presenting an overview of teens' employment, by age and gender, in section 3.4. Section 3.5 explores when and how much teens are working. In section 3.6 we analyse which teens are working and in what types of employment. In section 3.7 we examine what income teens receive for their employment, and to what extent they are working for financial or other reasons. Section 3.8 presents analysis of children's social emotional wellbeing and academic test scores according to work status at 14–15 years. Finally, in section 3.9, we summarise the key findings, including providing answers to the research questions set out above.

3.2 Data and methods

This chapter is based on the K cohort, with data sourced from Wave 6 when the LSAC study children were aged 14–15 years and Wave 5 when they were aged 12–13 years. We restrict the analyses to respondents at Wave 6, for whom we have information on teens' employment. This represents 3,453 families. Of these families, for all but 16 cases information was available about teens' employment at Wave 5.

Most of the information about teen's employment was collected from the child's primary carer. The details covered in this chapter are:

- *Whether study child had done any work* in the previous year. Respondents were instructed that work includes all formal and informal work for money or some other type of payment. It also includes paid or unpaid work in a family business or farm. It *excludes* any work teens may have done for pocket money around their home.
- *How many weeks in the year* the study child had worked, if they worked in the last year.
- Whether work was done only in *school terms*, *only in school holidays* or *both*.
- Whether work was done on *weekends or weekdays*, collected separately for school terms and school holidays.
- At what *times of day work was typically done*, collected separately for school terms and school holidays, weekends and weekdays.
- How many *hours per week* the study child worked, in school terms or school holidays.
- *Who the study child worked for* (e.g., an employer, a family business).
- Study child's *main reason for work*.
- Whether study child receives *wages or salary* and, if so, how much they received.

More information about the classification of each of the above is given as the data are introduced into the chapter.

At Wave 6, some employment information was collected from the teens themselves, including:

- self-reports of whether they had done any work in the previous year (with the same definition of "work" as given to parents); and
- reasons for employment.

Some analyses of ABS data on teens' occupations are also included in this chapter, in section 3.3.

Other key variables

To analyse these data, throughout the chapter we examine gender and age differences. In some sections we present multivariate analyses to consider how teens' employment varies with a range of socio-demographic characteristics. These are:

- *region of residence*: major city areas, inner regional areas, outer or remote areas.
- *family socio-economic status*: derived from the family socio-economic position variable, with families divided by quartile within each wave. Low socio-economic status families (the bottom quartile) are compared to those in quartiles 2 and 3, and to higher socio-economic status families (the top quartile).
- *culture and language*: two indicators used. One captures either parent (or single parent) being Indigenous. The other captures either parent (or single parent) mainly speaking a language other than English at home.
- *parental employment*: two indicators used. One captures either parent (or single parent) being self-employed. The other captures either parent (or single parent) being an employee.

Measures of children's social emotional wellbeing and academic achievement are presented according to work status at 14–15 years, drawing on these measures for the children at (or around) 14–15 years, as well as earlier points in time. The means and 95% confidence intervals are shown for:

- *social emotional wellbeing*: The total difficulties score and the prosocial score from the Strengths and Difficulties Questionnaire are analysed. Measures for children at 10–11 years, 12–13 years and 14–15 years are presented.
- *NAPLAN results*: The Year 5, 7 and 9 NAPLAN results are presented for each of the test scores available: reading, writing and numeracy.

Methods

Much of this chapter is descriptive, examining gender and age differences in employment patterns. Also, logistic regression was used to analyse employment participation, and to analyse some characteristics of employment. This allows us to report on whether certain variables have a significant association with the employment outcomes under consideration, holding other variables constant. Logistic regression is appropriate, since we are examining binary outcomes in each case. We use methods for longitudinal data that take account of there being up to two records (for two waves) per child.

3.3 Employed teens' occupations – overview from ABS data

While LSAC contains information about the work patterns of teens, details about their occupations are not yet collected. To understand more about the employment patterns of boys and girls at 14–15 years we set the scene using some ABS data on teens' occupations. First, Table 3.1 (page 41) presents the occupations of employed 15-year-old boys and girls, from the 2011 Census. About half of the employed 15 year olds worked as sales workers, and another one in four as labourers. However, the occupation patterns are gendered.

- Among employed girls, sales workers were much more likely (61% of employed girls), with labourer work (14% of employed girls) less likely than being employed as a community and personal service worker (16%). If we go beyond this to explore the more detailed classifications of girls' occupations, using four-digit ASCO (not shown in the table), the ten most common occupations of these girls are (with percentages showing the percentage of employed 15-year-old girls in this occupation):
 - general sales assistants (39%), checkout operators and office cashiers (18%), waiters (8%), kitchenhands (6%), fast food cooks (3%), cafe workers (3%), pharmacy sales assistants (2%), sports coaches, instructors and officials (2%), child carers (1%), commercial cleaners (1%).
- Employed boys were most likely to be employed as labourers (43%) or as sales workers (32%). Their most common occupations according to the more detailed classification (not shown in the table) were:
 - general sales assistants (22%), kitchenhands (15%), fast food cooks (11%), checkout operators and office cashiers (8%), shelf fillers (5%), sports coaches, instructors and officials (4%), other miscellaneous labourers (3%), waiters (2%), commercial cleaners (2%) and cafe workers (1%).

Note that these data may not fully represent the sorts of casual or intermittent work done by teens, especially younger teens, but this sort of work was included in the data collection in the ABS Child Employment Survey. The occupations of the 5–14 year old children who had worked during school terms in the previous year are also shown in Table 3.1. From this survey, for children working during school terms:

- For girls, a large percentage was employed as labourers (43% in total, of those who worked), which included leaflet or newspaper delivery (15%), cleaner/laundry (10%), farm, forestry, garden worker (10%) and other labourer (9%). The next most common classifications were community and personal service workers (22%) (most in the subcategory of carers and aides) and sales workers (20%). The remaining 14% were employed in other occupations.
- For boys, a much larger percentage was classified as labourers (71%). This category included leaflet or newspaper delivery (24%), farm, forestry, garden worker (22%), cleaner/laundry (11%) and other labourer (14%). Other boys were employed as community and personal service workers (8%), sales workers (6%) and other occupations (15%).

Many of these jobs appear to be a mix of informal jobs (e.g., babysitting and pamphlet delivery) and working for a family business or farm (e.g., sales worker, farm labourer). Nevertheless, the ABS analyses showed that of all children who worked in the previous year, 54% worked for an employer, 16% worked for themselves and 33% worked for a family business or farm. Some children worked for more than one employer type over the year.

We do not analyse these data further in this chapter but refer to these findings when discussing the results of the LSAC analysis in section 3.9.

Table 3.1: Occupations of employed young boys and girls according to ABS data

Occupation (1-digit ASCO)	Census (2011) Employed at Census			Child employment survey (2006) Working during school terms		
	Boy 15 year olds %	Girl 15 year olds %	Total 15 year olds %	Boy 5–14 year olds %	Girl 5–14 year olds %	Total 5–14 year olds %
Sales workers (e.g., general sales assistants, checkout operators and office cashiers, pharmacy sales assistants)	32.2	61.3	48.9	6.0	20.4	12.0
Labourers (e.g., kitchenhands, fast food cooks, shelf fillers, cleaners, farm workers, miscellaneous labourers)	43.3	13.8	26.3	71.1	43.0	59.4
Community and personal service workers (e.g., waiters, sports coaches, instructors and officials, cafe workers, child carers)	8.6	15.9	12.8	8.2	22.2	14.0
Technicians and trades workers	7.3	2.0	4.3	3.9	4.3	4.0
Other occupations	8.6	7.1	7.7	10.7	10.2	10.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Examples listed are the top-most occupations within the category for 15 year olds, identified using four-digit ASCO. Other occupations include not stated and inadequately described occupations, as well as managers and professionals, clerical and administrative workers, machine operators and drivers and labourers. Percentages may not total exactly 100.0% due to rounding.

Source: Australian 2011 Census of Population and Housing, Tablebuilder; Australian Bureau of Statistics (2007).

3.4 LSAC results: How common is it for teens to work at 15 years and younger?

According to parents' reports of whether children worked in the previous 12 months:

- At age 12–13 years, 16% had worked. The percentage was similar for boys (17%) and girls (15%).
- At age 14–15 years, 39% had worked. The percentage was significantly higher for girls (42%) than for boys (36%).⁷

We do not know exactly how many were working at the time of the survey, as some teens had only worked a small number of weeks in the previous years. For simplicity, though, teens who were reported to have worked in the previous 12 months are often referred to in this chapter as “employed”. Those working for fewer weeks include teens having recently commenced work and those doing casual, intermittent or school holiday work.

- Among the employed 12–13 year olds, 44% had worked 1–6 weeks in the year, 16% had worked 7–12 weeks, 24% had worked 13–39 weeks and 16% had worked for 40 weeks or more.
- Among the employed 14–15 year olds, 33% had worked 1–6 weeks, 16% had worked 7–12 weeks, 13% had worked 13–39 weeks and 19% had worked 40 weeks or more.

Parents who reported that their teens had done some work in the past 12 months were asked who their child had worked for; that is, whether they had worked for an employer, a family business or farm, for themselves or someone else. According to additional information provided by parents, “someone else” was typically another relative, a family friend or neighbour. We have classified those who worked for a family business or farm, for themselves or for someone else as

⁷ At 14–15 years the children were asked if they had worked in the previous 12 months, and their reports were largely consistent with those of the parents. According to the child-reported data at age 14–15 years, 40% had worked, with a significantly higher percentage for girls (43%) than boys (38%).

“informal” employment, which is consistent with the internationally-endorsed definition of informal employment.⁸

- At 12–13 years, 59% of the employed teens worked informally. This included 34% working for a family business or farm, 15% having worked for themselves and 11% having worked for someone else.
- At 14–15 years, 34% of the employed teens worked informally. This included 21% working for a family business or farm, 10% having worked for themselves and 5% having worked for someone else. Some reported more than one type of informal employment.

Teens could have worked for more than one employer type, but we found that only 4% of employed teens reported working informally *and* for an employer. We have therefore classified employment types such that “employer” includes the small percentage working informally and for an employer, and “informal” are those who only reported having undertaken informal employment.

Figure 3.1 shows that teens at 14–15 years were more likely to be working for an employer than they were at 12–13 years. If we include non-employed teens in the calculations, the percentage working informally increased just a little from 12–13 years to 14–15 years, with gender differences in the proportion in informal work not apparent at either age. The percentage working for an employer increased significantly for boys and for girls, much more so for girls, such that at 14–15 years the higher percentage of girls employed reflected their being more likely to be working for an employer.

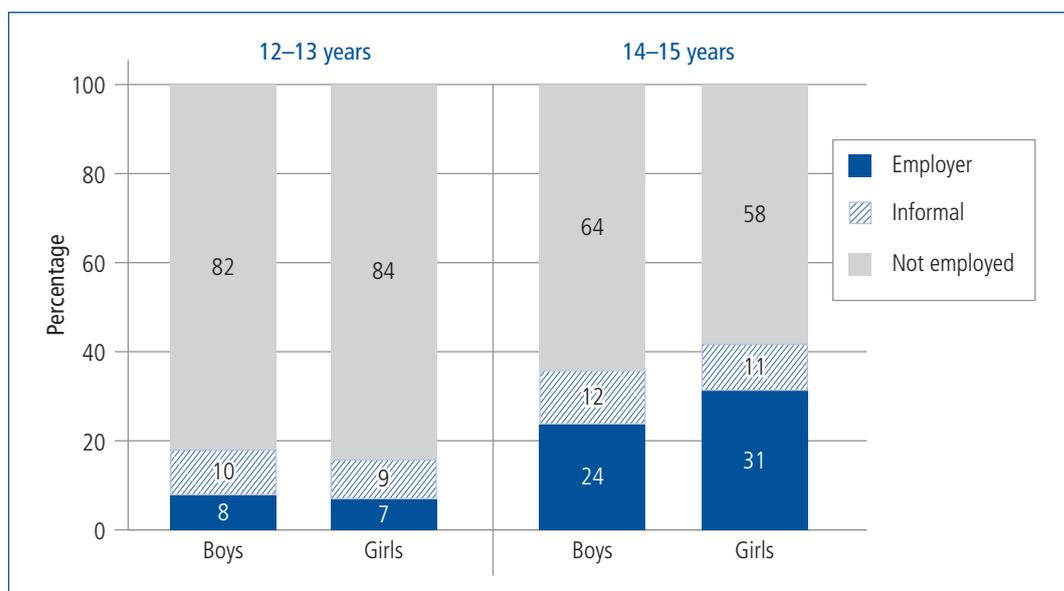


Figure 3.1: Employment type of teens at 12–13 and 14–15 years, by sex

Given these LSAC data are from the same children at different points in time, we can explore how their employment participation changed from 12–13 to 14–15 years. We do that by asking what the employment participation of teens was at 12–13 years, according to their employment status at 14–15 years.

- Overall, of those who were not employed at 14–15 years, most (92%) had not been employed at 12–13 years. If not employed at 14–15 years but employed at 12–13 years, some had previously been working informally (5%) and others had worked for an employer (3%).
- Of those who were employed at 14–15 years, 30% had been employed at 12–13 years and 70% had not been employed.
 - Those in informal work at 14–15 years were most likely to have worked at 12–13 years, with 28% having been in informal work at 12–13 years and 8% having worked for an employer then.

⁸ According to the internationally-agreed definition of informal employment (see Hussmanns, 2004), some of the teens working for an employer may also be working informally, for example if they are receiving goods or services in kind, rather than being paid wages. This is not taken into account here, but the receipt of wages is analysed in section 3.7.

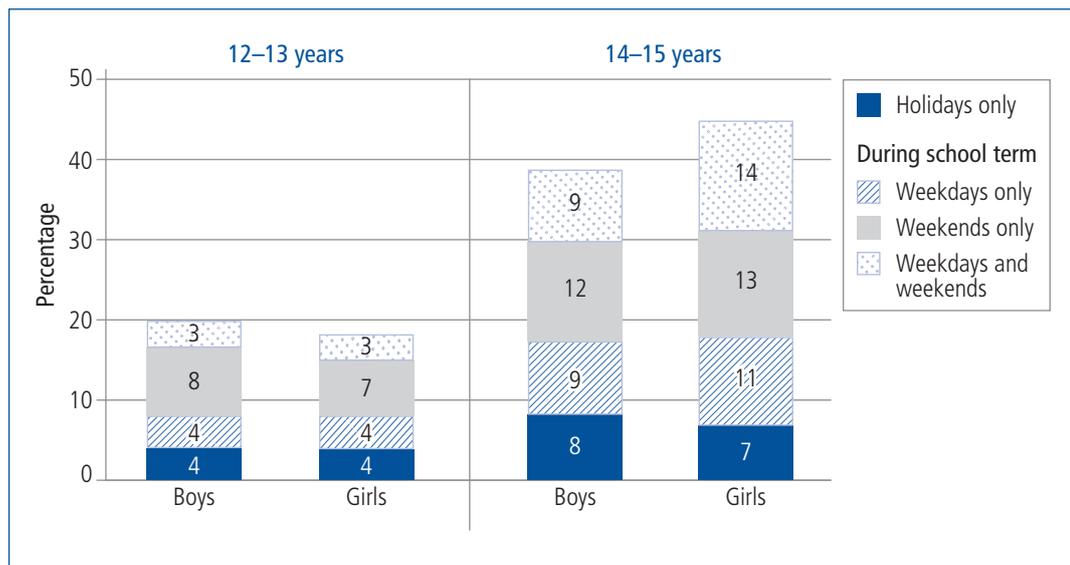
- Among those working for an employer at 14–15 years, 12% had worked informally at 12–13 years and 16% had already worked for an employer at this time. The rest were not working at 12–13 years.

The change from 12–13 years to 14–15 years, especially in the proportion working for an employer, is not surprising since it is around the age of 15 years that restrictions on employment are lifted in most jurisdictions of Australia. Differences by age are explored further in section 3.6.

3.5 Working hours and times

Just as there is variation in how much of the year teens worked, there is likely to be considerable variation in the amount of work done by employed teens and when that work is done. To understand how employment fits around schooling, it is necessary to distinguish between employment that occurs only in school holidays, or only on weekends, from that which occurs on weekdays during school terms. Information about the times of day work is done adds further to this. This section explores these characteristics of teens’ employment.

Figure 3.2 shows that at both 12–13 years and 14–15 years most teens, if employed, worked during school terms, with the increased employment from 12–13 to 14–15 years reflected in more teens working during school terms. Increases were most apparent for the percentage working weekdays and weekends in school terms, although the patterns of weekend and weekday employment were quite varied at the older age. There was a doubling of the percentage working only in school holidays but this percentage remained considerably lower than the percentage doing some work during school terms.



Note: Percentages add to the total employed at each age.

Figure 3.2: School holiday and school term weekday and weekend employment among teens at 12–13 and 14–15 years

Figure 3.3 (page 44) shows this information by gender and employment type but with percentages adding to the total employed in each employment type.

- At 12–13 years, these patterns of employment did not vary by gender for those working for an employer, but differences were apparent by employment status, with those working informally more often only working in school holidays.
- At 14–15 years it was again more likely that teens had worked only in school holidays if they worked informally rather than for an employer.
- At 14–15 years, boys’ informal work was more often only in holidays compared to girls’, while girls’ informal work was more commonly only on weekends during term time.
- Among those working for an employer, the nature of employment changed from 12–13 years to 14–15 years, being more often both on weekdays and weekends at the older age.

This can be further examined by looking at how many days per week teens worked. Focusing on those who worked during school terms:

- Among employed teens at 12–13 years, 52% worked only one day per week, 31% worked two days per week, 5% worked three days per week and 12% worked 4–7 days a week.
- Among employed teens at 14–15 years, 38% worked only one day per week, 36% worked two days per week, 14% worked three days per week and 12% worked 4–7 days a week.

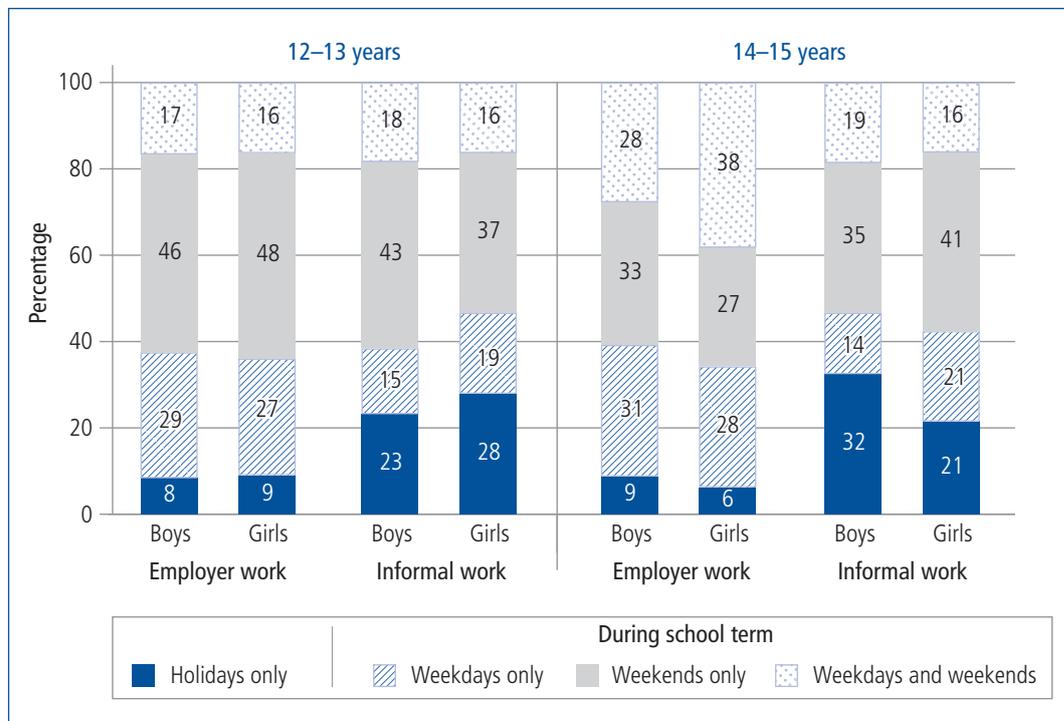


Figure 3.3: School holiday and school term weekday and weekend employment among employed teens at 12–13 and 14–15 years, by employer type

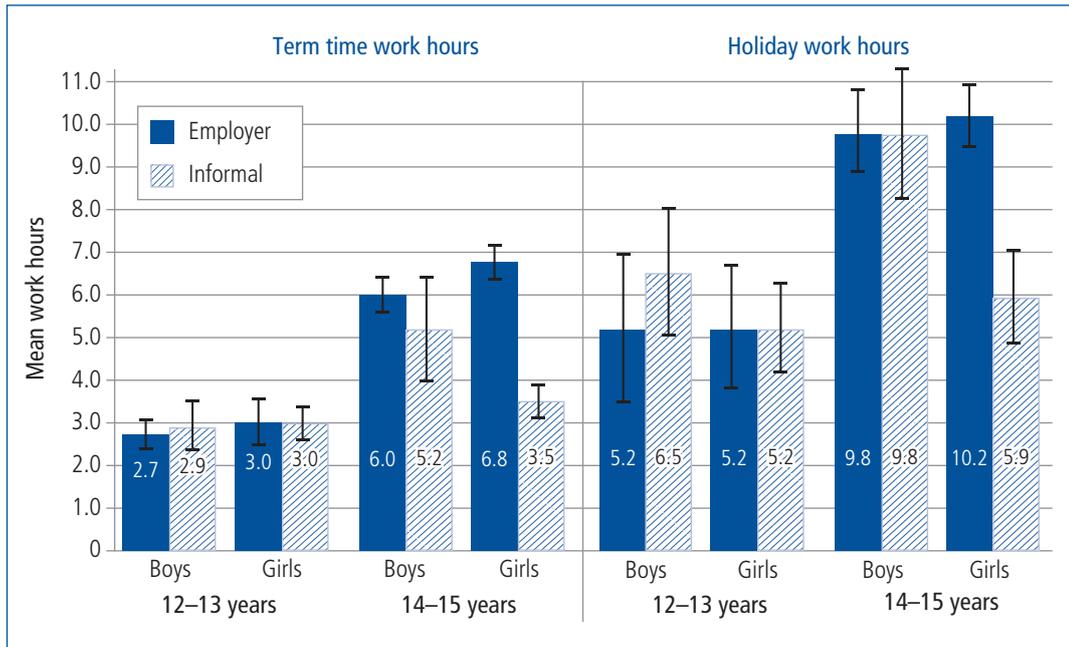
Not surprisingly, the amount of time that teens worked per week was lower during term times compared to school holiday times.

- At 12–13 years, those working during the school term worked, on average, 2.9 hours per week during school terms. Those working during school holidays worked, on average, 5.7 hours per week in the holidays.
- At 14–15 years, those working during the school term worked, on average, 6.0 hours per week during school terms. Those working during school holidays worked, on average, 9.5 hours per week in the holidays.
- Of those who worked during school term time, just 3% of employed 12–13 year olds and 19% of employed 14–15 year olds worked 10 or more hours per week.

Differences by gender and employment type are shown in Figure 3.4 (page 45).

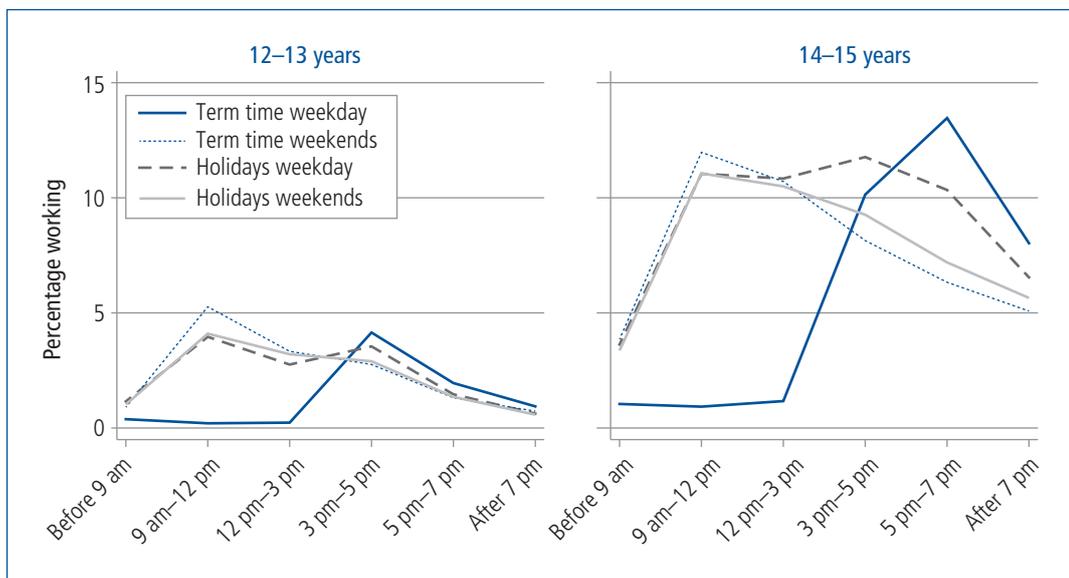
- During school terms and school holidays, at 12–13 years the average work hours did not vary significantly by gender or by employment type.
- At 14–15 years, girls who worked for an employer worked, on average, longer than those working informally. This was the case for school terms and school holidays. While a similar trend was apparent for boys during school terms, the difference was not statistically significant.

To complete this discussion of teens’ work hours, we also explore the times of day that they were typically in employment. Figure 3.5 (page 45) shows the percentage of 12–13 year olds and 14–15 year olds reported to be working across different segments of the day, on weekends or weekdays and in school terms or school holidays. This is presented as a percentage of all teens, not just those who were employed.



Note: Averages for term time are calculated over those with non-zero time spent working in term times, and averages in school holidays are calculated over those with non-zero time spent working in school holidays. The "I" bars represent 95% confidence intervals. "I" bars that do not overlap indicate there is a statistically significant difference between the groups.

Figure 3.4: Average work hours in term time and school holidays of employed boys and girls at 12-13 and 14-15 years, by employment type



Note: Teens who were not employed at all or not working during term times were included in the denominator as zero (not working at any time).

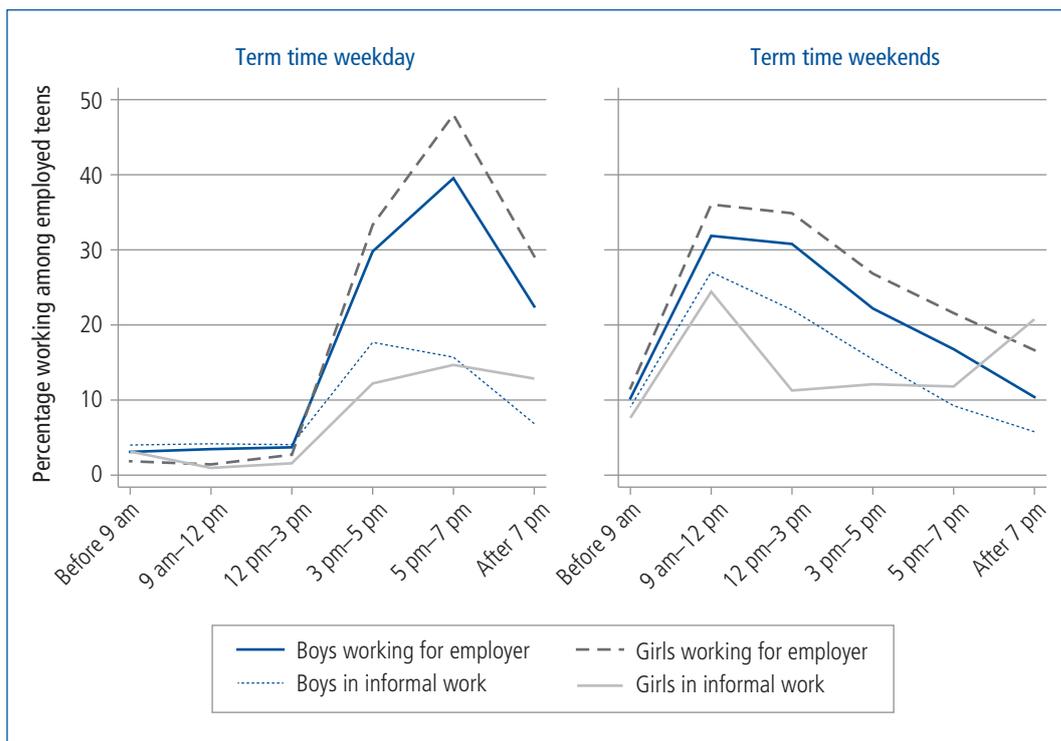
Figure 3.5: Proportion of teens at 12-13 and 14-15 years working at different times of the day, in school term times and in holidays

- On weekdays of school terms there was very little employment of teens before (or, naturally, during) school hours. Other days were markedly different, with some employment of teens during 9am-12pm and 12-3pm on school-term weekends and school holiday weekends or weekdays. On these days, teens were also working in the afternoon and into the evening, but with much higher rates apparent for the 14-15 year olds, given their higher likelihood of being employed.
- On school term weekdays, for 12-13 year olds the peak in the proportion working was at 3-5pm, while for 14-15 year olds the peak was at 5-7pm, with many at this age also working between 3pm and 5pm and after 7pm.

Given the different employment rates of boys and girls at 14–15 years, were there differences in when these teens were working? We explore this just for term-time employment, also incorporating type of employment, in Figure 3.6, excluding all teens who were not working at all.

- The higher proportion of teens working in employer jobs, rather than informal jobs, at 14–15 years was especially apparent in their working in these jobs for employers in after-school hours on weekdays. Those working for an employer were also more likely than those working informally to be working at all times of day on weekends, with one exception, described below.
- Among teens working for an employer, girls were more likely than boys to be working within the commonly worked times of day. But among informal workers, boys were more likely to be working across most of the day, compared to girls. The exception was for informal work done in the late afternoon and evening. In particular, evening informal work was more often done by girls than by boys, especially on weekends.

This does not mean that employed teens worked these hours every day of course, as they represent typical working patterns on those days that teens worked.



Note: Teens who were not employed at all or not during term times were not included in this figure.

Figure 3.6: Employed 14–15 year old boys' and girls' times of term-time work on weekdays and weekends by type of employment

This section has highlighted that there is considerable diversity among teens in their working arrangements, with differences apparent by age, as teens moved into more formal employment at 14–15 years. There were also differences by gender. To summarise, we put together information on whether teens were employed by an employer or informally, whether they only worked in school holidays or sometimes in school terms, and whether they usually worked more than two hours per week. Together, this information is compared for boys and girls at 12–13 and 14–15 years in Figure 3.7 (page 47).

- At 12–13 years there was a diverse range of work arrangements for both boys and girls who were employed. A small percentage worked more than two hours per week during term times. For boys and girls, 3% worked for an employer for more than two hours per week and 3% worked informally for more than two hours per week.
- The significant change by 14–15 years was the growth in teens working for an employer during term times for more than two hours per week, with this being the situation for 25% of girls and 17% of boys aged 14–15 years. For other employed 14–15 year olds, their work arrangements were diverse.

We will explore both age and gender differences further in subsequent sections, along with other characteristics of children and families, in relation to teens' employment.

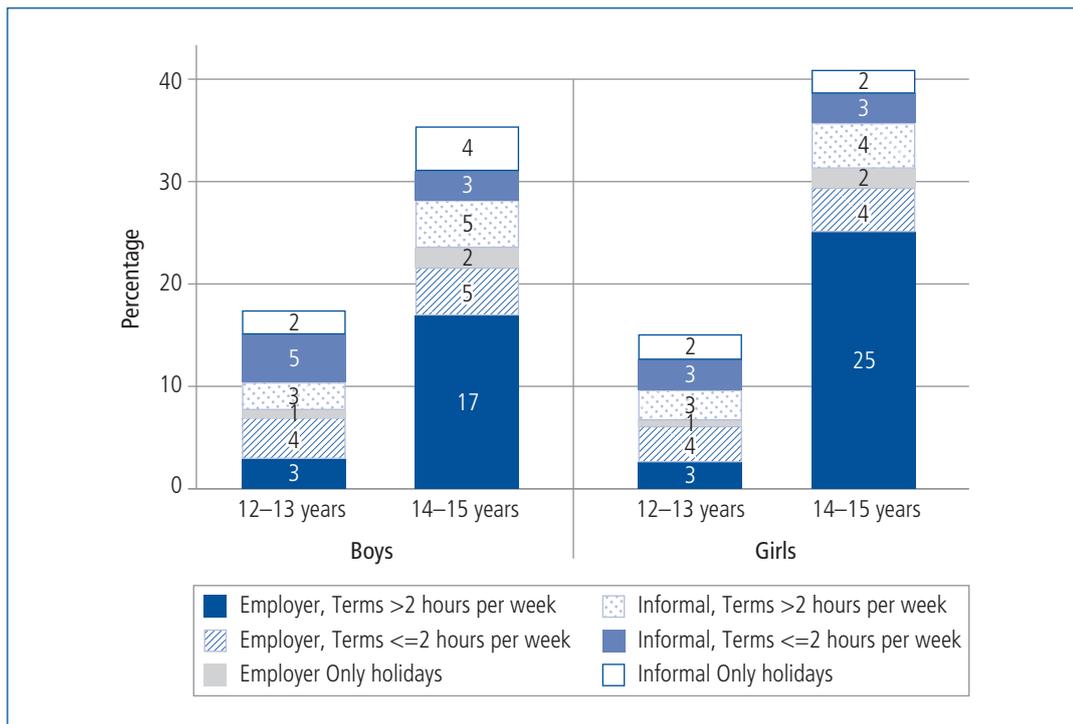


Figure 3.7: Summary of when, how much and what type of work teens do at 12–13 and 14–15 years

3.6 Which teens are working?

In this section we explore how teens' employment varies with their and their family's characteristics.

To begin, the age of teens is an important factor, in part because legislation concerning the employment of young people typically means restrictions in children's employment are relaxed from the age of 15 years. The exact details vary across jurisdictions of Australia.

At 12–13 years, when explored by age (in months), no trends in employment participation rates were apparent for boys and girls (not shown). However, at 14–15 years, considerable differences by age were apparent. Figure 3.8 (page 48) shows that among 14–15 year olds:

- The percentage who had worked increased significantly by age, from 30% for the youngest to 45% of the oldest.
- The increase with age was more apparent for 14–15 year old girls than boys, and the oldest girls were significantly more likely to have worked in the previous year compared to the oldest boys.
- The increased proportion employed reflected a trend in being employed by an employer. The proportion working in informal work did not increase with age.

Beyond these age and gender differences, there are likely to be demographic factors explaining variation in teens' employment, as described in the Introduction. Multivariate analyses are used here, with five different models presented in Table 3.2 (page 49):⁹

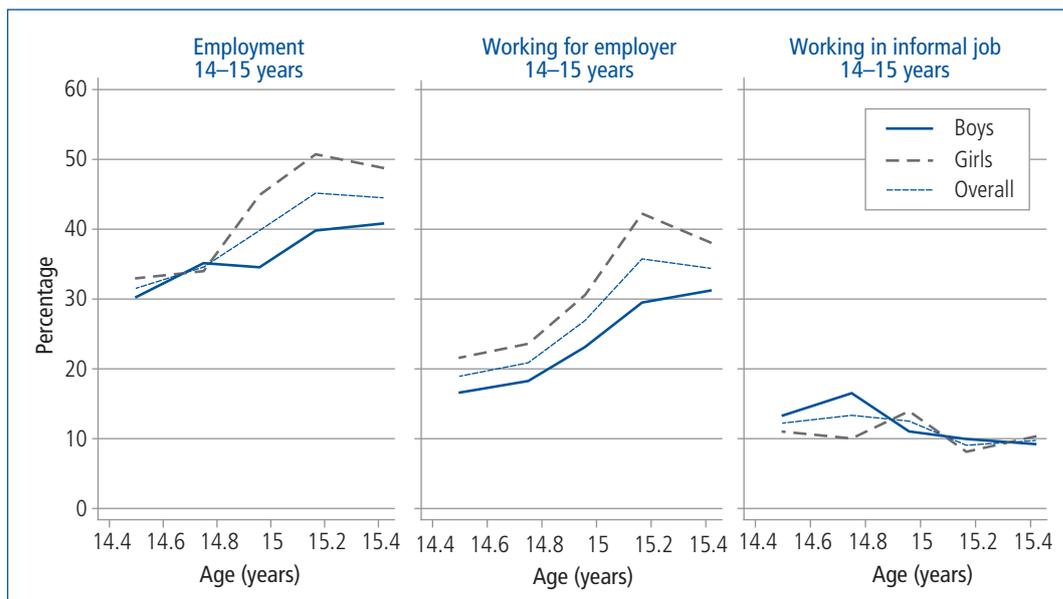
1. Model 1 analyses whether teens are employed or not.
2. Model 2 analyses whether teens work for an employer, versus working only informally or not at all.
3. Model 3 analyses whether teens work informally, versus working for an employer or not at all.

⁹ Models 2, 3 and 4 explore differences in predictors of working for an employer, informally or not working. A multinomial logistic regression model could also be used for this, but the coefficients are difficult to interpret, and so we presented a series of logistic models instead. Odds ratios are reported, so that values above 1 represent a positive influence and values below 1 represent a negative influence.

- 4 Model 4 focuses on those who are employed, analysing whether teens work for an employer versus working informally.
5. Model 5 also focuses on those who are employed, analysing which teens work 10 hours or more per week.

We explore whether teen employment varies according to characteristics of the child and their family described in section 3.2 (page 39). Each of the characteristics was included in the models, along with some interaction terms. One captured an interaction between gender and age, to reflect that girls' employment participation increased with age more than boys' (Figure 3.8). Another captured a finding that emerged concerning gender differences in how employment participation varied by the remoteness of areas (described below). Taking each of the variables in turn:

- Older teens were the most likely to be employed, and this was more so for older girls.
 - Teens at 14 years were the most likely to be in informal work. This did not vary by gender.
 - The probability of working for an employer increased with age, with older girls more likely than others to be working for an employer.
 - Together, if focusing on just those in employment, being employed in informal work was most likely at 12–13 years, and least likely at 15 years.
 - Among employed teens, the likelihood of working longer hours (10 or more per week during school terms) increases with age.
- Regional differences in teen employment were apparent, but boys in regional areas had different employment patterns compared to girls in regional areas:
 - These regional differences reflected the likelihood of being employed in informal work, which was higher in outer or remote areas, especially for boys.
 - In relation to working for an employer, gender differences were not significant, but teens were most often working for an employer (versus being not employed or only in informal work) in the outer regional areas, and least often doing so in the major city areas.
 - Among those in employment, though, there was no general tendency for being employed in informal work versus working for an employer to vary across regions.
 - Overall, teens in major city areas were the least likely to be employed. Those in outer or remote areas were the most likely to be employed, and this was most apparent for boys living in these regions.



Notes: Ages of children were aggregated by creating quintiles of ages in months within each wave to ensure there was sufficient sample for each data point. The median of each quintile was used to label these data above. The smallest sample size was for girls in the quintile represented by a median age of 15.4 years ($n = 253$) and the largest sample size was for boys within the quintile with a median age of 14.4 years ($n = 460$).

Figure 3.8: Percentage of 14–15 year old boys and girls working in the previous 12 months, by age

Table 3.2: Multivariate analyses of teens' employment participation, teens at 12–13 and 14–15 years

Variable	Odds ratios				
	Whether worked (model 1)	Whether worked in informal employment (model 2)	Whether worked for an employer (model 3)	Of those employed, whether in informal work (model 4)	Of those employed, whether worked >=10 hours/ week (model 5)
Gender and age					
Girls (ref. = boys)	1.16	1.04	1.28	0.75	1.18
Age 14 years (ref. = 12–13 years)	4.12***	1.73***	5.74***	0.33***	6.13***
Age 15 years (ref. = 12–13 years)	4.72***	1.17	8.76***	0.15***	8.69***
Girls aged 14–15 years	1.97***	1.39	1.70**	1.12	1.43
Region (ref. = major city areas)					
Inner	1.16	0.89	1.26	0.65	1.00
Outer or remote areas	1.99***	1.49*	1.97***	0.89	1.14
Boys in inner/outer/remote areas	1.76**	2.05***	1.32	1.60	1.51
Family socio-economic status (Ref. = 2nd & 3rd quartiles)					
Lowest socio-economic status	0.78*	0.77	0.91	0.83	1.89**
Highest socio-economic status	0.95	1.13	0.87	1.44*	0.65
Culture and language					
One or two Indigenous parents	0.41**	0.65	0.36**	1.86	1.10
One or two non-English speaking parents	0.52***	0.68**	0.49***	1.28	0.75
Parental employment					
One or two employee parents	1.13	0.71*	1.68***	0.44***	1.22
One or two self-employed parents	2.65***	3.76***	1.40**	3.66***	0.80
Constant	0.07***	0.04***	0.02***	1.93*	0.01***

Notes: Based on random effects models, which allow for there being two observations per child. *n* = 6,837 observations for 3,506 families in models 1 to 3. Models 4 and 5 only includes those employed – *n* = 2,013 observations for 1,590 families. *** *p* < .001; ** *p* < .01; * *p* < .05.

- Controlling for other characteristics, the family socio-economic status contributed little in explaining variation in teens' employment, although:
 - Teens were less likely to be employed in the lower socio-economic status families.
 - If employed, teens in the lower socio-economic status families were the most likely to be working longer hours.
 - Among employed teens, those from a higher socio-economic status family were more often employed in informal work, rather than employer work, compared to employed teens in families of moderate socio-economic status.

We also tested whether teens in single-parent families were more or less likely to be employed than those living in couple-parent families, once these other factors were taken into account. However, no significant differences emerged and this indicator was not retained in the final models.

- Significant differences were apparent according to the culture and language of parents.
 - Teens were less likely to be employed if they had at least one Indigenous parent, or if they had at least one parent who mainly spoke a language other than English at home. This was most apparent in terms of teens from these families being less often employed by an employer compared to other teens. Also, teens with a non-English speaking parent were less likely than other teens to be employed in informal work.
- Finally, parental employment characteristics were explored.
 - Findings were particularly marked for the indicator of having at least one parent in self-employment. These teens were more likely to be employed. The association was greatest in relation to teen's employment in informal work but was apparent also in teens being employed by an employer. Among employed teens, those with a self-employed parent were more likely than other employed teens to be in informal work.
 - Having a parent work as an employee was not in itself associated with the likelihood of teens' employment but did increase the likelihood of these teens themselves working for an employer, and reduced their likelihood of working informally. Overall, among employed teens, those with an employee parent were less likely to be working informally than those without an employee parent.

We will return to some of these findings in the final section of this chapter.

3.7 Income and other reasons for teen employment

We expect that teens would largely be working in order to receive some income, for spending money or saving. However, given the significant amount of informal work undertaken by teens, it is worth exploring whether there are other factors contributing to teens' reasons for employment.

First, we explore to what extent teens are paid for the work they do. Parents of employed teens were asked whether their teen received any income from wages or salaries at the time of the survey. Of all employed teens, 74% of 12–13 year olds and 85% of 14–15 year olds were said to receive some income from wages or salaries. Given that parents were asked specifically about wages and salaries, it is not surprising (as shown in Table 3.3, page 51) that this percentage was lower for those in informal work than those working for an employer. Those in informal work may not strictly speaking receive "wages or salary", but instead be paid cash in hand, for example.

The average amount of weekly earnings is also shown in Table 3.3.¹⁰ This was \$31 per week at 12–13 years, with the difference in incomes of those in informal employment and working for an employer not statistically significant. At 14–15 years, the average weekly earnings among employed teens was \$77. Those working for an employer earned an average of \$79 per week and those working informally earned an average of \$66 per week. While it would be interesting to know the wage rate of employed teens, with these data it is not possible, since the work hours reported (usual work hours over the last 12 months) are not necessarily those that were worked in respect to the reported wages.

¹⁰ When children were aged 12–13 years about 89% of parents reported an income for those who were said to have a wage or salary. At 14–15 years, the percentage was lower at 77%. Calculations of mean incomes exclude those with missing income data who were said to receive wages or salary. Wave 5 income was adjusted by the CPI so that the estimates for age 12–13 years and 14–15 years are in dollars as at 2014.

Table 3.3: Wages and salaries received for employment, employed teens at 12–13 and 14–15 years

		Employed child receives wages or salary (%)	Those receiving a wage	
			Average weekly wage (and 95% CI)	Number of observations with non-missing (missing) income
Age 12–13	Employer	84.4	\$30.90 (\$25.07, \$36.51)	207 (17)
	Informal	65.9	\$31.85 (\$25.72, \$37.97)	194 (34)
	Total	73.9	\$31.31 (\$27.20, \$35.42)	401 (51)
Age 14–15	Employer	93.4	\$79.18 (\$73.71, \$84.64)	766 (156)
	Informal	64.5	\$66.00 (\$51.69, \$80.30)	154 (114)
	Total	84.8	\$76.94 (\$71.88, \$82.00)	920 (270)

Notes: The average was calculated for those with an income greater than zero. Income is before income tax or anything else is taken out. Wave 5 income was adjusted by the CPI so that the estimates for ages 12–13 years and 14–15 years are in dollars as at 2014.

Table 3.4: Parents' reports of main reason for boys' and girls' employment at 12–13 and 14–15 years

	Age 12–13			Age 14–15		
	Boys %	Girls %	All %	Boys %	Girls %	All %
Financial	71.1	60.8	66.4	77.1	81.7	79.5
For spending money	43.2	40.5	41.9	45.7	54.7	50.4
To save up for something	27.6	20.3	24.3	31.3	27.0	29.1
To help in family business	15.0	15.3	15.1	7.2	5.2	6.1
Other	13.9	23.9	18.5	15.7	13.1	14.4
For friendship or to develop social skills	5.8 [#]	8.7	7.1	3.3	4.4	3.9
To improve career prospects	2.9 [#]	3.0 [#]	2.9 [#]	7.3	3.5	5.3
Other	5.2	12.2	8.4	5.1	5.2	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
<i>n</i>	334	287	621	661	737	1,398

Notes: Financial also includes "to supplement family income": numbers were not sufficient to show separately. [#]RSE > 25%.

If parents stated that their teen did not receive income from wages and salary, they were asked why this was. These reasons (captured as text responses) were grouped into categories.

- For some (19% of those not paid), non-receipt of wages reflected their no longer being employed.
- Another 25% of those not paid wages were said to receive casual incomes that were not considered to be wages or salary. This included being paid a token amount or paid cash in hand.
- Some parents said their teens' employment reflected a contribution to a family business (24% of those not paid wages). Some noted that this was how teens earned parents' financial contributions to specific costs, such as phone credits or special excursions.
- Another 13% were said to receive payment in kind.
- Some teens (11%) who did not receive wages were said to work for the experience, to help others or for the love of the work. For example, this included coaching work at a sports club.

Given that some teens actually do not receive income, or much income, for their employment, it may be that employment is sought for reasons other than income. Parents were asked why their teen had worked in the past 12 months. Table 3.4 shows:

- Across all employed teens, financial reasons were the reasons most often given for their employment (66% of employed 12–13 year olds and 80% of employed 14–15 year olds). Of those citing financial reasons, it was more often reported this was for spending money rather than saving up for something.

- Helping out in a family business was more commonly reported as a reason for working at 12–13 years compared to at 14–15 years.
- Working for friendship or to develop social skills was a reason for employment for girls at 12–13 years, but was less common for girls at 14–15 years or boys at either age.

At 14–15 years the teens themselves were asked their main reason for working. Their reasons are presented along with those of their parents in Table 3.5, tabulating responses according to whether teens were paid wages or salary for their employment.

- The distributions of reasons for working are quite similar for parents' and teens' reports.
- Not surprisingly, teens who were not paid wages or salary were less likely than those receiving some wages to cite financial reasons as their main reason for employment. Those not paid a wage or salary were more likely than those who were to say their main reason for working was to help in a family business.
- Around one in ten of those who were not paid wages or salary cited other reasons for working (according to parents' or children's reports). More detail was captured from those citing other reasons, and examination of this detail showed that teens' work was often attributed to their enjoyment of the activity (e.g., enjoying walking the dog), their interest in gaining experience or acquiring certain skills (e.g., umpiring a sport), or their contribution to helping family or others (e.g., caring for siblings, helping friends, grandparents or neighbours).

Table 3.5: Parents' and teens' reports of main reason for 14–15 year olds' employment, by whether received wages or salary

	Parent reports			Child report		
	Paid wages/salary %	Not paid wages/salary %	All %	Paid wages/salary %	Not paid wages/salary %	All %
Financial	81.7	66.9	79.5	85.5	68.3	81.5
For spending money	51.8	42.4	50.4	47.5	41.2	46.3
To save up for something	29.9	24.2	29.1	38.0	26.1	34.9
To help in family business	5.0	12.7	6.1	3.0	13.1	4.7
Other	13.3	21.4	14.4	11.5	18.6	13.8
For friendship or to develop social skills	3.7	5.0 [#]	3.9	2.3	4.3 [#]	2.8
To improve career prospects	5.3	5.2 [#]	5.3	4.1	2.9	4.1
Other	4.3	10.1	5.2	5.1	11.5	6.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
<i>n</i>	982	416	1,398	930	348	1,278

Notes: Financial also includes "to supplement family income": numbers were not sufficient to show separately. [#]RSE > 25%.

We explored whether teens' income varied according to the reasons they gave for working. No significant differences were found at either of the ages.

Multivariate analyses were used to explore the above income data and reasons for working, to see whether financial reasons for employment were more common in certain families or among certain teens. We used the same set of variables as was used in analysing teens' employment participation but omitted the interaction terms (between age and gender, and between remoteness and gender) as these were not statistically significant.

In Table 3.6 (page 53), the analysis of which teens receive wages or salary is presented, along with analyses of which teens say they are working either for financial reasons, for contribution to a family business, or for other reasons.¹¹ Some key findings are:

¹¹ Random effects logistic regression models were estimated. The first model is for a binary variable of whether teens receive income (wages or salary) from their employment. The other three are also models for binary variables, which capture whether or not teens selected a particular main reason for working. While this is better modeled with multinomial logistic regression, to capture that three response category groups are possible, three separate logistic regression models is a simpler way to present the associations.

- Consistent with Table 3.4 (page 51), receipt of wages or salary was more common for teens who worked for an employer, rather than working informally. Also, these teens were more likely than others to say their main reason for working was financial and less likely to give other reasons.
- Consistent with Table 3.5 (page 52), those who received wages or salary were more likely than those who did not to report working for financial reasons.
- There were no differences by gender, but the oldest teens (aged 15 years) were the most likely to receive wages or salary. The teens at 14–15 years were more likely than at 12–13 years to cite financial reasons for working, and significantly less likely to cite other reasons. Working to contribute to a family business did not vary by age.

Table 3.6: Multivariate analyses of employed teens’ receipt of wages or salary and reasons for employment

Variable	Category	Receives paid wages or salary	Main reason for working		
			Financial	Family business	Other reason
Odds ratios					
Employment characteristics	Worked for an employer (ref. = informal work)	5.79***	3.14***	0.03***	0.32***
	Receives wages/salary	N/A	2.15***	0.96	0.47***
Gender and age	Girls (ref. = boys)	0.87	1.04	0.93	0.96
	Age 14 years (ref. = 12–13 years)	1.24	2.00***	0.63	0.50***
	Age 15 years (ref. = 12–13 years)	1.77***	1.62**	0.71	0.62**
Family socio-economic status (ref. = 2nd & 3rd quartiles)	Lowest socio-economic status	0.91	1.15	1.56	0.87
	Highest socio-economic status	0.99	1.10	0.56	0.91
Culture and language	One or two Indigenous parents	1.01	5.38	0.19	0.19
	One or two non-English speaking parents	0.75	0.80	0.84	1.25
Parental employment	One or two employee parents	0.98	0.96	0.77	1.04
	One or two self-employed parents	0.86	0.72	4.82***	1.40
Region (ref. = major city areas)	Inner	0.87	0.54**	3.20***	1.85**
	Outer or remote areas	0.70*	0.52**	3.69***	1.92**
Constant		2.16**	1.58	0.06***	0.63

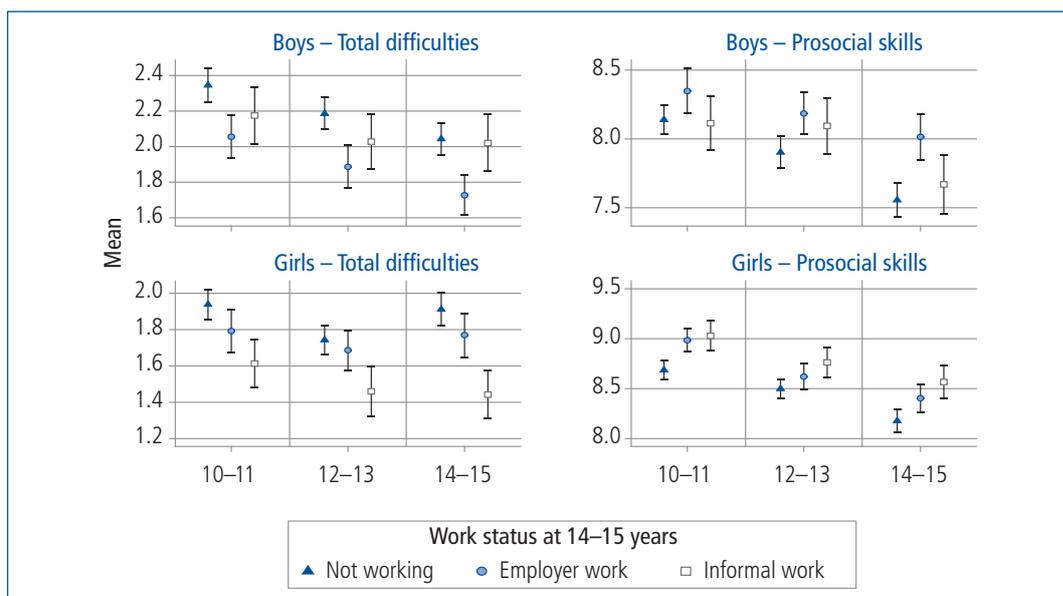
Notes: Based on random effects models, which allow for there being up to two observations per child. $n = 2,013$ observations from 1,590 families. Only employed teens are included. Reasons for employment are taken from parents’ reports. *** $p < .001$; ** $p < .01$; * $p < .05$.

- Teens living in major city areas were the most likely to be receiving wages and salary and to be working for financial reasons. Teens in inner or outer regional areas were significantly more likely than those in major city areas to be working to contribute to a family business. Teens in inner or outer regional areas were also significantly more likely than those in major city areas to select “other reasons”.
- Significant differences were not apparent for family socio-economic status or for family culture and language indicators.
- With respect to parental employment, the only significant finding was that when at least one parent was self-employed, the teen was more likely to report working to contribute to a family business.

3.8 Social emotional wellbeing and academic achievement of children according to employment at 14–15 years

The sections above have focused on how teen employment patterns vary according to some key socio-economic and demographic characteristics of families. It is likely, however, that other characteristics of the children themselves may lead to their decision to take up some employment. This has received some attention in research in the context of trying to disentangle how children's employment is associated with different child outcomes, given the possibility of certain children selecting into employment. For example, this has been explored in relation to problem behaviours (e.g., delinquency, substance use and smoking) and to academic outcomes (e.g., early school drop-out). It is generally acknowledged that to capture whether teen employment causes such outcomes, the characteristics of children prior to the commencement of work need to be taken into account. The more rigorous studies therefore include, using a range of statistical techniques, some attention to this selection into employment, incorporating factors such as early involvement in delinquent activities and substance use, poor relationships with parents and low school engagement (Lee & Staff, 2007; Monahan et al., 2011; Paternoster et al., 2003).

It is beyond the scope of this chapter to explore how teen employment is associated with either problem behaviours or academic outcomes. However, the longitudinal nature of these LSAC data provides an opportunity to highlight some aspects of selection into employment by analysing some characteristics of children at younger ages according to their work status at 14–15 years. This is done here by looking at social-emotional wellbeing using the Strengths and Difficulties Questionnaire (SDQ) and academic achievement using NAPLAN test scores.



Note: The "I" bars represent 95% confidence intervals. "I" bars that do not overlap indicate there is a statistically significant difference between the groups.

Figure 3.9: SDQ total difficulties and prosocial skills, boys and girls at 10–11 years, 12–13 years and 14–15 years according to work status at 14–15 years

The SDQ has been captured for children across multiple waves of LSAC, and here the responses of the child's primary carer (usually the mother) are used, drawing on the responses captured at ages 10–11 years, 12–13 years and 14–15 years. The means of the total difficulties scale and the prosocial scale were compared for boys and girls at each age, according to whether teens were working for an employer, in informal work or not working at 14–15 years. Figure 3.9 shows that there are very different associations between work status and these SDQ means for girls and boys.

- For boys at all ages, the average total difficulties score was significantly lower for those working for an employer at 14–15 years compared to those who were not working at this age. The average total difficulties score for those in informal work at 14–15 years fell in between these two groups at 10–11 and 12–13 years. At 14–15 years, boys working for an employer had

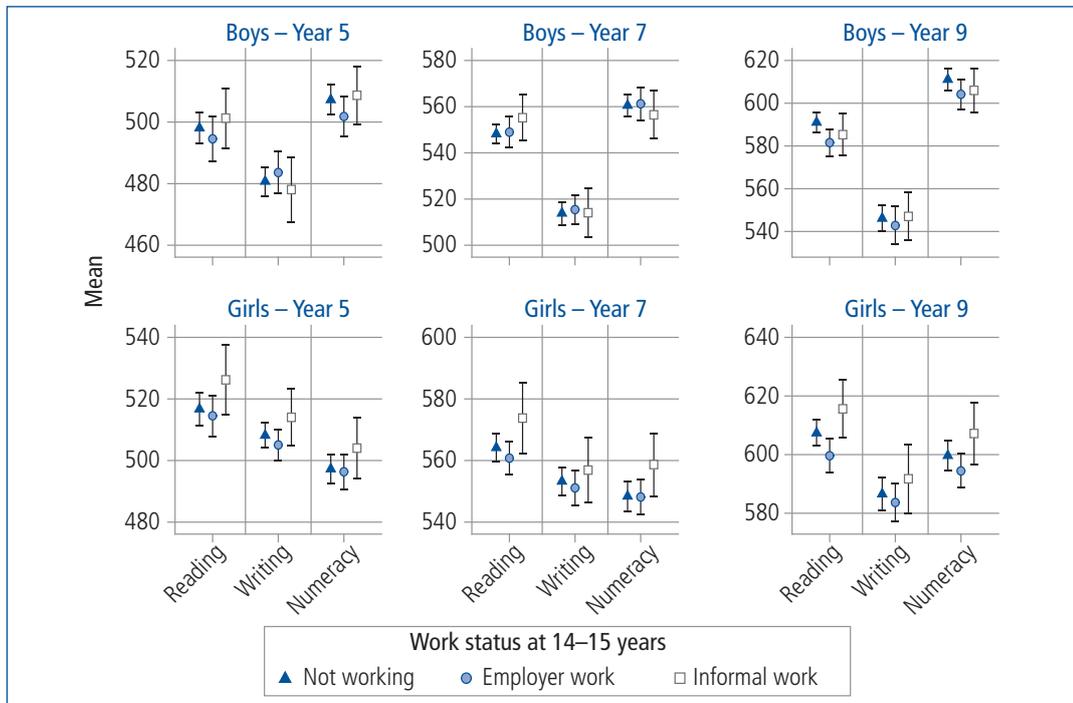
significantly lower total difficulties score, on average, compared to those who were not working at all or who were working informally.

- Also, boys working for an employer at 14–15 years had, on average, better prosocial skills compared to those not working at 14–15 years, although this was not statistically significant at 10–11 years. The average prosocial skills score did not differ statistically when comparing boys who were working in informal work at 14–15 years to those who were not working at this age.
- For girls, the average total difficulties score was lowest at all ages for those who were in informal work at 14–15 years, being statistically significant from the other groups at 12–13 and 14–15 years. The total difficulties score was highest, on average, for those who were not working at 14–15 years, but this was not significantly different from those working for an employer at 14–15 years.
- Findings for prosocial skills indicated that at 10–11, 12–13 and 14–15 years, girls who were not working at 14–15 years had the least developed prosocial skills, and those working informally the most developed. At 10–11 years, the mean prosocial score of those working for an employer at 14–15 years was similar to those in informal work at this age, while at older ages the mean prosocial skills score for this group tended to fall between those who were not working and those who were working informally.

The relatively high total difficulties scores and relatively low prosocial skills among the teens who were not working at 14–15 years may indicate that the boys and girls who are less socially adept may not be motivated to take up employment at this age.

The divergent findings for boys and girls and informal work could reflect that boys' and girls' informal work is different in nature, perhaps requiring different sets of social emotional skills. For example, this may be true if girls' informal work is more people-focused (babysitting or coaching, for example) and boys' work more focused on labouring or farm work. As occupation data is not available in LSAC, this could not be explored.

It is also possible that selection into informal jobs may arise through social connections or a family business. This might affect girls and boys in different ways, possibly leading to boys but not girls taking up labouring and farm work. Working for an employer, on the other hand, may more often reflect the choice of the boys and girls to take up a particular job.



Note: The "I" bars represent 95% confidence intervals. "I" bars that do not overlap indicate there is a statistically significant difference between the groups.

Figure 3.10: Year 5, Year 7 and Year 9 NAPLAN results for boys and girls at 10–11 years, 12–13 years and 14–15 years according to work status at 14–15 years

Turning to information about academic achievement, Figure 3.10 shows children's NAPLAN scores in reading, writing and numeracy at Years 5, 7 and 9 according to children's work status at 14–15 years.¹² The findings are presented separately for each year level, to allow the rescaling of the axis across years, given that the average test scores are higher at each year level. These findings actually show that academic results at earlier time points (Years 5 and 7) and at Year 9 were not significantly related to teens' work status at 14–15 years. That is, there is no evidence from these data that being employed at 14–15 years, whether working in informal jobs or working for an employer, was associated with weaker or stronger academic skills. This suggests that it is factors other than academic ones that are related to teens' employment at this age.

3.9 Summary and discussion

This chapter has explored the employment of teens at ages 12–13 years and 14–15 years, adding to existing research on student's part-time employment in particular through the inclusion of information about employment among teens aged under 15 years. Below we summarise our key findings against each of the research questions, relating the findings also to the Australian (and some international) literature about teens' employment.

How common is it for teens to work at 15 years and younger?

Overall, we found that 16% of teens at 12–13 years old and 39% at 14–15 years had worked at some time in the previous year. Given this broad reference period, it is not surprising that these estimates are higher than estimates for 15 year olds that refer to a more narrowly defined reference period, as in the ABS Census and Labour Force Survey. The figure for 14–15 year olds is similar to that derived from the 2009 LSAY cohort in year 9 (41%). Further, the estimate for 12–13 year olds appears consistent with the findings from the ABS Child Employment Survey, in which 11% of 10–14 year olds were said to have worked in the previous year.

We note that in defining “employed” teens as those who worked at some time in the past year, we have quite a diverse group, with some having worked very little of the past year, and some having worked for a majority of the time. Further, some worked very short hours in informal work, while others worked several days a week for wages. We focused much of the analyses on comparing teens in informal work to those working for an employer, in part because informal work is perhaps the type of employment that goes undetected in standard collections of labour force participation.

As we saw here, it is especially common among the younger teens to work in informal employment. As teens grow, and especially after they reach 15 years of age, it becomes more likely that employment will be for an employer rather than informal employment. In looking at which teens were employed, a significant factor was age, as it became more likely for teens to be employed as they grew older, with differences apparent even within the 14–15 year olds, with higher rates of employment among those aged 15 years.

Gender differences also reflected those observed in the ABS labour force and Census data, with higher rates of participation in employment by girls. This was especially apparent for the older girls and for participation in work for an employer. Biddle (2007), in commenting on the higher employment rate of teen girls compared to boys, suggested one reason for this could be a supply effect, with part-time jobs for students being common in those industries that employ more females than males. This remains untested though. Other differences between girls and boys, for example in their preferred patterns of time use or levels of social skills, may contribute to these differences in employment.

The ABS occupation data presented in section 3.3 (page 40) showed that at 15 years many of the teens worked in sales jobs, in labouring work including kitchenhands and fast food cooks, and in service work including as waiters. Work that is perhaps more informal, or family-based, included child care (babysitting), as a sports coach or instructor, and as farm workers. There were gendered patterns, with girls more often in the sales jobs and child care and less often in the labouring jobs, compared to boys. Similar findings were observed in the occupations of children aged 5–14 years in the 2006 ABS survey, but fewer worked in sales and a greater proportion worked in a range

¹² For most children, the Year 9 tests were undertaken in the months after the Wave 6 interviews.

of labouring jobs. Interestingly, in 2006, the most common of the labouring jobs for children was newspaper or pamphlet delivery.

We do not have more recent data on occupations to know how this has changed since 2006, but it may be that since then a new range of occupations has emerged for children to replace or supplement these occupations.

What are the work patterns of employed teens?

We looked at the question of when teens work from a number of perspectives, looking at work in term time and/or school holidays; work on weekends versus weekdays; times of day and the number of days and hours they work per week. There was variation in the findings by gender, by age and by employment type. Overall, teens at 14–15 years were considerably more likely than at 12–13 years to be working for an employer during term time for more than two hours per week.

At both ages, most teens did not spend a great deal of time during the week in employment. Employed teens worked an average of 2.9 hours per week at 12–13 years and 6.0 hours per week at 14–15 years, if we focus just on those who reported spending some time in work during the week in term times. Of those who worked during term time, just 3% of employed 12–13 year olds and 19% of employed 14–15 year olds worked 10 or more hours per week. The averages were higher for school holidays, at 6.7 hours at 12–13 years and 9.5 hours at 14–15 years. These averages were a little lower than those reported elsewhere (Anlezark & Lim, 2011), which may reflect that the LSAC estimates capture work over the last 12 months, rather than just around the time of the study.

Information about teens' work days also suggested that for most, their time commitment to work is not very high during term times, with it being most common for teens to work one or two days per week, often involving a weekend day.

Teens who worked for an employer had different patterns of work compared to those working informally. Work for an employer more often involved school terms as well as school holidays, and more often involved weekdays during school terms. Among those working for an employer on weekdays of school terms, teens at 12–13 years most often worked straight after school hours, while at 14–15 years they worked over a greater spread of hours, with the peak being at 5–7pm. Informal work did not have the same peak at 5–7pm. The peak of work in the after-school hours was also observed in the ABS study of child employment.

Which teens are working?

In exploring this question, we also asked which teens were doing work for an employer, and which were working informally. Also, we analysed which teens were working 10 hours or more per term-time week.

According to these analyses, teens in outer regional or remote parts of Australia were more likely to be employed than those in major city areas. This reflected a higher incidence of employment in informal work as well as employer work, as was reported to be the case in the study set in NSW and SA, reported by Smith and Wilson (2002). We also found that boys in these outer and remote regional areas were more likely to be employed, and more likely to be employed in informal work, compared to girls in those regions. This may reflect the availability of certain types of informal work in those regions that better suits the interests or skills of boys than girls. For example, this might reflect boys' participation in farming or labouring work.

We did not find strong differences in employment participation according to family socio-economic status but did find lower rates of employment in the lowest socio-economic status families, suggesting that teens were not necessarily taking up employment to help with costs of living. However, when those teens from lower socio-economic status families were employed, they were the most likely to be working 10 or more hours per week. We also found that among the employed teens, there was a higher likelihood of their being employed in informal work in the higher socio-economic status families, a finding that was similarly reported by Smith and Wilson (2002).

The findings concerning culture and language are consistent with those reported elsewhere (Biddle, 2007; Robinson, 1996; Smith & Wilson, 2002; Vickers et al., 2003), with lower rates of teen employment among teens of Indigenous parents or of parents who mainly speak a language other

than English. These differences were most apparent in relation to the likelihood of working for an employer but there were significant findings also in relation to informal employment among teens whose parents speak a language other than English.

Not surprisingly, when either parent was self-employed, the teens were more likely to have worked in the previous year. This actually predicted higher rates of employment in informal as well as employer employment, but the association was stronger for informal work, such that among employed teens, those with a self-employed parent were more likely to be in informal work rather than working for an employer. If teens had a parent who was an employee, their probability of working for an employer was increased. In Biddle's (2007) analysis of the census data, he found that teens were less often employed if they were from a jobless household, which he surmised might in part reflect these teens having more limited access to contacts who might help them to find a job. This was consistent with Smith and Wilson (2002)'s analysis of teens' job search methods, which very often involved getting a job through a family member. Such an effect may apply here, given that those without a self-employed parent and without an employee parent are the least likely to be working.

Most of the demographic variables examined had the same association with teen employment, regardless of whether examining formal or informal work, but some variables had a stronger (or weaker) effect on one type of employment than the other, most notably age, gender and parents' self-employment. The indicator of parents being an employee was the only variable in the analyses that predicted a higher rate of work for an employer but a lower rate of informal work.

Why are teens working? What are the financial gains to their employment?

To analyse why teens were working we first examined to what extent teens were paid for their work, as we were not certain that all informal work would involve wages in the way that would be the case for those working for an employer. This proved to be true, but also, as the employment information referred to work in the past year, some of the teens working for an employer also reported no earnings from that work, given that the job was no longer current, or because of the casual or sporadic nature of that employment.

Overall, 74% of the employed teens at 12–13 years and 85% at 14–15 years were said to receive a wage or salary. At both ages the percentage was lower (about 65%) for those in informal work. There were teens who reported to work for gains other than wages and salary, including those who were paid in kind, who worked for a family business for no direct payment (but parents sometimes said their work was their way of earning parents' payment of child-related expenses), or who worked for the experience or the love of the activity.

We examined which employed teens were likely to have wages or salary from their employment, and the main factors were teens' age (being 15 years old) and working for an employer (versus working informally). There was also a slightly lower probability of receiving wages among teens who lived in outer or remote regional areas, compared to major cities.

When we looked at reasons for teens' employment, then, consistent with other research (ABS, 2007; Robinson, 1999), financial reasons were the predominant reasons for teens to be employed, according to their parents and themselves. Teens who were reported to earn wages or salary, or who worked for an employer, were the most likely to be working for financial reasons. Also, teens at 14–15 years were more often working for financial reasons compared to teens at 12–13 years. The only other demographic factor predicting that teens would be working for financial reasons was region of residence, with this being most likely in major city areas, and less likely in inner or outer regional and remote areas.

Another reason some teens gave for working was that they were contributing to a family business. This was significantly more likely in the inner and outer regional and remote areas. It was especially likely when teens worked informally, and in families in which there was at least one self-employed parent.

Other reasons nominated by teens included working for friendship or to develop social skills, to improve career prospects or other reasons, which captured such things as enjoyment of the activity, interest in acquiring skills or helping others. This was most often given by those who did not receive

a wage or salary, who worked informally, and for teens at 12–13 years. Further, it was most likely for teens living in inner and outer regional and remote areas.

The average amount that employed teens receive for their employment was \$31 per week at 12–13 years and \$77 per week at 14–15 years. Incomes were higher at 14–15 years, compared to at 12–13 years, for those doing employer work as well as those doing informal work.

How does social emotional wellbeing and academic achievement vary according to teens' employment at 14–15 years?

A significant challenge for research exploring links between teens' employment and academic or behavioural outcomes is that employed teens may have pre-existing characteristics or traits that lead them to select into employment, such that the "outcomes" of teen employment may be a factor of those pre-existing factors rather than the employment itself. Using the LSAC data from previous waves we explored here whether such selection effects were apparent according to children's work status at 14–15 years, focusing on social emotional wellbeing and academic results.

There were some interesting differences for aspects of children's social emotional wellbeing, in which we found that boys and girls who were not working at 14–15 years already had more symptoms of social emotional difficulties at younger ages. This suggests that children with those characteristics may select out of employment at 14–15 years. There were different findings, however, for boys and girls when looking at the characteristics of teens employed in informal work, which we suggest may be related to informal work being different for boys and for girls. For example, girls in informal work tended to have the lowest total difficulties score. This work may involve jobs such as babysitting and coaching, which might attract girls who are more confident and have better-developed social skills. For boys, the lowest scores on these scales were for boys working for an employer, not those working informally, suggesting different selection effects were in operation. However, as we do not have information on the occupations of these employed teens, it is difficult to interpret these gendered patterns.

The equivalent analysis of children's academic results according to employment at 14–15 years found no significant differences. This indicated that factors other than academic ones are more prevalent in explaining the selection into employment at this age.

These findings suggest some selection effects may be operating, and it will be interesting to test this further once the teens are 16–17 years, when more are expected to be working.

Concluding comments

Overall, these LSAC data have provided a picture of employment among teens at 12–13 years and 14–15 years. The availability of information for the teens at the younger age was especially valuable given that employment information is typically only collected for 15 years and older. Following these teens' employment pathways into the future will be an important focus with these LSAC data.

Much research on teens' employment has concentrated on the possible consequences of their work on their later school and employment outcomes. As discussed, this research is fraught with methodological challenges given that the selection into employment by children of different characteristics needs to be taken into account. Exploring these associations using the longitudinal nature of LSAC will be an important focus of later research with these data. As well as taking account of selection effects, it will be important to take account of the nature of the work that teens do at different points in their school life. Clearly there were large changes from 12–13 years to 14–15 years in the types and amount of work done. Even among those working for an employer at 14–15 years, teens usually did not spend a very large amount of time in their employment.

With the existing LSAC data the multivariate analysis could be extended to consider whether teens with certain personal characteristics (such as those with different levels of academic motivation, differences in social emotional wellbeing, or physical health) are more or less likely to be employed. More information about teens' location could be incorporated, as local area characteristics may contribute to the degree to which teens have opportunities to work in different jobs. Given the differences in employment of boys and girls observed here, considering whether personal, family or regional factors affect employment participation in the same way for each sex would be worth exploring.

We could not answer all questions about teens' employment with these LSAC data, but it is clearly an important area of research, given that a significant proportion of school students in the later years of secondary school are undertaking some employment. This work may provide financial benefits and useful opportunities for development of social and other skills, as well as providing insights on being in employment. However, for those working a greater number of hours, it may pose challenges for their education. Continuing to build the evidence base on how employers and families can support teens to ensure their work experience is a positive one continues to be important.

3.10 References

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Parental influences on adolescents' alcohol use

4

Jacqueline Homel and Diana Warren

4.1 Introduction

Alcohol has a complex role in Australian society. While most Australian adults drink alcohol at levels that cause few adverse effects, a substantial proportion drink at levels that increase their risk of alcohol-related harm (National Health and Medical Research Council [NHMRC], 2009). In many countries, including Australia, alcohol is responsible for a considerable burden of death, disease and injury; and alcohol-related harm is not limited to drinkers but also affects families, bystanders and the broader community (NHMRC, 2009; Room et al., 2010).

The Global Burden of Disease (GBD) Study suggests that the burden attributable to substance use increases substantially in adolescence and young adulthood (Degenhardt, Stockings, Patton, Hall, & Lynskey, 2016).¹ Alcohol use during early adolescence is a major risk factor for later alcohol abuse and dependence (Hingson & Zha, 2009). Alcohol can also have short-term consequences for adolescents such as injury, violence, self-harm and risky sexual behaviour (Hall et al., 2016). Excessive drinking may also have lasting effects on adolescent brain development (Jacobus & Tapert, 2013). Therefore, research that improves our understanding of the risk factors for adolescent drinking is needed to inform policy aimed at improving the health and social outcomes for young Australians.

Adolescent drinking and the family environment

For most children, the family environment is the earliest source of alcohol exposure. Alcohol is part of many family and community celebrations and cultural events. In Australia, most parents drink alcohol at least occasionally, and over 20% drink heavily (Maloney, Hutchinson, Burns, & Mattick, 2010). Most investigations show a positive association between adolescents' use of alcohol and their parents' drinking behaviour.

Early drinking behaviours such as alcohol initiation (i.e. the first drink) may be largely influenced by environmental factors, including parental drinking, attitudes and supervision practices (Richmond-Rakerd, Slutske, Heath, & Martin, 2014). Social learning theories suggest that children learn about alcohol, how it is used and its effects by observing their parents drink and hearing their parents talk about drinking. Finally, parental drinking may be associated with less effective monitoring of adolescents' activities, which may, in turn, increase the likelihood that adolescents can access opportunities to use alcohol (Dishion, Capaldi, & Yoerger, 1999; Tildesley & Andrews, 2008; King & Chassin, 2004).

¹ Alcohol causes the most health burden in eastern Europe, while the illicit drug burden is higher than that of alcohol in the USA, Canada, Australia, New Zealand and western Europe (Degenhardt et al., 2016).

The vast majority of Australian children and adolescents are exposed to drinking situations, either at home or in other social settings. A recent poll of Australians found that 79% of drinkers with children under 18 years living in their home reported consuming alcohol around their children (Foundation for Alcohol Research and Education, 2013). Social learning theory would suggest that adolescents engage in behaviour modelled by their parents. Despite Australia's legislative requirements regarding the purchase of alcohol (restricted to those aged 18 or over; with laws specifically targeting the purchase of alcohol by an adult for a minor), parents are a common source of alcohol for young adolescents. For many, drinking initiation occurs at a family event (Hearst, Fulkerson, Malonado-Molina, Perry, & Komro, 2007; Gilligan & Cypri, 2012). Research suggests that parent drinking is associated with adolescent drinking, independent of a range of other socio-demographic risk factors for early alcohol use (van der Vorst, Engels, Meeus, Dekovic, & van Leeuwe, 2005). A few Australian studies have demonstrated this association (Alati et al., 2014; Kelly et al., 2011; Mattick et al., 2015), although none have had access to reports of drinking by both parents over time.

One explanation for the association between parents' drinking and adolescents' alcohol use rests with genetics. Studies of alcohol use among children of alcoholics clearly show that the symptoms of alcohol dependence tend to cluster in families. However, these studies focus mainly on alcohol use in adulthood (Latendresse et al., 2008; McGue, Malone, Keyes & Iacono, 2014). Studies of adolescent alcohol use suggest that genetic influences on drinking behaviour in early adolescence are quite small, becoming more pronounced in later adolescence and adulthood.²

Gaps in the existing literature

Despite generally positive correlations between parental drinking and adolescent drinking, a number of important questions about this association remain. One gap in the literature is knowledge about the nature of drinking among parents of young adolescents. Most longitudinal studies of parental drinking in relation to adolescent drinking include self-reported drinking from the child's mother. If information about the father's drinking is available, it is usually reported by the mother and, in most cases, these reports are averaged across parents for analysis (e.g., Cortes, Fleming, Mason, & Catalano, 2009; Fergusson, Horwood, & Lynskey, 1995; Harrington-Cleveland & Wiebe, 2003; Peterson, Hawkins, Abbott, & Catalano, 1994; Tyler, Stone, & Bersani, 2006). This is common practice even in studies where self-reported drinking from both parents was available (e.g., Donovan & Molina, 2011; Duncan, Duncan, & Strycker, 2006; Duncan, Gau, Duncan, & Strycker, 2011; Latendresse et al., 2008).

For these reasons, the literature is unclear with regards to the role fathers' drinking plays, the relative importance of mothers' and fathers' drinking, and the extent to which parents' drinking has additive or interactive effects for adolescents' drinking. Some studies have found that the drinking of both parents predicts adolescent drinking (Alati et al., 2014; van der Zwaluw et al., 2008; Vermeulen-Smit et al., 2012) while others have found only maternal drinking to be uniquely associated with adolescent drinking (Coffelt et al., 2006; Kelly, Chan et al., 2016). None have examined the potential contribution of alcohol use in separated families by non-resident parents or where parents share care and the young person regularly spends time across two households (where there may or may not be other co-resident adults).

Whether the importance of the role of a mother's or father's drinking varies depending on the gender of the adolescent (Coffelt et al., 2006) is also unclear. While some studies have found no observed associations between parents' drinking and their children's alcohol use (e.g. Kelly, Chan et al., 2016), others (e.g., Hung, Chang, Luh, Wu, & Yen, 2015) have found that the influences of fathers' and mothers' drinking on the drinking behaviour of children differed depending on the child's gender.

Moreover, the results were rarely reported in a way that could be interpreted using concrete levels of parental drinking such as number of drinks per week. This is important because policy-makers and those who design interventions would be interested in knowing whether parental drinking that

² For a review of the parent drinking–adolescent drinking literature refer to Rossow, Keating, Felix, and McCambridge (2016), for a more general review of parenting influences on adolescent drinking refer to Hayes, Smart, Toumbourou, and Sanson (2004), and for reviews of the behavioural genetic literature refer to Young-Wolff, Enoch, and Prescott (2011).

falls within recommended guidelines increases the risk for adolescent drinking, or whether the risk is mainly found in parental drinking that exceeds the guidelines. This information is also likely to be of interest to parents of adolescents. In the UK, Kelly, Chan et al. (2016) found that both light and heavy maternal drinking (compared to no drinking) increased the odds of drinking in 11 year olds. Dutch adolescents drank more between the ages of 12 and 15 if either parent drank heavily at least once a week, but were not at increased risk if their parents drank at lower levels (Vermeulen-Smit et al., 2012). Comparable evidence does not presently exist for Australian adolescents.

Another important issue is the role of parental monitoring. More monitoring of adolescents' behaviour and rule setting are consistently associated with less adolescent drinking (Peterson et al., 1994; Thompson, Roemer, & Leadbeater, 2015; Hayes et al., 2004). Some studies further suggest that parental drinking limits parents' capacities to monitor adolescents effectively (Dishion et al., 1999; Tildesley & Andrews, 2008; King & Chassin, 2004) but this aspect of the relationship between family environment and adolescent drinking has been less thoroughly explored. It is also unclear whether monitoring is always protective if adolescents are exposed to regular drinking at home. As drinking early in adolescence is a potent risk factor for later alcohol abuse as well as other problematic outcomes such as antisocial behaviour (Jackson, Barnett, Colby, & Rogers, 2015; Bonomo, Bowes, Coffey, Carlin, & Patton, 2014), it is important to examine the connections between adolescent drinking, parental drinking and parental monitoring.

In this chapter we examine linkages between parents' drinking and the drinking of their 14–15 year old children. The first aim of this chapter is to document the relationship between parental drinking and early adolescent drinking, exploring how this differs by the gender of the parents and the adolescent. The second aim is to examine the role of parental monitoring in the relationship between parental drinking and adolescent drinking. We address the following research questions:

1. What are the levels of drinking among mothers and fathers of young adolescents?
2. What are the levels of drinking among 14–15 year old adolescents, and what are the characteristics of those who drink alcohol?
3. How do different levels of mothers' and fathers' drinking, (separately and in combination) relate to the probability of adolescent drinking, and does this vary by the gender of the parent(s) and/or the gender of the adolescent?
4. Do mothers' and fathers' drinking (separately and in combination) predict a higher likelihood of adolescent drinking after controlling for socio-demographic risk factors?
5. Does poorer parental monitoring explain relationships between parental drinking and adolescent drinking?

This chapter uses contemporary, nationally representative data to address some of the limitations identified earlier. We examine self-reported drinking from both parents, and we consider differences for girls and boys. We use information about the quantity and frequency of parents' drinking to examine different levels of alcohol use with reference to the NHMRC drinking guidelines. In describing the association between parental drinking and adolescent drinking, we control for a number of potentially confounding variables.

The chapter will first explore the levels of alcohol consumption among parents of adolescents. We then describe the levels of alcohol consumption of young adolescents; and how child and family characteristics are associated with the likelihood of adolescents having had an alcoholic drink. The association between adolescents' alcohol consumption at age 14–15 and their parents' alcohol consumption two years before is then described, with separate analysis for mothers and fathers in the primary household; and fathers who were not living in the primary household.³ Multivariate analysis is then used to examine the influence of parents' risky drinking, after controlling for socio-demographic characteristics. Finally, we examine the role of parental monitoring in explaining the relationship between parental drinking and adolescent drinking.

³ For the purposes of this analysis, the "primary household" is the household in which children are enumerated in the main LSAC interview. Many young people whose parents have separated or divorced will be living in shared care situations where the parent who does not live in the primary household provides a considerable amount of care for the child.

4.2 Data and methodology

This chapter uses data from the LSAC K cohort. We focus on the relationship between parental drinking at Wave 5 (when children were aged 12–13) and the study child’s drinking at Wave 6 (age 14–15).⁴ For study children, we examine whether the child reported having had an alcoholic drink in the last 12 months, and in the last 4 weeks.⁵ Information about the study child’s alcohol use was collected through the audio-computer-assisted interview. This method allows sensitive content to be answered by the child in total anonymity.

For information on parents’ drinking, we firstly use information collected from parents in the study child’s primary household; that is, the household in which they are enumerated for LSAC.⁶ Also, if children have parents who live apart, the parent living elsewhere is invited to participate in LSAC if they have some contact with the study child. We therefore have additional information about parents living outside the study child’s primary household. However, the sample of parents living elsewhere is not representative of all separated parents, being biased toward parents who are more involved in their children’s lives (Baxter, Edwards, & Maguire, 2012).

The sample used for this analysis is restricted to children with self-reported alcohol consumption data in Wave 6, whose primary caregiver was interviewed in Wave 5. It is important to note that there is a considerable amount of missing information about parents’ alcohol consumption, particularly for parents who do not reside in the primary household. For this reason, and because the focus of this chapter is on the alcohol consumption of the study child, indicators of missing data for a parent’s alcohol consumption are included in this analysis. Table 4.1 provides a summary of the percentage of adolescents aged 14–15 in the Wave 6 LSAC sample for whom information about parents’ alcohol consumption was available.

Table 4.1: Availability of information about parents’ alcohol consumption when study child was aged 12–13, adolescents aged 14–15 who provided information about alcohol consumption

Alcohol consumption data	Mother in primary household %	Father in primary household %	Father living elsewhere %	Mother living elsewhere %
Alcohol consumption data available	96.7	64.0	52.2	58.0
No information about alcohol consumption ^a	1.7	14.0	47.8	42.0
No resident mother/father	1.6	22.1	–	–
Total	100.0	100.0	100.0	100.0
<i>n</i>	3,227	3,235	609	67

Notes: ^a This category includes non-resident parents who completed the Parent Living Elsewhere (PLE) questionnaire but skipped the questions about alcohol, those who did not complete the PLE questionnaire and those who have no contact with the study child and therefore were not given the opportunity to complete the PLE questionnaire. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Waves 5 and 6

Our measures of parents’ alcohol consumption levels are based on the NHMRC (2009) Australian guidelines and calculated based on reports of parents’ usual frequency and quantity of alcohol consumption.⁷ Four measures of parental drinking were created:

⁴ Parents who reported having had a drink containing alcohol (including those who had not had an alcoholic drink in the past year) were asked how many standard drinks they would have on a typical day when they were drinking; and how often they would have five or more standard drinks on one occasion. Because the outcome of interest is whether the study child had had an alcoholic drink in the past 12 months, our measures of risky alcohol consumption were constructed based on the information provided by parents in Wave 5, when the study child was aged 12–13. It should be noted that due to parental separation and other changes in household structure, some adolescents will not be living with the same mother/father in Wave 6 as they were in Wave 5.

⁵ In Waves 5 and 6 (ages 12–13 and 14–15), adolescents were asked “Have you ever had even part of an alcoholic drink?”, and if so, at what age they had their first alcoholic drink. Wave 5 data was rolled forward for those who reported having had an alcoholic drink at age 12–13.

⁶ For the purposes of this analysis, “parents” include biological, step, foster and adoptive parents.

⁷ The NHMRC (2009) specifies four main guidelines. Guideline 1 relates to reducing the risk of alcohol-related harm over a lifetime: “For healthy men and women, drinking no more than two standard drinks on any day reduces the

1. **long-term risk:** usually have more than two drinks on any day, regardless of frequency;
2. **short-term risk:** five or more drinks on any occasion, at any time in the last year;
3. **regular short-term risk:** five or more drinks on any occasion, at least twice a month;⁸ and
4. **level of frequent drinking:** this measure differentiates between frequent drinkers who drink within the guideline for long-term risk and frequent drinkers who exceed the guideline for long-term risk. There are three categories:
 - a. people who drink less than four days per week;
 - b. people who drink four or more days per week, 1–2 drinks per day on average; and
 - c. people who drink four or more days per week and drink three or more drinks per day on average.

We derived these measures for mothers and fathers in the primary household and, where applicable, for parents living elsewhere. For all parents, the variables measuring alcohol consumption include an additional category for “No information available”, either because the parent did not answer the questions about their alcohol consumption or did not complete the questionnaire at all.

Most of the analyses are descriptive, documenting levels of drinking among both parents and adolescents, and how these overlap. Across all analyses, we compare outcomes for male and female adolescents. As much as is practical, we also compare influences from mothers and fathers. Multivariate logistic regression is used to examine whether parental drinking predicts adolescents drinking.

In considering the relationship between parental and adolescent drinking, it is important to control for risk factors that are associated with both, and which may confound the relationship between the two. In this study we control for:

- a family history of alcohol problems in the parents' families. In this case, we look at the study children's grandparents.
- parents' socio-economic position, which has an unclear association with drinking. Some studies suggest that while adolescents and adults of higher socio-economic positions are more likely to drink alcohol, the risk of harm is higher among those of lower socio-economic positions (Giskes, Turrell, Bentley, & Kavanagh, 2011; Melotti et al., 2011).
- whether the adolescent speaks a language other than English at home and the mother's country of birth. Both adolescent and adult Australians from non-English speaking backgrounds have lower rates of risky alcohol use than English-speaking Australians (AIHW, 2014; Livingston, Laslett, & Dietze, 2008).

The variables used here describe these characteristics for the primary household. That is, while we include some analyses of drinking by parents living elsewhere, we have not analysed their or their households' characteristics in this chapter.

We also control for three risk factors that are proximal predictors of early drinking:

- birth order, as later-born children may be more likely to use alcohol (Argys, Rees, Averett, & Witoonchart, 2006);
- adolescents' pubertal status at age 12–13, as more advanced puberty, especially in girls, is associated with risky behaviour (Patton & Viner, 2007); and

lifetime risk of harm from alcohol-related disease or injury.” Guideline 2 relates to reducing the risk of injury on a single occasion of drinking: “For healthy men and women, drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion.” Guideline 3 relates to children and young people under 18 years of age: “For children and young people under 18 years of age, not drinking alcohol is the safest option.” Guideline 4 relates to pregnancy and breastfeeding: “For women who are pregnant, planning a pregnancy or breastfeeding, not drinking is the safest option.” Our measures of parental alcohol consumption are based on Guidelines 1 and 2.

⁸ Short-term risky drinking is quite common. For example, in the 2014–15 National Health Survey, 60–80% of 18–64 year old men who were current drinkers drank more than five drinks on a single occasion at least once in the past 12 months (Australian Bureau of Statistics [ABS], 2015). Presentations of some national surveys such as the National Drug Strategy Household Survey report short-term risky drinking as drinking five or more drinks at least once a month (Australian Institute of Health and Welfare [AIHW], 2014). The nearest approximation in the LSAC data is drinking five or more drinks on a single occasion at least twice a month.

- whether the adolescent has friends who drink alcohol. In longitudinal studies, affiliation with alcohol-using peers is usually the most robust predictor of an adolescent's own drinking (Leung, Toumbourou, & Hemphill, 2014).

We also test a simple mediation model examining whether mothers' short-term risky drinking is related to poorer parental monitoring, subsequently predicting a higher likelihood of adolescent drinking. Parental monitoring (reported by the study child's main carer, 95% of whom are the study child's mother) is considered at Wave 6, as this is most proximal to adolescents' reported alcohol use. The measure of parental supervision is calculated from the main carer's responses to six questions related to how well they know their child's close friends and their parents; how often they know where their child is and who they are with; and how strongly they agree with statements such as: "It is important that parents know where their child is and what they are doing all the time." The responses to these questions were combined to create a standardised measure of parental monitoring (with a mean of 0, variance of 1 and Cronbach's alpha 0.60). This scale was then divided into quartiles.

4.3 Levels of alcohol consumption among parents of young adolescents

In each wave of LSAC, parents of the study child are asked how often they have a drink containing alcohol. Table 4.2 provides a summary of the levels of alcohol consumption of mothers and fathers who provided information about how often they drank alcoholic drinks and how much alcohol they drank. Levels of alcohol consumption for mothers not living in the study child's primary household are not presented, as estimates are unreliable due to the small number of observations.

Table 4.2: Parents' alcohol consumption when study child was age 12–13 years

Alcohol consumption	Mother in primary household %	Father in primary household %	Father living elsewhere %
1: Long-term risk (2+ drinks on any day, regardless of frequency)			
Not at risk	56.9	45.4	41.6
At risk	23.0	43.5	46.9
2: Short-term risk: (5+ drinks on any occasion, at any time in the last year)			
Not at risk	41.5	23.5	20.5
At risk	38.3	65.4	68.1
3: Regular short-term risk: (5+ drinks on any occasion, at least twice a month)			
Not at risk	68.6	59.2	52.0
At risk	11.2	29.7	36.6
4: Level of frequent drinking			
Drinks alcohol less than 4 days per week	67.0	63.5	59.8
4+ days per week, 1–2 drinks per day	8.8	10.8	12.7
4+ days per week, 3+ drinks per day	4.0	14.7	16.1
Abstainer	20.2	11.1	11.4
Total	100.0	100.0	100.0
<i>n</i>	3,133	2,137	330

Notes: For each measure, column total plus the "Abstainer" percentage adds to 100.0. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Waves 5 and 6

When interpreting these figures, it is important to keep in mind that information about alcohol consumption was missing for 14% of fathers in the primary household, 48% of fathers living elsewhere and 42% of mothers living elsewhere (Table 4.1, page 64); and it is possible that the estimates of the level of alcohol consumption for these parents in Table 4.2 is not representative of the national population.

- Just over 20% of mothers in the primary household, and around 11% of fathers (in the primary household or living elsewhere) drank no alcohol at all.

- Only 23% of mothers in the primary household reported drinking more than two drinks per day on any occasion, compared to 44% of fathers in the primary household and 47% of fathers living elsewhere.
- The percentage of mothers who reported drinking more than five drinks on the same day at any time in the last year was 38%, compared to 65% of fathers in the primary household and 68% of fathers living elsewhere.
- However, only 11% of mothers and 30% of fathers in the primary household and 37% of fathers living elsewhere drank at this level (more than five drinks on one occasion) more than once a month.
- The majority of parents drank alcohol less often than four days a week. However, 4% of mothers living in the study child's primary household, 15% of fathers in the primary household and 16% of fathers living elsewhere) reported having at least three drinks per day at least 4 days a week.

4.4 Adolescent drinking at age 14–15

Adolescents at ages 12–13 (Wave 5) and 14–15 (Wave 6) were asked: “Have you ever had even part of an alcoholic drink?” Table 4.3 shows that while just over 40% of adolescents had had a few sips of an alcoholic drink by the age of 14–15, only 16% had drunk at least one alcoholic drink; and there was no significant difference in the percentage of boys and girls who had ever had an alcoholic drink.

Table 4.3: Ever had even part of an alcoholic drink, adolescents aged 14–15

Ever had alcohol	Boys %	Girls %	Total %
No	40.8	42.1	41.4
Just a few sips	43.5	41.7	42.6
At least one alcoholic drink in my life	15.7	16.2	16.0
Total	100.0	100.0	100.0
<i>n</i>	1,701	1,642	3,343

Source: LSAC K cohort, Waves 5 and 6

Those who reported having had at least one alcoholic drink were asked how old they were when they had their first full serve (a glass) of alcohol. Table 4.4 shows that among the 16% of adolescents who had consumed at least one full serve of an alcoholic drink, it was more common for boys than for girls to have had a full serve of alcohol before the age of 13. Only 2.5% of all girls aged 14–15 had had an alcoholic drink before the age of 13, compared to 4.4% of boys. This difference is reflected in the average age at which boys and girls consumed their first full serve of alcohol. Although the difference between the average age of first alcoholic drink for boys and girls is only seven months, it is statistically significant.

Table 4.4: Age when had first full serve of alcohol, adolescents age 14–15 who have had at least one drink

Age when had first alcoholic drink	% of adolescents aged 14–15 who have had at least one alcoholic drink			% of all adolescents aged 14–15		
	Boys	Girls	Total	Boys	Girls	Total
Under 13	28.1	15.5	21.9	4.4	2.5	3.5
13 years old	24.4	24.9	24.7	3.8	4.0	3.9
14 years old	36.6	47.1	41.8	5.7	7.6	6.6
15 years old	10.9	12.5	11.7	1.7	2.0	1.9
Never had an alcoholic drink	–	–	–	84.4	83.9	84.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Average Age (years)	12.9	13.5	13.2	–	–	–
<i>n</i>	263	255	518	1,699	1,640	3,339

Notes: Differences in average age are statistically significant at the 0.1% level. Percentages may not total exactly 100.0% due to rounding. Sample excludes 12 study children who said they did not know how old they were when they had their first alcoholic drink or refused to answer this question.

Source: LSAC K cohort, Waves 5 and 6

Of those who reported having at least one drink, the majority (93%) had consumed an alcoholic drink in the 12 months prior to their Wave 6 interview, but Table 4.5 shows that for most 14 and 15 year olds, drinking alcohol was not a regular practice, with only 7% of boys and 8% of girls saying they had had an alcoholic drink in the past four weeks. Differences by child gender were not statistically significant.

Table 4.5: Had an alcoholic drink in the last 12 months, adolescents aged 14–15 who have had at least one alcoholic drink

	% of adolescents aged 14–15 who have had at least one alcoholic drink			% of all adolescents aged 14–15		
	Boys	Girls	Total	Boys	Girls	Total
Had a drink in the last 12 months	90.4	95.9	93.1	14.1	15.5	14.8
Had a drink in the last 4 weeks	42.5	50.2	46.3	6.6	8.1	7.3
<i>n</i>	263	255	518	1,699	1,640	3,339

Source: LSAC K cohort, Wave 6

Furthermore, among those who reported having had an alcoholic drink in the past four weeks, more than half had not had a drink in the previous week (Table 4.6). Around one-third of boys and girls who reported having had an alcoholic drink in the past four weeks had had more than one drink in the last week, with boys having had an average of 3.9 and girls an average of 2.3 alcoholic drinks in the past week. Differences by child gender were not statistically significant, with the higher average for boys being a result of more of them being likely to say they had had a large number (20 or more) of alcoholic drinks in the last week.

Table 4.6 Previous week's alcohol consumption, adolescents aged 14–15 who had had at least one alcoholic drink in the past four weeks by number of alcoholic drinks

Number of alcoholic drinks	Boys %	Girls %	Total %
0	56.4	46.9	51.4
1	#10.5	19.4	15.2
2–4	#18.0	21.9	20.1
5+	#15.1	#11.8	13.4
Total	100.0	100.0	100.0
Average number of alcoholic drinks in the previous week	3.9	2.3	3.0
<i>n</i>	116	128	244

Note: # Estimate not reliable (cell count less than 20). Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Wave 6

4.5 Characteristics associated with adolescents' drinking

In Table 4.7 (page 69) and Table 4.8 (page 70) we examine the association between adolescents' drinking and selected characteristics of the child and their family. The key outcome variable is whether the study child has had an alcoholic drink *in the last 12 months*. As we are interested in factors associated with adolescents' alcohol use that may have occurred up to 12 months prior to the Wave 6 interview, most of the characteristics analysed (including parents' alcohol use) are measured at Wave 5, when the study children were aged 12–13, rather than at Wave 6. One exception is the measure of whether the study child has friends who drink alcohol, which is measured at age 14–15 (Wave 6), as the likelihood of having friends who drink alcohol will change considerably between the ages of 12–13 and 14–15. Similarly, birth order is measured at age 14–15 to account for any siblings born within the last two years; and area of residence is measured at 14–15 to account for changes in residence since the Wave 5 interview.

As shown in Table 4.7, the following adolescent characteristics were significantly associated with adolescent drinking:

- *Birth order*: Almost 30% of girls and 19% of boys who were the only child reported having had an alcoholic drink in the past 12 months, compared to only 11% of adolescents who were the oldest child and 16% of those who were the youngest child in the family.
- *Pubertal status*: There were considerable differences in the percentage of adolescents who drank alcohol in the last 12 months depending on their pubertal status, with almost 20% of adolescents who were in the later stages of puberty reporting having at least one alcoholic drink, compared to 11% of those in the early stages of puberty.
- *Friends' drinking*: Adolescents with friends who drank alcohol were much more likely to drink. Almost half of the adolescents who said they had some friends who drank alcohol; and over 70% of adolescents who said most or all of their friends drank reported having had an alcoholic drink in the past year, compared to only 5% of those who said that none of their friends drank.

Table 4.7: Study child drank alcohol in the last 12 months, by characteristics of the child

	Boys %	Girls %	Total %
Birth order (At age 14–15)	*	*	*
Oldest child	11.1	11.6	11.4
Middle child/Twin	14.0	12.3	13.2
Youngest child	16.3	17.0	16.4
Only child	18.6	29.6	24.2
Adolescent speaks a language other than English at home	ns	ns	ns
Yes	#7.2	#3.4	#5.3
No	15.1	16.6	15.8
Pubertal status (At age 12–13)	*	*	*
Pre pubertal	11.2	#2.0	10.7
Early puberty	15.0	#3.2	13.7
Mid pubertal	13.6	11.1	12.5
Late/post puberty	19.6	19.2	19.7
Study child has friends who drink alcohol (At age 14–15)	*	*	*
None of them	5.8	4.1	5.0
One or two of them	27.5	22.6	25.0
Some of them	42.6	53.9	49.0
Most or all of them	72.7	71.2	71.8

Notes: # Estimate not reliable, cell count less than 20. Number of observations ranges from 3,230 for pubertal status to 3,339 for Indigenous status. * Indicates that differences in the percentage of adolescents reporting having had an alcoholic drink in the past 12 months are statistically significant at the 5% level.

Source: LSAC K cohort, Waves 5 and 6

As shown in Table 4.8 (page 70), the following family characteristics were significantly associated with adolescent drinking.

- Family type and employment status:
 - Compared to adolescents living with both their biological parents, the percentage of 14–15 year olds who drank alcohol in the past 12 months was almost double for those in single-mother households.
 - Among adolescents living with two parents, the percentage of adolescents who drank alcohol was approximately 4 percentage points higher for those with two parents employed, compared to those whose father was in paid employment but their mother was not.
- Socio-economic position: Compared to adolescents living in households in the highest quartile of socio-economic position, the percentage of 14–15 year olds in households in the lowest quartile of socio-economic position who drank alcohol in the past 12 months was almost double.

Table 4.8: Study child had an alcoholic drink in the last 12 months, by characteristics of the family

	Boys %	Girls %	Total %
Family type (At age 12–13)	*	*	*
Two biological parents	11.5	12.5	12.0
Single mother	24.8	21.7	23.2
Single father	#15.2	#23.1	#18.1
Parent and step-parent	#15.1	23.6	18.7
Other	#22.1	#26.2	24.0
Parents' employment status (At age 12–13)	*	*	*
Single parent			
Employed	22.0	22.5	22.3
Not employed	27.0	#22.0	25.1
Two parents			
Both employed	12.4	14.3	13.3
Father employed only	8.2	10.5	9.2
Mother employed only	#28.9	#12.8	#19.9
Both not employed	#6.3	#16.0	#10.8
Socio-economic position (At age 12–13)	*	*	*
Lowest quartile	23.0	19.9	21.1
2nd quartile	12.6	17.2	14.7
3rd quartile	10.3	14.9	12.4
Highest quartile	11.3	10.6	11.0
Remoteness (At age 14–15)	ns	ns	ns
Major city	12.6	14.5	13.5
Inner regional	16.8	17.2	17.6
Outer regional, remote or very remote	17.5	15.4	16.5
Grandparent had a drinking problem	ns	*	*
No	12.2	13.2	12.7
Yes	#17.4	17.0	17.2
Mother's country of birth	*	*	*
Australia	15.1	17.1	16.1
Mainly English speaking country	#7.9	#15.0	11.1
Non-English speaking country	10.2	9.5	9.9
Father's country of birth	ns	*	*
Australia	13.4	15.4	14.4
Mainly English speaking country	#12.3	#14.9	#13.5
Non-English speaking country	10.3	8.0	9.2
Mother's religion (At age 8–9)	ns	ns	ns
No religion	16.1	17.4	16.8
Catholic	15.3	15.4	15.3
Other Christian	13.5	15.3	14.4
Other non-Christian religion	#9.1	#12.7	10.8
Father's religion (At age 8–9)	ns	ns	ns
No religion	11.7	16.3	13.9
Catholic	14.8	14.6	14.6
Other Christian	12.1	14.7	13.4
Other non-Christian religion	7.2	8.9	8.1

Notes: # Estimate not reliable, cell count less than 20. Number of observations ranges from 2,984 for father's religion to 3,339 for remoteness. Family type, parents' employment status and socio-economic position are based on parents in the primary household only. * Indicates that differences in the percentage of adolescents' reporting having had an alcoholic drink in the past 12 months are statistically significant at the 5% level.

Source: LSAC K cohort, Waves 5 and 6

- Parents' country of birth: Compared to adolescents whose mother was born in Australia, the percentage of adolescents who drank alcohol in the past 12 months was significantly lower among those whose mother was born in a mainly English speaking country other than Australia, and lower again among those whose mother was born in a non-English speaking country. For girls, but not for boys, differences according to their father's country of birth were also significant.
- Grandparents' problematic alcohol use: The percentage of adolescents who reported having an alcoholic drink in the last 12 months was approximately 5 percentage points higher for those who had at least one grandparent who had a problem with alcohol (reported by the parents of the study child).

4.6 The association between parents' drinking and their children's alcohol use

In this section, we describe the association between adolescents' alcohol consumption at age 14–15 and their parents' alcohol consumption two years before. This section concentrates on drinking by parents in the primary household (refer to section 4.7 for analysis of drinking by fathers living elsewhere) and presents bivariate analyses.⁹ Table 4.9 and Table 4.10 (page 72) show the percentage of boys and girls who reported having at least one alcoholic drink by the time they were age 14–15, according to the level of alcohol consumption of their parents in their primary household.

Table 4.9: Study child had an alcoholic drink in the last 12 months, by mother's alcohol consumption (two years before)

Mother's alcohol consumption	Boys %	Girls %	Total %
Abstainer	*	*	*
Yes	8.3	#5.7	6.9
No	15.9	18.2	17.0
Among mothers who were not abstainers ...			
Long-term risk (2+ drinks on any day, regardless of frequency)	ns	*	*
Not at risk	14.6	15.3	14.9
At risk	19.3	24.3	21.9
Short-term risk: (5+ drinks on any occasion, at any time in the last year)			
Not at risk	13.6	13.0	13.3
At risk	18.3	23.6	20.8
Regular short-term risk: (5+ drinks on any occasion, at least twice a month)			
Not at risk	14.4	16.8	15.6
At risk	25.2	26.0	25.6
Level of frequent drinking			
Drinks alcohol less than 4 days per week	16.4	17.5	16.9
4+ days per week, 1–2 drinks per day	#12.1	17.2	14.6
4+ days per week, 3+ drinks per day	#15.9	#29.0	22.9
Mothers alcohol data not available	#31.1	#13.0	#21.2
No resident mother	#27.4	#30.6	#28.7
Total	14.9	15.5	15.2
<i>n</i>	1,533	1,510	3,063

Notes: Sample includes step, foster and adoptive mothers in the primary household, excludes mothers living elsewhere # Estimate not reliable, cell count less than 20. * Indicates that differences in the percentage of adolescents' reporting having had an alcoholic drink in the past 12 months are statistically significant at the 5% level.

Source: LSAC K cohort, Waves 5 and 6

⁹ Refer to section 4.8 (page 78) for multivariate analyses that explores the associations between parents' drinking and adolescents' drinking.

Compared to those whose mother did not drink alcohol at all, the percentage of adolescents who had an alcoholic drink in the last 12 months was 10 percentage points higher among those whose mother did drink alcohol (at any level and frequency). This difference was statistically significant ($p < .05$).

Among 14–15 year olds whose mother drank some alcohol:

- For girls, and overall, but not for boys, the percentage of adolescents who drank alcohol in the past 12 months was significantly higher among those whose mother drank at a long-term risky level (more than two drinks on any occasion in the last 12 months).
- For girls and boys, the percentage that drank at least one alcoholic drink in the last 12 months was significantly higher among those whose mother drank alcohol at the level considered to be risky in the short term (five or more drinks on any occasion).
- Comparisons for level of frequent drinking showed that the prevalence of drinking among adolescents whose mother frequently drank 1–2 drinks per day were not significantly higher than the prevalence of drinking among adolescents whose mother drank alcohol less often than four days per week. However, there was a significant difference between those whose mothers drank alcohol less frequently and those who had three or more drinks per day, at least four days a week (17% compared to 23%). This difference is significant overall but not for boys and girls separately, presumably due to the limited number of observations.

Table 4.10: Study child had an alcoholic drink in the last 12 months, by father's alcohol consumption (two years before)

Father's alcohol consumption	Boys %	Girls %	Total %
Abstainer	ns	*	*
Yes	#11.5	#5.2	#8.1
No	11.7	14.9	13.3
Among fathers who were not abstainers ...			
Long-term risk (2+ drinks on any day, regardless of frequency)	*	*	*
Not at risk	9.4	10.9	10.1
At risk	14.5	18.7	16.6
Short-term risk: (5+ drinks on any occasion, at any time in the last year)	ns	*	*
Not at risk	11.0	#7.8	9.5
At risk	11.6	17.3	14.4
Regular short-term risk: (5+ drinks on any occasion, at least twice a month)	ns	*	*
Not at risk	10.4	10.7	10.6
At risk	13.7	22.9	18.2
Level of frequent drinking	*	*	*
Drinks alcohol less than 4 days per week	10.3	13.3	11.7
4+ days per week, 1–2 drinks per day	#13.4	#15.1	14.2
4+ days per week, 3+ drinks per day	17.3	21.6	19.4
Father's alcohol data not available	15.4	16.4	15.9
No resident father	26.1	20.4	23.2
Total	14.9	15.5	15.2
<i>n</i>	1,533	1,510	3,063

Notes: Sample includes step, foster and adoptive fathers in the primary household, excludes fathers living elsewhere. # Estimate not reliable, cell count less than 20. * Indicates that differences in the percentage of adolescents' reporting having had an alcoholic drink in the past 12 months are statistically significant at the 5% level.

Source: LSAC K cohort, Waves 5 and 6. Sample restricted to adolescents with alcohol consumption data in Wave 6, whose primary carer was interviewed in Wave 5.

Turning now to the differences in the percentage of adolescents who reported drinking alcohol in the last 12 months, according to their father's levels of alcohol consumption, Table 4.10 shows that compared to those whose father did not drink alcohol at all, the percentage of adolescents who

had an alcoholic drink in the last 12 months was 5 percentage points higher among those whose father did drink alcohol (at any level and frequency).¹⁰

Among adolescents whose father drank some alcohol:

- For girls and boys, the percentage of adolescents who drank alcohol in the past 12 months was significantly higher among those whose father drank at a long-term risky level (more than two drinks on any occasion in the last 12 months).
- Overall, and for girls (but not for boys when considered separately), the percentage who drank at least one alcoholic drink in the last 12 months was significantly higher among those whose father drank alcohol at the level considered to be risky in the short term (five or more drinks on any occasion).
- Compared to adolescents whose father drank alcohol less often than four days per week, the percentage who reported drinking alcohol in the last 12 months was significantly higher among those whose father reported having three or more alcoholic drinks per day, at least four days a week (19% compared to 12%).

In Table 4.11 the percentage of adolescents aged 14–15 who reported having at least one alcoholic drink in the last 12 months is compared according to whether they have one or two parents in their primary household and if either or both of their parents regularly drink at a level that is considered risky in the short term (i.e., five or more drinks on a single occasion, at least twice a month). For two-parent households, the sample is restricted to adolescents with information about the alcohol consumption of both parents. In single-parent households, the sample is restricted to adolescents with information available about that parent's level of alcohol consumption.

Table 4.11: Study child had an alcoholic drink in the last 12 months, by parents' alcohol consumption (parents in the primary household two years before)

Parents' alcohol consumption	Boys %	Girls %	Total %
Two-parent household	*	*	*
Neither parent a risky drinker	9.6	9.3	9.4
Father only a risky drinker	11.6	20.0	15.7
Mother only a risky drinker	#17.8	#11.0	#15.5
Both parents risky alcohol consumption	#18.2	#27.9	22.7
Total	11.1	12.8	11.9
<i>n</i>	1,010	993	2,003
Single-parent household	*	*	*
Does not drink at a risky level	24.2	19.8	22.1
Drinks at a risky level	#42.8	#27.2	33.2
Total	26.2	21.0	23.6
<i>n</i>	236	238	474
Total	14.7	14.9	14.8
<i>n</i>	1,246	1,231	2,477

Notes: Risky drinking is defined as having five or more alcoholic drinks per day, at least twice per month. Sample is restricted to adolescents in two-parent households where information about both parents drinking is available and those in single-parent households (the majority in single-mother households) where the parent has provided information about their alcohol consumption. # Estimate not reliable, cell count less than 20. Significance (chi-square) tests indicate that for boys and girls, the proportions are different at the 5% significance level. * Indicates that differences in the percentage of adolescents' reporting having had an alcoholic drink in the past 12 months are statistically significant at the 5% level.

Source: LSAC K cohort, Waves 5 and 6

The prevalence of having had a drink in the last 12 months was around 9% for adolescents in two-parent households where neither parent drank at a risky level. This increased to 16% for those whose father drank alcohol at the short-term risky level; and to 23% when both parents reported regularly drinking at the short-term risky level. Comparisons for adolescents whose mother (but

¹⁰ Test of differences in proportions indicate that this difference is significant at the 5% level for girls, and overall, but not for boys. However, this lack of statistical significance is likely to be due to the small number of observations for boys whose father did not drink alcohol at all.

not father) drank at a risky level were not possible due to small numbers of families where this was the case.

For adolescents in single-parent households (91% in single-mother households), the percentage that reported having an alcoholic drink in the last 12 months was 22% among those whose parent did not drink alcohol at a risky level. This percentage is almost as high as that of children living in a two-parent household in which both parents drank at risky levels. Further, among adolescents in single-parent households in which their parent reported drinking at a level that is considered risky in the short term, one-third reported having at least one alcoholic drink in the past 12 months.

The association between alcohol consumption of parents living elsewhere and their children's alcohol use

For adolescents with parents who do not live in their primary household, it is important to also consider the levels and frequency of alcohol consumption of the parent living elsewhere, if they have contact with the study child. The LSAC data are unique in having information about the alcohol consumption levels of parents who do not live in the primary household, allowing these associations to be tested for the first time. Table 4.12 shows that among adolescents with a father living elsewhere, the percentage that reported having at least one alcoholic drink (22%) in the past 12 months was considerably higher than the overall average of around 16% (see Table 4.3, page 67). Due to the small number of observations, we do not present a table of adolescent drinking according to the alcohol consumption of mothers who do not live in the primary household.

Table 4.12: Study child had an alcoholic drink in the last 12 months, by alcohol consumption of father living elsewhere (two years before)

Father's alcohol consumption	Boys %	Girls %	Total %
Abstainer	ns	ns	ns
Yes	#14.0	#13.8	#13.9
No	21.1	22.4	21.7
Among fathers who were not abstainers ...			
Long-term risk (2+ drinks on any day, regardless of frequency)	ns	ns	ns
Not at risk	#20.7	#18.7	19.8
At risk	#21.5	#25.1	23.4
Short-term risk: (5+ drinks on any occasion, at any time in the last year)	ns	ns	ns
Not at risk	#26.9	#19.4	#22.8
At risk	19.6	23.5	21.4
Regular short-term risk: (5+ drinks on any occasion, at least twice a month)	ns	ns	ns
Not at risk	#21.1	25.4	23.0
At risk	#21.2	#18.7	19.8
Level of frequent drinking	ns	ns	ns
Drinks alcohol less than 4 days per week	16.5	20.7	18.6
4+ days per week, 1–2 drinks per day	#37.4	#21.2	#30.1
4+ days per week, 3+ drinks per day	#25.1	#29.7	#27.3
Non-resident father's alcohol data not available	25.0	22.4	23.7
Total	22.6	21.8	22.2
<i>n</i>	310	299	609

Note: # Estimate not reliable, cell count less than 20. ns Indicates that differences in the percentage of adolescents' reporting having had an alcoholic drink in the past 12 months are not statistically significant at the 5% level.

Source: LSAC K cohort, Waves 5 and 6

While the percentage of adolescents who reported drinking alcohol in the past 12 months was higher among those with a father living elsewhere who drank alcohol, compared to those with a father living elsewhere who did not drink at all (“abstainer”), these differences were not statistically significant. This lack of statistical significance was influenced by the small number of observations for fathers living elsewhere who were abstainers. Similarly, among adolescents whose father living elsewhere did drink alcohol, differences in the percentage who reported having at least one alcoholic drink in the last 12 months were not statistically significant depending on whether their father drank at levels that were considered to be risky in either the short or the long term.

It is important to note that, in addition to the high level of non-response among parents living elsewhere and bias in this subsample, the influence of the alcohol consumption of a father who does not live in the primary household is likely to depend on the amount of contact the adolescent has with their father. However, due to the limited number of observations for non-resident fathers, this type of analysis is not possible.

4.7 Does parents' drinking predict the likelihood of adolescent drinking after controlling for socio-demographic risk factors?

In this section, we use a multivariate approach to examine the association between parents' alcohol consumption and adolescents' drinking. Our key variable of interest is whether adolescents have drunk alcohol in the last 12 months. To test for associations with parents' drinking our primary focus is on the measure of parents regularly drinking alcohol at a level that is considered risky in the short term—five or more drinks on any day, at least twice a month. This measure of parents' alcohol consumption was chosen as the descriptive evidence showed the largest differences in adolescents alcohol use.¹¹

As there is a considerable amount of missing data about parents' alcohol consumption, particularly for fathers, the measures of parents' risky alcohol consumption are categorical variables, with four categories:

- parent does not drink at a risky level, including abstainers (reference category);
- parent drinks at a risky level;
- no information about parents' drinking; and
- no father/mother in the primary household.¹²

To estimate the association between parental drinking and adolescent drinking, we run five sets of logistic regressions, adding covariates in stages (Table 4.13, page 76).

- The baseline model (Model I) controls only for mother's risky alcohol consumption.
- In Model II, father's risky short-term drinking is added.
- In Model III, measures of the drinking levels of parents living elsewhere (mainly fathers) are added.
- In Model IV, characteristics of the child and their family are added to the model; and
- In Model V, an indicator of having at least one friend who drinks alcohol is added to the set of control variables. Friends' drinking is illustrated separately in Model V because of the magnitude of its relationship with adolescent drinking.

¹¹ Regressions were also run using the measure of parental long-term risky alcohol use (more than two drinks on any day, regardless of frequency) and frequent alcohol use (more than two drinks per day, at least four days per week). For boys, parents' long-term risky alcohol use was not statistically significant when socio-demographic controls were included in the model. For girls, fathers' long-term risky alcohol use was statistically significant after controlling for socio-demographic characteristics (odds ratio of 1.6). However, when the indicator of having at least one friend who drinks was included, parents' drinking was no longer statistically significant. For boys and girls, parents' frequent alcohol use was not statistically significant once socio-demographic controls were included in the model.

¹² For example, for adolescents in single-mother households, the “no resident father” category is added in order to retain these observations.

Regressions are run separately for boys and girls, as the descriptive evidence earlier in this chapter suggests that there are gender differences in the factors associated with adolescent drinking.¹³

Table 4.13: Study child had an alcoholic drink in the last 12 months, by parents' risky alcohol consumption two years before (odds ratios)

	I		II		III		IV		V	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Mother's drinking (Reference = Does not drink at a risky level)										
Mother drinks at a risky level	2.2***	2.2***	2.3***	1.7*	2.3***	1.8***	2.6***	1.4	2.4***	1.3
No information about mother's risky drinking	3.0	0.9	3.9*	0.9	3.4*	1.3	2.4	0.8	3.7*	0.4
No mother in the primary household	2.5	2.7	3.6*	3.0	1.9	2.1	6.1	1.3	1.2	5.9
Father's drinking (Reference = Does not drink at a risky level)										
Father drinks at a risky level			1.2	2.5***	1.2	2.1***	1.1	2.0**	1.0	1.7
No information about father's risky drinking			1.6*	1.8**	1.5*	1.5*	1.7*	1.8*	1.7	1.7
No father in the primary household			3.3***	2.2***	2.8***	2.2**	3.2**	0.3	2.1	1.2
Drinking of parent living elsewhere (Reference = Does not drink at a risky level)										
PLE drinks at a risky level					1.2	1.0	1.1	0.9	0.9	0.6
No information about PLE's risky drinking					1.1	1.3	1.1	1.0	1.0	1.1
Socio-Demographic Controls	No	No	No	No	No	No	Yes	Yes	Yes	Yes
At least one friend drinks									10.1***	14.9***
Pseudo R ²	0.01	0.01	0.03	0.03	0.03	0.10	0.08	0.10	0.24	0.29
<i>n</i>	1,553	1,510	1,553	1,510	1,553	1,510	1,307	1,223	1,305	1,223

Notes: *** $p < .001$, ** $p < .01$, and * $p < .05$. Covariates included in Models IV and V: birth order, quartile of socio-economic position, whether the study child speaks a language other than English, mother's country of birth, pubertal status category at age 12–13, Indigenous status, parental employment and an indicator of whether a grandparent had a problem with alcohol.

Source: LSAC K cohort, Waves 5 and 6

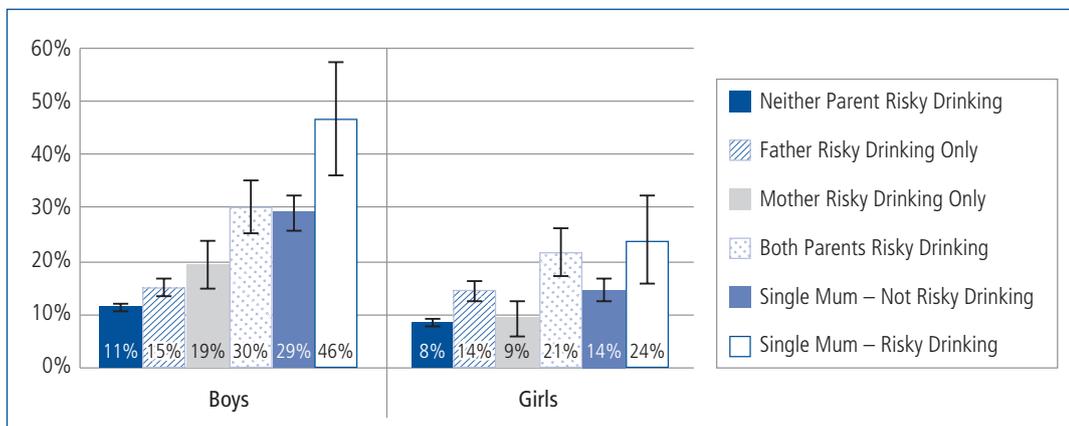
Our estimates of the association between parents' and adolescents' drinking show that:

- Before controlling for any other factors, the baseline model (Model I) suggests that the odds of having had an alcoholic drink in the last 12 months for adolescents whose mother regularly drank at the short-term risky level was 2.2 times higher than that of those whose mothers did not drink at this level.
- When an indicator of father's risky drinking was included in the model (Model II), mother's alcohol consumption remained statistically significant for boys and girls. For girls, but not for boys, there was a significant additional effect of the father's alcohol consumption. That is, after controlling for the mother's risky drinking, the odds of having had an alcoholic drink in the last 12 months for girls whose father drank at a risky level were 2.5 times the odds for girls whose father did not drink at this level.

¹³ A Chow test rejects the hypothesis that the coefficients are equal in the male and female subsamples for Models II, III, IV and V.

- Model III shows that the indicators of risky drinking of a parent living elsewhere were not statistically significant, and the results concerning the risky drinking of parents in the primary household were very similar to those for Model II. This does not necessarily mean that the alcohol consumption of parents living elsewhere has no significant influence on adolescents' alcohol use. It must be kept in mind that there was a considerable amount of missing data about the alcohol use of parents living elsewhere; and the results may be biased in the sense that parents living elsewhere who drink at risky levels may be less likely to have contact with their children (and therefore are less likely to complete the PLE questionnaire).
- After controlling for a range of covariates, including whether a grandparent had a problem with alcohol (Model IV), mother's risky drinking remained statistically significant for boys, and father's risky drinking remained significant for girls. For boys whose mother regularly drank at a risky level, the odds of having had an alcoholic drink were 2.6 times those of boys whose mother did not; and, for girls, the odds of having consumed an alcoholic drink were doubled if their father drank at a risky level. However, this does not necessarily mean that mother's alcohol consumption is not an important factor influencing adolescent girls' alcohol consumption; or that father's alcohol consumption is not an important factor in boy's alcohol use. This may reflect the combination of mother's and father's drinking where, for example, a significant coefficient for mother's drinking is an indicator of a household where both parents drink heavily. There may also be differences between the group of parents who provided information about their alcohol consumption and those who did not; and it is possible that the alcohol consumption of parents whose alcohol consumption data were missing consumed alcohol at higher levels than those who provided information about their alcohol consumption.¹⁴
- Having at least one friend who drank alcohol (Model V) was a very strong predictor of adolescents having had an alcoholic drink. When this indicator was included in the model, only mother's risky drinking remained significant for boys. This result suggests that there is some shared variance between parents' drinking and friends' drinking. That is, adolescents who had parents who drank at risky levels may be more likely to have friends who drank alcohol, and were also more likely to have tried alcohol themselves.

Figure 4.1 provides a summary of these results, showing predicted probabilities of having had an alcoholic drink, based on predicted probabilities calculated from Model V in Table 4.13 (page 76).



Notes: Predicted probabilities derived from model IV for adolescents either in two parent households with information about both parents dinking, or single mother households with information about their mothers drinking. Predicted values are calculated at the sample average of all other variables included in the model. Sample size was too small to include predicted probabilities for single father households. The "I" bars represent 95% confidence intervals. "I" bars that do not overlap indicate there is a statistically significant difference between the groups.

Figure 4.1: Predicted probability of adolescents age 14–15 drinking (in the last 12 months), by levels of parents' risky drinking

¹⁴ Compared to boys whose mother reported not drinking at a risky level, the odds of having had an alcoholic drink in the past twelve months are significantly higher for boys whose mother did not provide information about their alcohol consumption. This is also the case for boys whose father (living in the primary household) did not provide information about their alcohol consumption. Similarly, compared to girls whose father (living in the primary household) reported not drinking at a risky level, Model IV indicates that those whose fathers did not provide information about their alcohol consumption had significantly higher odds of having had an alcoholic drink in the past 12 months.

- The predicted probabilities of 14–15 year olds having had an alcoholic drink in the last 12 months ranged from 8% for girls and 11.2% for boys in two-parent households in which neither parent drank at a risky level to 46.3% for boys in single-mother households in which the mother drank at a risky level.
- For boys and girls, the predicted probability of having had an alcoholic drink was highest among those in single-mother households in which the mother drank at a risky level.
- Among adolescents in two-parent households, the predicted probability of having had an alcoholic drink was significantly higher for those living in households where both parents drank at a risky level, compared to those in households where neither parent drank at a risky level.
- For boys, but not for girls, the predicted probability of having had an alcoholic drink was significantly higher for those in single-mother households where the mother drank at a risky level, compared to those in two-parent households where both parents drank at a risky level.¹⁵

4.8 Does poorer parental monitoring explain relationships between parent drinking and adolescent drinking?

This section addresses the final research question and examines whether the association between adolescents' drinking and parents' drinking is explained by poorer levels of parental monitoring among parents who consume alcohol at risky levels. There is some evidence that peer pressure to drink is more strongly related to adolescent alcohol use in the presence of poor parenting (Nash, McQueen & Bray, 2005). A large US study of young adolescents showed that effects of parental monitoring on adolescent drinking were mediated by peer effects and, taken together, parental monitoring and peer effects accounted for all variability in alcohol use by ethnicity and family structure (Wang, Simons-Morton, Farhart, & Luk, 2009). It is also possible that problem behaviour such as drinking and associating with deviant peers leads to decrements in parenting, as these children may be difficult to effectively monitor (Trucco, Colder, Wieczorek, Lengua, & Hawk, 2014).

Table 4.14 shows that the percentage of adolescents who reported having at least one alcoholic drink in the last 12 months was considerably higher among those receiving lower levels of parental monitoring, compared to those with high levels of parental monitoring. Almost one quarter of boys and 19% of girls who experienced low levels of parental monitoring reported having had an alcoholic drink, compared to 8% of boys and 11% of girls whose parents reported high levels of parental monitoring.

Table 4.14: Study child drank in the last 12 months, by parental monitoring level at age 12–13

Parental monitoring score	Age 14–15		
	Boys %	Girls %	Total %
1 (Lowest level)	24.5	19.3	22.0
2	13.5	16.4	14.8
3	11.8	15.1	13.4
4 (Highest level)	8.3	11.2	9.8

Notes: Significance (chi-square) tests indicate that the proportion who reported having had an alcoholic drink according to the main carers reports of parental monitoring are different: $p < .05$.

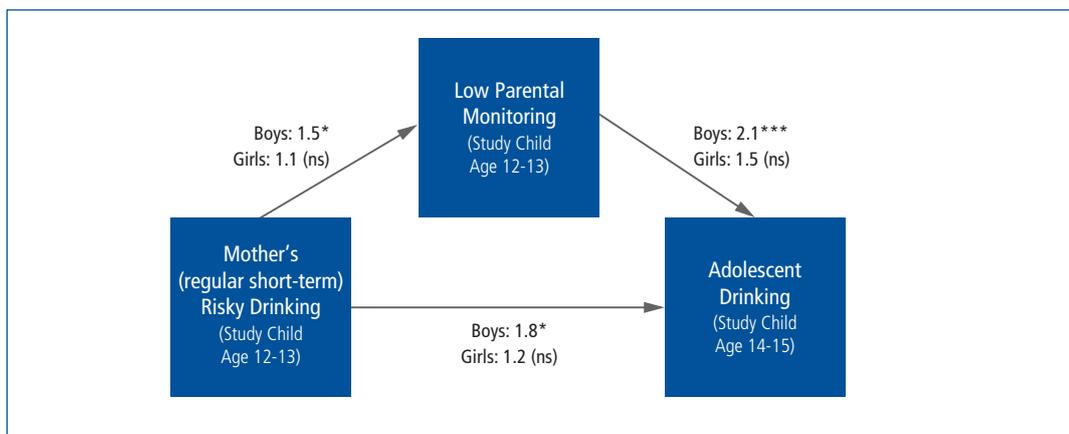
Source: LSAC K cohort, Wave 6

A structural equation model (mediation model) is used to examine whether the association between maternal alcohol consumption and adolescents' drinking is to some extent an indirect association, occurring via lower levels of parental monitoring among those parents who drink at risky levels.

¹⁵ For adolescents in single-mother households, comparisons of the predicted probability of having had an alcoholic drink, according to the level of risky drinking of both the mother and the non-resident father (where this information is available) generally do not show significant differences depending on the level of risky drinking among parents. However, this is likely to be due to the limited amount of information about the alcohol consumption of parents living elsewhere (48% of fathers living elsewhere either had no contact with the study child, did not complete the Parent Living Elsewhere questionnaire, or did not provide information about their levels of alcohol consumption).

As our measure of adolescent drinking is binary (0 if the adolescent has not had an alcoholic drink and 1 if they had), a generalised structural equation model is estimated and odds ratios are reported. The sample is restricted to adolescents whose mother provided information about her alcohol consumption. This allows the “mother drinks at a risky level” variable to be measured as a binary variable. Similarly, the measure of “low parental monitoring” is set to 1 if the parental monitoring score is in the lowest quartile and zero otherwise. Measures of (resident and non-resident) father’s risky drinking are included in the set of control variables, along with a set of socio-demographic characteristics including birth order, quartile of socio-economic position, whether the study child speaks a language other than English, mother’s country of birth, pubertal status category at age 12–13 and an indicator of whether a grandparent had a problem with alcohol.

Estimates of the direct and indirect influence of mother’s risky alcohol consumption on the odds of adolescent boys’ and girls’ drinking at age 14–15 are presented in Figure 4.2. Exponentiated coefficients are reported on the diagrams, so that a coefficient above 1 represents a positive influence (increasing the odds of having had an alcoholic drink) and a coefficient below 1 represents a negative influence.



Note: *** $p < .001$, ** $p < .01$, and * $p < .05$. n.s. indicates a non-significant result. $n = 1,309$ for boys and 1,255 for girls. Controls include an indicator of risky drinking of a resident father and parent living elsewhere, birth order, quartile of socio-economic position, whether the study child speaks a language other than English, mother’s country of birth, pubertal status category at age 12–13, Indigenous status, parental employment and an indicator of whether a grandparent had a problem with alcohol.

Figure 4.2: The influence of mothers’ risky alcohol consumption on the odds of adolescents’ drinking at age 14–15

For example, for boys, the coefficient representing the association between mothers’ risky drinking and low parental monitoring is 1.5. This means that for boys whose mother drank at a risky level, the odds of receiving low levels of parental monitoring are 1.5 times the odds of low levels of parental monitoring for boys whose mother did not drink at this level. Similarly, for boys who experienced low levels of parental monitoring, the odds of having had an alcoholic drink in the last 12 months were 2.1 times the odds of having had an alcoholic drink in the last 12 months for boys who experienced higher levels of parental monitoring. For boys, there is also a significant direct influence of having a mother who drank at a risky level, with the odds of having had an alcoholic drink being twice those for boys whose mother did not drink at this level. The significant direct and indirect influences of maternal risky drinking indicate that it is not only the influence of maternal drinking via a lack of parental monitoring that increase the likelihood of boys drinking if their mother drinks at this level.

For girls, there was no significant direct or indirect influence of maternal drinking on the odds of having had an alcoholic drink in the last 12 months. This is to be expected given the lack of significance of mother’s risky drinking, once socio-demographic factors were controlled for in the logistic regression models presented in Table 4.13 (page 76).

4.9 Summary and conclusion

This chapter documented the association between parental and adolescent drinking, exploring how this differed by gender of both parent and adolescent, and examined the role of parental monitoring in accounting for this association. Unlike many previous studies, we were able to describe levels of self-reported drinking in parents with reference to NHMRC guidelines in a large, nationally representative sample of 14–15 year old adolescents.

What are the levels of drinking among mothers and fathers of young adolescents?

- About 80% of mothers and almost 90% of fathers of adolescents had consumed some alcohol in the past 12 months. This is quite similar to population estimates from other survey data for males and females aged 35–64 (AIHW, 2014).
- Also consistent with national figures, the percentage of parents who drank at levels that exceeded guidelines for reducing both lifetime and single-occasion risk was high: about a quarter of resident mothers drank more than two drinks per occasion on average, and almost 40% had drunk more than four drinks on a single occasion at least once in the past 12 months.
- Although most parents did not drink daily, of those that did, more men exceeded guidelines for long-term risk (more than two drinks per day). Non-resident fathers drank at levels similar to resident fathers. Levels of risky drinking were substantially higher in non-resident mothers compared to resident mothers but because of the very small number, it was not possible to draw conclusions about this group of women.
- While many parents exceeded guidelines for minimising risk in the short and long term, a substantial minority drank at more risky levels. Around 11% of mothers and 30% of fathers reported drinking more than four standard drinks on a single occasion at least twice a month, and about 15% of fathers reported drinking more than two drinks per day on at least four days per week.

What are the levels of drinking among 14–15 year old adolescents; and what are the characteristics of those who drink alcohol?

- The percentage of 14–15 year olds who had had an alcoholic drink in the last 12 months was 14.8%, which is similar to the 15.2% of 12–15 year-olds in the 2013 National Drug Strategy Household Survey (AIHW, 2014).
- Adolescents who drank alcohol were likely to be more advanced in pubertal status at age 12–13, to be an only child or have older siblings, to have friends who drank alcohol at age 14–15, to have parents born in Australia or an English-speaking country, and to have a grandparent who had an alcohol problem. Several of these characteristics are risk factors for delinquent and problem behaviour more generally, highlighting the problematic nature of early-adolescent drinking.
- Being in the lowest quartile of socio-economic position also increased the likelihood of adolescent drinking. This result differs from the findings from contemporary UK research (Melotti et al., 2011), which found that drinking alcohol was more common among young people from higher-income households (but less common with higher levels of maternal education). However, this inconsistency may be due to differences in the age group being considered and the time frame when alcohol use was measured.¹⁶ It is also possible that differences in adolescents' alcohol use, by socio-economic position, are greater in Australia than in the UK. While there has been a considerable historical change toward Australian 13–14 year olds adopting NHMRC guidelines to not use alcohol, lower SES parents in Australia may have been slower to adopt these changes (Kelly, Goisis et al., 2016).
- The percentage of adolescents who had had a drink in the last 12 months was about double (25%) for those living in single-mother households compared to those living with both biological parents (12%).

¹⁶ Melotti et al. (2011) used data from the Avon Longitudinal Study of Parents and Children (ALSPAC) to examine alcohol use among 13 year olds. The measure of alcohol use was whether they had consumed an alcoholic drink in the past six months.

How do different levels of mothers' and fathers' drinking relate to the probability of adolescent drinking, and does this vary by gender?

The following points summarise our descriptive analysis of the association between parents' drinking and the probability of adolescent drinking:

- *Adolescents with parents who abstained from drinking were less likely to drink.* Overall, the percentage of adolescents of abstaining parents who had had a drink in the last 12 months was less than half the percentage of adolescents of parents who had had a drink in the last 12 months. There may be many social, cultural and individual reasons why parents abstain from drinking, which are also correlated with less adolescent drinking. However, due to small numbers of abstainers, it was not feasible to explore abstention in multivariate models.
- *For resident mothers and fathers who were current drinkers, drinking at a risky level was associated with increased rates of adolescent drinking.* This was true for all drinking variables. For regular frequent drinking, rates of adolescent drinking were similar for those whose parents drank alcohol less than four days per week compared to those whose parents who drank alcohol four or more days per week within the guidelines for minimising long-term risk. However, rates of adolescent drinking were substantially higher if the regular drinking exceeded this long-term guideline. This top category of frequent drinkers overlapped substantially with those who regularly exceeded the short-term risk guidelines. This indicates that adults (and especially men) who have episodes of heavy drinking also tend to drink regularly. Thus, it is difficult to determine whether regular drinking (of any quantity) increases the risk for adolescent drinking, or whether this association occurs because regular drinking is likely to be accompanied by heavy drinking.
- *In two-parent households, rates of adolescent drinking were highest when both parents were risky drinkers.* It was unusual for a mother to exceed risk guidelines while the father did not. This applied to only 81 families (3.5% of two-parent households), making cross-tabulations with adolescent drinking unreliable.
- *Rates of adolescent drinking were high in single-parent households, and higher still if the parent regularly exceeded the short-term guidelines.* In single-parent households the rate of adolescent drinking when the parent did not drink at a risky level was as high as the rate for adolescents in two-parent households where both parents drank at a risky level. Single-parent households experience higher levels of social disadvantage. This may increase the likelihood of living in communities where rates of both adult and adolescent drinking are higher (Winstanley et al., 2008) and may also limit parental resources available to monitor adolescents and their friends (Chilcoat, Breslau, & Anthony, 1996). However, the relationships between family and community disadvantage, family structure and the onset of adolescent drinking remain unclear and should be the focus of further investigation with the LSAC data.

Does parents' drinking predict a higher likelihood of adolescent drinking after controlling for socio-demographic risk factors?

Multivariate modelling was used to examine whether the associations between parent drinking and adolescent drinking that were observed in simple cross-tabulations would persist after controlling for socio-demographic factors that are known to be risk factors for adolescent and/or parent alcohol use. For this analysis we focused on the regular short-term risk variable, which identified *parents who drank more than four drinks on one occasion at least twice a month*.

In general, results confirmed that parents' risky drinking did have unique associations with early adolescent drinking. However, the roles of mothers compared to fathers drinking and gender differences are still not clear. In models that controlled for all socio-demographic risk factors, except the adolescent's friends' drinking, results suggested that a mother's drinking was more strongly associated with drinking for boys, while a father's drinking was more strongly associated with drinking for girls.

The fact that fathers' drinking was not significant in the final model does not mean that fathers' drinking is not important. Indeed, this may reflect the combination of mothers' and fathers' drinking, where a significant coefficient for mothers' drinking is an indicator of a household where both parents drink heavily. Estimates of the predicted probability of adolescent drinking based on our multivariate

models indicate that for adolescents in two-parent households, the predicted probability of having had an alcoholic drink was significantly higher if both parents drank at a risky level, compared to those in households where neither parent, or only one parent, drank at a risky level. Further, missing data on fathers' drinking was significantly associated with adolescent drinking in most models, suggesting that fathers who did not complete these items may have been heavier drinkers.

It was not surprising to see the coefficients for parents' drinking drop substantially after friends' drinking was included in the model (Leung et al., 2014; Scholte, Poelen, Willemsen, Boomsma, & Engels, 2008). This suggests that there is some shared variance between parents' drinking and friends' drinking: that adolescents who had parents who drank at risky levels at age 12–13 were more likely to have friends who drank alcohol at age 14–15, and were also more likely to have tried alcohol themselves. Parental monitoring is likely a key piece to this puzzle, as we discuss below.

Does poorer parental monitoring explain relationships between parental drinking and adolescent drinking?

The mediation model showed that risky maternal drinking when adolescents were aged 12–13 increased the odds of poorer monitoring of children's friends and activities two years later, which was subsequently associated with drinking for boys only. It is possible that parents who drink at risky levels have less organised rules around adolescent activities or other parenting difficulties (Dishion et al., 1999; King & Chassin, 2004). Findings like these suggest that reciprocal influences among parental drinking, parental monitoring, adolescents' behaviour and friends' behaviour need to be considered to understand the processes leading to early adolescent alcohol use.

Limitations

As mentioned, this study was limited by missing data for fathers' drinking. Future research with these data may benefit from exploiting the longitudinal information available in LSAC and using more complex missing-data techniques (e.g., multiple imputation) to account for this missing information. While dealing with this is challenging, the LSAC data represent a valuable opportunity to examine the usually neglected role of non-resident parents in adolescents' development.

Conclusions

The results showed that risky parental drinking increased the likelihood of adolescent drinking after controlling for a range of socio-demographic risk factors, including drinking among adolescents' friends. Moreover, poorer parental monitoring explained some of this association for boys. However, gender differences in the link between parent and adolescent drinking were not clear. Nor did the results confirm a "safe" level of parental drinking with regard to adolescent use.

Overall, the results suggested that parental drinking (especially if it is frequent and heavy) does increase the likelihood of early adolescent drinking but this association is probably only one part a complex developmental pathway involving parenting practices, family resources, community disadvantage, peer groups and alcohol availability.

4.10 References

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Young carers

Diana Warren and Ben Edwards

5.1 Background

Children growing up in a household with a person with a disability, long-term illness or frailty due to old age may take on caring responsibilities of different types and intensities. Tasks undertaken by young carers include a wide range of physical, household, medical, emotional and social support tasks. The caring tasks and responsibilities undertaken often go beyond what adults would normally expect of children and what most children would expect to do within the family (Becker, 2007; Early, Cushway, & Cassidy, 2006; Warren, 2007).

Obtaining precise estimates of the numbers of young carers is difficult because many qualitative studies note that young people may not identify as a carer either because of a reticence to admit caring responsibilities within the family, or because the young person themselves does not consider themselves as a young carer (e.g., Clay, Connors, Day, Gkiza, & Aldridge, 2016). Population estimates of the prevalence of young carers also vary in Australia due to differences in how caring is defined, for example:

- the age group being considered;
- whether care is provided inside and outside of the household; and
- whether the young person or another adult in the household is reporting on caring circumstances.

For instance, the 2012 Australian Bureau of Statistics (ABS) Survey of Disability and Caring (SDAC) (ABS, 2013) estimated that 1.7% of children under the age of 15 years and 7.4% of 15–24 year olds were carers.¹ The 2011 Census of Population and Housing estimated that 4.3% of 15–19 year olds were carers.²

¹ In the SDAC, a carer is defined as “a person who provides any informal assistance, in terms of help or supervision, to an older person or someone who has a disability or a long-term health condition”. This is slightly broader than the definition of a carer under the 2010 Carer Recognition Act (Cth), in which a carer is defined as “an individual who provides personal care, support and assistance to another individual who needs it because that other individual (a) has a disability; or (b) has a medical condition (including a terminal or chronic illness) or; (c) has mental issues or (d) is frail aged. Under this Act, an individual is not a carer if he or she provides only formal care. Under the Carer Recognition Act, “An individual is not a carer in respect of care, support or assistance he or she provides (a) under a contract of service or a contract for the provision of services; or (b) in the course of doing voluntary work for a charitable, welfare or community organisation; or (c) as part of the requirements of a course or education or training.” Further, “An individual is not a carer merely because he or she (a) is the spouse, de facto partner, parent, child or other relative of an individual, or is the guardian of an individual, or (b) lives with an individual who requires care.”

² The ABS 2006 and 2011 censuses collected data about informal carers aged 15 and over using questions about the provision of unpaid assistance in the previous two weeks to a person because of disability, long-term condition or problems related to age. The parts of the definition about the reason for providing assistance are consistent with the SDAC, but reference periods for the two collections are different, and the census does not refer to ongoing assistance (AIHW, 2013).

Internationally several countries have included questions about caring for a person with a disability or frail age in their census to understand caring for household members. For example, in the 2011 Census 2.1% and 2.6% of 5–17 year olds were young carers in England and Wales respectively (Office of National Statistics, 2013). In New Zealand 8% of children aged 14 years old or under were estimated to have caring responsibilities in their households based on the 2013 Census (Carers New Zealand, 2017). Estimates of care provided by 15–29 year olds from the 2012 General Social Survey in Canada (which includes care of people in and outside the household) suggest that 27% of young people care for a family member or friend with a long-term health condition, disability, or aging needs in the previous 12 months (Bleakney, 2014).³

Nationally representative surveys of young people in other countries generally tend to report a similar percentage of young carers as the abovementioned census estimates. For example, the Longitudinal Study of Young People (LSYPE) in England, a nationally representative sample of students in Year 9, reported 4.5% of students identified as young carers (The Children’s Society, 2013). In the United States of America 3.2% of 8–17 year olds were identified as young carers from another survey (Hunt, Levine, & Naiditch, 2005). A large survey of Austrian 10–14 year olds estimated young carers to be 4.5% of this age group (Nagl-Cupal, Daniel, Koller, & Mayer, 2014), while the Kids Life and Times survey in Northern Ireland of 10–11 year olds found 12% of children said they helped look after someone in their household who was sick, elderly or disabled (Lloyd, 2013).

The informal care of a family member with a disability, long-term illness or frailty due to old age can be personally rewarding and provide a broader benefit to society for children undertaking this role. However, it may come at a cost of their engagement in normative behaviour throughout childhood; and also has opportunity costs well into adulthood (Cass, Smyth, Hill, Blaxland, & Hamilton, 2009). For example, compared to children who were not carers, young carers were more likely to be prevented from participating in social and leisure activities by factors associated with their caring roles and familial circumstances, such as needing to help at home, looking after someone in the family, the financial costs of caring, and problems with transport (Becker, 2007; Cass et al., 2011; Warren, 2007). Research shows that young carers often have limited choice about their caring role, and there is some evidence to show that the caring role can have significant negative effects, including poor physical, mental health and educational outcomes (The Children’s Society, 2013; Kavanaugh, Stamatopoulos, Cohen, & Zhang, 2016; Lloyd, 2013; Nagl-Cupal et al., 2014; Noble-Carr, 2002).

Several studies have documented the demographic profile of young carers and found that:

- Young women were more likely to be carers than young men (Cass et al., 2011).
- Young people in low resource and single-parent households were more likely to take on a caring role (Bray, 2011; Cass et al., 2011).
- Households with young carers are generally characterised by lower incomes (Bittman, Fisher, Hill, Thompson, & Thomson, 2004; Cass et al., 2011; Dearden & Becker, 2004; Hunt et al., 2005; Noble-Carr, 2002; Young, Grundy, & Kalogirou, 2005).⁴
- Young carers are more likely to live in more disadvantaged communities, in outer urban locations and country towns (Bray, 2011).
- Research in Australia reveals differences in the circumstances of young carers from culturally and linguistically diverse (CALD) backgrounds. Indigenous young Australians were two to three times more likely than non-Indigenous young people to be carers (Bray, 2011; Cass et al., 2011) and compared to non-carers, twice as many young primary carers were born in non-English speaking countries (Cass et al., 2011). Research focused on young carers in receipt of income support suggests that higher rates of caring were evident for children with parents from countries that had experienced war such as Iraq, Afghanistan, Croatia, Bosnia and Herzegovina and Serbia (Bray, 2011).

The aim of this chapter is to provide new information about the number of Australian children who are providing informal care for a family member, how much time they spend providing care and the types of care provided. The main focus of this chapter is on the characteristics of children who take

³ Four in ten care recipients were grandparents, with a further 1 in 4 being parents of the young person.

⁴ It should be noted that in many cases, the association between carer status and financial disadvantage will be due to the fact that at least one parent will be the person being cared for, and therefore unable to work, leading to lower household income.

on caring roles and the types of caring activities that they undertake. This chapter explores various aspects of the lives of young people who care for a person with a long-term health condition, disability or frail age, and spans caring activities involving very limited assistance, through to the provision of two or more hours of care on a daily basis. The chapter will address the following research questions:

1. How many children spend time caring for another person?
2. What type of help do they provide?
3. How much time do they spend providing care or help?
4. How does the amount and type of care provided differ according to characteristics of the child and the household?
5. Does caring limit young peoples' academic achievement?

The chapter is structured as follows. A description of the data and methods used is given first, below. The first analytical section of this chapter provides new evidence about the number of 14–15 year olds who care for someone who is elderly or has a disability or long-term illness; and the primary care arrangement for those who care for more than one person. We then examine the type of help that young carers provide, the relationship between the study child and the person receiving assistance, and the socio-demographic characteristics of young carers. The final section looks at the association between carer status and NAPLAN Reading and Numeracy outcomes in Year 9.

5.2 Data and methods

The focus of this chapter is the K cohort, Wave 6 data, when the children were aged 14–15 years, and were asked about informal care of a family member. More specifically, study children were asked “Do you help someone who has a long-term health condition, has a disability or is elderly with activities that they would have trouble doing on their own?” The question specified that we are interested in help they have given, or are likely to give, for at least six months; and help that is given as part of a paid job, unpaid volunteer work or community service should not be included. Those who reported engaging in some type of caring activity were how often they do these activities; how many hours they spend providing care; and the type of help they provide.

Dimensions of caring in this chapter

Adolescents who reported providing care were asked about their relationship to the person (or people) they were caring for and the type of care they were providing for up to three people.⁵ This restriction resulted in some missing information for those who reported caring for more than three people. These observations are retained in the analysis by including a specific category for those who reported providing assistance for four or more people, but gave no details about their relationship to the people being cared for and the type of care provided. Adolescents who reported caring for at least four people make up around 4% of 14–15 year olds (11% of those who reported providing help or care) as shown in Table 5.1 (page 88).

For those who said they cared for up to three people, for each person being cared for, study children were asked whether they provide assistance with:

Core activities:

- personal care (e.g., washing, dressing, eating, toileting, etc.);
- moving around (e.g., getting in/out of bed or chair, etc.);
- communicating (including being understood and understanding family, friends or others).

⁵ These questions were asked as part of the Audio Computer Assisted Self Interview (ACASI). However, when study children entered more than three names, the instrument was unable to process who to ask the questions about and therefore these questions were not asked. This has resulted in missing information for 132 children who reported providing help for four or more people. Based on the number of people in the household, the majority of these children were reporting about care for at least one person who did not live with them: 2% lived in a two-person household (i.e., a single-parent household), 13% had three people in their household (including the study child), 41% had four people and the remaining 45% lived in a household of five or more people. For more details about this issue, refer to the LSAC Data Issues paper: <www.growingupinaustralia.gov.au/pubs/issues/2015/data-issues.pdf>.

Non-core activities:

- health care (e.g., giving medication, medical appointments);
- transport (e.g., catching buses, trains, etc.);
- preparation of meals;
- housework, shopping, errands;
- house repairs or garden care (e.g., mowing, changing light bulbs);
- paperwork (e.g., filling in forms, paying bills, dealing with government or other agencies);
- keeping them company;
- other things.⁶

Table 5.1: Number of people cared for, by gender of carer

Number of people cared for	Number of observations			% (weighted)		
	Boys	Girls	All	Boys	Girls	All
Do not provide care	1,049	1,052	2,101	60.2	62.8	61.4
Provides care for ...						
1 person	338	309	647	20.4	19.0	19.7
2 people	150	155	305	8.8	10.1	9.4
3 people	95	61	156	6.0	4.2	5.1
4 or more people	69	63	132	4.7	4.0	4.3
Total	1,701	1,640	3,341	100.0	100.0	100.0

Notes: Adolescents who cared for someone with a long-term health condition, disability or who is elderly. Differences in proportions by gender are not statistically significant at the 5.0% level. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Wave 6

Of the 3,341 children in the K cohort who completed the survey, 39% (40% of boys and 37% of girls) reported providing some type of care. Therefore, it is important to distinguish between assistance with “core activities” (i.e. helping with personal care, moving around and communicating) and “non-core activities”, that is, help with other things such as preparing meals and keeping them company.⁷

For some of the analysis in this chapter, it is necessary to classify carer status into mutually exclusive categories according to their “primary care arrangement”, more specifically this means care that involves assistance with:

1. core activities (personal care, mobility or communication) for someone who lives with them;
2. core activities for someone who does not live with them;
3. non-core activities only, for someone who lives with them; and
4. non-core activities only, for someone who does not live with them.

For those who reported caring for two or three people, help with core activities is given priority. If the type of help is the same for multiple-care recipients, help for those who live with them is given priority. For example, if a study child helps someone who lives with them with non-core activities and someone who does not live with them with core activities, they are considered to be helping with core activities for someone who does not live with them. A study child who helps someone who lives with them and someone who does not live with them with non-core activities would be classified as providing help with non-core activities for someone who lives with them.

⁶ Details provided by respondents who reported helping with “other things” commonly included companionship or friendship, protecting children from being bullied and helping with schoolwork.

⁷ The classification of core activities (personal care, moving around and communicating) in this chapter is in line with the ABS ‘Core Activity Need for Assistance’ concept, which was developed for the 2006 Census to identify people with a ‘profound or severe core activity limitation’ using similar criteria to the Survey of Disability, Ageing and Carers (SDAC). This population is defined as people with a disability who need assistance in their day to day lives with any or all of the following core activities – self-care, body movements or communication (ABS, 2013). It is important to note that young carers may not view their own caring responsibilities this way. For example, a young carer who provides care for a parent who has a mental illness may be very invested in the daily care of their parent, but this may not involve personal care tasks.

In this chapter, we describe the differences in the type of care provided and amount of time spent caring depending on:

- the relationship between the study child and the person being cared for (e.g., parent, sibling, grandparent, other related or unrelated people);
- whether they live in the same household as the person being cared for;
- the gender of the child; and
- the characteristics of the household (e.g., household structure, parents' employment status and education).

Documenting the characteristics of carers

Logistic regression models are used to estimate the association between carer status and characteristics of the child and their primary household. The explanatory variables used in the multivariate analyses capture a range of characteristics including age, birth order, Indigenous status, whether the child speaks a language other than English, household structure, mother's country of birth, whether adults (over 15) other than the study child's parents live in the household,⁸ whether there is a household member with a disability or long-term illness, whether there is a household member aged 65 or older, if the parent cares for a non-household member, mother's education and remoteness of residence.

Estimating the impact of caring on academic achievement

We also examine the relationship between carer status and NAPLAN Reading and Numeracy scores in Year 9. The NAPLAN tests broadly reflect aspects of literacy and numeracy common to the curriculum in each state or territory, with test formats and questions chosen so that they are familiar to teachers and students across Australia (Australian Curriculum Assessment and Reporting Authority [ACARA], 2008). Linear regression models (OLS) are used to estimate the strength of the relationship between carer status and NAPLAN outcomes before and after controlling for background characteristics such as birth order, household structure and region of residence. To account for the association between carer status and household characteristics such as mother's education and parent's employment status, these covariates are added to the model in stages.

5.3 How many 14–15 year olds spend time caring for another person?

Almost 40% of 14–15 year olds said that they spent some time caring for a person who is elderly or has a health condition or disability. Twenty-two per cent provided help with core activities and a further 12% said they provided other types of assistance, but no help with core activities (Table 5.2).

Table 5.2: Adolescents who reported caring for someone with a long-term health condition, disability or who is elderly

Carer status	<i>n</i>	% (weighted)
Does not provide care	2,101	61.4
Helps someone with core activities	733	22.4
Provides assistance but not with core activities	375	11.8
Provides care for 4 or more people (no further details)	132	4.3
Total	3,341	100.0

Note: Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Wave 6

Among 14–15 year olds who provided care, most were assisting someone who did not live with them. While around 18% of 14–15 year olds helped someone who did not live with them with core activities and 10% provided assistance with non-core activities for someone who did not live with

⁸ Other adults in the household may be older siblings of the study child.

them, only 6% of 14–15 year olds helped someone who lived with them with core activities, and 3% helped someone who lived with them with non-core activities.

While the percentage of girls who help someone with core activities was slightly higher than that for boys, the gender difference was not statistically significant. However, the percentage of boys who helped with non-core activities was significantly higher than that for girls (15% compared to 10%). This was mainly due to a higher percentage of boys who reported providing assistance with non-core activities for someone who does not live with them. It is also important to note that very few carers provide assistance only with core activities. That is, most carers who help with core activities also provide other types of help as well. The specific types of assistance that young carers provide are explored in more detail in section 6.4 of this chapter.

Almost 20% of 14–15 year olds reported caring for more than one person. Table 5.3 shows that, among those who cared for two or three people, over 70% helped someone with core activities, but this help was mainly for people who did not live with them. While there was no overall gender difference in the percentage of 14–15 year olds who helped someone with core activities, among those who cared for more than one person, the percentage of girls who provided assistance with core activities was significantly higher than that for boys; while boys who reported caring for two or three people were more likely than girls to be helping someone who does not live with them with non-core activities.

Table 5.3: Carer status of 14–15 year olds who care for 2 or 3 people, by gender of the study child, type of assistance and household membership of the person being cared for

Carer status	Male (%)	Female (%)	All (%)
Helps someone with core activities*	66.3	76.9	71.3
Helps someone who lives with them	16.1	22.7	19.2
Helps someone who does not live with them	58.4	64.8	61.4
Helps someone with other (non-core) activities*	41.3	28.5	35.2
Helps someone who lives with them	12.1	#7.8	10.0
Helps someone who does not live with them*	37.2	26.0	31.9

Notes: $n = 461$. Columns do not add to 100.0% as those who care for more than one person may be included up to three times.

Estimate not reliable (Cell count < 20). * Indicates the gender difference in proportions is significant at the 5.0% level.

Source: LSAC K cohort, Wave 6

Table 5.4: Primary care arrangement, by gender of the study child

Primary care arrangement	Male (%)	Female (%)	All (%)
Does not provide care	60.2	62.8	61.4
Helps someone with core activities	21.3	23.5	22.4
Helps someone who lives with them	4.9	6.5	5.6
Helps someone who does not live with them	16.5	17.1	16.8
Helps someone with other (non-core) activities	13.9	9.7	11.8
Helps someone who lives with them	2.8	2.9	2.9
Helps someone who does not live with them	11.0	6.8	9.0
Cares for 4 or more people (no details about residence or type of care)	4.7	4.0	4.3
Total	100.0	100.0	100.0

Notes: $n = 3,341$. Mutually exclusive categories with priority given to help with core activities, then help for household members for those who care for more than one person. Gender difference in proportions is significant at the 5.0% level.

Source: LSAC K cohort, Wave 6

When those who care for more than one person are allocated to a carer status category according to their primary care arrangement (i.e., help with core activities is given priority, then help for someone who lives with the carer is given priority over help for someone living elsewhere), Table 5.4 shows that the percentage of 14–15 year olds providing each type of care remains quite similar to that in Table 5.3, where those who cared for more than one person were included more than once. The most common care arrangement is still helping someone who does not live with them with core activities (17%), followed by helping someone who does not live with them with non-core activities only (9%).

For many of those who cared for more than one person, classifying carer status in this way made no difference to their carer status. Among those who reported caring for two people, 71% provided the same type of care for both people (29% provided help with non-core activities for two people who did not live with them, 32% provided help with core activities for two people who did not live with them, 5.5% helped two household members with core activities and 4% helped two household members with non-core activities only). Of those who reported caring for three people, 46% provided the same type of care for all three people (19% provided help with non-core activities for three people who did not live with them, 23% provided help with core activities for three people who did not live with them, 1.8% provided help with core activities for three people who lived with them and 2.6% helped three household members with non-core activities only). While almost 40% of 14–15 year olds reported providing some type of care for someone who is either elderly or has a disability, most were providing assistance for someone who did not live with them—only 6% were helping someone who lived with them with core activities.

5.4 Who are young carers caring for and what type of assistance do they provide?

Prior research has found that the types of caring tasks that young carers undertake are often related to the complexity of family structure, the care recipient's illness or disability and whether the young person was a primary carer or the oldest sibling in the household (e.g., Cass et al., 2011). In this section, we describe the type of care provided according to the relationship with the person being cared for, and whether the person receiving assistance lives in the same household as the study child. Because most of those who provide assistance with core activities also help with non-core activities, the analysis in this section looks separately at the specific types of help provided by those who help someone who lives with them; and then the types of help provided to people who do not live with the study child.

Caring for someone in the same household

Approximately 9% of 14–15 year olds said they cared for at least one person who lived with them. This included 6% who helped with core activities and 3% who did not.⁹ Figure 5.1 (page 92) shows that of those who cared for someone who lived with them, almost half (46%) cared for a parent or step-parent, just over one third provided care for a sibling and just over 30% cared for a grandparent. Among those who cared for a sibling, almost 70% helped with core activities (personal care, moving around and communicating). Of those who cared for a grandparent, 56% helped with core activities; while for those who cared for a parent or step-parent, 49% helped with core activities.

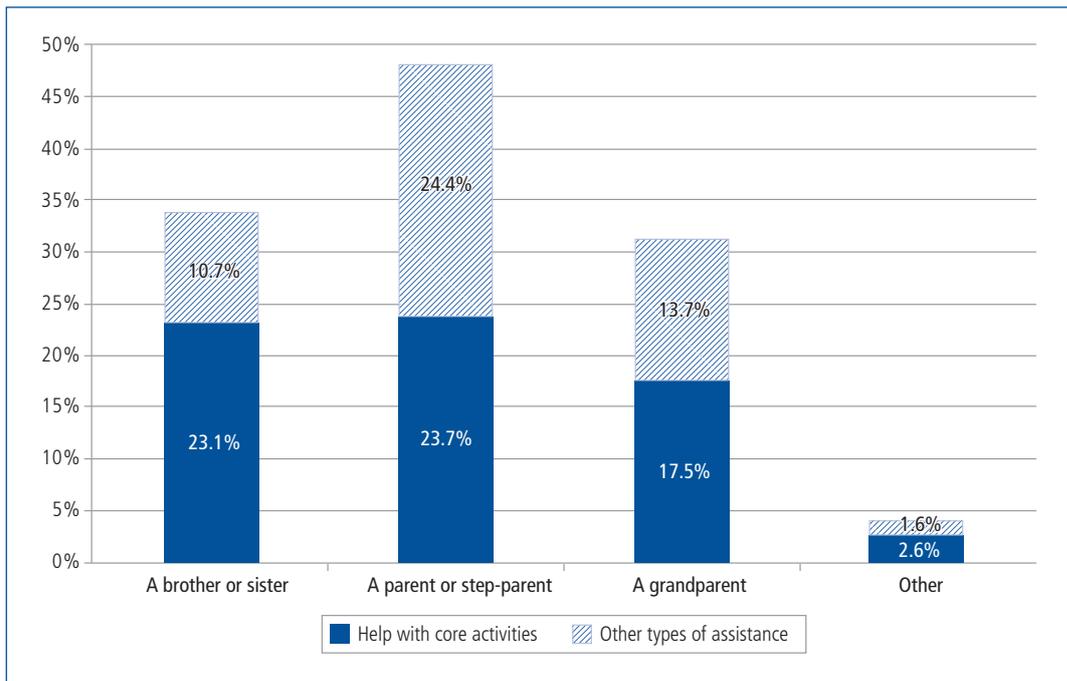
There was no significant gender difference in the percentage of males and females who provided assistance to family members or the percentage who helped with core activities. This is presumably because the likelihood of providing care depends mainly on whether the study child has a household member who requires this type of assistance. It may also depend on whether there are older siblings and another parent living in the household.

Table 5.5 (page 92) shows that the most common types of help that young carers provided to people who live with them was keeping them company, followed by help with housework, shopping and errands, help with communicating and help with preparation of meals. For most types of help, the percentage of young carers who provided each type of assistance did not differ significantly by gender. The only exceptions were help with meal preparation, which was more common among female carers than male carers (58% compared to 43%); and help with house repairs or garden care, which was more commonly provided by male carers (61% compared to 24%).

Compared to young carers who did not provide assistance with core activities, those who helped a household member with personal care, mobility or communication were more likely to also provide help with transport (31% compared to 9%);¹⁰ preparation of meals (58% compared to 39%); health care (28% compared to 6%) and keeping them company (91% compared to 73%).

⁹ This figure is likely to be an underestimate as we have no information about the type of care provided by those who reported caring for four or more people.

¹⁰ As 14–15 year olds are not able to drive, assistance with transport presumably involves assistance with taking public transport (e.g., school bus) or providing care to someone while travelling together in a vehicle (e.g., helping with seatbelts, or providing other types of assistance while travelling).



Notes: Sample is restricted to 14–15 year olds who reported caring for a household member. $n = 273$. “Other” includes other relatives, boarders, housemates and unrelated children living in the same household as the study child. No significant gender differences in the percentage of 14–15 year olds who provided care to siblings, parents, step-parents or grandparents.

Source: LSAC K cohort, Wave 6

Figure 5.1: Relationship to person being cared for in the same household

Table 5.5: Type of help provided to people in the same household, by gender

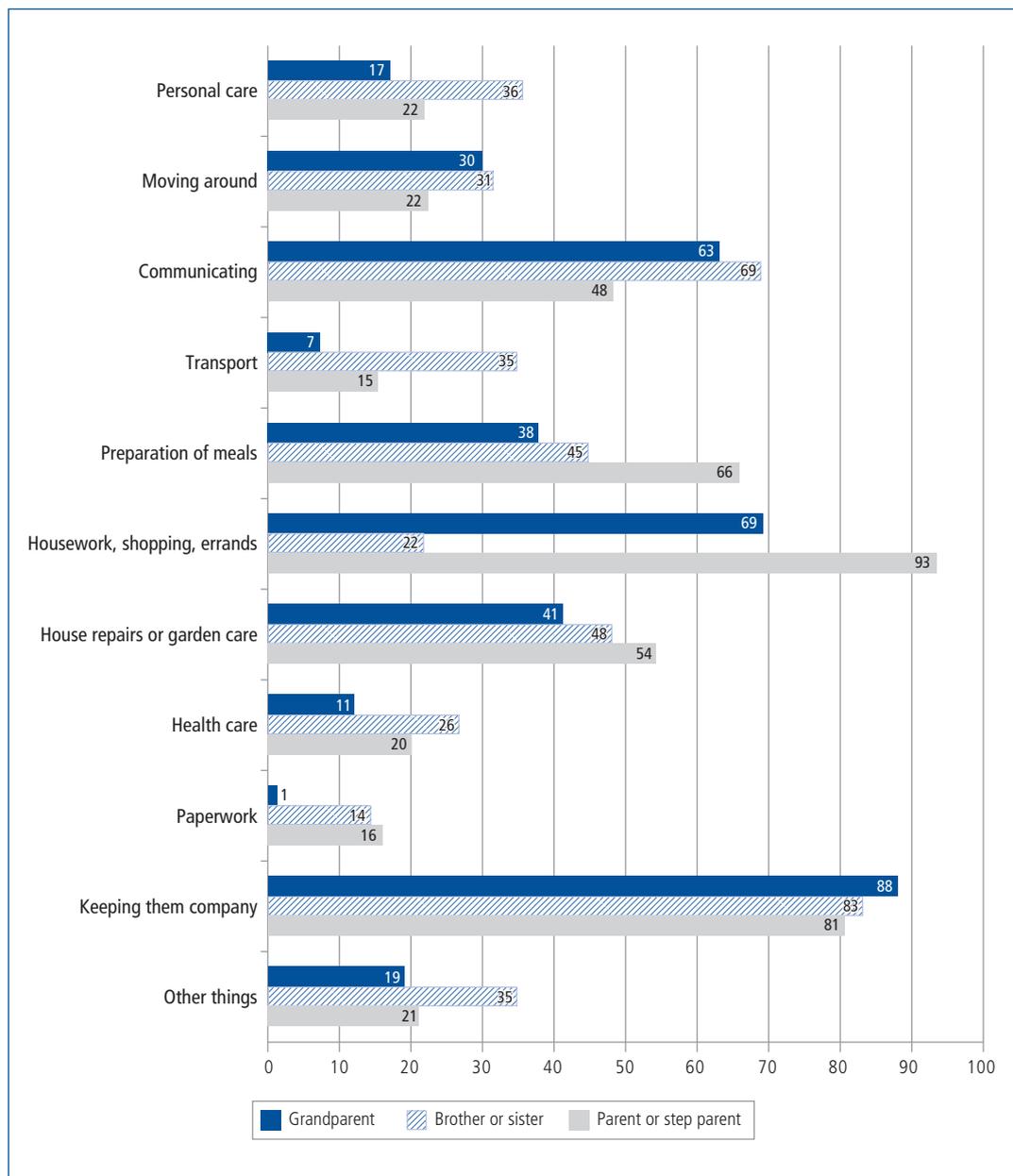
Type of help provided	Male (%)	Female (%)	All (%)
Core activities			
Personal care	20.5	25.2	23.0
Moving around	24.4	29.9	27.3
Communicating	57.3	58.7	58.1
Non-core activities			
Transport	23.6	21.4	22.4
Preparation of meals	42.6	58.2	50.8*
Housework, shopping, errands	73.1	73.7	73.4
House repairs or garden care	60.5	24.4	41.4*
Health care	#15.0	23.9	19.7
Paperwork	#15.4	#9.0	#12.0
Keeping them company	84.8	83.4	84.1
Other things	29.8	24.0	26.7
<i>n</i>	128	145	273

Notes: Sample is restricted to 14–15 year olds who reported caring for a household member. # Estimate unreliable (Cell count < 20). * Indicates the gender difference in proportions is significant at the 5.0% level.

Source: LSAC K cohort, Wave 6

Figure 5.2 (page 93) provides more detail about the type of help that adolescents provided to parents, siblings and grandparents who live with them. Assistance for a parent or step-parent most commonly involved help with meal preparation, housework, shopping and errands and house repairs or garden care, as well as keeping them company. Among those who cared for a sibling, the most common types of assistance were help with communicating and keeping them company. It was more common for 14–15 year olds to help a sibling with personal care, health care and transport than to help a parent or grandparent with those tasks. Among those who cared for a

resident grandparent, care most commonly involved help with housework shopping and errands and keeping them company. Relatively few 14–15 year olds helped a grandparent with personal care, transport, health care or paperwork.



Notes: Sample is restricted to 14–15 year olds who reported caring for a resident parent, step-parent, sibling or grandparent. *n* = 273.

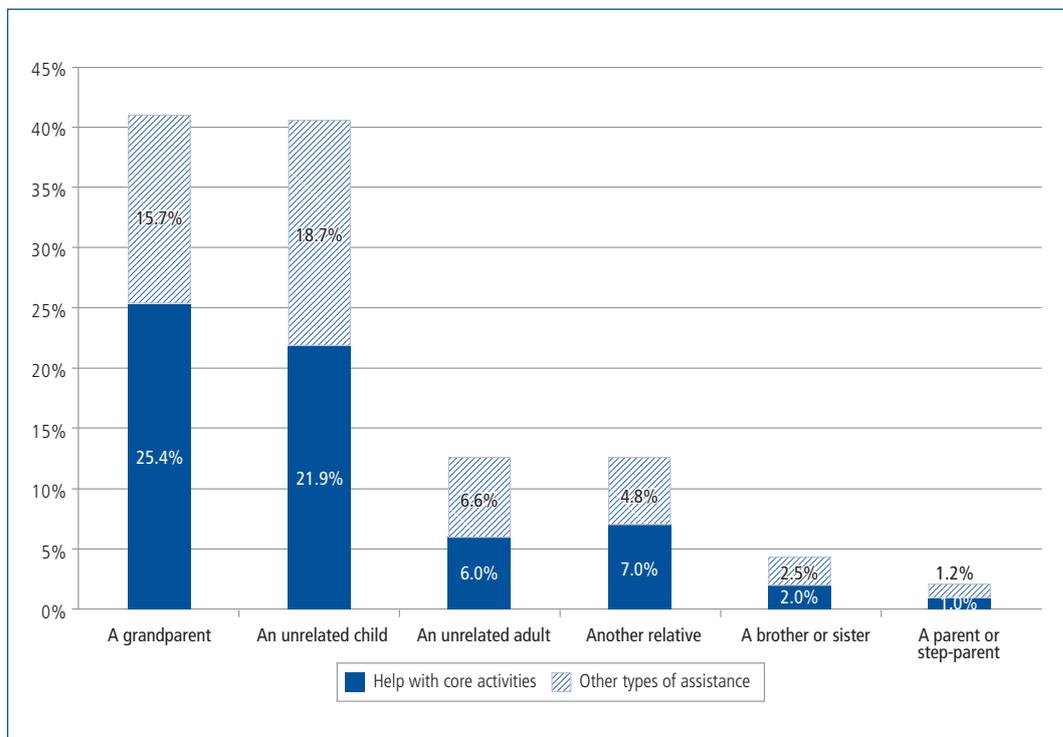
Source: LSAC K cohort, Wave 6

Figure 5.2: Type of assistance provided, by relationship to person being cared for (in the same household)

In summary, of the estimated 9% of 14–15 year olds who cared for a household member, almost half cared for a parent or step-parent, just over one third provided care for a sibling and just over 30% cared for a grandparent. There were very few gender differences in the types of help provided. However, a higher percentage of girls helped with meal preparation; and a higher percentage of boys helped with house repairs or gardening. The type of help provided to a household member depended to some extent on the relationship between the carer and the person receiving assistance. For example, compared to siblings and grandparents, parents more commonly received help with housework and meal preparation; while siblings were more likely than parents or grandparents to receive help with personal care.

Caring for someone not living in the same household

Almost 30% of 14–15 year olds said they cared for at least one person who did not live with them.¹¹ Figure 5.3 shows that young people who cared for someone who did not live with them most commonly provided assistance to either a grandparent or an unrelated child.



Notes: Sample is restricted to 14–15 year olds who reported caring for someone who does not live with them. $n = 927$.
Source: LSAC K cohort, Wave 6

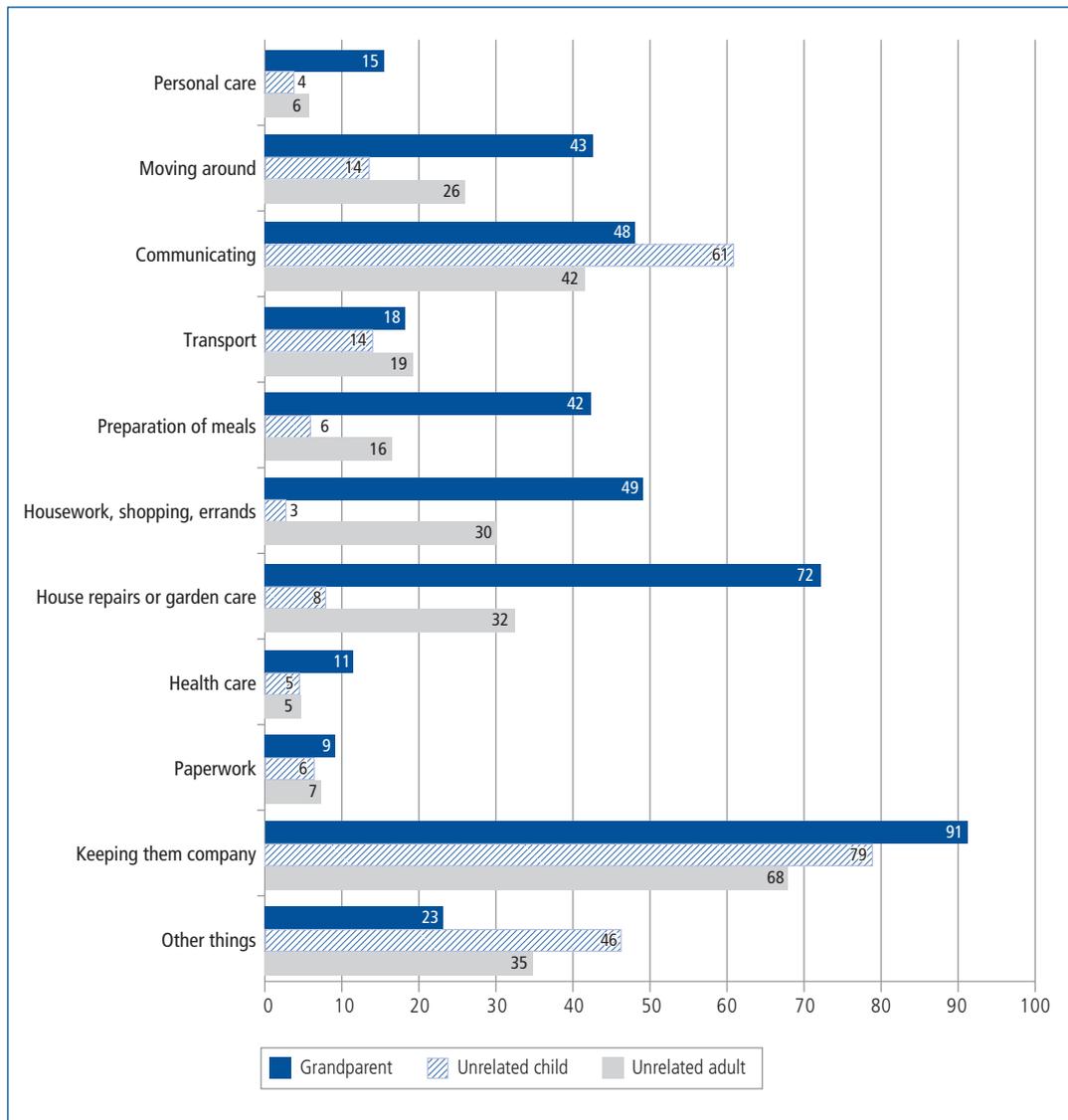
Figure 5.3: Relationship to person being cared for (not in the same household)

Table 5.6: Type of help provided to people not in the same household, by gender

Type of help provided	Male (%)	Female (%)	All (%)
Core activities			
Personal care	9.4	13.5	11.2
Moving around	26.1	35.5	30.4*
Communicating	50.9	58.7	54.4*
Non-core activities			
Transport	17.4	20.3	18.7
Preparation of meals	18.7	32.7	25.0*
Housework, shopping, errands	38.5	44.4	41.2
House repairs or garden care	29.0	25.5	27.4
Health care	6.9	10.9	8.7*
Paperwork	7.3	9.9	8.5
Keeping them company	78.2	88.8	83.0*
Other things	39.6	31.6	36.0*
<i>n</i>	506	421	927

Notes: Sample is restricted to 14–15 year olds who reported caring for someone who does not live with them. # Estimate unreliable (cell count < 20). * Indicates the gender difference in proportions is significant at the 5.0% level.
Source: LSAC K cohort, Wave 6

¹¹ This figure is likely to be an underestimate as we have no information about the type of care provided by those who reported caring for four or more people.



Notes: Sample is restricted to 14–15 year olds who reported caring for a non-resident grandparent, unrelated adult or unrelated child. *n* = 881.
 Source: LSAC K cohort, Wave 6

Figure 5.4: Type of assistance, by relationship to person being cared for (study child cares for a grandparent, unrelated child or unrelated adult who does not live with them)

Compared to boys who helped someone who did not live with them, a significantly higher percentage of girls helped someone who did not live with them with moving around, meal preparation, paperwork and keeping them company.

Compared to young carers who did not provide assistance with core activities, those who helped a non-household member with personal care, mobility or communication were more likely to also provide help with transport (23% compared to 12%), preparation of meals (29% compared to 18%), health care (11% compared to 4%), paperwork (10% compared to 5%) and keeping them company (91% compared to 68%).

Table 5.6 (page 94) shows that the most common types of help that young carers provided to people who did not live with them was keeping them company, followed by help with housework, shopping and errands, help with communicating and help with preparation of meals.

Compared to boys who helped someone who did not live with them, a significantly higher percentage of girls helped someone who did not live with them with moving around, meal preparation, paperwork and keeping them company.

Compared to young carers who did not provide assistance with core activities, those who helped a non-household member with personal care, mobility or communication were more likely to also provide help with transport (23% compared to 12%); preparation of meals (29% compared to 18%); health care (11% compared to 4%); paperwork (10% compared to 5%) and keeping them company (91% compared to 68%).

Figure 5.4 (page 95) provides more detail about the type of help that adolescents provided grandparents, unrelated children and unrelated adults who do not live with them. Assistance for a non-resident grandparent most commonly involved help with meal preparation, housework, shopping and errands, house repairs or garden care, communicating, moving around as well as keeping them company.

Among those who cared for an unrelated adult who did not live with them, the most common type of care was keeping them company. Over 40% helped with communication, and around one third provided assistance with house repairs, garden care, housework, shopping and errands, but less than 20% provided help with meal preparation or transport. One possible explanation for this difference is that unrelated adults may be living in residential care facilities where this help is provided. Alternatively, study children may be helping unrelated adults (e.g., elderly neighbours) that do not need this type of assistance.

Of the 28.5% of 14–15 year olds who cared for someone who did not live with them, just over 40% cared for an unrelated child.¹² This assistance was mostly provided for children who attended the same school as the study child and commonly involved keeping them company, help with communicating and “other things”. Details provided in response to the “other things” category commonly involved protecting a child from bullies, helping with schoolwork and helping them with sports, hobbies or other recreational activities.

Summary

Among 14–15 year olds who cared for someone with a long-term health condition, disability or who is elderly, the majority were caring for someone who did not live with them. Only 6% of 14–15 year olds helped someone who lived with them with core activities (personal care, mobility or communication).

The specific types of care provided to household members varied depending on the relationship between the carer and the person receiving assistance. For example, compared to those who cared for a parent or grandparent, a higher percentage of those who cared for a sibling helped with personal care and transport. On the other hand, those who provided assistance to a parent were more likely to help with meal preparation, housework, shopping and errands than those caring for a sibling or grandparent.

Almost 30% of 14–15 year olds reported caring for someone who did not live with them, including 18% who provided assistance with core activities. Most 14–15 year olds who cared for someone who did not live with them were caring for either a grandparent or an unrelated child. Again, the specific type of care varied depending on the care recipient. Those who were caring for a grandparent commonly provided help with house and garden care, shopping, errands, meal preparation and moving around; while those who cared for an unrelated child mainly helped a child who attended the same school with communication, keeping them company and “other things” such as schoolwork.

¹² This amounts to at least 11% of all 14–15 year olds (underestimated due to lack of details about those who cared for four or more people).

5.5 How much time do young carers spend providing assistance to others?

Young carers were asked about how often they provide care for someone else; and the amount of time they spend providing care on occasions that they provide care.¹³ Table 5.7 shows that just over 20% of 14–15 year olds who provided care for another person did so every day (9% spent two or more hours per day); and an additional 37% provided assistance at least once a week.

Table 5.7: Amount of time spent caring, by carer status

Amount of time spent caring	Help with core activities			Help with other (non-core) activities				
	Someone who lives with study child (%)	Someone who does not live with study child (%)	All who help with core activities (%)	Someone who lives with study child (%)	Someone who does not live with study child (%)	All who help with non-core activities only (%)	Cares for 4 or more people (%)	All (%)
Daily	51.1	16.3	23.1	39.1	11.8	18.2	15.6	20.6
< 2 hours	27.2	7.9	11.6	#23.0	7.3	11.4	#7.3	11.2
2+ hours	23.8	8.4	11.5	#16.1	#4.5	6.9	#8.3	9.4
Weekly	31.3	37.8	36.0	39.6	36.8	37.7	45.0	37.4
< 2 hours	13.0	18.5	17.4	#20.7	18.9	19.8	26.0	19.3
2+ hours	18.3	19.3	18.6	#18.9	17.9	18.0	19.0	18.2
Fortnightly	#11.1	15.3	14.5	#8.7	14.3	12.8	#9.3	13.2
Monthly	#2.5	17.1	14.4	#9.2	17.2	14.4	17.0	14.8
Less than once a month	#4.0	13.6	11.9	#3.5	19.9	16.9	#13.1	14.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>n</i>	168	605	733	102	342	410	132	1,240

Notes: *n* = 1,240. Columns are not mutually exclusive due to some 14–15 year olds caring for more than one person. # Estimate not reliable (cell count < 20). Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Wave 6

Table 5.8: Amount of time spent caring, by number of people cared for (%)

Amount of time spent caring	Number of people cared for				
	1	2	3	4 or more	All
Daily	18.8	20.7	31.6	15.6	20.6
< 2 hours	11.2	11.4	#13.8	#7.3	11.2
2+ hours	7.6	9.3	17.8	#8.3	9.4
Weekly	36.1	35.6	39.6	45.0	37.4
< 2 hours	18.9	17.6	18.1	26.0	19.3
2+ hours	17.2	18.0	21.6	19.0	18.2
Fortnightly	14.1	14.2	#11.3	#9.3	13.2
Monthly	14.8	15.2	12.0	17.0	14.8
Less than once a month	16.3	14.4	#5.5	#13.1	14.0
Total	100.0	100.0	100.0	100.0	100.0
<i>n</i>	647	305	156	132	1,240

Note: # Estimate not reliable (cell count < 20). Gender differences in the amount of time spent caring, by number of people cared for, are not statistically significant at the 5.0% level.

Source: LSAC K cohort, Wave 6

¹³ For those who provide care for more than one person, it is not possible to determine how much time they spend caring for each individual, only the overall amount of time they spend caring.

Among those who helped someone in the same household with core activities, more than half did so daily, and a further 31% provided assistance at least once a week. However, among those who provided core assistance only for non-household members, only 16% did so daily, while 38% provided assistance at least once a week.

Table 5.8 (page 97) shows that among those who care for more than one person, the amount of time spent doing caring activities is not necessarily more than that of those who only care for one person. While the percentage who provided care daily increased from 19% for those who cared for one person, to 32% for those who cared for three people, only 16% of those who reported caring for four or more people spent time caring for someone every day. Still, the percentage of 14–15 year olds who spent more than two hours per day doing caring activities increased considerably, from 8% of those who cared for one person to 18% of those who cared for three people.

The amount of time that 14–15 year olds spend doing caring activities depends strongly on whether or not they are caring for someone who lives with them, and to a lesser extent on the relationship with the care recipient. In Table 5.9, the amount of time spent caring is presented for the six most common carer–recipient relationships.

Table 5.9: Amount of time spent caring, by relationship to person being cared for (%)

Amount of time spent caring	Parent or stepparent who lives with SC	Sibling who lives with SC	Grandparent who lives with SC	Grandparent who does not with SC	Unrelated child who does not with SC	Unrelated adult who does not with SC
Daily	50.7	44.5	42.5	7.0	23.8	#8.4
< 2 hours	28.4	22.6	#21.8	#3.9	11.8	#7.7
2+ hours	22.3	21.9	#20.7	#3.1	12.0	#0.8
Weekly	36.8	31.3	33.3	35.5	44.6	36.8
< 2 hours	#13.3	13.6	#19.5	13.1	27.0	19.6
2+ hours	23.5	17.6	#13.9	22.4	17.6	17.1
Fortnightly	#8.7	#10.9	#14.2	19.7	9.7	#12.3
Monthly	#3.3	#4.5	#6.0	23.1	8.6	22.2
Less than monthly	#0.6	#8.8	#4.1	14.7	13.3	20.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
<i>n</i>	122	97	68	396	379	121

Notes: SC = study child. Columns are not mutually exclusive due to some 14–15 year olds caring for more than one person.
Estimate not reliable (cell count < 20). Gender differences in the amount of time spent caring, by relationship to care recipient, are not statistically significant at the 5.0% level.

Source: LSAC K cohort, Wave 6

More than half of those who cared for a resident parent or step-parent did so daily, with 22% spending more than two hours per day doing these activities. Over 40% of those who cared for a sibling or grandparent who lives with them spent some time every day doing caring activities.

On the other hand, less than one quarter of those who cared for an unrelated child who did not live in their household said they did so every day. Given that this arrangement mainly involves helping a child who attends the same school, it is not surprising that almost half of the 14–15 year olds who care for an unrelated child reported doing so weekly.

Only 7% of 14–15 year olds who cared for a grandparent who did not live with them did so daily, with just over one third of those who care for a non-resident grandparent doing so weekly, and almost 40% providing this type of care monthly or less often.

5.6 Characteristics of young carers

In this section, we look at the characteristics of young carers, according to the type of care they provide. In Table 5.10, characteristics of the study child such as gender, birth order and whether they speak a language other than English at home are compared first, according to whether or not they care for someone who is elderly or has a disability or long-term illness and, then, for those who are carers, according to their primary care arrangement.

Table 5.10: Characteristics of the child, by primary care arrangement (%)

	Any care for someone with a disability or is elderly		Help with core activities		Help with non-core activities		Cares for 4 or more people	Total
	No	Yes	Someone who lives with SC	Someone who does not live with SC	Someone who lives with SC	Someone who does not live with SC		
Gender						***		
Male	60.2	39.8	4.9	16.5	2.8	11.0	4.7	100.0
Female	62.8	37.2	6.5	17.1	2.9	6.8	4.0	100.0
Birth Order (At age 14–15) ^a		**			**		*	
Eldest child	62.7	37.3	5.8	15.6	2.3	10.2	3.6	100.0
Middle child/Twin	56.0	44.0	6.4	18.8	5.1	7.3	6.5	100.0
Youngest child	64.7	35.3	5.3	16.2	2.1	7.6	4.1	100.0
Only child	57.9	42.1	#4.9	18.9	#3.1	10.9	#4.3	100.0
Aboriginal or Torres Strait Islander								
No	61.6	38.4	16.8	2.8	9.0	4.3	5.5	100.0
Yes	54.4	45.6	#15.5	#6.6	#9.0	#5.6	#9.0	100.0
Speaks a language other than English at home				*	***			
No	61.6	38.4	16.8	2.8	9.0	4.3	5.5	100.0
Yes	54.4	45.6	#5.4	12.3	6.5	10.9	#3.7	100.0
Mother's country of birth					*			
Australia	60.8	39.2	5.6	17.4	2.8	8.8	4.6	100.0
Mainly English speaking	68.9	31.1	#2.9	18.6	#0.6	#7.6	#2.2	100.0
Non-English speaking	63.3	36.7	6.0	13.5	4.0	9.7	#3.5	100.0
Father's country of birth				*				
Australia	61.4	38.6	4.7	18.3	2.4	9.2	4.1	100.0
Mainly English speaking	65.0	35.0	8.3	15.4	2.7	6.3	2.3	100.0
Non-English speaking	63.4	36.6	4.1	13.3	4.7	9.9	4.5	100.0
Total	61.4	38.6	5.6	16.8	2.9	9.0	4.3	100.0

Notes: SC = study child. # Estimate not reliable, cell count less than 20. ^a Birth order is based only on resident siblings. Number of observations ranges from 2,825 for father's country of birth to 3,341 for age group, gender and birth order and Indigenous status. Statistical significance is tested against the base category ("Not a carer") *** $p < .001$; ** $p < .01$ and * $p < .05$.

Source: LSAC K cohort, Wave 6

Overall, there were few significant differences in the personal characteristics of 14–15 year olds who cared for someone who is either elderly or has a long-term health condition or disability. Only birth order was statistically significant, with 35% of those who were the youngest child in the family stating that they provide some type of care, compared to 37% of eldest children, 44% of middle children and 42% of those who were the only child. However, there were some differences in characteristics depending on the primary care arrangement:

- The percentage of 14–15 year olds who helped someone who did not live with them with core activities was significantly higher among those who speak only English at home (17% compared to 12% for those who spoke another language at home); and for those whose father was born in Australia (18% compared to 13% for those whose father was born in a non-English speaking country).
- Helping someone who lives in the same household with non-core activities was more common among those who were the middle child and those who spoke a language other than English at home.
- Helping someone who does not live with them with non-core activities was more common among males (11% of males compared to 7% of females).
- Caring for four or more people was more common among those who were the middle child.

Turning now to the association between carer status and household characteristics, Table 5.11 (page 101) shows that the percentage of 14–15 year olds providing care for someone else is significantly higher in households where:

- there is someone with a long-term health condition or disability;
- there is someone aged 65 or older;
- the study child's parents provide care for someone outside the household;
- none of the parents (in the study child's primary household) are employed;
- the study child's mother's highest level of education is Year 12 or below;
- government payments are the main source of parental income; or
- the study child's primary household is in the lowest quartile of socio-economic position.

It is important to note that these associations are not causal—they may be the result of having someone in the household who requires care. For example, it may be the case that a parent has a health condition or disability that limits the amount of work they are able to do or prevents them from working at all. If a parent has a lifelong or ongoing health condition, this may also have restricted that parent's education opportunities. Further, if a parent takes time off work or stops working to care for another household member, this is likely to result in a reduction in household income and possibly a lower socio-economic status for the household.

There were also some significant differences in household characteristics of young carers according to their primary care arrangement. The percentage of 14–15 year olds who helped someone who lived with them with core activities was significantly higher among:

- those with a household member aged 65 or older (18% compared to 4%);
- those with a household member with a long-term health condition or disability (9% compared to 3%),
- those in single-parent households (10% compared to 5% to those in two-parent households);
- those in single-parent households where the parent is not employed (20% compared to 3.5% among those in households with two employed parents);
- those whose mother's highest level of education is Year 12 or lower (8% compared to 5% for those whose mother has a post-school qualification);
- those in the lowest quartile of socio-economic position (8% compared to 4% in the highest quartile); and
- those in households where the main source of parental income is government payments.

Table 5.11: Characteristics of the family, by primary care arrangement (%)

	Any care for someone with a disability or who is elderly		Help with core activities		Help with non-core activities		Cares for 4 or more people	All
	No	Yes	Someone who lives with SC	Someone who does not live with SC	Someone who lives with SC	Someone who does not live with SC		
Single-parent household			***				*	
No	62.5	37.6	4.7	17.1	2.8	9.1	3.9	100.0
Yes	57.6	42.4	9.6	15.4	2.8	8.4	6.3	100.0
Other adult living in the household				*				
No	63.2	36.9	4.3	16.1	2.8	10.0	3.7	100.0
Yes	60.9	39.1	6.2	17.0	2.9	8.5	4.6	100.0
Household member 65+		***	***	***	***			
No	63.1	36.9	4.1	17.2	2.2	9.1	4.3	100.0
Yes	47.6	52.5	18.2	13.6	8.1	8.1	4.4	100.0
Household member has a long-term health condition or disability		***	***		***	***	*	
No	66.2	33.8	3.2	17.3	1.6	8.0	3.8	100.0
Yes	54.6	45.4	9.2	16.0	4.7	10.4	5.2	100.0
Parent cares for someone outside the household		***		***				
No	63.0	37.0	5.6	15.3	2.8	8.9	4.4	100.0
Yes	51.9	48.1	5.7	25.7	#3.3	9.4	#3.9	100.0
Parents' employment status		**	***		***			
Single parent								
Employed	60.8	39.2	5.6	#16.7	2.3	7.9	6.7	100.0
Not employed	48.9	51.1	20.4	#11.6	#4.2	#9.6	#5.2	100.0
Two parents								
Both employed	63.8	36.2	3.5	18.1	2.2	8.5	3.9	100.0
One parent employed	59.9	40.1	7.1	14.3	#4.5	10.4	#3.9	100.0
Both not employed	46.5	53.5	#16.0	#11.3	#9.6	#13.1	#3.5	100.0
Mother's education		**	**		**			
Year 12 or below	56.5	43.5	8.2	17.7	4.3	8.5	4.7	100.0
Certificate or diploma	62.0	38.1	4.6	17.3	2.5	9.1	4.5	100.0
Degree	66.1	33.9	4.6	14.9	2.0	8.9	3.4	100.0
Socio-economic position		***	***			***	**	
Lowest quartile	54.1	45.9	8.0	16.4	#3.5	11.9	6.2	100.0
2nd quartile	60.3	39.7	4.8	18.8	3.5	8.2	4.4	100.0
3rd quartile	64.2	35.8	4.8	16.5	2.8	8.8	2.9	100.0
Highest quartile	67.7	32.3	3.8	16.0	#1.7	7.0	3.9	100.0

Table 5.11 continued on page 102.

	Any care for someone with a disability or who is elderly		Help with core activities		Help with non-core activities		Cares for 4 or more people	All
	No	Yes	Someone who lives with SC	Someone who does not live with SC	Someone who lives with SC	Someone who does not live with SC		
Government payments main source of parental income		***	***		***	*	*	
No	64.0	36.0	3.9	17.7	2.1	8.4	4.0	100.0
Yes	49.0	51.1	16.9	11.4	5.9	10.9	6.0	100.0
Remoteness of residence								
Major city	62.9	37.1	5.2	16.9	2.7	8.3	4.0	100.0
Inner regional	58.7	41.3	6.4	17.3	2.7	9.8	5.1	100.0
Outer regional, remote or very remote	58.8	41.2	6.5	15.1	3.9	10.7	4.9	100.0

Notes: SC = study child. # Estimate not reliable, cell count less than 20. Number of observations ranges from 2,890 government payments main source of parents' income to 3,339 for remoteness. Family type, parents' employment status and socio-economic position are based on parents in the primary household only. Statistical significance is tested against the base category ("Not a carer") *** $p < .001$; ** $p < .01$ and * $p < .05$.

Source: LSAC K cohort, Wave 6

The percentage of 14–15 year olds who helped someone who did not live with them with core activities was significantly higher among:

- those with a household member aged 65 or older (17% compared to 14%); and
- those whose parent(s) care for someone outside the household (26% compared to 15%).

The percentage of 14–15 year olds who helped someone who lived with them with non-core activities was significantly higher among:

- those with a household member aged 65 or older (8% compared to 2%);
- those with a household member with a long-term health condition or disability (5% compared to 2%);
- those whose mother's highest level of education is Year 12 or lower (4% compared to 2% for those whose mother has a degree); and
- those in households where the main source of parental income is government payments (6% compared to 2%).

Helping someone who did not live with them with non-core activities was significantly higher among:

- those with a household member with a long-term health condition or disability (5% compared to 2%);
- those in the lowest quartile of socio-economic position (12% compared to 7% for those in the highest quartile); and
- those in households where the main source of parental income is government payments (11% compared to 8%).

Those who reported caring for four or more people were more commonly in single-parent households, in households where someone has a disability or long-term illness, in households in the lowest quartile of socio-economic position and in households where the main source of parental income is government payments.

Logistic regressions: factors associated with carer status

In this section, we use logistic regressions to estimate the main factors associated with being a carer (providing any type of care for someone who is elderly or has a disability); and the factors associated with providing specific types of care (e.g., helping someone who lives with them with core activities). A range of socio-demographic characteristics was included in the models, based on the bivariate associations described in Tables 5.12 and 5.13 (page 106). The results, presented as odds ratios, indicate characteristics associated with an increased or decreased likelihood of being a carer, after accounting for other factors.

Estimates of the influence of child and household characteristics on the odds of being a carer (providing any type of care for a person who is elderly or has a disability) are presented in Table 5.12.¹⁴ The results indicate that the odds of providing (some type of) care are higher if:

- a household member has a long-term health condition or disability;
- a household member is aged 65 or older;
- a parent cares for someone not living in the main household.

For girls, but not for boys, there is a statistically significant association between the odds of being a carer and quartile of socio-economic position. Compared to girls whose household was in the lowest quartile, the odds of being a carer were significantly lower among those in households in the highest quartile. However, it is important to keep in mind that this result could be due to the poor health or caring responsibilities of the parents, which may limit their ability to work.

To compare the characteristics of those who provided help with core activities to those who helped only with non-core activities, and those who helped someone who lived with them compared to those who did not, logistic regressions were run comparing each care type (core assistance for a household member, core assistance for a non-household member, non-core assistance for a household member, non-core assistance for a non-household member, and care for four or more people) to the group who were not carers.¹⁵

Table 5.12: Odds of caring for a person with a disability or who is elderly

	Odds ratios	
	Male	Female
Household member with a disability (Reference = No)	1.4*	2.1***
Household member aged 65+ (Reference = No)	1.7**	1.6*
Other adult (apart from parents of study child) in household (Reference = No)	1.1	1.5*
Parent cares for someone not living in the household (Reference = No)	1.6**	1.7***
Socio-economic position (Reference = Lowest quartile)		
2nd quartile	0.8	0.9
3rd quartile	0.8	0.8
Highest quartile	0.7	0.6*
<i>n</i>	1,650	1,602

Notes: Logistic regression model estimating the probability of being a carer, including controls for age, birth order, Indigenous status, child speaks a language other than English, single-parent household, mother's country of birth, adults other than parents in the households, household member with a disability, household member aged 65 or older, parent cares for a non-household member, mother's education, remoteness of residence and quartiles of socio-economic position. Only statistically significant coefficients are presented. A Chow test rejects the hypothesis that the coefficients are equal in the male and female sub-samples. *** $p < .001$; ** $p < .01$ and * $p < .05$.

Source: LSAC K cohort, Wave 6

¹⁴ Odds ratios with values above 1 indicate a positive association, while those below 1 indicate a negative association. For example, after controlling for socio-demographic characteristics, the odds of being a carer are 1.7 times higher among 14–15 year olds who have a household member aged 65 or older, compared to those who do not.

¹⁵ A multinomial logistic model was run using six categories based on primary carer status. However, when likelihood ratio tests were applied, the results indicated that some categories (resident core and resident non-core; non-resident non-core and not a carer) should be combined. Therefore, logistic regressions were run separately comparing each care type to the sub-sample of 14–15 year olds who do not provide any type of care. Those who care for two or three people may be included in more than one of these sub-samples. To preserve space regression results are not presented.

The results indicate that for boys, after controlling for a range of socio-demographic characteristics:

- The odds of helping someone who lives with them with core activities are significantly higher if:
 - a household member has a disability (OR = 3.6);
 - a household member is aged 65 or older (OR = 6.6);
- and significantly lower if their mother has a certificate- or diploma-level qualification, compared to those whose mother's highest qualification was Year 12 or lower (OR = 0.5).
- The odds of helping someone who lives with them with non-core activities are significantly higher if:
 - the study child speaks a language other than English at home (OR = 4.7);
 - a household member has a disability (OR = 3.3);
 - they are the middle child, compared to those who were the eldest child (OR = 4.8);
 - a household member is aged 65 or older (OR = 4.1);
- and significantly lower if their mother had a certificate- or diploma-level qualification, compared to those whose mother's highest qualification was Year 12 or lower (OR = 0.5).
- The odds of helping someone who does not live with them with core activities are twice as high among those whose parents care for someone outside the household.
- The odds of helping someone who does not live with them with non-core activities are significantly higher if:
 - a parent cares for someone living elsewhere (OR = 1.5);
 - they live in inner regional Australia, compared to those who live in a major city (OR = 1.4);
 - and
- significantly lower if they are the youngest child, compared to the first born (OR = 0.6) and also if their household socio-economic position is in the top two quartiles, compared to those in the lowest quartile (OR = 0.6 for the 3rd quartile and 0.5 for the highest quartile).

For girls:

- The odds of helping someone who lives with them with core activities are significantly higher if:
 - a household member has a disability (OR = 4.9);
 - a household member is aged 65 or older (OR = 4.6).
- The odds of helping someone who lives with them with non-core activities are significantly higher if:
 - the study child speaks a language other than English at home (OR = 5.2);
 - they are the middle child, compared to the first born (OR = 2.9);
 - a household member has a disability (OR = 4.2);
 - a household member is aged 65 or older (OR = 4.0);
 - if their household socio-economic position is in the 2nd quartile, compared to those in the lowest quartile (OR = 2.2).
- and significantly lower if their mother has a certificate- or diploma-level qualification, compared to those whose mother has no post-school qualification (OR = 0.6).
- The odds of helping someone who does not live with them with core activities are significantly higher if:
 - there is an adult other than the study child's parents living with them (OR = 1.6);
 - a parent cares for someone living elsewhere (OR = 2.1).
- The odds of helping someone who does not live with them with non-core activities are significantly higher if:
 - the study child speaks a language other than English at home (OR = 1.7);
 - a parent cares for someone outside the household (OR = 1.6);
 - a household member has a disability (OR = 1.6);
 - their mother has a degree qualification, compared to those whose mother has no post-school qualification (OR = 1.8);
- and significantly lower if their household socio-economic position is in the top quartile, compared to those in the lowest quartile (OR = 0.4).

- For boys, the odds of caring for four or more people is significantly lower among those whose household socio-economic position is in the third quartile, compared to those in the lowest quartile (OR = 0.5); while for girls, the odds of caring for four or more people is significantly higher among those who have a household member with a disability (OR = 2.1). This result suggests that there may be a gender differences in the type of care provided by those who reported caring for four or more people, with girls more likely to be helping at least one household member with a disability, while boys more commonly provided assistance with non-core activities for several non-household members.

Overall, these results imply that for 14–15 year olds, the likelihood of providing care or assistance depends mainly upon whether there is a family member who requires this type of assistance. That is, those who live in a household in which someone is over the age of 65 or someone has a disability are more likely to care for someone who lives with them. Similarly, around one-quarter of 14–15 year olds who have a parent who cares for someone outside their household helped someone who does not live with them with core activities. Presumably, for many of these young carers, this is because they are accompanying a parent who is caring for a family member living elsewhere.

Our findings indicate that, compared to children who are the eldest child, children who are the middle child are more likely to provide assistance with non-core activities for a household member. This finding is inconsistent with other studies that have shown that it is more common for the eldest child in the family to provide informal care, particularly if the eldest child is female (e.g. McMahon & Luthar, 2007; Zukow-Goldring, 2001). However, there is some Australian evidence of middle children taking on caring responsibilities once the eldest child takes on paid employment or leaves home, or if the eldest child suddenly becomes ill or disabled (e.g. as a result of an accident).¹⁶

There are very few significant associations between child and household characteristics and the likelihood of providing non-core assistance for someone who does not live with the study child. Given that a large proportion of 14–15 year olds who provide this type of assistance are helping an unrelated child who attends the same school, the decision to provide this type of care is likely to depend mainly on the personality or temperament of the child and whether they have a friend or classmate who requires this type of assistance, rather than socio-demographic characteristics.

It is also interesting to note that there are some gender differences in the characteristics associated with caring for four or more people. In particular, for girls, but not for boys, the odds of caring for four or more people were higher if they had a household member with a disability. That is, among those who reported caring for more than four people, girls are more likely than boys to be caring for a household member with a disability or long-term illness. This suggests that among those 14–15 year olds who reported caring for more than one person, the intensity of caregiving is likely be higher for girls than for boys.¹⁷

5.7 The association between carer status and Year 9 NAPLAN Outcomes

There is little large-scale evidence on the impact of caring on educational outcomes in Australia and only limited research internationally; however, the evidence to date does suggest that being a young carer does limit young peoples' educational performance. Analyses of the LSYPE in England suggests that young carers' Year 9 examination results were substantially below their peers,

¹⁶ Based on the responses of 68 young carers aged between 11 and 25 years who participated in focus groups in Sydney, Adelaide and Canberra, Cass et al. (2009) identified four main pathways leading to the onset of caring responsibilities. Some young carers believed themselves to have been born into caring (e.g., they had older siblings with disabilities, or were born to parents with a disability or illness, or had younger siblings close in age for whom they assumed a caring role at a young age); some assumed greater caring responsibilities as they grew older (e.g., they had older siblings who undertook a great deal of caring responsibilities, and as they themselves grew older and their older siblings took on paid employment or left home, they also started to contribute); others experienced a sudden onset of caring responsibilities due to a diagnosis or illness or a change in family circumstances (e.g., due to an accident); and others made an active choice to provide care (e.g., they took up their role as carer because they felt that they could provide better care than someone else, or that it was the responsibility of a family member to provide care, or they felt an emotional obligation).

¹⁷ The percentage of girls who cared for 2–3 people and helped with core activities at home was higher for girls than for boys, with boys more likely to help someone who does not live with them with non-core activities.

although this analysis did not take into account any differences in the socio-economic or household circumstances between young carers and non-carers (The Children's Society, 2013). Evidence from 10–11 year olds in Northern Ireland also suggested young carers had poorer educational outcomes than their peers (Lloyd, 2013). For example, fewer young carers sat the secondary school transfer test than their peers (56% compared to 67%), a prerequisite for the more academic grammar school.¹⁸ Further, those young carers who did take the transfer test did not perform as well as their peers. Moreover, fewer young carers said they would like to go on to university than non-carers (Lloyd, 2013).

For 14–15 year olds in LSAC, there are substantial differences in average Year 9 reading and numeracy scores according to carer status. Compared to boys who do not provide care or assistance for another person, average reading and numeracy scores are 18 and 17 points lower, respectively, among boys who provide some type of care for someone else. For girls, the differences are much larger. Compared to girls who are not carers, average reading and numeracy scores are 31 and 24 points lower, respectively, among those who care for someone who is elderly or has a disability (see Table 5.13).

These differences in NAPLAN scores are substantial. One way to think about the magnitude of these differences is that the NAPLAN score required to meet the national minimum standard (or any other bandwidth cut-off point) is 52 points higher for Year 9, compared to Year 7. Therefore, 26 NAPLAN points can be considered to be the equivalent of one year of schooling at the Year 9 level (Warren & Haisken deNew, 2013). Based on this assumption, the differences in Year 9 NAPLAN, depending on carer status at age 14–15 range from 0.7 years of schooling at the Year 9 level for numeracy for boys to 1.2 years of schooling for reading for girls.¹⁹

Table 5.13: NAPLAN scores by carer status and gender (means)

Carer status	Boys		Girls	
	Reading	Numeracy	Reading	Numeracy
Does not provide care	595.9	619.1	622.6	610.3
Cares for someone who is elderly or has a disability	577.8***	601.8***	591.3***	586.5***
Helps with core activities	579.9*	603.6	596.6***	587.9***
Helps with non-core activities only	574.1**	602.7	592.0***	593.5**
Cares for someone who lives with them	567.7***	596.2**	589.9***	579.6***
Cares for non-household members only	580.8*	605.5*	597.5***	593.3***
Helps a household member with core activities	558.0**	581.1**	585.8**	572.8***
Helps a non-household member with core activities	581.9*	606.0	597.6***	589.2***
Helps a household member with non-core activities only	574.5*	608.4	598.1*	590.6
Helps a non-household member with non-core activities only	568.7**	597.8*	592.2***	595.0*
Cares for 4 or more people	579.7	590.4*	545.7***	552.6***
Total	587.3	611.3	610.4	600.9
<i>n</i>	1,030	1,020	1,019	1,021

Notes: Statistical significance is tested against the base category ("Does not provide care"), *** $p < .001$; ** $p < .01$ and * $p < .05$. For boys and girls, differences in average reading and numeracy scores of those who provide assistance with core activities and those who only provide help with non-core activities only are not statistically significant. Further, differences in average reading and numeracy scores of those who provide assistance for someone who lives with them, and those who provide help only for those who do not live with them are not statistically significant. These groupings are not mutually exclusive, i.e. someone who helps a household member with core activities may also help someone who does not live with them with non-core activities.

Source: LSAC K cohort, Wave 6. Sample restricted to 14–15 year olds who completed their Year 9 NAPLAN tests in 2014.

¹⁸ Most of Northern Ireland (NI) has a dual grammar/secondary school system, and the transfer test (taken at age 11) is used to decide which children are eligible to go to Grammar schools. While taking the test is not mandatory, Grammar schools generally provide a higher academic standard of education, compared to secondary schools (Lloyd, 2013).

¹⁹ Estimates in terms of years of schooling would be considerably higher using the methodology employed by the Grattan Institute (Goss & Sonnemann, 2016), who estimate that for Reading, the NAPLAN scores equivalent to the year 8 and 9 levels are 566 and 583 points respectively and for Numeracy, the NAPLAN scores equivalent to the year 8 and 9 levels are 563 and 585 points respectively. Therefore, using this method, one year of schooling at the year 8–9 level can be considered to be equivalent to approximately 17 NAPLAN points for Reading and approximately 22 NAPLAN points for Numeracy, compared to 26 points for both Reading and Numeracy using the method proposed by Warren and Haisken deNew (2013).

For boys and girls, average reading and numeracy scores among those who help at least one person with core activities are not significantly different from the average scores of those who provide assistance with non-core activities only. Furthermore, differences in the average reading and numeracy scores of boys and girls who help someone who lives with them, compared to the scores of those who only help people who do not live with them, are not statistically significant. However, Table 5.13 (page 106) shows that for boys, average reading and numeracy scores are lowest among those who provide assistance with core activities for someone who lives with them. Compared to boys who are not carers, average reading and numeracy scores of those who help a household member with core activities are 38 points lower. These differences amount to 1.5 years of schooling at the Year 8–9 level. For girls, average reading and numeracy scores are also lower among those who help someone who lives with them with core activities, compared to those who provide other types of care (for up to three people); but NAPLAN scores are lowest among girls who reported caring for four or more people. Compared to girls who did not provide assistance for someone who was elderly or had a disability or long-term illness, average NAPLAN scores for girls who reported caring for four or more people were 77 points (three years of schooling) lower for reading and 58 points (2.2 years of schooling) lower for numeracy.²⁰

Looking at differences in NAPLAN scores according to the primary care arrangement (Table 5.14) confirms that, compared to those who are not carers, boys who help someone who lives with them with core activities have significantly lower scores for reading and numeracy, as do those who only provide assistance with non-core activities for non-household members. For boys, average scores for numeracy, but not for reading, are significantly lower among those who reported caring for four or more people. For girls, average reading and numeracy scores are significantly lower among those who provide care for someone else, regardless of the type of care provided.²¹

Table 5.14: NAPLAN scores by primary care arrangement and gender (means)

Primary care arrangement	Boys		Girls	
	Reading	Numeracy	Reading	Numeracy
Does not provide care	595.9	619.1	622.6	610.3
Someone who lives with them—core activities	558.0^{***}	581.1^{***}	585.8^{**}	572.8^{***}
Someone who does not live with them—core activities	585.6	609.4	600.3^{**}	593.0^{**}
Someone who lives with them—non-core activities only	579.1	613.2	598.1[*]	590.6
Someone who does not live with them—non-core activities only	572.3^{**}	598.9[*]	589.3^{***}	594.8[*]
Cares for four or more people	579.7	590.4[*]	545.7^{***}	552.6^{***}
Total	587.3	611.3	610.4	600.9
<i>n</i>	1,030	1,020	1,019	1,021

Note: Statistical significance is tested against the base category ("Does not provide care"), *** $p < .001$; ** $p < .01$ and * $p < .05$.

Source: LSAC K cohort, Wave 6. Sample restricted to 14–15 year olds who completed their Year 9 NAPLAN tests in 2014.

For girls, it appears that the number of people being cared for has a stronger negative association with NAPLAN outcomes than whether they help with core activities or whether they help someone who lives with them. Table 5.15 (page 108) shows that average reading and numeracy scores for girls decrease substantially with the number of people they care for. However, for boys, while average reading and numeracy scores are lowest for those who care for three people, there is no clear relationship between average NAPLAN scores and the number of people they care for.

The amount of time spent caring is also important, with average reading and numeracy scores lowest among those who care for someone daily (Table 5.16, page 108), with differences ranging from 25 points (almost one year of schooling) for numeracy for girls to 37 points (1.4 years of schooling) for numeracy for boys. For reading, but not for numeracy, average scores were significantly lower

²⁰ These results should be interpreted with caution as there are only 29 observations for girls who reported caring for four or more people.

²¹ The only exception is for Numeracy scores for girls who helped someone who lives with them with non-core activities. The lack of statistical significance is likely to be due to the small number of observations (27) for this group.

among boys and girls who spent two or more hours per day providing assistance—compared to those who were not carers, average reading scores were 50 points (1.9 years of schooling) lower for boys and 42 points (1.6 years of schooling) lower for girls.

Table 5.15: NAPLAN scores, by number of people cared for and gender (means)

	Boys		Girls	
	Reading	Numeracy	Reading	Numeracy
Does not provide care	595.9	619.1	622.6	610.3
Cares for 1 person	584.9	607.2	597.9***	592.6**
Cares for 2 people	578.0	607.5**	598.8***	592.3**
Cares for 3 people	554.9***	585.5*	573.6***	567.6**
Cares for 4 or more people	579.7	590.4*	545.7***	552.6***
Total	587.3	611.3	610.4	600.9
<i>n</i>	1,030	1,020	1,019	1,021

Note: Statistical significance is tested against the base category (“Does not provide care”), *** $p < .001$; ** $p < .01$ and * $p < .05$.

Source: LSAC K cohort, Wave 6. Sample restricted to 14–15 year olds who completed their Year 9 NAPLAN tests in 2014.

Table 5.16: NAPLAN scores, by time spent caring and gender (means)

	Boys		Girls	
	Reading	Numeracy	Reading	Numeracy
Does not provide care	595.9	619.1	622.6	610.3
Daily	562.6***	582.6***	586.8***	585.7**
Daily—2 hours or more per day	545.8***	582.0***	580.7***	586.8*
Daily—less than 2 hours per day	578.1	583.2***	591.8	584.5*
Weekly	575.5*	603.7	592.5***	585.9***
Fortnightly	586.9	622.6	596.1**	600.2
Monthly	591.9	599.6	586.9***	577.8**
Less often than monthly	585.7	604.9	596.6***	587.3*
Total	587.3	611.3	610.4	600.9
<i>n</i>	1,020	1,030	1,021	1,019

Note: Statistical significance is tested against the base category (“Does not provide care”), *** $p < .001$; ** $p < .01$ and * $p < .05$.

Source: LSAC K cohort, Wave 6. Sample restricted to 14–15 year olds who completed their Year 9 NAPLAN tests in 2014.

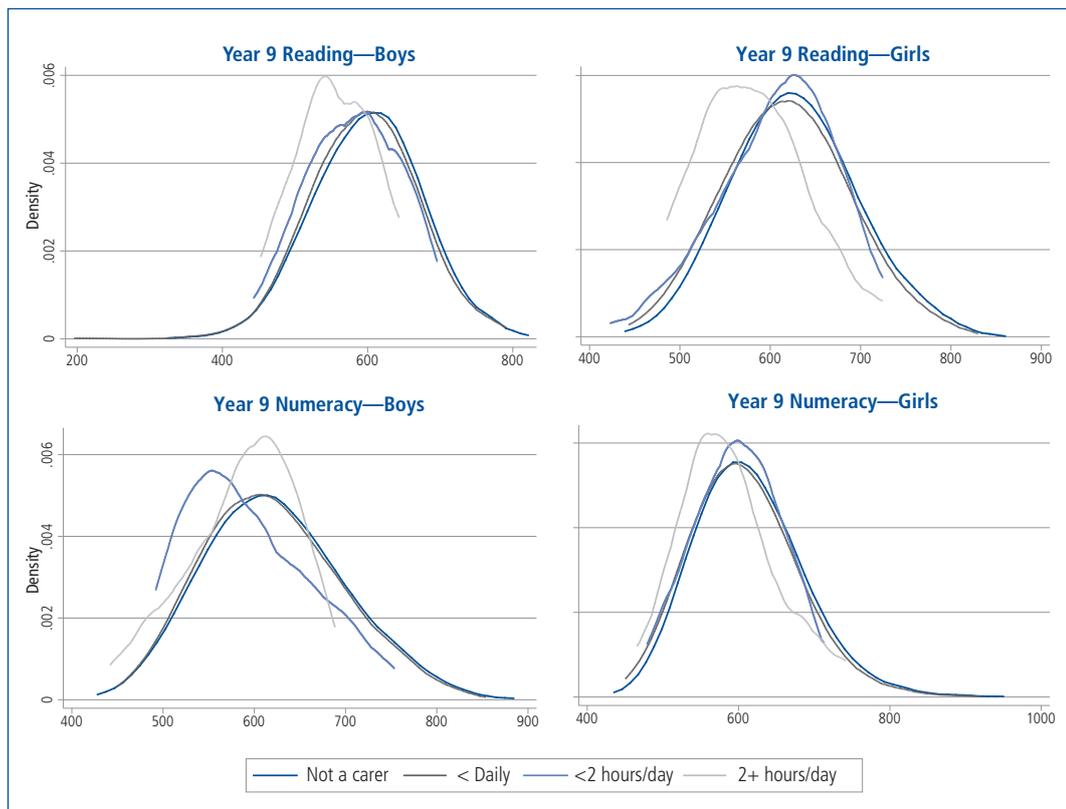
Plots of the distribution of NAPLAN scores according to the amount of time spent caring provide a clear picture of the differences in scores depending on the time spent caring (Figure 5.5, page 109).

For boys and girls who spend at least two hours per day doing caring activities, the distribution of reading scores sits well to the left of those of 14–15 year olds who are not carers and of those who spend less than two hours per day caring. Among 14–15 year olds who spent two or more hours per day caring, 80% of boys and 58% of girls had reading scores below the Year 9 equivalent of 583 points, compared to 55% of boys and 43% of girls who did caring activities daily but spent less than two hours per day on caring activities; 54% of boys and 46% of girls who were carers but did not do caring activities daily; and 45% of boys and 31% of girls who were not carers.

For numeracy, the differences in NAPLAN scores according to time spent caring are less stark than those for reading. Figure 5.5 shows that for boys, it is those who cared for someone daily, to some extent regardless of the time spent caring, who had the poorest outcomes. While 35% of boys who were not carers had scores below the Year 9 equivalent score of 585, 49% of those who did caring activities daily (59% of those who cared for less than two hours per day and 39% of those who cared for two hours or more per day) had scores below this level.

For girls and numeracy, the differences in the distribution of NAPLAN scores, according to time spent caring looked similar to those for reading, with girls who spent two or more hours per day caring had the poorest outcomes—53% of those who spent 2+ hours caring had scores below the

year equivalent score of 585, compared to 47% of girls who cared daily but for less than 2 hours, and 40% for girls who were not carers.



Notes: Sample is restricted to 14–15 year olds who reported caring for a household member. For reading, $n = 1,030$ for boys and 1,019 for girls. For numeracy, $n = 1,020$ for boys and 1,021 for girls.

Source: LSAC K cohort, Wave 6

Figure 5.5: Distribution of Year 9 NAPLAN scores, by time spent caring

For girls, but not for boys, average reading and numeracy scores were lowest among those who reported caring for four or more people. However, this is a relatively small group of young people and only 16% of this group reported doing caring activities daily; and estimates for the group who cared for four or more people *and* spent at least two hours per day caring were unreliable due to the small number of observations.

The descriptive evidence in this section has shown that there are substantial differences in the average NAPLAN scores of 14–15 year olds according to whether or not they care for someone who either has a disability or is elderly. However, it is important to note that the simple differences in test scores between children who provided care or assistance to someone else and those who did not should not be regarded as causal, as they may simply reflect other characteristics, such as parental education, which may be correlated with both carer status and NAPLAN test scores.

Sample characteristics in section 6.6 of this chapter indicate that 14–15 year olds who cared for someone else were less advantaged than those who were not carers. For example, those who cared for another person were more commonly from a low socio-economic quartile and single-parent household, and to have a mother who did not have a post-school qualification. To control for these differences in characteristics, multivariate regressions were conducted. First, we estimated the influence of caring on NAPLAN scores using an indicator of whether or not the study child provides any type of care, controlling for a range of socio-demographic characteristics. To account for the association between carer status and household characteristics such as mother's education and parent's employment status, covariates were added in stages:

- The baseline model (Model I) controls only whether the study child cares for another person.
- In Model II, controls for socio-demographic characteristics (age (in months)), birth order, whether the study child speaks a language other than English, mother's country of birth, Indigenous status, single-parent household) were added.

- In Model III, mother's education (indicator of whether mother has a degree qualification) was included.
- In Model IV, household employment status (indicator of jobless household) was added to the model.

Table 5.17 shows that even after accounting for a range of child and family characteristics, including mother's education and parent's employment status, being a carer has a substantial and statistically significant influence on reading and numeracy outcomes for girls and boys.

Table 5.17: OLS regressions estimating the association between carer status and NAPLAN reading and numeracy scores in Year 9

	I		II		III		IV	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Reading								
Being a carer	-18.1***	-31.3***	-18.7***	-28.7***	-17.6***	-26.7***	-16.4***	-25.2***
Socio-demographic controls			***	***	**	***	**	***
Mother has a degree					41.8***	34.7***	41.0***	33.5***
Jobless household							-27.7	22.8*
Constant	595.9	622.6	646.3	636.6	638.5	608.8	647.2	615.2
R ²	0.02	0.05	0.05	0.10	0.12	0.16	0.13	0.16
n	1,030	1,019	1,008	1,002	1,006	999	1,005	998
Numeracy								
Being a carer	-17.3***	-23.8***	-17.5***	-20.5***	-17.1***	-18.5***	-16.1***	-16.2***
Socio-demographic controls			***	***	***	***	***	***
Mother has a degree					36.4***	36.1***	35.6***	34.1***
Jobless household							-28.1*	-41.0***
Constant	619.1	610.3	719.6	725.4	704.9	693.4	711.2	709.5
R ²	0.01	0.03	0.06	0.10	0.11	0.16	0.12	0.18
n	1,020	1,021	999	1,006	996	1,003	995	1,002

Notes: *** $p < .001$, ** $p < .01$, and * $p < .05$. Covariates included in models II to IV: age (in months), birth order, whether the study child speaks a language other than English, mother's country of birth, Indigenous status, single-parent household. Significance levels for socio-demographic controls are based on F-tests of joint significance.

Source: LSAC K cohort, Wave 6

The results in Table 5.17 suggest that compared to boys who were not carers, those who were carers could be expected to have average reading scores 16.5 points and average numeracy scores 15.9 points lower (0.6 years of schooling at the Year 8–9 level) after controlling for socio-demographic characteristics. Compared to girls who were not carers, those who were carers could be expected to have average reading scores 25.7 points (1 year of schooling) lower, and average numeracy scores 16.5 points (0.6 years of schooling) lower.

The descriptive evidence in this section shows that average Reading and Numeracy scores are lowest among those who have the highest burden of care, that is, those who provide care daily, particularly if they spend 2 hours or more each day; those who provide assistance with core activities for someone who lives with them; and for girls, those who reported caring for 4 or more people.

Estimates of the influence of caring on NAPLAN scores, taking into consideration time spent caring and the type of care provided are presented Table 5.18 (page 112) for Reading and Table 5.19 (page 113) for Numeracy. Model I includes only the time spent caring. In Model II, indicators of whether the child helps a household member with core activities and whether they care for 4 or more people are added; and in Model III, a range of socio-demographic controls are added. As mother's education and parent's employment status are likely to be associated with having a household member who requires care, they are included separately in model IV.²²

Estimates in Table 5.18 (page 112) indicate that, for boys:

- Before taking the type of care provided into consideration, compared to those who were not carers, average reading scores could be expected to be 50 points (1.9 years of schooling) lower for those who spent at least two hours per day caring for someone. Those who did caring activities weekly could be expected to have reading scores 20 points (0.8 years of schooling) lower than non-carers.
- After time spent caring was taken into consideration, there was no significant additional influence from helping someone in the same household with core activities, or caring for four or more people.
- After accounting for a range of socio-demographic characteristics including mother's education and parents' employment, there was still a significant and substantial negative influence of time spent caring, with boys who spent at least two hours per day doing caring activities expected to have average reading scores 48.5 points (1.9 years of schooling) lower than non-carers; and those who did caring activities weekly expected to have average scores 19 points (0.7 years of schooling) lower than non-carers.

For girls:

- Before taking the type of care provided into consideration, compared to those who were not carers, average reading scores could be expected to be almost 42 points (1.6 years of schooling) lower for those who spent at least two hours per day caring for someone. Girls who spent less than two hours per day doing caring activities and those who did caring activities weekly or less often could be expected to have average reading scores around 30 points (1.2 years of schooling) lower than non-carers.
- After time spent caring was taken into consideration, there was no significant additional influence of helping someone in the same household with core activities. However, girls who reported caring for four or more people could be expected to have average reading scores a further 53 points (two years of schooling) lower. For example, before controlling for socio-demographic characteristics, girls who did caring activities weekly and cared for four or more people could be expected to have reading scores, on average, 75 points (2.9 years of schooling) lower than non-carers.
- After accounting for a range of socio-demographic characteristics including mother's education and parents' employment, there was still a significant and substantial negative influence of time spent caring. Compared to non-carers, girls who spent at least two hours per day doing caring activities could be expected to have average reading scores 37 points (1.4 years of schooling) lower; and those who did caring activities weekly or less often could be expected to have reading scores, on average, 18–19 points (0.7 years of schooling) lower. Those who reported caring for four or more people could be expected to have average reading scores a further 47 points (1.8 years of schooling) lower. For example, girls who did caring activities weekly *and* cared for four or more people could be expected to have average reading scores 65 (17.5 + 47.3) points (2.5 years of schooling) lower than non-carers.

²² Models in which the indicator of helping a household member with core activities was replaced with the interaction of indicators of core activities and helping a household member shows no significant differences to those presented in Tables 5.18 (page 112) and 5.19 (page 113). Note that a model including a measure of primary care arrangement interacted with time spent caring would arguably be a better specification, this was not possible due to the small number of cell sizes for many of these combinations.

Table 5.18: OLS regressions estimating the association between carer status and NAPLAN reading scores in Year 9

	I		II		III		IV	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Time spent caring (Reference = Not a carer)								
Daily 2+ hours	-50.1***	-41.9***	-45.7***	-37.5***	-49.0***	-41.4***	-48.6***	36.7***
Daily < 2 hours	-17.8	-30.9**	-14.8	-22.5	-14.1	-22.6	-12.8	-19.5
Weekly	-20.4**	-30.1***	-18.9*	-22.1**	-19.8*	-20.5*	-16.7*	-17.5*
Less often than weekly	-7.9	-30.3***	-7.4	-25.5***	-6.0	-21.6***	-3.6	-19.3**
Helps a household member with core activities			-12.9	-11.4	-15.8	-9.5	-14.7	-8.1
Cares for 4 or more people			-0.9	53.2***	-2.7	-51.2***	3.8	-47.3**
Socio-demographic controls					***	***	**	***
Mother has a degree							41.1***	32.9***
Jobless household							-27.6	-21.7*
Constant	595.9	622.6	595.9	622.6	639.9	643.7	642.7	622.9
R ²	0.03	0.05	0.03	0.07	0.07	0.12	0.14	0.18
n	1,030	1,019	1,030	1,019	1,008	1,002	1,005	998

Notes: *** $p < .001$, ** $p < .01$, and * $p < .05$. Covariates included in models II to IV: age (in months), birth order, whether the study child speaks a language other than English, mother's country of birth, Indigenous status, single-parent household. Significance levels for socio-demographic controls are based on F-tests of joint significance.

Source: LSAC K cohort, Wave 6

Tuning now to the results for numeracy, estimates in Table 5.19 (page 113) indicate that, for boys:

- Before taking the type of care provided into consideration, compared to those who were not carers, average numeracy scores could be expected to be almost 36 to 37 points (1.4 years of schooling) lower for those who were caring daily (regardless of whether they spent two hours or more); and those who were caring weekly could be expected to have numeracy scores 15.5 points (0.6 years of schooling) lower than non-carers.
- After time spent caring was taken into consideration, there was no significant additional influence of helping someone in the same household with core activities, or caring for four or more people. When these indicators were included in the model, there was no significant difference between the average numeracy scores of those who were not carers and those who did caring activities weekly.
- After controlling for age, birth order, whether the study child speaks a language other than English, mother's country of birth, Indigenous status and household structure, there was still a significant difference in average numeracy scores for those who were caring daily, regardless of the number of hours per day. Boys who were caring daily could be expected to have numeracy scores 30–33 points (up to 1.3 years of schooling) lower, on average, than non-carers.
- After controlling for mother's education and household joblessness, which are strong predictors of both carer status and cognitive outcomes, boys who spent two hours or more doing caring activities still had significantly lower numeracy scores (34 points or 1.3 years of schooling), compared to non-carers.

For girls:

- Before taking the type of care provided into consideration, differences in NAPLAN scores according to time spent caring were relatively small. Compared to non-carers, average numeracy scores could be expected to 23 to 26 points (0.9–1 years of schooling) lower for girls who were carers.

Table 5.19: OLS regressions estimating the association between carer status and NAPLAN numeracy scores in Year 9

	I		II		III		IV	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Time spent caring (Reference = Not a carer)								
Daily 2+ hours	-35.9**	-25.8*	-29.2*	-19.3*	-33.5**	-22.0*	-33.8**	-16.0
Daily < 2 hours	-37.2**	-23.5*	-31.7*	-11.7	-30.3*	-12.7	-29.8	-11.1
Weekly	-15.5*	4.3***	-11.9	-16.2*	-12.0	-13.0	-9.9	-10.0
Less often than weekly	-9.2	-23.1***	-6.9	-18.2**	-4.5	-14.0*	-3.5	-10.8
Helps a household member with core activities			-16.9	-21.5*	-21.5	-21.0*	-20.2	-16.9
Cares for 4 or more people			-16.0	-41.0***	-18.5	-35.8***	-18.6	-31.3**
Socio-demographic controls					***	***	***	***
Mother has a degree							36.1***	34.0***
Jobless household							-26.3	-38.4***
Constant	619.1	610.3	619.1	610.4	730.7	722.8	723.5	706.2
R ²	0.02	0.03	0.02	0.04	0.08	0.11	0.14	0.19
n	1,020	1,021	1,020	1,021	999	1,006	995	1,002

Notes: *** $p < .001$, ** $p < .01$, and * $p < .05$. Covariates included in models II to IV: age (in months), birth order, whether the study child speaks a language other than English, mother's country of birth, Indigenous status, single-parent household. Significance levels for socio-demographic controls are based on F-tests of joint significance.

Source: LSAC K cohort, Wave 6

- After time spent caring was taken into consideration, there were significant additional influences of caring for four or more people and also for helping a household member with core activities.
- After controlling for age, birth order, whether the study child speaks a language other than English, mother's country of birth, Indigenous status and household structure, there was still a significant difference in average numeracy scores for girls who spent two or more hours per day caring and also for those who did caring activities less often than weekly. Compared to non-carers, girls who spent more than two hours per day caring could be expected to have average numeracy scores 22 points (0.8 years of schooling) lower; and those who were caring less often than weekly could be expected to have average scores 14 points (0.5 years of schooling) lower. Girls who helped a household member with core activities could be expected to have numeracy scores a further 21 points lower (0.8 years of schooling) and those who cared for four or more people could be expected to have numeracy scores a further 36 points lower (1.4 years of schooling). That is, girls who spent more than two hours per day caring and helped a household member with core activities could be expected to have numeracy scores 43 points (1.7 years of schooling) lower than non-carers; and girls who cared for four or more people and spent at least two hours per day doing caring activities could be expected to have numeracy scores 58 points (2.2 years of schooling) lower than non-carers. However, these results should be interpreted with caution due to the small number of observations.
- When mother's education and parental employment were included in the model, time spent caring was no longer statistically significant for girls. Only the indicator of caring for four or more people remains statistically significant, reducing numeracy scores by 31 points (1.2 years of schooling), on average. While these results suggest that the amount of time and the type of care does not have a statistically significant influence on numeracy outcomes for girls, it is possible that the influence of time spent caring is underestimated in this model due to the inclusion of variables that may be correlated with both carer status and NAPLAN test scores.

In summary, carer status has a substantial negative influence on NAPLAN reading and numeracy outcomes for boys and girls. After controlling for a range of socio-demographic characteristics, this

negative influence remains statistically significant and the differences in average NAPLAN scores for those who provide some type of care, compared to those who do not, are substantial—ranging from 16.5 points (0.6 years of schooling) for numeracy for boys to 25.7 points (1 year of schooling) for reading for girls.

Estimates taking the amount of time spent caring and the type of care provided into consideration show that for those who do caring activities daily, and particularly for those who spend at least two hours per day doing caring activities, the negative influence of being a young carer on NAPLAN outcomes is substantial. After controlling for a range of socio-demographic characteristics, average reading scores can be expected to be 49 points lower for boys and 37 points lower for girls. These differences can be considered to be the equivalent of 1.9 and 1.4 years of schooling respectively. For boys, there is a similar result for numeracy, with those who spend at least two hours per day caring expected to have numeracy scores 34 points (1.3 years of schooling) lower than non-carers. Girls who cared for four or more people could be expected to have numeracy scores 31 points (1.2 years of schooling) lower than girls who were not carers.

5.8 Summary and conclusion

This chapter provides information about the number of 14–15 year olds in Australia who have provided informal care for at least six months to a family member or friend either because of a long-term health condition, disability or frailty due to old age. Based on young people's reports almost 40% were young carers, suggesting that providing some form of care for someone who is elderly or who has a long-term health condition or disability is a normal part of many young peoples' lives. However, a much smaller proportion, 22% of all 14–15 year olds provided assistance with core activities of daily living such as personal care (e.g. washing, dressing, eating, toileting), moving around (e.g., getting in/out of bed or chair) and communicating (including being understood and understanding family, friends or others). Caring for multiple people was also not that uncommon, with almost 20% of young people of this age caring for more than one person.

A relatively small percentage of young people cared for a household member. Six per cent of 14–15 year olds provided assistance with core activities in the household and 3% with non-core activities (i.e., health care, transport, preparation of meals, housework/shopping, house repairs or garden care, paperwork and keeping them company). Of the 9% of young people who did care for someone in the household almost half were caring for a parent or step-parent, a third a brother or sister and a little over 30% a grandparent. The types of care to household members depended on the relationship between the young carer and the person receiving assistance, with those who cared for a parent or grandparent more commonly helping with personal care and transport than those who were caring for siblings; and parents more commonly receiving help with meal preparation, housework, shopping and errands.

A large percentage of 14–15 year olds reported caring for someone who did not live with them (29%) and 60% of these young carers reported providing assistance with core activities. Most 14–15 year olds who cared for someone who did not live with them were caring for either a grandparent or an unrelated child. Young carers provided most help to grandparents in the form of house and garden care, shopping, errands, meal preparation and moving around, while the care for an unrelated child who attended the same school was more commonly in the form of communication, keeping them company and “other things” such as schoolwork.

The amount of time young people spent caring varied markedly with 21% (an estimated 18,923 14–15 year olds) providing care daily, 9% (an estimated 8,635 14–15 year olds) for two or more hours per day, 37% weekly, 13% fortnightly and 29% monthly or less than once per month.

Living in the same household was associated with caring for relatives on a daily basis:

- 51% of young people caring for parents or step-parents did so daily, (22% spending more than two hours per day);
- 45% of young people who were caring for a resident sibling (22% spending more than two hours per day); and
- 43% of young people who were caring for a resident grandparent (21% spending more than two hours per day).

Whereas for young people caring for people outside the household far fewer were doing so on a daily basis (7% of those caring for grandparents, 24% of those caring for an unrelated child).

Regardless of the number of care recipients, whether the care was for someone living with them, or the care was for core or non-core activities, there were a common set of household characteristics associated with being a carer at 14–15 years of age. These household characteristics were primarily about having a person who needed care in the household or a parent who had caring responsibilities outside of the household. Results from the statistical model suggested that caring was associated with:

- a household member who has a long-term health condition or disability;
- a household member who is aged 65 or older;
- a parent who cares for someone not living in the household; and
- a mother with lower levels of education or living in a household with a lower socio-economic status.

These findings are broadly consistent with previous Australian research using census and income support payment data that suggests that the presence of a relative with a long-term health condition, disability or who is elderly increases the likelihood of a young person caring, particularly if they are living in the same household (Bray, 2011; Cass et al., 2011). This chapter and other population data also suggest that young carers' families are also more disadvantaged on a number of measures.

In this chapter we find evidence that being a young carer limits young people's educational opportunities and, by extension, their life chances. We find that young carers have significantly lower performance in reading and numeracy in NAPLAN at Year 9 than their peers. These differences range from 8.5 months of schooling for numeracy for boys to 1.2 years of schooling for reading for girls. When statistical models are used to control for demographic characteristics of the child and parent's country of birth, household structure, parental employment status and mother's education, young carers are still substantially behind their peers. Even after taking into account a wide range of other characteristics, boys are seven months behind and girls are one year behind in reading and, for numeracy, boys and girls are around seven months behind their peers.

Further analyses examining the role of time spent caring, the type of care provided (core/non-core), whether the young carer is living in the same household and the number of care recipients suggest that the time spent caring undermines young carers' academic achievement. Statistical models that take into account many demographic characteristics, as well as mother's education and whether the young person is in a jobless household, still find that young people who are spending two or more hours per day on caring activities have substantially lower levels of academic achievement. Compared to their non-caring peers, in reading, boys were 1.9 years behind and girls were 1.6 years behind their peers when they spent two or more hours per day as carers.

For Year 9 NAPLAN numeracy, boys who were providing care daily (regardless of the amount of time they spent per day) were 1.3 years behind non-caring peers. For girls, a more complex picture emerged. After adjusting for many demographic variables, female young carers who spent two or more hours per day providing care were still behind, but not if the mother's education and living in a jobless household was taken into account. Given that a long-term health condition or disability in the family is likely to affect the capacity of mothers to obtain a tertiary degree and/or employment, taking these factors into account may well be overly conservative. However, when all demographic variables were taken into account, female young carers who cared for four or more people were 1.2 years behind their peers on Year 9 NAPLAN numeracy scores. While the results from these statistical models are not causal, and further research is needed to unpack the precise causal pathways,²³ estimates of differences between young carers and their peers on NAPLAN scores changed little after accounting for child and household characteristics, supporting the conclusion that caring has a detrimental impact on educational performance.

The findings from this chapter, coupled with evidence that suggests that young carers are more likely to live in disadvantaged households and communities, to have lower educational attainment

²³ There are a number of possible explanations for the poorer educational achievement of young carers including more limited time to spend studying, but also increased rates of non-attendance at school (Lloyd, 2013) and the higher levels of stress and fatigue experienced by those in a caring role (Kavanaugh et al., 2016; Nagl-Cupal et al., 2014). Some studies also report that young carers are more likely to be bullied at school as well (Lloyd, 2013).

and employment rates when older (Bray, 2011; Cass et al., 2011) and to rely on income support for longer periods than other young income support recipients (Bray, 2011), raise concerns about how family health conditions can have far-reaching intergenerational consequences if young people have great caring responsibilities. The evidence in this chapter suggests that, although a minority of young people, this group of young carers are in need of additional support. Young carers who were most affected, that is, those who were caring for two or more hours per day, only comprised 3.6% of all 14–15 year olds in 2014 (an estimated 8,647 young people). Given the relatively small group of young people involved in intensive caring, investment in targeted policies and programs to provide additional formal support for the person in need of care and also provide better support for these young carers to participate fully in school could make a real difference to the lifetime educational prospects of this group of youths.

The findings from this chapter show that despite popular perceptions of young people being self-absorbed, two in five are engaged in the pro-social activity of caring for a person with a long-term health condition, disability or who is elderly. Asking young people themselves about their own caring experiences provides quite different estimates to the census, and underscores how important it is to get insights into the lives of young carers for the development of policy and programs. For the majority of these caring arrangements there is likely to be a level of reciprocity, particularly given that they were largely for grandparents, parents and younger siblings—something that was not a focus of current research. While for many young people caring may be part of a set of reciprocal family ties, findings from this chapter do highlight that intensive caring does undermine young peoples' educational prospects. Future investments in support for this small minority of youth may well pay dividends for these young carers and provide broader benefits to society.

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Self-harm and suicidal behaviour of young people aged 14–15 years old

6

Galina Daraganova



If you or someone you know is feeling depressed or suicidal, please contact one of the following services:

- In an emergency, call 000
- Lifeline <www.lifeline.org.au> ph. 13 11 14
- Kids Help Line (5-25 years) <kidshelpline.com.au> ph. 1800 55 1800

6.1 Background

Introduction

Self-harm and suicidal behaviour is an important public health concern attracting attention from policymakers and mental health practitioners all around the world (Hawton, Saunders, & O'Connor, 2012). Among young people who engage in this behaviour, the age of onset of self-harm is usually between 11 and 15 years, while for suicidal behaviour it is between 15 and 17 years (Evans, Hawton, & Rodham, 2004; Hawton, et al., 2012; Lawrence et al., 2015; Jacobson & Gould, 2007; Klonsky & Muehlenkamp, 2007; Kumar, Pepe, & Steer, 2004; Muehlenkamp & Gutierrez, 2004; Nixon, Cloutier, & Aggarwal, 2002; Nock & Prinstein, 2004; Muehlenkamp, Claes, Havertape, & Plener, 2012).

Taken together, self-harm and suicidal behaviour account for a considerable portion of the disability burden and mortality among adolescents (Gore et al., 2011). According to worldwide statistics, self-harm has been reported as one of the top five reasons for acute medical admissions (Haq, Subramanyam, & Agius, 2010) and suicide is the second leading cause of death among 15–20 year olds (World Health Organization [WHO], 2014). In Australia, similar trends have been observed, with around one in ten (11%) 12–15 year olds reporting ever been involved in self-harming behaviour (Lawrence et al., 2015), and suicide being the leading cause of death among 15–24 year olds in 2012 (Australian Bureau of Statistics [ABS], 2016). Therefore, understanding the epidemiology and risk factors of self-harm and suicide-related behaviour is crucial for developing effective prevention programs.

Self-harm: epidemiology and correlates

Self-harm (self-injury) is commonly defined as a deliberate act of hurting yourself physically as a way of releasing painful emotions or communicating personal distress to others (Royal Australian and New Zealand College of Psychiatrists [RANZCP], 2009; Klonsky, 2007). While the act of self-harm might not have a fatal intent, severe cases of physical injury can result in death (Conner, Langley, Tomaszewski, & Conwell, 2003).

The majority of young people who engage in self-harming behaviours hide their injuries and may never seek help from medical or other services as a result of their self-harming acts (Moran et al., 2012; Muehlenkamp et al., 2012). Therefore, population estimates of the prevalence of self-harm vary considerably depending on the source of information (i.e., hospital admissions records or general population surveys). Statistics on “hospitalised self-harm” are mainly available for severe cases of self-harm and do not include cases when adolescents are admitted to emergency departments, treated by paramedics attending a call-out or a general practitioner, or die prior to hospitalisation (Martin et al., 2009). According to different international studies, only 6–12.6% of

those who had harmed themselves had presented to hospital, whereas the vast majority of self-harm acts remain invisible to professionals (McMahon et al., 2014).

General population surveys report more accurate lifetime prevalence rates of self-harm. The majority of prevalence studies report the lifetime rates of self-harm among adolescents to be between 15% and 30% (Baetens, Claes, Onghena, Muehlenkamp, & Grietens, 2011; Ross, Heath, & Toste, 2009; Whitlock et al., 2013; You, Leung, Fu, & Lai, 2011). Prevalence estimates for adolescents in the United States, for example, varied from 20% to 37% among young people aged 14–16 years old and was 7–8% among children aged 11–13 years old (Plener, Schumacher, Munz, Groschwitz, 2015). An epidemiological study of adolescents (age 14–17 years) in seven European countries and Australia found an average lifetime prevalence estimate of 17.8% and a 12-month prevalence of 11.5% for self-harm behaviour, with some variation across countries (Madge et al., 2008). According to the most recent Australian survey on the mental health of children and adolescents (Lawrence et al., 2015), 6.2% of 12–15 year olds have engaged in self-harming behaviour in the previous 12 months.

The prevalence rates of self-harm are the highest among adolescents and greater among girls than boys. As young people get older, the prevalence rates decrease and the gap between boys and girls reporting acts of self-harm narrows (Whitlock & Rodham, 2013). A study of individuals aged 12–15 years in Australian and US schools (Patton et al., 2007) found that the greater prevalence of self-harm among girls has been largely attributed to issues related to pubertal development, especially late or completed puberty, rather than chronological age (Hawton et al., 2012).¹ Other factors associated with the increased risk of self-harm have been poor mental health or an underlying psychological or emotional problem (Haw, Hawton, Houston, & Townsend, 2001; Zubrick et al., 2016a); experience of bullying, domestic violence or abuse in childhood (Fisher et al., 2012; Lang & Sharma-Patel, 2011; Maniglio, 2011); poor peer and family relationships (Prinstein et al., 2010; Jarvi, Jackson, Swenson, & Crawford, 2013); stressful life events (Meltzer et al., 2002); and engagement in risk-taking behaviours (Madge et al., 2011). Growing evidence reports also on a strong association between sexual orientation and non-suicidal self-harm, with non-heterosexual people being at higher risk of self-harm compared to heterosexual people (King et al., 2008). Interestingly, studies of self-harm predictors also find some notable variations by gender. For example, friends' engagement in self-harm and the parent–child relationship were risk factors of self-harm for girls but not for boys (Prinstein et al., 2010; Bureau et al., 2010).

The decrease in the prevalence rate of self-harm behaviour as young children grow older (around 20 years old and above) suggests that this behaviour ceases in most cases. However, recurrent self-harm increases the risk of accidental suicide and the likelihood of suicide-related behaviours, including attempted and completed suicide (Bergen et al., 2012).

Suicide-related behaviours: epidemiology and correlates

Suicide-related behaviour, including suicidal thoughts (also known as suicidal ideation), plans and attempts, is defined as self-destructive behaviour with the primary intent to end life (Hawton et al., 2012). Prevalence estimates of suicide-related behaviour among adolescents also vary depending on the source. The official statistics substantially under-report suicide rates due to misclassification of suicide in young people as undetermined or accidental cause of death (Gosney & Hawton, 2007). In 2011, the reported age-specific suicide rate for Australians aged 15–19 was 10 deaths per 100,000 (ABS, 2014). The prevalence estimates of suicide-related behaviours are mainly available via population-based studies. According to the second Australian Child and Adolescent Survey of Mental Health and Wellbeing in the previous 12 months, 8% of 12–15 year olds reported having suicidal ideation, 5% reported having a suicidal plan, and 3% reported attempting suicide (Lawrence et al., 2015). As suicide is uncommon before 15 years of age, statistics for children younger than 15 years are usually not reported.

Gender differences are also observed in the prevalence of suicide-related behaviours, with boys reporting higher rates of completed suicide, while girls report higher rates of other suicide-related behaviours (thoughts, plans and attempts). In the second national Australian sample of adolescents

¹ Using the LSAC data, Warren and Yu (2016) found that, particularly for girls, differences in pubertal status compared to peers, rather than the stage of pubertal development, are most problematic for emotional, social and school functioning; and these differences become less problematic as adolescents begin to reach a similar level of physical development.

12–15 years of age (Lawrence et al., 2015), 8% of girls and 3% of boys reported having suicidal ideations, 6% of girls and 2% of boys made suicidal plans, and 3% of girls and 1% of boys ever attempted suicide.

Different risk factors of suicide-related behaviours have been identified. Poor mental health (Houston, Hawton, & Shepperd, 2001; Fortune, Stewart, Yadav, & Hawton, 2007; Reinherz et al., 1995), risk-taking behaviour (Houston et al., 2001; Aseltine, Schilling, James, Glanovsky, & Jacobs, 2009), non-heterosexual orientation (Ryan, Huebner, Diaz, & Sanchez, 2009), childhood trauma or abuse (Fergusson, Boden, & Horwood, 2008), dysfunctional family dynamics and changes (Fergusson, Boden, & Horwood, 2007; Brent & Mann, 2005), poor peer dynamics (Klomek et al., 2009), poor emotion regulation capacity (Nock et al., 2013) and negative cognition (negative thoughts or beliefs that limit current functioning) (Muehlenkamp & Gutierrez, 2007) are the most common factors identified as likely candidates for explaining suicide-related behaviours (for review see Cash & Bridge, 2009).

The risk factors associated with suicide-related behaviours are similar to the risk factors associated with self-harm (Prinstein et al., 2008). While it has been well-established that engagement in self-harm is related to an increased likelihood of suicide, and this is particularly the case for those who get admitted to the emergency department or report recurrent self-harm (Bergen et al., 2012; RANZCP, 2009), not every person who self-harms goes on to attempt suicide. Moreover, a large proportion of young people engaged in self-harm are not intentionally suicidal and, in fact, describe self-harm as a way to avoid suicide (Hawton & James, 2005).

To develop effective prevention and early intervention strategies it is of crucial importance to obtain accurate prevalence data, understand distal and concurrent risk factors associated with acts of self-harm and attempted suicide, and identify any gender differences.² Although a lot of research has been conducted in this area, there are still gaps that require further research. Firstly, population-based studies on prevalence rates of self-harm and suicide-related behaviour aggregated for 14–15 year olds are scant. The second national Child and Adolescent Survey of Mental Health and Wellbeing reports prevalence rates for 12–15 year olds (Lawrence et al., 2015). Given that self-harm and suicidal behaviour is less prevalent among 12–13 years olds, these aggregated estimates might underrepresent the prevalence rates for adolescents aged 14–15 years. Secondly, limited and inconsistent findings are available on key risk factors in the presence of various confounders. Finally, only a small number of studies have examined the distal predictors of self-harm and suicide-related behaviours.

Research questions

This chapter uses LSAC K-cohort data to address these gaps and, in particular, to examine risk factors associated with the onset of self-harm and suicidal behaviour. The key research questions explored in this chapter are:

1. What are the prevalence rates of self-harm and suicidal behaviour among 14–15 year olds and do the prevalence rates vary by gender?
2. What are the risk factors associated with self-harm?
3. What are the risk factors associated with suicide attempts after controlling for self-harm?
4. To what extent is poor socio-emotional health earlier in life associated with self-harm and suicide attempts at age 14–15 years?

After a description of the LSAC data and methods used, the results are organised as follows. First, the overview of prevalence rates of self-harm and suicide-related behaviours and relationships between these behaviours are presented. The overview is followed by a description of the analytical approach and the analysis of main risk and protective factors associated with self-harm and suicide attempts. The analytical section examines the association between earlier indicators of mental health measured at 10–11 and 12–13 years of age and engagement in self-harm and attempting suicide at 14–15 years. Gender-specific differences are discussed throughout the chapter. The chapter concludes with a discussion around key findings, limitations and future research.

² Distal risk factors are background characteristics that may put someone at risk for an event or condition at some point in their lifetime (not immediately), while concurrent, or proximal, risk factors represent an immediate vulnerability.

6.2 Sample and measures

This section provides a brief description of the sample and key measures used. Other variables, and the methods used to analyse the data, are described in later sections of the chapter.

Sample

The focus of this chapter is the K cohort, Wave 6 data, when the LSAC study children were aged 14–15 years ($n = 3,318$). Given that this chapter examines self-harm and suicide-related behaviours, only adolescents who answered the relevant questions were included in the sample.³ There were 1,694 boys and 1,624 girls aged 14–15 years. In some analyses, both Wave 4 and 5 data were used. In that analysis, the sample was reduced to 1,591 boys and 1,548 girls.

Measures of self-harm and suicide-related behaviours

Self-harm

In LSAC, measures of self-harm were derived from the AVON Longitudinal Study of Parents and Children (ALSPAC): Life of a 16+ Teenager questionnaire (ALSPAC, 2007). Table 6.1 describes the questions and corresponding measures used in the analysis. It is worth noting that intent of self-harm was not specified. Also, no information was collected on methods of self-harm.

Table 6.1: Items used to measure self-harm

Measure	Categories	Question
Thoughts of self-harm	0 = no 1 = yes	During the last 12 months have you thought about hurting yourself on purpose in any way (i.e., by taking an overdose of pills, or by cutting or burning yourself)?
Act of self-harm	0 = no 1 = yes	During the past 12 months have you hurt yourself on purpose in any way (i.e., by taking an overdose of pills, or by cutting or burning yourself)?

Suicide-related behaviour

Measures of suicide-related behaviours were derived from the National Survey of Mental Health & Wellbeing (ABS, 2007). Questions regarding suicide-related behaviour and corresponding measures used in this chapter are described in Table 6.2. No information was collected on methods of suicidal behaviour.

Table 6.2: Items used to measure suicidal behaviour

Measure	Categories	Question
Suicidal ideation	0 = no 1 = yes	During the past 12 months did you ever consider attempting suicide?
Suicidal plans	0 = no 1 = yes	During the past 12 months did you make a plan about how you would attempt suicide?
Suicide attempt	0 = no 1 = yes	During the past 12 months, how many times did you actually attempt suicide?
Frequency of suicide attempts	0 = 0 times 1 = 1 time 2 = 2 or 3 times 3 = 4 or 5 times 4 = 6 or more times	
Medical treatment	0 = no 1 = yes	Did any attempt result in an injury, poisoning or overdose that had to be treated by a doctor or nurse?

³ A small proportion of adolescents did not answer questions related to self-harm and suicide-related behaviours either because parents or young people themselves did not give consent to be asked these questions ($n = 56$ and $n = 4$, respectively).

6.3 Prevalence rates of self-harm and suicidal behaviours

This section reports the prevalence rates of self-harm and suicide-related behaviours of 14–15 year olds.⁴ The prevalence rates are presented separately for boys and girls and overall. The significant differences in the prevalence estimates among boys and girls were tested using chi-square tests and reported if the corresponding confidence intervals did not overlap. All the analyses were performed using weighted data, adjusting for sample design and non-response.

Self-harm

The prevalence rates of thoughts of self-harm and acts of self-harm were 16% and 10%, respectively (Table 6.3). Half of the young people who thought about self-harm also reported engaging in self-harm (56%). The prevalence rates of thoughts and acts of self-harm among girls were 25% and 15%, respectively. More than half of the girls (60%) who reported thinking about self-harm also reported engaging in self-harm. A similar pattern was observed for boys, but their prevalence rates were significantly lower than the girls' rates (see Table 6.3). The prevalence rates of thoughts and acts of self-harm among boys were 9% and 4%, respectively. Notably, out of those boys who thought about self-harm, less than half reported engaging in self-harm (42%). This proportion was significantly lower in boys than it was in girls.

	Boys % [95CI]	Girls % [95CI]	Total % [95CI]
Out of total sample	n = 1,694	n = 1,624	n = 3,318
Thoughts of self-harm	8.5 [7.1–10.1]	24.8 [22.5–27.2]	16.4 [15.0–17.9]
Acts of self-harm	4.4 [3.5–5.6]	15.3 [13.4–17.3]	9.7 [8.6–10.9]
Out of those who thought of self-harm	n = 146	n = 390	n = 534
Acts of self-harm	42.2 [34.0–50.9]	60.3 [54.8–65.6]	55.5 [51.1–59.8]

Notes: Statistical significance is reported if the 95% confidence intervals do not overlap [95CI].

Source: LSAC, K cohort, Wave 6

Suicidal behaviours

Table 6.4 (page 124) reports the prevalence rates of suicidal behaviours for all 14–15 year olds and by gender. The 12-month prevalence rates of suicide ideation, plans and attempts were 9%, 7% and 5%, respectively. Two thirds (66%) of adolescents who attempted suicide did so once, one in five (22%) attempted two or three times, one in ten (9%) attempted four or five times, and six children attempted six or more times. Out of those who reported a suicide attempt, 16% reported that at least one of those attempts had resulted in them receiving treatment from a nurse or doctor.

Girls were also more likely to be involved in suicidal behaviour than boys. More than one in ten girls (12%) reported suicidal ideation, 9% reported developing suicidal plans, and 6% of girls reported at least one suicide attempt. Out of the girls who did attempt suicide, 59% tried once, 22% attempted two or three times, 15% tried four or five times, and four girls attempted six or more times. Around one in five girls who made a suicide attempt were treated by a nurse or doctor as a result of that attempt (18%).

Among boys, 6% reported suicidal ideation, 5% reported suicidal plans, and 4% reported at least one suicide attempt. Among those who had attempted suicide, a majority of boys had attempted only once (75%), and 14% were medically treated.

⁴ The original LSAC sample (Wave 1 sample) is not representative of very remote areas and immigrants.

Table 6.4: Prevalence rates of suicidal behaviour, by gender

	Boys % [95CI]	Girls % [95CI]	Total % [95CI]
Out of total sample	<i>n</i> = 1,694	<i>n</i> = 1,624	<i>n</i> = 3,316
Thoughts of committing suicide	5.9 [4.8–7.2]	12.0 [10.3–13.9]	8.8 [7.8–10.0]
Made plans to commit suicide	5.1 [4.1–6.4]	9.4 [7.9–11.1]	7.2 [6.3–8.2]
Attempted suicide	3.5 [2.6–4.7]	5.8 [5.6–7.3]	4.6 [3.8–5.6]
Out of those who attempted suicide	<i>n</i> = 52	<i>n</i> = 84	<i>n</i> = 136
Medical treatment	14.2 [6.9–27.0]	18.0 [10.6–29.0]	16.5 [10.9–24.4]
Number of attempts			
1	75.4 [62.0–85.2]	59.3 [47.7–69.9]	65.5 [56.6–73.4]
2 or 3	21.5 [12.4–34.8]	21.8 [13.9–32.6]	21.7 [15.3–29.8]
4 or 5	0.0 –	15.1 [8.5–25.4]	9.2 [5.0–16.2]
6 or more	3.1 (<i>n</i> = 2)	3.9 (<i>n</i> = 4)	3.6 (<i>n</i> = 6)

Notes: Statistical significance is reported if the 95% confidence intervals do not overlap [95CI].

Source: LSAC, K cohort, Wave 6

Among those who reported having thoughts about suicide in the previous 12 months, a majority also reported developing a suicide plan (56%) and 37% reported a suicide attempt (Table 6.5). Only one third of those who reported suicidal ideation did not report any other suicidal behaviours. Only four in ten with a plan also reported a suicide attempt, with 60% not going ahead with their plan.

Among those who reported a suicide attempt, almost 60% also reported planning suicide. That is, 40% of suicide attempts were unplanned. One in five adolescents who reported attempting suicide did not report having any suicidal ideation or plans. While there is not always “causal” order in suicidal ideation, plans and attempts, the findings provide an important insight into possible pathways of suicidal behaviour.

Table 6.5: Prevalence rates of suicidal behaviour among those who reported suicidal ideation and a suicide

	Boys % [95CI]	Girls % [95CI]	Total % [95CI]
Reported suicidal ideation	<i>n</i> = 100	<i>n</i> = 179	<i>n</i> = 279
Made a suicide plan	55.8 [45.0–66.0]	56.4 [48.2–64.3]	56.2 [49.6–62.5]
Attempted suicide	32.1 [22.7–43.2]	39.4 [32.2–47.0]	36.9 [26.4–41.8]
No plan & no attempt	31.4 [22.0–42.8]	34.2 [26.6–42.7]	33.2 [27.0–40.2]
Reported a suicide attempt	<i>n</i> = 52	<i>n</i> = 84	<i>n</i> = 136
Made a suicide plan	41.5 [28.4–55.8]	68.6 [57.0–78.3]	58.1 [48.0–67.5]
No thought & no plan	36.2 [23.0–54.5]	12.1 [6.2–22.1]	21.4 [13.9–31.5]

Notes: Statistical significance is reported if the 95% confidence intervals do not overlap [95CI].

Source: LSAC, K cohort, Wave 6

The rates reported in Table 6.5 were similar among boys and girls who reported suicidal ideation, but varied among those who reported a suicide attempt. Girls who reported a suicide attempt were more likely to also report developing a suicide plan than boys (69% vs 42%, respectively), resulting in 30% of unplanned attempts among girls versus 60% of unplanned attempts among boys. In contrast, boys who reported a suicide attempt were more likely than girls to also report no suicidal ideation and no suicide plans (36% vs 12%, respectively).

Pathways between self-harm and suicidal behaviour

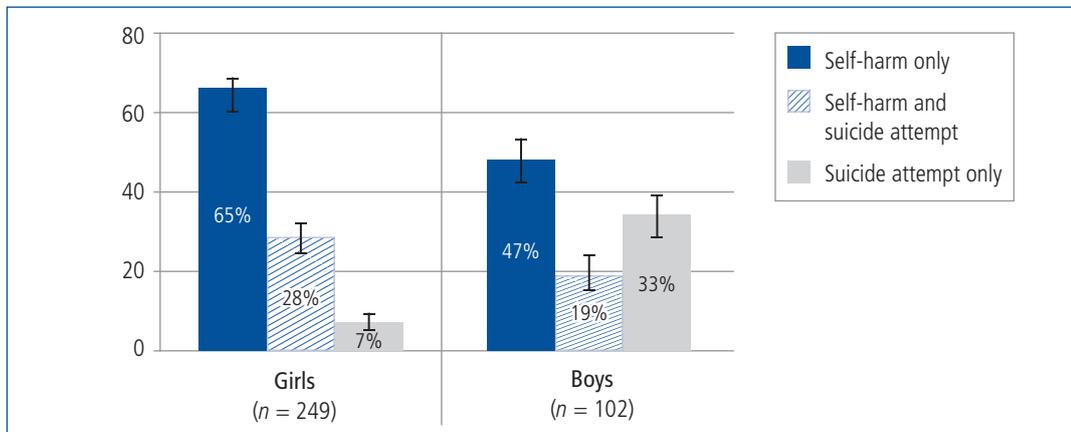
The relationships between self-harm and suicide-related behaviours are reported in Table 6.6. Of girls who reported an act of self-harm, every second girl reported suicidal ideation, four in ten girls reported suicide plans, and three in ten reported a suicide attempt. Out of girls who did not engage in self-harm, less than 2% reported a suicide attempt. Similar proportions were observed in boys who were engaged in self-harm (i.e., 48% of boys had suicidal ideation, 46% planned suicide, and 29% attempted suicide). Around 2% of boys who did not report self-harm reported a suicide attempt. These results indicate that 30% of young people who engage in self-harm over a 12-month period, attempt suicide.

Looking at this the other way, eight in ten girls who reported attempting suicide, reported engaging in self-harm. These proportions were significantly lower in boys who attempted suicide: one third engaged in self-harm. Thus, of those who attempted suicide, boys were less likely to engage in self-harm than girls (64% vs 20%, respectively).

Table 6.6: Relationship between self-harm and suicidal behaviour			
	Boys % [95CI]	Girls % [95CI]	Total % [95CI]
Out of who reported self-harm	n = 71	n = 231	n = 302
Suicidal ideation	48.1 [35.3–61.1]	54.1 [47.2–60.8]	52.6 [45.5–58.7]
Planned suicide	46.0 [33.5–59.1]	41.5 [34.2–49.1]	42.5 [36.3–49.0]
Attempted suicide	28.7 [19.0–41.0]	30.3 [24.0–37.3]	29.9 [24.4–36.1]
Out of who reported a suicide attempt	n = 52	n = 84	n = 136
Act of self-harm	36.4 [24.0–50.8]	79.1 [68.2–87.0]	62.5 [52.9–71.2]

Notes: Statistical significance is reported if the 95% confidence intervals do not overlap [95CI].
Source: LSAC, K cohort, Wave 6

Overall, 16% of girls (n = 249) and 7% of boys (n = 102) reported engaging in self-harm or attempting suicide.



Notes: Statistical significance is reported if the 95% confidence intervals do not overlap [95CI].
Source: LSAC, K cohort, Wave 6

Figure 6.1: Patterns of self-destructive behaviour, by gender

Figure 6.1 (page 125) describes the proportion of adolescents who were engaged in either self-harm, a suicide attempt, or both. A different pattern was observed for boys and girls. Compared to boys, girls were more likely to report engaging in self-harm than boys (65% vs 47%) and less likely to report a suicide attempt only (7% vs 33%, respectively).

6.4 Factors associated with self-destructive behaviours

For better prevention and intervention strategies, it is crucial to identify factors associated with self-harm and suicidal behaviours. Rather than focusing on different types of self-destructive behaviours (thoughts of self-harm, acts of self-harm, suicidal ideation, suicide plans or attempts), this section focuses only on factors associated with acts of self-harm and suicide attempts measured as follows:

- Self-harm: There were 51 boys and 192 girls who reported engaging in self-harm within the last 12 months.
- Suicide attempt: There were 43 boys and 65 girls who reported attempting suicide at least once in the last 12 months.

For the purpose of the analysis presented in this section, only those adolescents who provided responses on all relevant variables (outcome variables and risk factors) were included ($n = 2,883$) and all analyses used weighted data.

List of potential risk factors

The list of potential factors associated with the increased risk of self-harm and suicide attempts was derived from the extensive literature review and included three main domains (see Introduction):

- individual factors such as adolescents' sexual development, mental and physical health, risk-taking behaviours and self-concept;
- family factors such as family's socio-economic position, financial stress, family type and child–parent relationships; and
- social relationships and school-related factors such as bullying and victimisation, sense of belonging to school and academic self-concept.

Although differences between those who engage in self-destructive behaviour (self-harm or suicidal behaviour) and others who do not can emerge in early childhood, long before adolescents engage in these behaviours, the factors that show the strongest association with such behaviours are likely to be those measured around the time that self-destructive behaviour occurs. Therefore, for the purpose of the analysis presented in this section, all the potential factors were measured at the same time as self-destructive behaviour and referred to the same time period, that is, experiences in the last 12 months. The relationships between engagement in self-destructive behaviour and early social-emotional problems as measured by the Strength and Difficulties Questionnaire (SDQ, Goodman, 2001) at earlier waves of LSAC are briefly examined in section 6.5.

All the measures used in the statistical models and how they were derived are described below.⁵

Individual factors

Individual factors included gender, pubertal development, temperament, sexual identity, risk-taking behaviours, mental and physical health, and general feeling of happiness.

Pubertal development was based on Puberty Category Scores developed by Crockett and Petersen (1987). The score was calculated using parents' ratings of the signs of puberty separately for boys and girls at 14 and 12 years old, respectively (for boys, body hair growth, deepening voice and facial hair growth; and for girls, body hair growth, breast development, and menarche). The score then was binarised as follows: boys with a score above 8 and girls with a score above 3 and menstruation were considered in their late or post puberty (reference category in the analysis). There were 47% of boys and 55% of girls who were in *late or post puberty*.

⁵ Due to a small number of cases on key outcome variables, it was essential to binarise independent variables. Continuous variables were categorised into two groups using quartile scores (25% top/bottom vs the rest) with the top/bottom quartile classified as a higher/lower level of problems on a corresponding measure. Allocations to each subgroup were, therefore, relative to each other rather than being absolute measures.

Temperament was measured using the Short Temperament Scale for Children (STSC) that comprised of three subscales: *Reactivity*, *Persistence*, and *Introversion*. Each scale consisted of four items with the total score being calculated as an average on the four items and the higher score reflecting a greater level of reactivity/persistence/introversion. A binary indicator for each scale was derived using quartile scores (top 25% vs the rest), with the top quartile indicating more reactive, more persistent and more introverted adolescents (reference categories).

Adolescents were asked who they were attracted to. A binary measure was derived based on adolescents' responses, that is, those who reported being attracted to the opposite gender were categorised as having heterosexual identity; those who reported being attracted to the same gender (1%), both genders (3%), being not sure to who they were attracted (3%) or reported not feeling attractions to others (4%) were categorised as having non-heterosexual identity. There were 8% of boys and 16% of girls who were categorised as having non-heterosexual identity (reference category).

Risk-taking behaviour was a composite measure derived from the following questions: "In the last 12 months have you had an alcoholic drink?"; "In the last 12 months have you had smoked/used marijuana or/and tried other drugs?"; and "Have you ever had sex?". Adolescents who reported any of these activities were considered to be involved in risky behaviour. There were around 16% of adolescents who reported *risky behaviour*. No gender differences were observed.

Delinquent behaviour was derived as a single indicator of involvement in crime or delinquency based on whether an adolescent had committed any of 13 violent crimes or property offences in the last 12 months. A quarter of boys and 14% of girls reported *delinquent behaviour* (reference category).

Their level of anxiety was derived from the Spence Anxiety Scale (short form, Spence, 1998) based on the sum of eight items. Total scores ranged from 0 to 24, with higher scores reflecting higher levels of anxiety symptoms. Boys with a total score of 9 or above and girls with a total score of 11 or above were classified as having a higher level of anxiety (reference category). There were 13% of boys and 34% of girls who reported a higher level of *anxiety symptoms* compared to others (reference category).

Their level of depression symptoms was derived using the Short Mood and Feelings Questionnaire (Angold, Costello, Messer, Pickles, Winder & Silver, 1995) based on the sum of 13 items. Total scores ranged from 0 to 26 with the higher scores reflecting a greater level of depression. Adolescents with scores of 8 or more were categorised as having significant depressive symptoms. There were 18% of boys and 32% of girls who were classified as having significant *depressive symptoms* (reference category).

Physical health was measured using PedsQL Physical Functioning scale for teens, adapted from the Pediatric Quality of Life Inventory (PedsQL) 4.0 Teen Report (ages 13–18) (Varni, 1998). The total score was calculated based on the average of eight items with the higher scores reflecting a better physical functioning. An indicator of poor physical health was derived using quartile scores (bottom 25% vs the rest), with the bottom quartile being classified as a poor level of *physical health* (reference category).

Adolescents were also asked whether they were generally happy with how things were for them in their life at the moment of interview. Those who were "strongly disagree"/"disagree"/"neither agree/disagree" were classified as *feeling unhappy* (reference category). Around a quarter of boys and a third of girls reported feeling unhappy.

Family-related factors

Family factors included family socio-demographic background (socio-economic position, residence, single-parent family, financial stress), general family wellbeing (mother's level of depression, experience of stressful life events), and parenting (difficulty monitoring, parent/child conflict, parenting styles).

Socio-economic position was calculated using a z-score based on parental occupation, education and income. An indicator of low socio-economic position (SEP) was derived using quartile scores (bottom 25% vs the rest), with those in the bottom quartile being classified as families from low *socio-economic background*.

Family financial stress was derived from Parent 1s' response on whether they have experienced one or more instances of financial stress in the last 12 months, as indicated by six items (e.g., parent has not been able to pay gas, electricity or telephone bills on time due to a shortage of money). Financial stress (reference category) was reported for around 15% of adolescents.

Family type was derived based on Parent 2s' presence in the home when adolescents were 14–15 years old. Around 13% of adolescents were living in the *single-parent household* (reference category).

Mother's level of depression was measured using the Kessler-6 (K6) scale, a six-item scale measuring psychological distress (e.g., "In the past four weeks about how often did you feel so sad that nothing could cheer you up?"). Total scores ranged from 0 to 24 with the higher scores reflecting a greater level of depression. An indicator of higher levels of depressive symptoms was derived using quartile scores (top 25% vs the rest), with the top quartile being classified as a high level of *mother's depressive symptoms* (reference category).

Family stressful life events were derived from parents' responses on whether any stressful life event happened to them (suffered serious illness, separation, death of a close friend/relative, etc.) in the last 12 months. Around 20% of families reported at least one *stressful life event* (reference category).

Time alone was measured based on adolescents' responses to how many days within the last week preceding the interview they were without an adult for an hour or more. Those who reported four or more days were classified as being alone more often (reference category). Around 24% of children reported being alone more often, there were no gender differences.

Parent 1 reported on the parent/child relationship with six items (disagree and fight, bug each other, yell at each other, stay angry, refuse to talk, stomps out of house) using a five-point scale from "1 = not at all" to "5 = all the time". The total score was derived using confirmatory factor analysis with higher scores reflecting a higher level of "fights" in the family. An indicator of a poor parent/child relationship as reported by parents was derived using quartile scores (top 25% vs the rest), with the top quartile being classified as high levels of *parent/child conflict* (reference category).

Parenting styles as reported by children were derived using the Parenting Style Inventory II that comprised of three scales Responsiveness, Demandingness and Autonomy-Granting (Darling & Toyokawa, 1997). Each scale consisted of five items with responses on a five-point scale from "1 = strongly agree" to "5 = strongly disagree". Total scores varied from 5 to 25 with the lower score reflecting a greater level of mother/father responsiveness/demandingness/autonomy-granting. A binary indicator of less responsive/less demanding/less autonomy-granting parenting style was derived if the respective parenting-style score at least for one parent was in the top quartile of score distribution. Among girls, 42% reported to have at least one non-responsive parent, 36% reported to have at least one non-demanding parent, and 33% reported at least one authoritative parent. Slightly smaller proportions were observed among boys, that is, 35% reported at least one non-responsive parent, 29% reported at least one non-demanding parent, and 27% reported at least one authoritative parent.

Social relationships and school-related factors

Social relationships and school-related factors included unfair treatment by peers, victimisation and bullying, communication with peers, sense of belonging to school, academic self-esteem and absenteeism.

Adolescents were asked whether they thought there were unfairly treated because of their cultural background, skin colour, language, religious belief, sexual identity/same-sex attraction, body size/shape/physical appearance, mental health problems or disability. A binary measure of whether an adolescent felt "*unfairly treated*" was derived if an adolescent reported "yes" to any of the above items. Around 27% of boys and 30% of girls reported feeling "unfairly treated" (reference category).

Bullying perpetration and victimisation measures were derived from the School Climate Scale (Brockenbrough et al., 2002) and the Edinburgh Study of Youth Transitions and Crime (Sweep 5, 2001), and comprised of six subscales: *Physical Victimisation* (three items), *Verbal Victimisation* (three items), *Victimisation by Isolation* (two items), *Physical Perpetration* (three items), *Verbal Perpetration* (three items), and *Perpetration by Isolation* (two items). For each scale a binary indicator was derived for those who reported at least one experience in the last 12 months

(reference category). Around 40% of boys and 23% of girls reported being physically victimised (e.g., being hit or kicked, being grabbed or shoved); around 45% of boys and girls reported being verbally victimised (e.g., were threatened to be hurt or were called mean things); and 26% of boys and 42% of girls reported being deliberately isolated from peers (e.g., were not let to join in). Around 29% of boys and 10% of girls reported bullying others physically (e.g., hit or kicked, grabbed or shoved); 29% of boys and 20% of girls reported threatening others (e.g., threatened to hurt or called others mean things); and about 13% of boys and girls reported deliberately isolating others (e.g., did not let others join in).

Sense of belonging to school was measured using the Psychological Sense of School Membership (short form) that consisted of 12 items. The total score was calculated as the mean of the 12 items with higher scores reflecting a stronger sense of belonging to school. A binary indicator was derived using quartile scores (bottom 25% vs the rest), with the bottom quartile indicating adolescents with a weak sense of belonging to school (reference category).

The frequency of unauthorised absences from school was measured using adolescents' reports on a number of times the adolescent was absent from school without parental permission during the last two weeks preceding the interview. A binary indicator was derived to identify adolescents who had any unauthorised absences during this period (reference category). Around 5% of adolescents were *absent from school* without parental consent during two weeks preceding the interview. There were no gender differences.

Analytical approach

To identify the risk factors associated with adolescents' engagement in self-harm, logistic regressions were estimated with results reported as an odds ratio.⁶ The odds ratio (OR) is a relative measure of risk, which tells how much more likely it is that someone who is exposed to the factor under study will develop the outcome compared to someone who is not exposed. The OR of greater than 1 suggests that the self-harm is more likely for those who were exposed to the factor compared to those who were not. The odds ratio of 1 suggests that there is no difference in the likelihood of self-harm between two groups. An OR of less than 1 suggests that self-harm is less likely for those who were exposed to the factor compared to those who were not.

In order to identify the main factors associated with self-harm, four models were estimated:⁷

- Model 1: includes individual variables only. This model allows examination of the association between adolescent's characteristics and self-harm, in the absence of any other contributing factors.
- Model 2: includes family variables only. This model allows an evaluation of the unique contribution of family factors independent of child and school and friends factors.
- Model 3: includes school and social relationships variables only. This model assesses the role of school characteristics and social relations independently of other factors.
- Model 4: includes all of the above variables. This model allows us to determine the most significant factors associated with self-harm.

To ensure that the differences across models are not attributed to differences in sample size due to missing data on various variables, only those adolescents who provided data on all variables of interest across four models were included in the analysis (i.e., complete case analysis). As a result, the sample size was 2,883 individuals. Gender differences were tested using interaction effects.

A similar approach was employed to identify factors associated with a suicide attempt. As the majority of young adolescents who attempted suicide were also likely to engage in self-harm and girls were more likely to engage in self-harm, it was important to identify the unique contribution of different factors after accounting for self-harm and gender. The sample size was 2,882 individuals. Gender differences were tested using interaction effects.

⁶ Given that the outcome occurs in less than 10% of the unexposed population, the odds ratio provides a reasonable approximation of the relative risks ratios.

⁷ All risk factors included in Models 1 to 3 were tested in bivariate analysis and were significantly associated with an increased risk of self-harm and suicide attempts.

Risk factors associated with self-harm

Table 6.7 (page 131) presents results for logistic regressions of self-harm, focusing on different factors in separate multivariate regressions within blocks (individual variables, family and parenting variables, school and peer-related variables), and then entered into the final model.

Across all models, females were more likely to self-harm than boys. When only individual characteristics were considered (Model 1), adolescents were at a greater risk of engaging in self-harm behaviour if they reported:

- being attracted to adolescents of the same gender, or both genders, or not being attracted to anyone (OR = 1.91, $p < 0.01$);
- a higher level of temperamental reactivity (OR = 2.01, $p < 0.001$);
- being engaged in risky behaviour in the last 12 months (OR = 2.32, $p < 0.001$);
- delinquent behaviour (OR = 1.56, $p < 0.01$);
- having symptoms of depression (OR = 7.26, $p < 0.001$);
- having symptoms of anxiety, though gender differences were observed. Among adolescents who did not report anxiety symptoms, girls were more likely to engage in self-harm compared to boys; and
- being generally not happy at the time of the interview (OR = 2.35, $p < 0.001$).

Physical health, early pubertal development and other temperament characteristics were not associated with an increased risk of self-harm. All these factors but engagement in delinquent behaviour remained statistically significant even after controlling for family, parenting, peer and school characteristics.

When only family characteristics were considered (Model 2), the factors associated with an increased risk of self-harm were:

- non-responsive parent as reported by adolescent (OR = 2.31, $p < 0.001$);
- more authoritative parent as reported by adolescent (OR=2.31, $p < 0.01$); and
- conflict between parents and adolescent as reported by parent (OR = 1.63, $p < 0.001$).

Socio-demographic characteristics, such as family socio-economic position, experience of financial stress, and type of household as well as other family characteristics such as stressful events and difficulty monitoring were not associated with an increased risk of self-harm. No gender differences were observed. When we controlled for child, parenting and school characteristics, parenting characteristics and family-related factors were no longer associated with a greater risk of self-harm.

In Model 3, when school-related characteristics and peer relationships were examined, adolescents were at a greater risk of engaging in self-harm behaviour if they reported:

- being treated unfairly by their peers (OR = 2.47, $p < 0.001$);
- being kicked/hit/shoved/grabbed in the last 12 months (OR = 1.58, $p < 0.05$);
- being verbally threatened by their peers, though only for girls;
- poor school belonging (OR = 2.70, $p < 0.001$); and
- being frequently absent from school (OR = 2.97, $p < 0.001$).

Being a bully was not associated with an increased risk of self-harm when we controlled for other factors within the social domain. In the full model (Model 4), adolescents who reported being unfairly treated or verbally threatened by their peers were at an increased risk of self-harm.

Table 6.7: Factors associated with self-harm				
	Model 1	Model 2	Model 3	Model 4
	OR	OR	OR	OR
	[95% CI]	[95% CI]	[95% CI]	[95% CI]
Individual factors				
Female	4.76*** [2.60–8.71]	4.54*** [3.24–6.35]	3.38*** [1.73–6.59]	3.15*** [2.28–5.33]
Non-heterosexual identity	1.91** [1.23–2.96]			1.89*** [1.40–3.14]
Early pubertal development	1.36 [0.93–1.99]			1.28 [0.88–1.73]
High level of persistence	1.03 [0.66–1.59]			1.08 [0.79–1.86]
High level of introversion	1.15 [0.77–1.70]			1.28 [0.74–1.64]
High level of reactivity	2.01*** [1.33–2.98]			1.68* [1.07–2.35]
Risky behaviour	2.32*** [1.60–3.37]			2.06*** [1.34–2.88]
Delinquent behaviour	1.56* [1.05–2.33]			1.30 [0.85–1.89]
Symptoms of depression	7.26*** [4.64–11.31]			6.40*** [3.70–8.67]
Symptoms of anxiety	3.00*** [1.41–6.37]			3.24** [1.05–2.27]
Poor physical health	1.09 [0.78–1.54]			1.06 [0.81–1.62]
Unhappiness	2.35*** [1.54–3.58]			2.15*** [1.42–2.97]
Family-related factors				
Low SEP (bottom 25%)		1.17 [0.84–1.62]		0.96 [0.65–1.47]
Experience of financial stress		1.37 [0.93–2.01]		1.12 [0.69–1.79]
Single-mum household		0.84 [0.52–1.37]		0.79 [0.40–1.27]
Stressful family events		0.72 [0.48–1.06]		0.78 [0.51–1.21]
Difficulty monitoring		1.38 [0.97–1.95]		1.33 [0.89–1.96]
Often alone		1.31 [0.91–1.90]		1.25 [0.84–1.84]
Mum's depression		1.19 [0.84–1.68]		0.87 [0.59–1.27]
Non-responsive parent		2.31*** [0.99–2.19]		1.25 [0.86–1.81]
Non-demanding parent		1.02 [0.74–1.41]		0.95 [0.67–1.35]
Authoritative parent		2.31** [1.65–3.24]		1.26 [0.88–1.79]
Child–parent conflict		1.63*** [1.16–2.28]		1.19 [0.80–1.76]

Table 6.7 continued on page 132

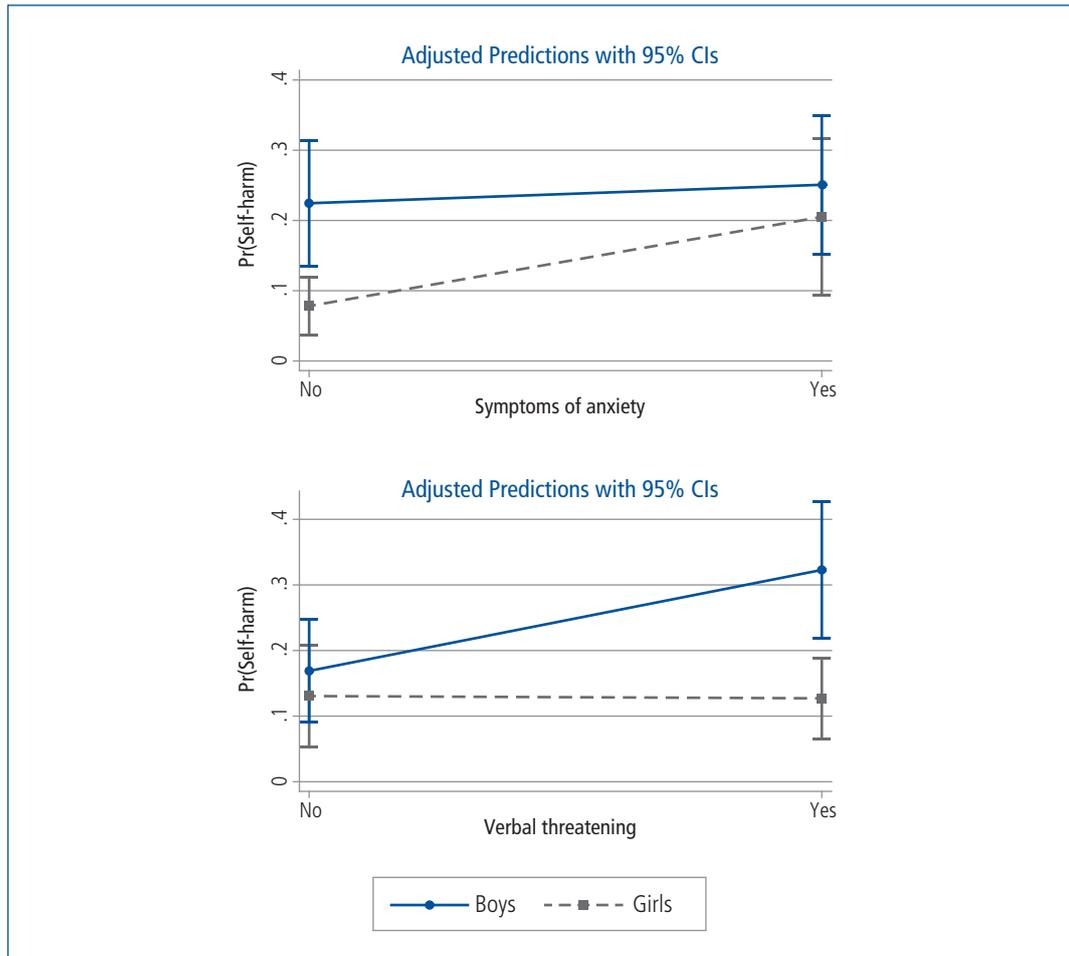
	Model 1	Model 2	Model 3	Model 4
	OR	OR	OR	OR
	[95% CI]	[95% CI]	[95% CI]	[95% CI]
Peer-related and school factors				
Unfairly treated			2.47*** [1.75–3.49]	1.71** [1.08–2.25]
Physical victimisation			1.58* [1.04–2.46]	1.15 [0.79–1.77]
Verbal threatening			1.23 [0.63–2.42]	0.85 [0.38–1.93]
Isolation by peers			0.92 [0.63–1.31]	0.63* [0.42–0.94]
Physical bully			1.43 [0.86–2.22]	1.45 [0.90–2.20]
Verbal bully			0.98 [0.68–1.4]	0.78 [0.55–1.21]
Isolation bully			0.91 [0.58–1.427]	0.94 [0.58–1.38]
Poor belonging to school			2.70*** [1.90–3.92]	0.90 [0.65–1.41]
Frequently absent from school			2.97*** [1.81–4.81]	1.52 [0.90–2.71]
Interactions				
Female* anxiety symptoms	0.42* [0.18–0.96]			0.32** [0.14–0.79]
Female* verbal threatening			2.23* [1.02–4.89]	2.77** [1.04–6.18]
Intercept	0.01 [0.00–0.01]	0.01 [0.01–0.02]	0.01 [0.00–0.01]	0.00 [0.00–0.01]
Total (n)	2,883	2,883	2,883	2,883

Notes: Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

The results of the final model (Model 4) suggest that individual characteristics and relationships with peers are the main factors associated with an increased risk of self-harm. Overall, girls were more likely to engage in self-harm behaviour than boys; however, some differences were apparent. Boys who reported anxiety symptoms were more likely to self-harm compared to boys with no anxiety symptoms. There were no differences observed among girls by anxiety level (Figure 6.2, page 133). Among adolescents who reported being verbally threatened by others, girls were more likely than boys to report self-harm (Figure 6.2).

Also, the odds of self-harm were greater among adolescents:

- who reported being attracted to other adolescents of the same sex, both sexes or not being attracted to anyone compared to those who reported being attracted only to the opposite sex (OR = 1.89, $p < 0.001$);
- with a more reactive temperament compared to those who were less reactive (OR = 1.68, $p < 0.05$);
- who reported having depression compared to those who did not show any depressive symptoms (OR = 6.40, $p < 0.001$);
- who reported feeling not happy compared to those who generally felt happy with their life (OR = 2.15, $p < 0.001$); and
- who reported being treated unfairly by their peers because of their health, skin colour, sexual orientation, language, culture or religion compared to those who felt they were being treated fairly (OR = 1.71, $p < 0.05$).



Note: Predicted probabilities are calculated after adjusting for all other variables shown in Model 4, in Table 6.7 (page 131).

Figure 6.2: Adjusted probabilities of self-harm by anxiety symptoms and peer victimisation (verbal threatening) and gender

Risk factors of suicide attempt

Table 6.8 (page 134) presents results for logistic regressions of suicide, focusing on individual factors within each block (individual factors, family demographics and parenting, school and peers) in separate multivariate regressions, and then all blocks in the final model.

In all four models presented below, we have controlled for self-harm for two main reasons. Firstly, previous research suggests that adolescents' engagement in self-harm is a significant risk factor for suicide attempts. In the current sample, the odds of a suicide attempt were 20 times greater among adolescents who reported self-harm than those who did not ($OR = 20.46$, $p < 0.001$). Secondly, risk factors associated with suicide-related behaviours are similar to the risks factors associated with self-harm (Prinstein, 2008).

When only individual characteristics were considered (Model 1), adolescents were at a greater risk of a suicide attempt if they reported:

- engagement in self-harm behaviour ($OR = 9.32$, $p < 0.001$);
- being attracted to adolescents of the same gender, or both genders, or not being attracted to anyone ($OR = 2.10$, $p < 0.01$);
- being involved in any crime or property offences in the last 12 months ($OR = 1.89$, $p < 0.01$); and
- being generally not happy ($OR = 1.88$, $p < 0.05$).

There were no gender differences observed. When all the factors across three domains were included in the final model, only adolescents' sexual identity and delinquent behaviour were associated with a risk of suicide attempts.

Table 6.8: Factors associated with suicide attempts

	Model 1	Model 2	Model 3	Model 4
	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]
Individual factors				
Self-harm	9.26*** [4.98–17.21]	16.55*** [9.94–27.54]	13.11*** [7.22–23.82]	9.18*** [4.64–18.15]
Female	0.69 [0.43–1.09]	0.63 [0.41–0.98]	0.71 [0.43–1.17]	0.64 [0.38–1.06]
Non-heterosexual identity	2.03* [1.18–3.66]			2.05* [1.14–3.68]
Early pubertal development	0.91 [0.56–1.48]			0.89 [0.55–1.45]
High level of persistence	0.38* [0.16–0.92]			0.48 [0.21–1.21]
High level of introversion	0.69 [0.36–1.30]			0.69 [0.33–1.30]
High level of reactivity	1.52 [0.93–2.49]			1.24 [0.76–2.10]
Risky behaviour	0.85 [0.51–1.42]			0.65 [0.25–1.05]
Delinquent behaviour	2.10** [1.29–3.40]			1.81* [1.05–3.11]
Symptoms of depression	1.65 [0.08–3.37]			1.39 [0.68–2.63]
Symptoms of anxiety	1.31 [0.68–2.55]			1.28 [0.73–2.41]
Poor physical health	0.99 [0.57–1.72]			0.84 [0.46–1.56]
Unhappiness	1.88* [1.10–3.21]			1.61 [0.95–2.74]
Family-related factors				
Low SEP (bottom 25%)		1.60 [0.93–2.76]		1.63 [0.92–2.88]
Experience of financial stress		1.15 [0.60–2.21]		1.18 [0.58–2.25]
Single-mum household		1.34 [0.68–2.65]		1.15 [0.54–2.40]
Stressful family events		1.11 [0.60–2.10]		1.07 [0.52–2.16]
Difficulty monitoring		1.21 [0.72–2.04]		1.21 [0.61–1.98]
Often alone		0.92 [0.58–1.45]		0.87 [0.52–1.44]
Mum's depression		1.75* [1.12–2.75]		1.54 [0.92–2.52]
Non-responsive mother		1.31 [0.74–2.34]		1.21 [0.80–2.18]
Demanding mother		1.33 [0.74–2.41]		1.29 [0.40–1.71]
Authoritative mother		1.83** [1.16–2.90]		1.51 [0.64–1.97]
Child–parent conflict		1.36 [0.78–2.36]		1.11 [0.66–2.12]

	Model 1	Model 2	Model 3	Model 4
	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]
Peer-related and school factors				
Unfairly treated			1.15 [0.64–2.06]	0.96 [0.55–1.70]
Physical victimisation			1.06 [0.60–1.88]	0.89 [0.50–1.59]
Verbal threatening			1.68 [0.86–3.32]	1.57 [0.81–3.25]
Isolation by peers			0.94 [0.51–1.72]	0.87 [0.44–1.49]
Physical bully			1.12 [0.62–2.02]	0.97 [0.54–1.91]
Verbal bully			1.14 [0.66–1.98]	1.04 [0.52–1.68]
Isolation bully			0.99 [0.51–1.91]	1.10 [0.58–2.41]
Poor belonging to school			2.02** [1.25–3.27]	1.15 [0.63–1.96]
Frequently absent from school			1.79 [0.93–3.43]	1.13 [0.46–2.31]
Intercept	0.01 [0.00–0.02]	0.01 [0.00–0.02]	0.01 [0.00–0.02]	0.01 [0.00–0.02]
Total (n)	2,882	2,882	2,882	2,882

Notes: Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

In Model 2, the odds of a suicide attempt were greater among adolescents who reported self-harm compared to those who did not (OR = 16.55, $p < 0.001$); adolescents with mothers with depressive symptoms compared to those with mothers with no signs of depression (OR = 1.75, $p < 0.05$); and adolescents with at least one very authoritative parent compared to those who had less authoritative parents (OR = 1.83, $p < 0.01$). Other family and parenting factors were not associated with a suicide attempt, nor were there any gender differences observed. In the final model, after controlling for child, school and peer characteristics, family factors were not associated with an increased risk of suicide attempts.

In Model 3, when school-related characteristics and peer relationships were examined, adolescents were at a greater risk of a suicide attempt if they reported self-harm behaviour in the last 12 months (OR = 13.37, $p < 0.001$) and a poor sense of belonging to school (OR = 1.99, $p < 0.01$). There were no gender differences observed. Factors such as bullying, victimisation, school absenteeism, negative academic self-esteem and poor communication with peers were not associated with an increased risk of a suicide attempt. In the final model, school-related characteristics and relationships with peers were not associated with suicide attempt.

The results of the final model (Model 4) suggest that, after controlling for self-harm and all other child, family and school characteristics as well as relationship with peers, the only factors associated with an increased risk of a suicide attempt were engagement in self-harm, an adolescent's sexual identity and delinquent behaviour. The odds of a suicide attempt were greater among adolescents:

- who reported engagement in self-harm behaviour in the last 12 months compared to those who did not report self-harm (OR = 9.18, $p < 0.001$);
- who reported being attracted to the same sex or both sexes, not being attracted to anyone or not knowing who they were attracted to compared to those who reported being attracted only to the opposite sex (OR = 2.05, $p < 0.05$);
- who reported being involved in any crime or property offences in the last 12 months compared to those who did not engage in any delinquent behaviour (OR=1.81, $p < 0.05$).

6.5 Co-variation with early indicators of mental health

In the previous section the focus was on understanding the relationship between self-destructive behaviour and factors that were measured around the time the self-harm or suicide attempt occurred, that is, from the Wave 6 LSAC interview. But the predisposition to engage in self-harm and/or attempt suicide can emerge in early childhood, long before adolescents engage in these behaviours. Research suggests that poor socio-emotional wellbeing and mental health problems could be early indicators identifying those at a greater risk of engagement in self-harm and/or attempted suicide (Chapman, Gratz, & Brown, 2006; Esposito-Smythers, et al., 2010). Therefore, this section examines how many adolescents who reported self-destructive behaviour at 14–15 years of age already showed signs of socio-emotional problems at 10–11 or 12–13 years of age.

Early indicators of mental health

Indicators of mental health were derived from children's reports on socio-emotional problems based on the Strength and Difficulties Questionnaire (Goodman, 2001). This instrument is a brief screening tool that includes four scales assessing conduct problems, emotional problems, hyperactivity and peer problems. Each scale measures the degree of reported problems a child may be experiencing and comprises five items with response options from 0 to 10. Higher scores indicate higher levels of socio-emotional problems. The total "difficulty" score is aggregated from responses to questions from these four scales. In this analysis, children's reports at 10–11 and 12–13 years of age were used. To identify children with relatively high problems at multiple ages, a longitudinal measure was derived. Firstly, at each age, children in the bottom 33% of the distribution of each scale were distinguished from the remainder of children. Then, a longitudinal measure with two categories was derived for each scale and the total score:

- never had relatively high problems (non-elevated level); and
- had relatively high problems at 10–11 **or/and** 12–13 years old (elevated level).

The chi-square tests were used to compare proportions of young people who engaged in self-harm and made a suicide attempt by earlier indicators of their socio-emotional wellbeing.

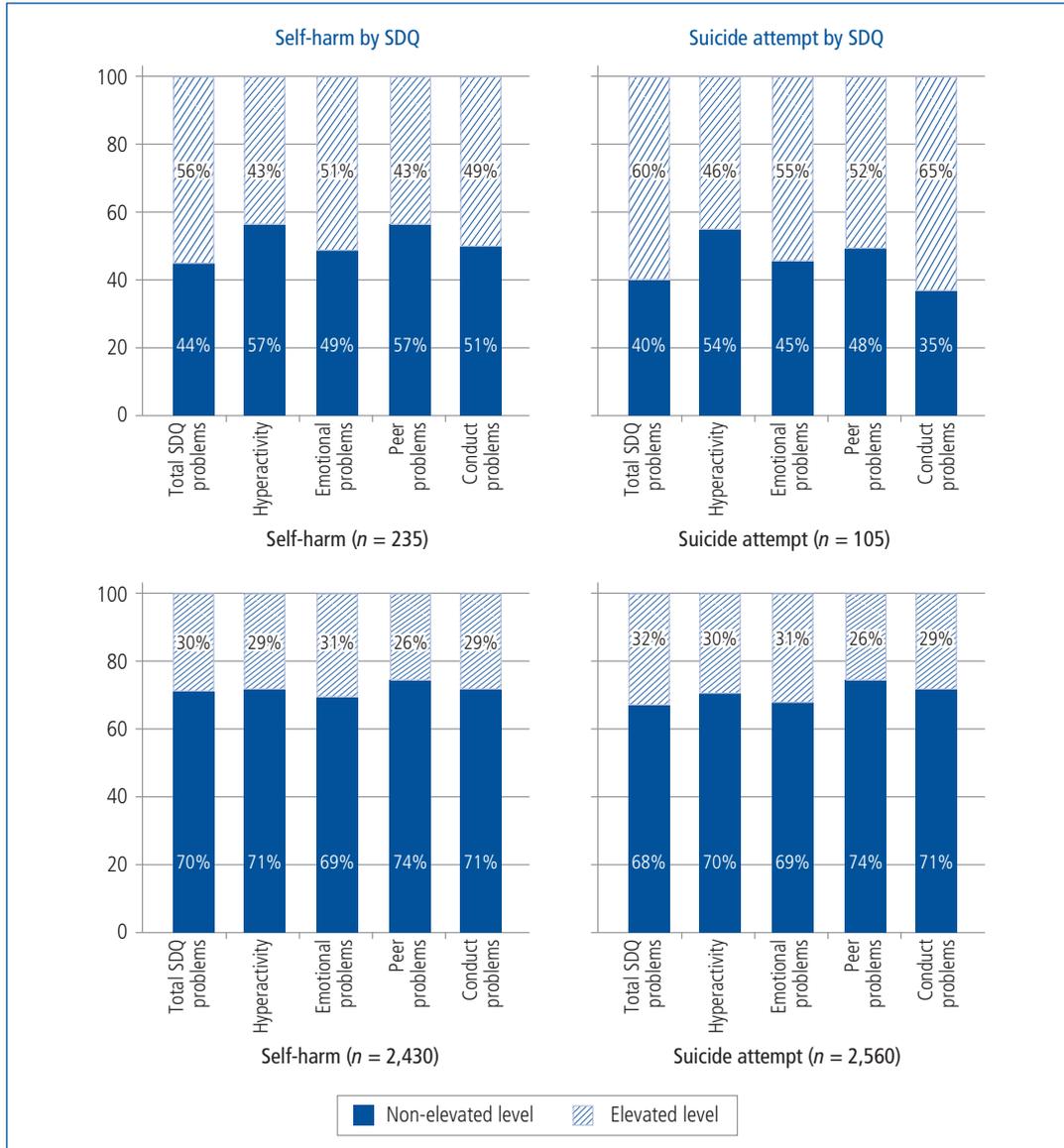
Risk of self-harm by early indicators of mental health

Engagement in self-destructive behaviour (self-harm and suicide attempts) was strongly associated with socio-emotional problems identified at earlier ages (Figure 6.3, page 137). Almost half of the adolescents who reported self-harm at 14–15 years had the following problems at 10–11 and 12–13 years of age: conduct problems (49%), peer problems (43%), emotional problems (51%) and hyperactivity (43%). Among adolescents who did not report self-harm, the proportion of adolescents with socio-emotional problems was smaller, that is, 29% of these adolescents had conduct problems, 26% had peer problems, 31% emotional problems and 29% hyperactivity problems. Differences were also observed in the total problems score. Among adolescents who did self-harm, 56% had high levels of total problems at early ages compared to 30% among those who did not self-harm. No gender differences were observed.

A similar tendency was observed for suicidal behaviour. Among those who attempted suicide, a greater proportion of adolescents had socio-emotional problems in early or pre-teen years: 65% had conduct problems, 52% had peer problems, 55% had emotional problems and 46% had hyperactivity problems. There were no gender differences observed.

It is important to emphasise that among the 14–15 year olds who did report self-destructive behaviour, a large proportion did not have any socio-emotional problems in their pre-teen (10–11 years old) and early teen (12–13 years old) years.

We also examined whether early internalising problems were risk factors of self-destructive behaviour, above and beyond adolescents' current mental health symptoms. Table 6.9 reports odds ratios of self-harm and suicide attempts among adolescents who had socio-emotional problems at early and/or pre-teen years and those who had not, controlling for all other risk factors measured at the same time as self-harm or a suicide attempt occurred. Two different models were fitted:



Notes: Statistical significance was examined using chi-square test. All the differences were statistically significant at: $p < .001$. Weighted sample.

Source: LSAC, K cohort, Waves 4, 5 & 6

Figure 6.3: Self-destructive behaviour at 14–15 years old by internalising problems at 10–11 and/or 12–13 years old

- Model 1—SDQ Scales: includes four measures of adolescents’ early mental health symptoms derived from the SDQ subscales and their current symptoms of mental health derived from the Short Mood and Feelings Questionnaire and Spence anxiety scale controlling for individual characteristics, family and parenting characteristics, school characteristics and relationships with peers.
- Model 2—SDQ Total: includes one measure of adolescents’ early mental health symptoms derived from the SDQ total score and their current symptoms of mental health derived from the Short Mood and Feelings Questionnaire and Spence anxiety scale controlling for individual characteristics, family and parenting characteristics, school characteristics and relationships with peers.

There were no significant associations between self-harm and early symptoms of poor mental health after controlling for individual characteristics, family and parenting characteristics, school characteristics and relationships with peers. But the odds of a suicide attempt were greater among adolescents who had higher scores on the SDQ Conduct Problems scale at 10–13 years of age compared to those who did not, even after controlling for adolescents’ engagement in self-harm, concurrent mental health problems, and other individual, family and social characteristics.

Table 6.9: Modelling self-harm and suicide attempts as a function of early mental health symptoms

	Self-harm ^a		Suicide attempt ^b	
	SDQ scales	SDQ total	SDQ scales	SDQ total
	OR [95% CI]	OR [95% CI]	OR [95% CI]	OR [95% CI]
Mental health symptoms measured at 14–15 years of age				
Symptoms of depression	6.01*** [3.78–9.57]	5.96*** [3.75–9.45]	1.35 [0.67–2.68]	
Symptoms of anxiety	1.45 [0.94–2.23]	1.38 [0.88–2.17]	1.11 [0.56–2.19]	
Mental health symptoms measured at 10–13 years of age				
Conduct problems	0.90 [0.58–1.41]		1.94** [1.18–3.20]	
Peer problems	0.79 [0.50–1.24]		1.25 [0.70–2.56]	
Emotional problems	0.83 [0.56–1.24]		1.02 [0.54–1.91]	
Hyperactivity	1.13 [0.74–1.72]		0.99 [0.61–1.60]	
Total SDQ score		0.90 [0.58–1.41]		1.16 [0.66–2.05]
Total (n)	2,665	2,665	2,665	2,665

Notes: Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$. Weighted sample. ^a Controls: female, non-heterosexual identity, early pubertal development, persistence, reactivity, introversion, risky behaviour, delinquent behaviour, poor physical health, unhappiness, low SEP, financial stress, single-mum household, stressful family events, difficulty monitoring, often alone, mum's depression, non-responsive parent, non-demanding parent, authoritative parent, child–parent conflict, unfair treatment, physical victimisation, verbal threatening, isolation by peers, physical bully, verbal bully, isolation bully, poor belonging to school, frequently absent. ^b Controls: self-harm, female, non-heterosexual identity, early pubertal development, persistence, reactivity, introversion, risky behaviour, delinquent behaviour, poor physical health, unhappiness, low SEP, financial stress, single-mum household, stressful family events, difficulty monitoring, often alone, mum's depression, non-responsive parent, non-demanding parent, authoritative parent, child–parent conflict, unfair treatment, physical victimisation, verbal threatening, isolation by peers, physical bully, verbal bully, isolation bully, poor belonging to school, frequently absent.

Source: LSAC, K cohort, Waves 4, 5 & 6

6.6 Conclusion and key implications

Self-harm and suicide-related behaviour accounts for a considerable portion of disability burden and mortality among adolescents, yet the majority of incidents of such behaviour do not come to the attention of health services or even parents and friends. The purpose of this report was to establish the 12-month prevalence of self-harm and suicide-related behaviours among 14–15 year olds and identify key risk factors associated with such behaviours.

Prevalence rates

Using nationally representative data for 14–15 year olds born in 1999/2000, it was estimated that 15% of girls and 4% of boys reported engaging in self-harm in the last 12 months. Among girls, 12% reported suicidal ideation, 9% developed a suicide plan, and 6% attempted suicide. Smaller rates were reported in boys: 6% of boys experienced suicidal ideation, 5% developed a plan, and 4% attempted suicide. These estimates were higher than the ones reported for 12–15 years old and similar to the ones reported for 16–17 years old in the second Child and Adolescent Survey of Mental Health and Wellbeing (Lawrence et al., 2015). The differences are mainly attributed to differences in the reference group. In the current research, the estimates were presented for 14–15 year olds, whereas in the Mental Health study, the estimates were presented for 12–15 year olds and 16–17 year olds, not for 14–15 years old separately. As 12–13 year olds are less likely to engage

in self-harm and suicidal behaviour is comparatively uncommon in the younger age group, the prevalence rates of 12–15 year olds reported in the Child and Adolescent Survey of Mental Health and Wellbeing would have been lower when reporting on the broader age range.

This research aimed to examine the pathways of suicide attempts. Only one third of adolescents with suicidal ideation did not report any other suicide-related behaviours, whereas approximately half of adolescents with suicidal ideation reported developing a suicide plan and one third (three in ten boys and four in ten girls) reported a suicide attempt. Among those who attempted suicide, six in ten adolescents reported a suicide plan at some point in the last 12 months, suggesting that at least 40% of suicide attempts were unplanned, with the proportion of unplanned suicide attempts being greater among boys than girls (58% of boys and 31% of girls). This finding is consistent with previous research that has shown that impulsive suicide attempts are more common among males than females (Simon et al., 2001). When monitoring youth at risk of attempting suicide, it is important to also be aware of the risk factors that may help to identify those who are more likely to attempt an unplanned suicide (most likely out of impulsiveness).

Important relationships were also observed between self-harm and suicide attempts. Among those who engaged in either of these forms of self-destructive behaviour, one third of boys and girls reported a suicide attempt, whereas among those who attempted suicide, a greater proportion of girls (79%) than boys (36%) reported engaging in self-harm, highlighting the elevated risk of attempted suicide in girls who have self-harmed. In contrast, among those who did not engage in self-harm, boys were more likely to report attempting suicide than girls (33% vs 7%). These findings are consistent with previous research and highlight gender differences in the pathways of self-harm and may reflect different patterns and psychological functions of self-harm between boys and girls that need to be taken into account in developing prevention programs (Andover et al., 2010; Whitlock et al., 2011; Nock, Green, Hwang, McLaughlin, Sampson, Zaslavsky, Kessler, 2013).

While there is no “causal” order in suicidal ideation, plans and attempts, this phenomenology provides an important insight into possible pathways of suicidal behaviour. In addition, these findings are important not only for the scientific understanding of suicidal behaviour but also for developing preventive strategies.

Risk factors

This chapter also provided further insights around risk factors of self-harm and suicide attempts and examined whether there were gender differences. Consistent with previous research, a large number of factors were associated with an increased risk of self-harm: adolescents’ risky behaviours (Madge et al., 2011; Aseltine et al., 2009), temperament, victimisation and discrimination (Bureau et al., 2010; Prinstein et al., 2010; Jarvi et al., 2013), non-heterosexual identity (Ryan et al., 2009), high levels of depression and anxiety (Haw et al., 2001; Skegg, 2005), parenting styles and child–parent conflict (Fergusson et al., 2007; Brent & Mann, 2005), a general feeling of unhappiness, and poor sense of belonging to school (Kidger et al., 2015).

However, after controlling for all cofounders, individual characteristics and experience of peer victimisation were the only key risk factors associated with an increased risk of self-harm. That is, the odds of engagement in self-harm were significantly greater among females compared to males; adolescents who reported being attracted to the same sex, both sexes, or were not sure who they attracted to compared to those who were attracted to the opposite sex only; adolescents with a reactive temperament compared to those without; adolescents with depressive and anxiety symptoms compared to non-depressive and non-anxious adolescents; adolescents who engaged in any risky behaviour (substance abuse, drinking, or sexual activity) compared to those who did not; adolescents who did not feel generally happy compared to those who did; adolescents who reported being unfairly treated because of their race, religion, skin colour, look, disability, etc. compared to those who did not.

While both boys and girls with anxiety symptoms were likely to self-harm, among those without anxiety symptoms, girls were more likely to self-harm than boys. Gender differences were also observed in the experiences of peer victimisation. Among adolescents who reported being verbally threatened by others, girls were more likely to report self-harm compared to boys.

A broad range of factors that were associated with self-harm were also risk factors for attempting suicide. Once engagement in self-harm was taken into account, a number of factors were no longer

associated with elevated odds of attempting suicide. The key factors that did remain significant were engagement in self-harm, non-heterosexual identify and delinquent behaviour. The results suggest that even though not every adolescent who engages in self-harm proceeds with a suicide attempt, self-harm serves as a “gateway” for suicide attempt (Whitlock, et al., 2013). Therefore, there is a need for early response and intervention on any act of self-harm. For example, screening for self-harm may aid in the identification of adolescents at risk of attempting suicide.

This chapter has also explored the potential association between the risk of self-harm and attempted suicide and early indicators of adolescents’ mental health measured two and four years prior to reporting an act of self-harm and/or attempted suicide. In line with previous research, the results signify the important relationships between socio-emotional problems experienced in early and pre-teen years and elevated risks of self-harm and suicide attempts for young people (Hintikka et al., 2009). These findings suggest that screening using early indicators of mental health may assist greatly in identifying those at a greater risk of self-destructive behaviour, particularly self-harm. However, relying only on screening would lead to missing a substantial proportion of young people who do engage in self-harm and attempt suicide but have not experienced these problems during the four years prior to their self-harming.

Overall, the findings highlight that interventions and preventive strategies should take place at both individual and school levels. These preventative strategies should be directed towards young people, in order to increase their awareness of risk factors for themselves and also their peers, as well as increase awareness of the support services and other resources available (e.g., Lifeline, beyondblue, local support groups or online resources such as MindSpot or ECouch), which can be a starting point for identifying issues and finding support. Programs to assist teachers and parents to appropriately assess the signs of self-harm and suicidal intent, including identifying those who are more likely to attempt suicide unplanned (most likely out of impulsiveness), could be of considerable benefit for reducing the overall disability burden of self-destructive behaviour of young people.

Limitations

These findings should be interpreted in light of several limitations, though. First, there were not many gender differences identified. This might be due to low statistical power for tests of interaction effects, especially when controlling for a number of cofounders. Secondly, while the study included measures of mental health, anxiety and depression, specific mental disorders (both ongoing and clinically diagnosed) known to be associated with self-harm and suicidal behaviour, identified early in the child’s life were not included in the analysis. It would be of great importance to understand, using longitudinal data, causal pathways linking child-adolescent mental disorders to adolescents’ self-harm and suicidal behaviour. The insights will be not only of scientific value but also assist in developing actionable strategies of clinical prediction and prevention of these behaviours. Lastly, the temporal relationship between self-harm and suicide attempts was not taken into account. It was assumed that self-harm behaviour was preceding or concurrent to a suicide attempt. Understanding why young people change course could provide important insights into how to prevent suicidal behaviours and suicide itself. Therefore, examining temporal relationships between self-harm and suicide attempts and understanding mechanisms that trigger adolescents to end their life would be important research in its own right. These limitations notwithstanding, the chapter provides valuable information about self-harm and the suicide-related behaviour of 14–15 year olds and emphasises a need for timely and targeted interventions.

6.7 References

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Teaching practices in Australian primary schools

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7.1 Introduction

There is significant debate within the research literature about the effectiveness of different teaching practices in promoting student achievement and engagement. This literature is full of recommendations regarding what educators should and should not do, and many hold passionate views as to why particular approaches are superior to others (Hattie, 2009).

Some aspects of teaching practice that are widely debated include whether students should be grouped within classes for particular subjects according to level of ability (within-class grouping; see Loveless, 1998; Slavin, 1987); the relative effectiveness of whole-group instruction compared with small-group learning and other types of classroom activities (Hattie, 2009); and which approaches work best in teaching fundamental reading and maths skills (see National Inquiry into the Teaching of Literacy, 2005, Sullivan, 2011). For example, with reading, some favour a focus on phonics, while others believe that recognition and comprehension of whole-word units is most effective.

The decision to use a particular teaching approach may be influenced by a range of student-related factors including age, ability, motivation, learning style and socio-cultural background (Isac, Dinis Da Costa, Araujo, Soto Calvo, Albergaria-Almeida, 2015; Rowe, 2006, Tomlinson, 2001). Teaching practices may also vary according to school type (Choy, 1997) and socio-economic status level (Stipek, 2004); teacher characteristics such as the amount of teaching experience (Jensen, Sandoval-Hernandez, Knoll & Gonzalez, 2012) and self-efficacy¹ (Rice, 2010); as well as class size and composition (Bourke, 1986; Veenman, 1995).

Much has been written on the strengths and weaknesses of particular instructional practices. However, less consideration has been given to trying to comprehensively document the type of teaching practices that Australian teachers actually use, and how these may vary in accordance with school, teacher or class characteristics.

This chapter aims to provide a comprehensive snapshot of teaching practices in Australian primary schools and how these differ according to:

1. the year level of the student (Years 1–2, 3–4 or 5–6);
2. school characteristics (school sector, school educational advantage);
3. teacher characteristics (experience, self-efficacy regarding teaching ability); and
4. class characteristics (single-grade or multi-grade class, proportion of students from non-English speaking background or with a diagnosed disability).

¹ The extent to which teachers believe their teaching can make a difference to their students, feel competent to deal with students' problems and have high expectations for their students' achievement (Caprara, Barbaranelli, Steca, & Malone, 2006; Midgley, Feldlaufer, & Eccles, 1989).

In this chapter, three main aspects of teaching practice are examined. Namely (i) whole group versus other forms of instruction (small group, individual and child-initiated activities), (ii) approaches to teaching maths and reading, and (iii) the use of within-class grouping. These teaching practices are selected as they have been subject to debate, and data on these teaching practices are available from the LSAC dataset. It is not the purpose of this chapter to explain why differences in teaching practices occur but instead to document what is happening in Australian primary schools, with a view to generating further discussion.

7.2 Data and methods

Sample

This chapter uses teacher-reported data relating to the LSAC K cohort, focusing on the waves in which study children were in primary school. Teachers provided information about their teaching practices at three waves: when study children were in Years 1–2 (Wave 2), Years 3–4 (Wave 3) and Years 5–6 (Wave 4).² As it is usual within the Australian education system for a student’s classroom teacher to change from year to year, the teacher reporting on each study child typically varied between waves. Further, as teaching practices, rather than study children, were the main focus of the analysis, we used all available teacher data at each wave. Consequently, some variations in sample size were observed across waves and analyses. Table 7.1 presents a summary of the sample size by wave of data collection.

Data source	Years 1–2			Years 3–4			Years 5–6		
	Time	<i>n</i>	%	Time	<i>n</i>	%	Time	<i>n</i>	%
Teacher’s questionnaire	Wave 2	3,632	81.53	Wave 3	3,643	84.29	Wave 4	3,352	80.58

Teacher practice measures

A number of measures were used to examine the types of teaching practices used by primary school teachers:

- type of classroom activity;
- emphasis when teaching mathematics and reading; and
- within-class grouping for mathematics and reading.

Type of classroom activities

At each wave, teachers were asked to report on the frequency with which they used four types of classroom activities on a typical day. Age-appropriate examples were included for each classroom activity type. The examples below relate to Years 1–2 students. The activities were:

1. teacher-directed whole-group activities (e.g., language or numeracy activities, story time or news time);
2. teacher-supported small-group activities (e.g., literacy or numeracy activities, science, cooking or art activities);
3. teacher-supported individual activities (e.g., reading, doing puzzles, writing or completing worksheets); and
4. child-initiated activities (e.g., free choice of activities, free play in outdoor activities, pretend play).

Ratings were made on a four-point scale: 1 = “never”, 2 = “occasionally”, 3 = “often” 4 = “very often”. Few teachers reported that they “never” engaged in these activities. Therefore, the decision was made to collapse responses into three categories: “never/occasionally”, “often” and “very often”. It should be noted that no quantitative description was provided to teachers to differentiate between “often” and “very often”.

² Note that this school-level data cannot be considered to be nationally representative. Due to LSAC’s clustered sampling design, government schools are under-represented and independent schools are over-represented.

Emphasis when teaching reading and maths

When study children were in Years 1–2 and 3–4, their teachers were asked what their main emphasis was in their approach to teaching (i) reading and (ii) mathematics (hereafter referred to as “maths”). Responses were made on a 7-point scale.

For the reading item, a rating of 1 indicated that the teacher favoured an “emphasis on reading and comprehending whole texts”, a 7 indicated an “emphasis on phonetics and decoding”, while a rating midway between these values signified “equal emphasis on both approaches”.

To aid interpretation, responses were collapsed into three categories, reflecting these three preference options. Ratings from 1–3 were seen as endorsing an “emphasis on reading and comprehending whole texts”, a rating of 4 as indicating “equal emphasis on both approaches” and ratings from 5–7 as favouring an “emphasis on phonetics and decoding”.³

For the maths item, a rating of 1 indicated an “emphasis on talking about and solving mathematical problems”, a 7 indicated an “emphasis on learning rules, facts and procedures”, and a score midway between these values showed that the teacher placed “equal emphasis on both approaches”. As with the reading item, responses were collapsed into three categories to improve interpretability. These were an “emphasis on talking about and solving mathematical problems” (ratings from 1–3), “equal emphasis on both approaches” (rating of 4), and “an emphasis on learning rules, facts and procedures” (rating from 5–7).

Within-class grouping for reading and maths

At each wave, teachers were also asked about the frequency with which they organised their class in achievement level groupings for (i) reading and (ii) maths. Responses were made on a five-point scale whereby 1 = “never” and 5 = “daily”. For the current analyses, responses were collapsed into the following three categories: “never/less than once a week”, “1–2 times a week” and “3 or more times a week”.

Analysis

The use of different teaching practices was compared:

1. at different year levels (Years 1–2, 3–4, 5–6);
2. by school characteristics (school sector, school socio-educational advantage);
3. by teacher characteristics (experience and self-efficacy); and
4. by classroom characteristics (single grade/multi-grade; proportion of class from non-English speaking background; proportion of class with disability).

Descriptive statistics (e.g., crosstabs, ANOVA) were used for these comparisons. Due to the large number of analyses undertaken, only statistically significant results are discussed in detail in this chapter.

7.3 Teaching practices by year level

The use of different teaching practices was compared at each wave to determine whether there were any systematic differences in the approaches teachers used with students in different year levels. Table 7.2 (page 148) provides a summary of those teaching practices that significantly differed according to student year level, and a more detailed discussion of the results follows.

³ Notably, only 1% of teachers put emphasis only on phonetics or understanding the whole text in Years 1–2. In Years 3–4, only one teacher reported putting emphasis only on phonetics and around 100 teachers (2%) reported focusing on understanding the whole text only.

Table 7.2: Summary of differences in teaching practices by year level

Classroom activities	
Directed whole group	ns
Supported small group	Used less frequently as students matured
Supported individual	ns
Child-initiated	Used more often with older students
Emphasis in teaching styles	
Reading	Increasing preference for emphasis on “reading and comprehending the whole text” as students matured
Maths	Decreasing preference for “talking about and solving mathematical problems” as students matured
Within-class grouping	
Reading	Used less frequently as students matured
Maths	Use of this practice highest in Years 3–4

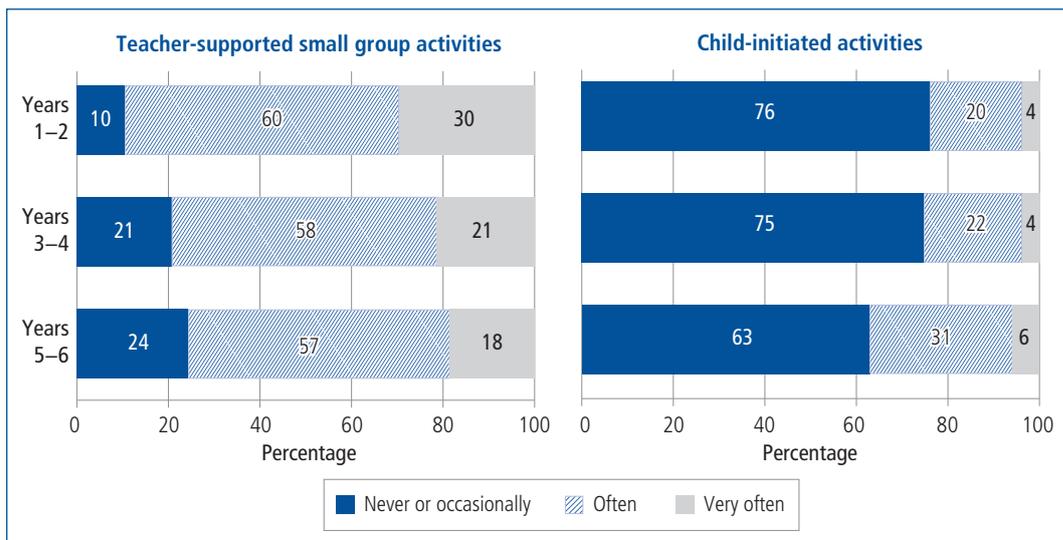
Note: ns = not statistically significant at any wave based on the results of chi-square test at $p < 0.05$.
 Source: LSAC K cohort, Waves 2, 3 and 4

Type of classroom activities

As indicated in Figure 7.1, student year level was not significantly associated with teachers’ use of directed whole-group activities or supported individual activities, with similar proportions of teachers using these approaches across all year levels (Years 1–2, 3–4 and 5–6).

However, there was some variation in teachers’ use of supported small-group activities by year level, with teachers reporting that they were less likely to frequently use these activities, or engage in them at all as students matured (see Figure 7.1). For example, only 18% of teachers reported running supported small-group activities “very often” in Years 5–6 compared to 30% of teachers in Years 1–2. Conversely, almost a quarter of teachers reported engaging students in small groups “never/occasionally” in Years 5–6 compared to one in ten teachers in Years 1–2.

Teachers also differed in their use of child-initiated activities in accordance with the age of their students. While the majority of teachers reported “never/occasionally” running child-initiated activities, a higher proportion of teachers reported engaging older students in these activities than younger students (37% used child-initiated activities “often” or “very often” in Years 5–6 compared with 24% in Years 1–2).



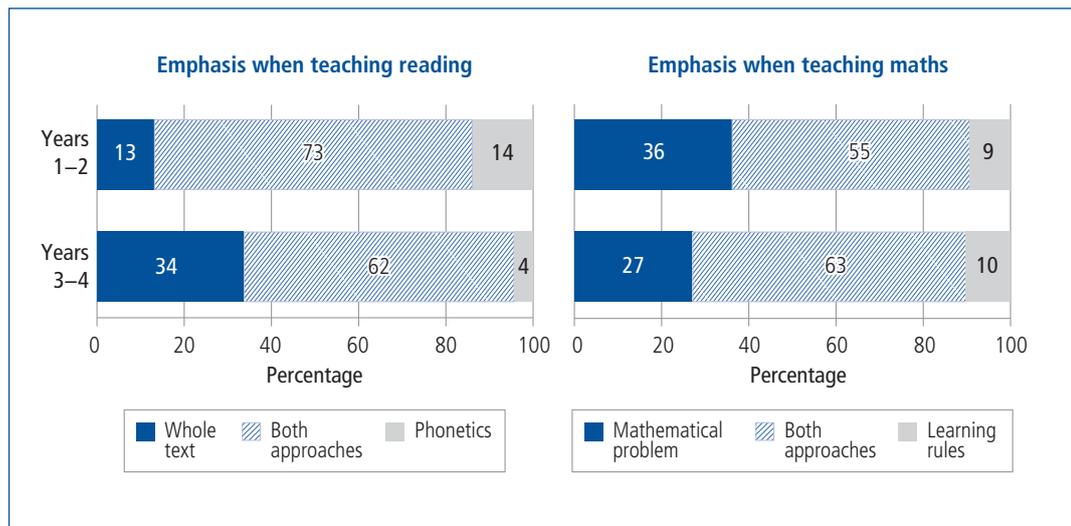
Notes: Teacher supported small-group activities: $\chi^2(4, n = 10,096) = 276.7, p < .001$; child-initiated activities: $\chi^2(4, n = 10,097) = 169.1, p < .001$. The pooled data across three waves was used in the analyses. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Waves 2, 3 and 4

Figure 7.1: Frequency of teachers’ engagement in different types of classroom activities, by year level

Emphasis when teaching reading and maths

Different patterns were observed across year levels in the approaches teachers took to teaching reading (Figure 7.2). While the majority of the teachers placed equal emphasis on both approaches when students were in Years 1–2 and 3–4, teachers were more likely to favour an emphasis on “reading and comprehending whole texts” when students were in Years 3–4 (34%) than when they were in Years 1–2 (13%). A much smaller proportion of teachers reported placing a greater emphasis on “phonetics and decoding”. Furthermore, preference for this approach declined as students matured (14% of teachers favoured this approach in Years 1–2 compared with only 4% of teachers in Years 3–4).



Notes: *Emphasis in reading* (whole texts = an emphasis on reading and comprehending whole texts; phonetics = an emphasis on phonetics and decoding): $\chi^2(2, n = 6,737) = 505.8, p < .001$. *Emphasis in maths* (mathematical problem = an emphasis on talking about and solving mathematical problems; learning rules = an emphasis on learning rules, facts and procedures): $\chi^2(2, n = 6,707) = 64.4, p < .001$.

Source: LSAC K cohort, Waves 2 and 3

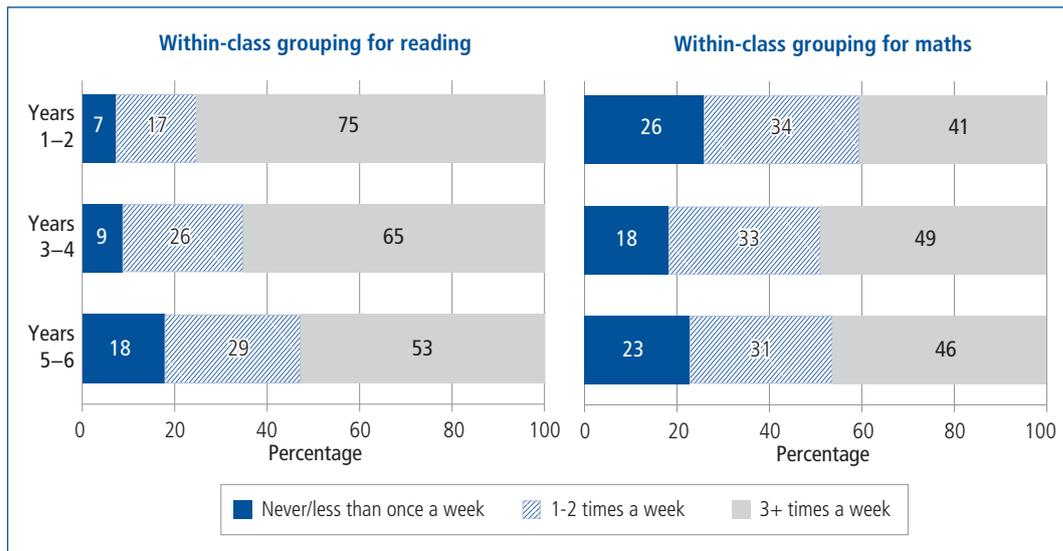
Figure 7.2: Emphasis when teaching reading and maths, by year level

When teaching maths, the majority of Years 1–2 and 3–4 teachers also reported focusing equally on both approaches (Figure 7.2). The proportion of teachers who favoured “talking about and solving mathematical problems” was greater in Years 1–2 (36%) than Years 3–4 (27%). One in ten teachers at both waves reported a preference for “learning rules, facts and procedures”.

Within-class grouping for reading and maths

Figure 7.3 (page 150) reports the frequency with which teachers reported using within-class grouping when teaching reading and maths. As this figure shows, the use of within-class grouping was very common at all year levels; however, within-class grouping for reading was used less frequently with older students. For example, just over half of teachers reported using within-class grouping for reading three or more times per week when students were in Years 5–6, compared with 65% of teachers in Years 3–4, and 75% in Years 1–2.

Use of within-class grouping for maths was also common among teachers. Use of this practice was highest in Years 3–4, with almost half of teachers reporting that they used within-class grouping for maths three or more times a week.



Notes: *Within-class grouping for reading:* $\chi^2(4, n = 10,039) = 423.1, p < .001$. *Within-class grouping for maths:* $\chi^2(4, n = 10,008) = 74.6, p < .001$. Percentages may not total exactly 100.0% due to rounding.
 Source: LSAC K cohort, Waves 2, 3 and 4

Figure 7.3: Within-class grouping when teaching reading and maths, by year level

7.4 Teaching practices by school characteristics

Next, the use of different teaching practices was examined across (i) different school sectors, and (ii) schools with differing levels of socio-educational advantage. As variations were noted in teachers’ use of different teaching practices according to the year level they taught, results are presented by year level throughout the remainder of the chapter.

School type

At each wave, parents provided information about the type of school their child attended (i.e., government, Catholic, or independent). Close to 70% of teachers surveyed at each year level (between 67% and 69%) taught at government schools, 21% worked in Catholic schools and about one in ten (between 10% and 13%) in independent schools.

The use of different teaching practices in government, Catholic and independent schools was examined. There was some variation in sample size between analyses due to missing data. A summary of the results follows (see Table 7.3).

Table 7.3: Summary of differences in teaching practices, by school type

Classroom activities	
Directed whole group	ns
Supported small group	Teachers at independent schools used less frequently (all year levels)
Supported individual	Teachers at independent schools used more frequently (Years 3–4 only)
Child-initiated	Teachers at independent and government schools used more often in Years 1–2; teachers at independent and Catholic schools used more often in Years 5–6
Emphasis in teaching styles	
Reading	Teachers at independent schools more likely to place greater emphasis on phonetics and decoding (Years 1–2 and 3–4)
Maths	Teachers at independent schools more likely to place greater emphasis on learning rules, facts and procedures (Years 1–2)
Within-class grouping	
Reading	Teachers at government schools used more frequently (all year levels)
Maths	Teachers at government schools used more frequently (all year levels)

Notes: ns = not statistically significant at any wave based on the results of chi-square test at $p < .05$.
 Source: LSAC K cohort, Waves 2, 3 and 4

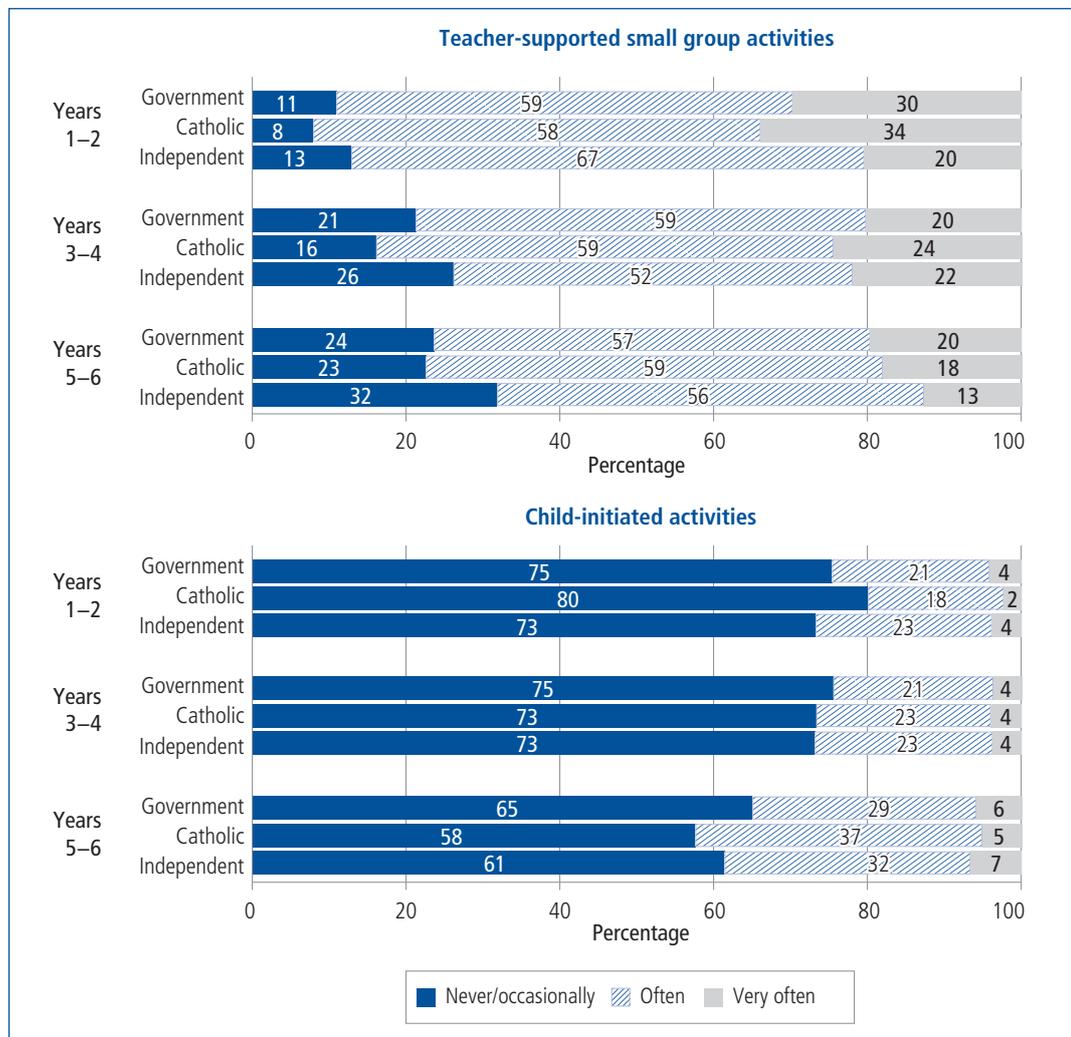
Type of classroom activities

Significant differences were observed in the frequency with which teachers from different school types (i.e., Catholic, government or independent) reported engaging their students in supported small group activities. Teachers working in independent schools were somewhat less likely than other teachers to use these activities, with a higher proportion of independent school teachers at each year level indicating that they “never or occasionally” engaged in supported small-group activities (see Figure 7.4).

Although the majority of teachers across different sectors reported using child-initiated activities only occasionally or not at all, differences were not consistent across year levels (Figure 7.4).

Significant differences were also observed in the frequency with which government, Catholic and independent school teachers used supported individual activities, though only with Years 3–4 students (not shown in figures). Teachers at independent schools were more likely to report that they frequently used supported individual activities than their counterparts at Catholic and government schools (used “very often”: independent 28.8%, government 21.8%, Catholic 19.8%; $\chi^2(4, n = 3,587) = 14.3, p < .05$).

In contrast, there were no differences between teachers from government, Catholic and independent schools in their frequency of use of directed whole-group activities.



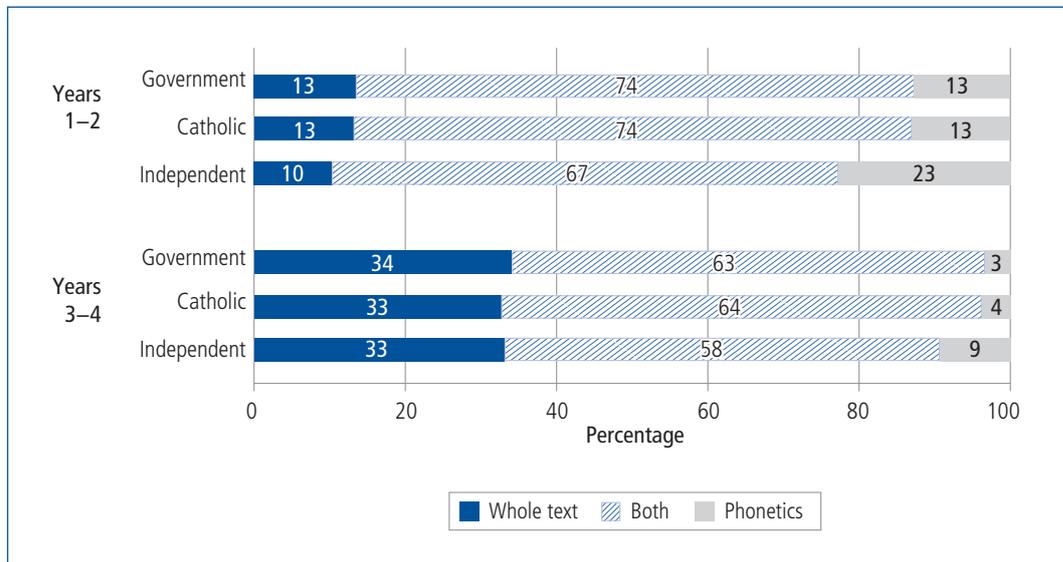
Notes: *Teacher-supported small-group activities*: Years 1–2: $\chi^2(4, n = 3,171) = 23.0, p < .001$; Years 3–4: $\chi^2(4, n = 3,587) = 21.8, p < .01$; Years 5–6: $\chi^2(4, n = 3,338) = 21.0, p < .01$. *Child-initiated activities*: Years 1–2: $\chi^2(2, n = 3,174) = 7.6, p < .05$; Years 3–4: not significant; Years 5–6: $\chi^2(2, n = 3,340) = 13.1, p < .01$. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Waves 2, 3 and 4

Figure 7.4: Frequency of supported small group activities and child-initiated activities, by school type

Emphasis when teaching reading and maths

Teachers working in different sectors also significantly differed in the approaches they used to teach reading and maths. While most teachers favoured an equal emphasis on “phonetics and decoding” and “reading and comprehending whole texts” when teaching reading, a higher proportion of teachers at independent schools placed greater emphasis on phonetics and decoding than teachers from other schools (Figure 7.5). These differences were evident at different year levels (i.e., Years 1–2 and 3–4).



Notes: *Whole texts* = an emphasis on reading and comprehending whole texts; *phonetics* = an emphasis on phonetics and decoding; Years 1–2: $\chi^2(4, n = 3,167) = 26.3, p < .001$; Years 3–4: $\chi^2(4, n = 3,570) = 32.4, p < .001$. Percentages may not total exactly 100.0% due to rounding.

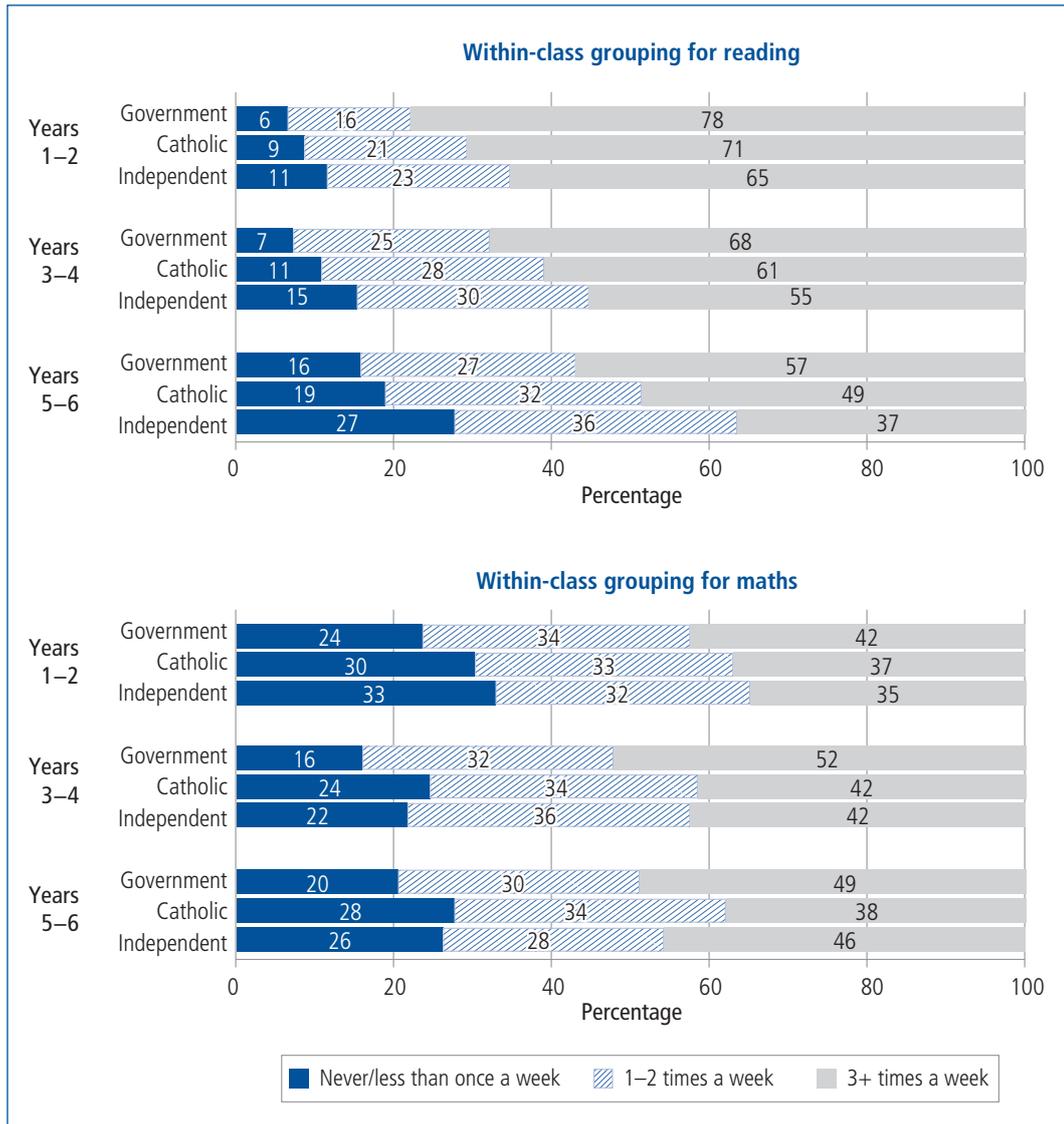
Source: LSAC K cohort, Waves 2 and 3

Figure 7.5: Approach to teaching reading, by school type

Teachers from different school types also differed in the approaches they used to teach maths in Years 1–2 ($\chi^2(4, n = 3,157) = 12.5, p < .05$). Teachers from independent schools were somewhat more inclined than other teachers (particularly Catholic school teachers) to favour an emphasis on “learning rules, facts and procedures” when teaching maths to Years 1–2 students (independent school teachers 14%, government 9%, Catholic 7%). Conversely, they were less likely than other teachers to favour an emphasis on “talking about and solving mathematical problems” (37% of government school teachers favoured this approach compared with 35% of Catholic school teachers and 32% of teachers at independent schools).

Within-class grouping for reading and maths

Clear, consistent differences emerged in the use of within-class grouping by teachers from different school types (Figure 7.6, page 153). Teachers at government schools were more likely than those at non-government schools to frequently use within-class grouping for reading and maths. These differences were evident at all year levels (Years 1–2, 3–4 and 5–6). On the other hand, independent school teachers were the group least likely to use within-class grouping for reading.



Notes: *Within-class grouping for reading*: Years 1-2: $\chi^2(2, n = 3,159) = 34.2, p < .001$; Years 3-4: $\chi^2(2, n = 3,551) = 44.7, p < .001$; Years 5-6: $\chi^2(2, n = 3,329) = 44.1, p < .001$. *Within-class grouping for maths*: Years 1-2: $\chi^2(2, n = 3,146) = 21.8, p < .03$; Years 3-4: $\chi^2(2, n = 3,546) = 44.1, p < .001$; Years 5-6: $\chi^2(2, n = 3,316) = 32.6, p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Waves 2, 3 and 4

Figure 7.6: Use of within-class grouping activities, by school type

School educational advantage

The Index of Socio-Educational Advantage (ICSEA) was used to assess the socio-educational background of students in Years 3-4 and 5-6. ICSEA data was not available for the K cohort in Wave 2 (Years 1-2). This index provides information on the average level of educational advantage among a school's student population. Parent (education, occupation) and school-level factors (geographic location, proportion of Indigenous students) are used to calculate scores on this index. Higher ICSEA scores signify higher relative levels of educational advantage (ACARA, 2015). For the purposes of the current analyses, schools were divided into three groups based on ICSEA scores: (1) lower ICSEA scores (bottom 33% of the distribution of mean scores); (2) average ICSEA scores (middle 33% of the distribution of mean scores); and (3) higher ICSEA scores (top 33% of the distribution of mean scores). The categorisation was based on percentile scores, therefore, allocations to each subgroup were relative to each other, rather than being an absolute measure. Examination of teacher data revealed that about 40 per cent of Years 3-4 and 5-6 teachers worked in schools with lower ICSEA scores (39-40%), a third in average ICSEA schools (32%-33%), and close to 30 per cent in higher ICSEA schools (29-30%).

Teaching practices were compared across schools with differing levels of educational advantage. As ICSEA data was not available when students were in Years 1–2, comparisons could only be made at Years 3–4 and 5–6. A summary of the results follows (Table 7.4).

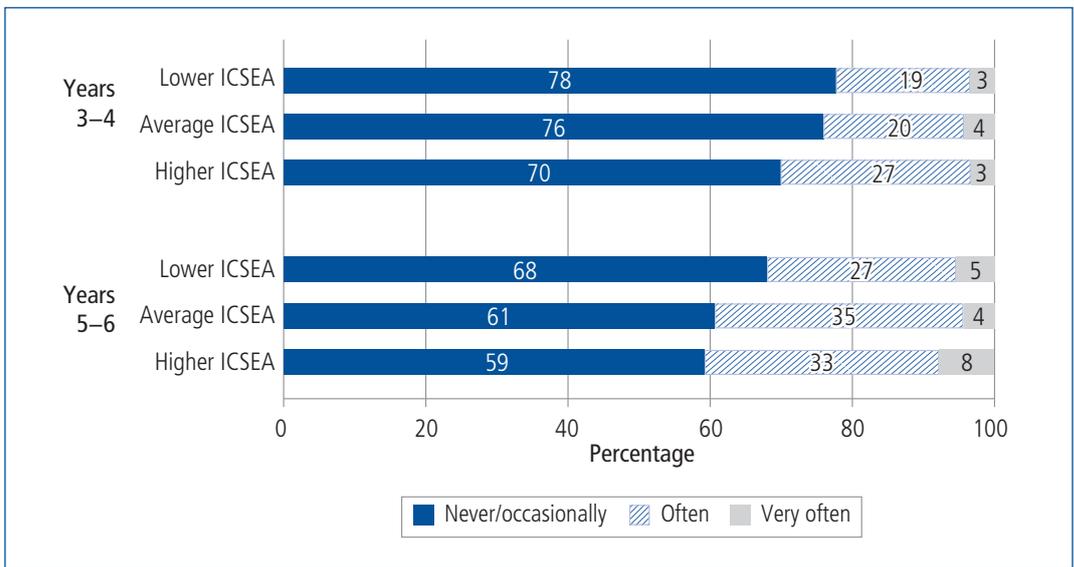
Table 7.4: Summary of differences in teaching practices, by school educational advantage

Classroom activities	
Directed whole group	Teachers at more advantaged schools used less often (Years 5–6)
Supported small group	Teachers at more advantaged schools used more often (Years 3–4)
Supported individual	ns
Child-initiated	Teachers at more advantaged schools used more often (Years 3–4 and 5–6)
Emphasis in teaching styles ^a	
Reading	Teachers at more advantaged schools more likely to place greater emphasis on “reading and comprehending whole text” (Years 3–4)
Maths	ns
Within-class grouping	
Reading	Teachers at less advantaged schools used more often (Years 5–6)
Maths	ns

Notes: ns = not statistically significant at any wave based on the results of chi-square test at $p < 0.05$. ^a Data only available at Wave 3 (Years 3–4).
 Source: LSAC K cohort, Waves 3 and 4

Type of classroom activities

There was a significant relationship between the use of child-initiated activities and the level of school educational advantage (based on ICSEA scores) in Years 3–4 and 5–6. However, the magnitude of this difference was small. Teachers working at more advantaged schools were more likely than teachers at less advantaged schools to frequently engage their students in child-initiated activities (Figure 7.7).



Notes: Years 3–4: $\chi^2(4, n = 3,486) = 25.6, p < .01$; Years 5–6: $\chi^2(4, n = 3,263) = 32.9, p < .001$.
 Source: LSAC K cohort, Waves 3 and 4

Figure 7.7: Frequency of use of child-initiated activities, by school ICSEA

Significant differences were also observed in the frequency that teachers used supported small-group activities and directed whole-group activities, by level of school educational advantage, but only at particular year levels. Teachers working at more advantaged schools were more likely to implement supported small group activities “very often” in Years 3–4 (lower ICSEA = 18%, average ICSEA = 22%, higher ICSEA = 24%; $\chi^2(4, n = 3,490) = 19.0, p < .05$) and less likely to use directed whole

group activities “very often” in Years 5–6, (lower ICSEA = 35%, average ICSEA = 30%, higher ICSEA = 27%, χ^2 (4, $n = 3,262$) = 16.6, $p < .01$). However, the differences were small.

There were no differences observed in teachers’ use of supported individual activities at any year level according to school ICSEA level.

Emphasis when teaching reading and maths

When teaching Years 3–4 students to read, teachers at the most advantaged schools (those within the highest tertile on the ICSEA) were more likely to favour “reading and comprehending whole texts” than teachers at less advantaged schools (χ^2 (4, $n = 3,474$) = 35.0, $p < .001$). Thirty-nine per cent of teachers working in the most advantaged schools reported placing greater emphasis on this approach to reading in Years 3–4, compared with 33% of teachers working in schools with average ICSEA scores, and 29% of teachers in the least advantaged schools. However, teachers working at lower, average and higher ICSEA schools did not significantly differ in their approaches to teaching maths in Years 3–4.

Within-class grouping for reading and maths

A highly significant difference was observed in the use of within-class grouping for reading, according to the level of educational advantage of a school’s student population, but only in Years 5–6 (χ^2 (2, $n = 3,253$) = 116.0, $p < .001$). Teachers working at less advantaged schools tended to use within-class grouping for reading more frequently than teachers at more advantaged schools (lower ICSEA 68% used three or more times a week; average ICSEA 65%; higher ICSEA 62%).

No differences were found in teachers’ use of within-class grouping for maths, according to the level of educational advantage of a school’s student population.

7.5 Teaching practices by teacher characteristics

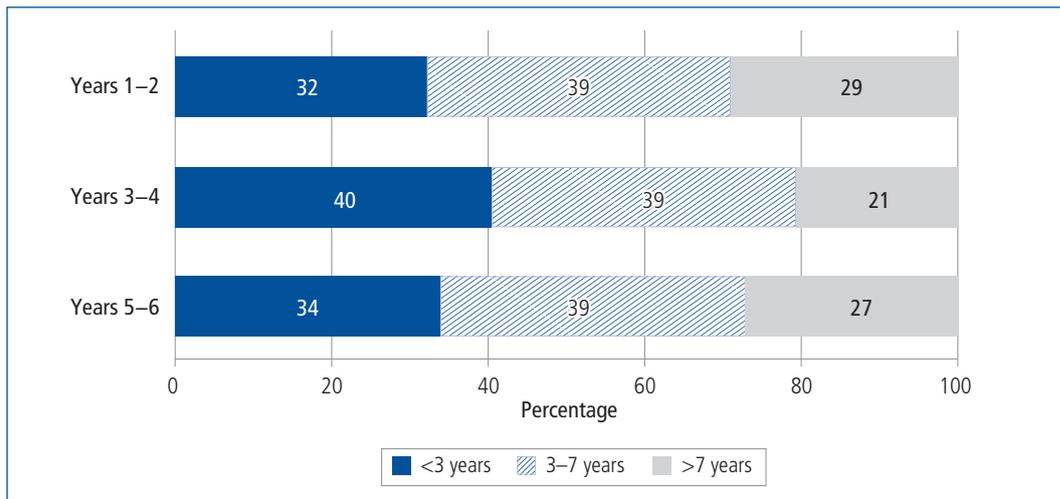
Teaching practices were compared according to teachers’ (i) amount of teaching experience and (ii) self-efficacy about their teaching abilities.⁴ An overview of the findings follows.

Teacher experience

Data were collected from teachers at each wave regarding the number of years of experience they had (i) “altogether as a teacher”, (ii) “as a teacher at this grade level” and (iii) “as a teacher at this school”. Teaching practices were compared using these three measures of teaching experience. Few differences were found when teachers were compared according to their total amount of teaching experience or their experience teaching within their current school. Hence, the decision was made to focus on teaching experience at this grade level in this chapter.

For this analyses, amount of teaching experience was categorised as follows: “less than three years”, “3–7 years” or “more than seven years” teaching at current year level. Some variations were found in teachers’ levels of experience in accordance with the year level they taught. For those who were teaching at the Years 1–2 and Years 5–6 levels, there was very little difference in experience. However, among those who were teaching at the Years 3–4 level, only 21% had more than seven years’ experience and 40% had less than three years’ experience (see Figure 7.8, page 156).

⁴ Differences in teaching practices according to teachers’ highest level of qualification and their major field of study were also examined. However, few significant differences emerged when teaching practices were compared according to teachers’ qualification levels. Further, the vast majority of teachers at each year level listed their major field of study as either Primary Education (77% in Years 1–2 to 90% in Years 5–6) or Early Childhood Education (18% in Years 1–2 to 3% in Years 5–6). Therefore, it was not feasible to examine differences in teaching practices according to teachers’ field of study.



Source: LSAC K cohort, Waves 2, 3 and 4

Figure 7.8: Teachers' experience at current year level

Table 7.5 provides a summary of those teaching practices that significantly differed according to teachers' experience teaching at their current year level.

Table 7.5: Summary of differences in teaching practices, by teachers' experience

Classroom activities	
Directed whole group	ns
Supported small group	More experienced teachers used less often (Years 3-4)
Supported individual	More experienced teachers used less often (Years 3-4)
Child-initiated	More experienced teachers used more often (Years 1-2)
Emphasis in teaching styles	
Reading	More experienced teachers more likely to place equal emphasis on both approaches and less likely to favour emphasis on "reading and comprehending the whole text" (Years 1-2)
Maths	ns
Within-class grouping	
Reading	ns
Maths	More experienced teachers used more often (Years 5-6)

Notes: ns = not statistically significant at any wave based on the results of chi-square test at $p < 0.05$.

Source: LSAC K cohort, Waves 2, 3 and 4

Type of classroom activities

No significant differences were observed in teachers' use of directed whole-group activities by amount of experience teaching at their current year level. Some significant differences were observed in teachers' use of other classroom activities in accordance with their level of experience but these were generally not consistent across year levels and group differences were small.

For instance, teachers with higher levels of experience teaching at their current year level were significantly less likely than other teachers to use supported individual activities with their students in Years 3-4, although group differences were quite small. About 23% of teachers with more than three years of experience teaching at Years 3-4 ("3-7 years" and "more than seven years") engaged their students in supported individual activities never or occasionally, compared with 19% of teachers with less than three years of experience teaching at this year level (Table 7.6, page 157). Teachers with higher levels of experience teaching Years 3-4 students were also less likely to report running supported individual activities "very often".

Teachers' use of supported small-group activities also differed significantly in accordance with the teacher's experience teaching at their current year level. Teachers with more than seven years of

experience teaching Years 3–4 students were somewhat less inclined to run supported small-group activities than teachers with less experience working at this year level.

Almost a quarter (24%) of teachers with more than seven years of experience teaching at this year level reported that they never or only occasionally engaged their students in small-group activities, compared with 20% of teachers in the other two groups. Conversely, teachers with limited experience teaching Years 3–4 students were more likely to report running these activities “very often”.

Table 7.6: Frequency of use of different teaching practices, by teachers’ experience (Years 3–4)

Classroom activity by frequency	Number of years teaching at current year level		
	< 3 years	3–7 years	> 7 years
	%	%	%
Supported individual			
Never/occasionally	19.0	23.7	23.1
Often	56.0	55.5	57.1
Very often	25.0	20.8	19.7
Supported small group			
Never/occasionally	19.7	19.9	24.0
Often	56.1	59.8	58.1
Very often	24.2	20.3	17.9

Notes: *Teacher-supported individual activities* (Years 3–4): $\chi^2(4, n = 3,538) = 16.1, p < .05$; *teacher-supported small-group activities* (Years 3–4): $\chi^2(4, n = 3,538) = 17.0, p < .05$. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Wave 3

A significant difference was also observed in teachers’ use of child-initiated activities according to their level of experience teaching at grade level; however, this was only apparent at Years 1–2 ($\chi^2(4, n = 3,057) = 13.61, p = .029$). A higher proportion of teachers with more than seven years of experience teaching at this year level reported using this approach either “often” or “very often” compared with teachers with less experience (more than seven years, 28%; 3–7 years 23%; less than 3 years, 21%).

Emphasis when teaching reading and maths

Teachers’ approach to teaching reading also significantly differed in accordance with the amount of experience teaching at their current year level ($\chi^2(4, n = 3,052) = 23.4, p < .01$). However, this difference was only observed in Years 1–2. Teachers with higher levels of experience teaching Years 1–2 students were more inclined to place equal emphasis on “phonetics and decoding” and “reading and comprehending the whole text” when teaching students to read than teachers who had been teaching Years 1–2 students for less than three years (at less than three years of experience, 68% favoured an equal emphasis; at 3–7 years, 75%; and more than 7 years, 77%). More experienced teachers were also less likely to favour a greater emphasis on reading and comprehending whole texts with this age group (less than 3 years, 16%; 3–7 years, 12%; more than 7 years, 10%).

No significant differences were found in teachers’ approaches to teaching maths.

Within-class grouping for reading and maths

Teachers’ use of within-class grouping for reading was not significantly related to their experience teaching at their current year level, with no significant differences observed at any year level.

A significant difference was observed in teachers’ use of within-class grouping for maths according to how long they had been teaching at their current year level, but only at Years 5–6 ($\chi^2(2, n = 3,223) = 13.3, p < .05$). Teachers who had more than seven years of experience working with Years 5–6 students tended to use this approach more often than less experienced teachers, particularly those with less than three years of experience teaching at this year level (at more than seven years of experience 50% used within-class grouping “very often”; at 3–7 years, 47% did; and less than 3 years, 43% did).

Teacher self-efficacy

Teacher self-efficacy was assessed at each wave using the following four items: “I have a strong effect on the academic achievement of the students I teach”; “I feel competent in dealing with students’ behavioural problems”; “I feel competent in dealing with students’ learning problems”; and “I have high expectations for the academic success of my students”. Teachers rated their level of agreement with each statement on a five-point scale ranging from 1 = “strongly disagree” to 5 = “strongly agree”. The mean score was calculated and three categories were derived: (1) lower efficacy (less than mean); (2) average efficacy (mean); (3) higher efficacy (above the mean).⁵

Some variations in teacher self-efficacy were evident across year levels, with teachers at Years 3–4 tending to report lower self-efficacy than those teaching other year levels. For instance, 38% of teachers scored below the mean on self-efficacy compared with 33% of Years 1–2 teachers, and only 30% of Years 5–6 teachers. Additionally, fewer teachers in Years 3–4 were classified as having higher self-efficacy (29%) than teachers in Years 1–2 (36%) and Years 5–6 (39%). These differences may be related to teacher experience, as Years 3–4 teachers also reported having lower levels of experience teaching at that year level.

Teaching practices were compared by teacher’s self-efficacy (lower, average, higher). A summary of the results is presented in Table 7.7.

Table 7.7: Summary of differences in teaching practices, by teachers’ self-efficacy

Classroom activities	
Directed whole group	Teachers with higher self-efficacy used more often (all year levels)
Supported small group	Teachers with higher self-efficacy used more often (all year levels)
Supported individual	Teachers with higher self-efficacy used more often (all year levels)
Child-initiated	Teachers with higher self-efficacy used more often (all year levels)
Emphasis in teaching styles	
Reading	ns
Maths	Teachers with lower self-efficacy more likely to place greater emphasis on “learning rules, facts and procedures” (Years 1–2 and 3–4)
Within-class grouping	
Reading	Teachers with higher self-efficacy used more often (Years 3–4 and 5–6)
Maths	Teachers with higher self-efficacy used more often (all year levels)

Notes: ns = not statistically significant at any wave based on the results of chi-square test at $p < 0.05$.

Source: LSAC K cohort, Waves 2, 3 and 4

Type of classroom activities

Teachers significantly differed in their use of various teaching practices according to their level of self-efficacy. These differences were evident for all types of teaching practices examined (i.e., directed whole group, supported small group, supported individual and child initiated) and at all year levels (i.e., Years 1–2, 3–4 and 5–6). As shown in Table 7.8 (page 159), teachers with higher levels of confidence in their teaching abilities were more likely to regularly use all of these classroom activities, compared to those with average and lower self-efficacy. Additionally, teachers with average self-efficacy were generally more likely to engage in these activities than those with lower self-efficacy. Group differences were most pronounced for teacher-supported small group activities (at all waves) and child-initiated activities (in Years 3–4 and 5–6). For instance, 42% of teachers with higher self-efficacy reported using supported small group activities “very often” in Years 1–2 compared with 28% of teachers with average self-efficacy and only 18% of those with lower self-efficacy.

⁵ Continuous measure was not used as the distribution was heavily skewed.

Table 7.8: Frequency of use of different teaching practices, by teachers' self-efficacy

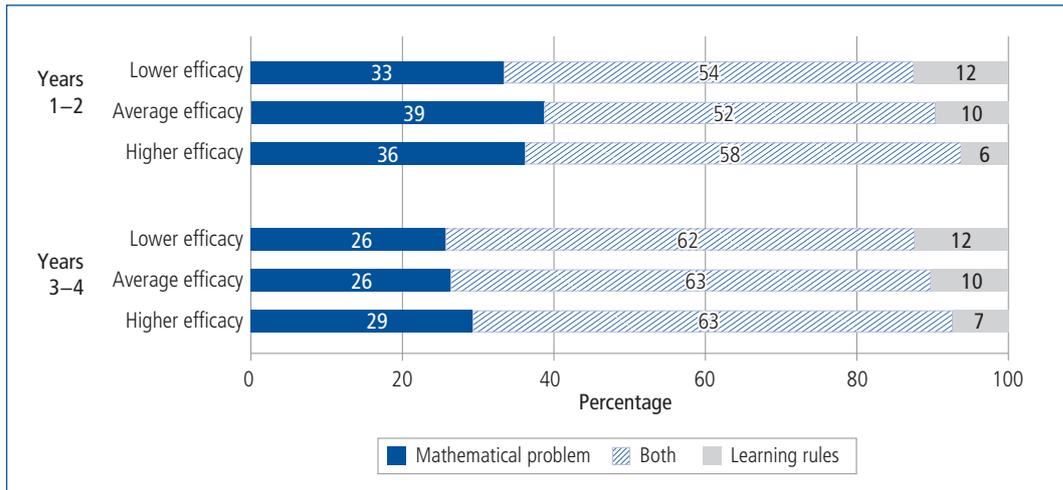
Classroom activity by frequency	Teachers' self-efficacy by year level								
	Years 1–2			Years 3–4			Years 5–6		
	Lower %	Average %	Higher %	Lower %	Average %	Higher %	Lower %	Average %	Higher %
Directed whole group									
Never/occasionally	7.4	6.4	6.8	8.3	10.4	9.5	9.8	9.1	10.4
Often	62.4	57.5	50.9	61.9	55.6	50.1	64.1	59.6	54.7
Very often	30.2	36.2	42.3	29.8	34.0	40.4	26.1	31.3	34.9
Supported small group									
Never/occasionally	14.5	11.9	5.6	27.8	19.4	13.0	33.3	26.1	16.2
Often	67.8	60.4	52.5	57.8	60.7	55.3	55.6	58.4	57.2
Very often	17.6	27.8	42.0	14.5	20.0	31.8	11.1	15.5	26.7
Supported individual									
Never/occasionally	24.2	22.4	15.8	26.2	20.2	18.0	24.0	20.2	15.5
Often	62.2	56.1	53.9	56.4	59.5	51.2	63.1	60.8	56.6
Very often	13.6	21.5	30.3	17.4	20.3	30.8	12.9	18.9	27.9
Child-initiated									
Never/occasionally	79.0	78.7	70.9	83.9	75.4	63.3	73.2	66.4	52.7
Often	18.4	18.0	23.8	15.6	21.6	29.2	24.6	29.4	37.5
Very often	2.6	3.3	5.3	1.5	3.1	7.5	2.2	4.2	9.9

Notes: *Teacher-directed whole-group activities*: Years 1–2: $\chi^2(4, n = 3,152) = 35.7, p < .001$; Years 3–4: $\chi^2(4, n = 3,562) = 37.4, p < .001$; Years 5–6: $\chi^2(4, n = 3,332) = 23.5, p < .01$. *Teacher-supported small-group activities*: Years 1–2: $\chi^2(4, n = 3,149) = 176.2, p < .001$; Years 3–4: $\chi^2(4, n = 3,563) = 150.7, p < .001$; Years 5–6: $\chi^2(4, n = 3,332) = 151.5, p < .001$. *Teacher-supported individual activities*: Years 1–2: $\chi^2(4, n = 3,149) = 96.44, p < .001$; Years 3–4: $\chi^2(4, n = 3,563) = 77.17, p < .001$; Years 5–6: $\chi^2(4, n = 3,331) = 88.0, p < .001$. *Child-initiated activities*: Years 1–2: $\chi^2(4, n = 3,151) = 28.6, p < .001$; Years 3–4: $\chi^2(4, n = 3,559) = 139.8, p < .001$; Years 5–6: $\chi^2(4, n = 3,334) = 135.3, p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Waves 2, 3 and 4

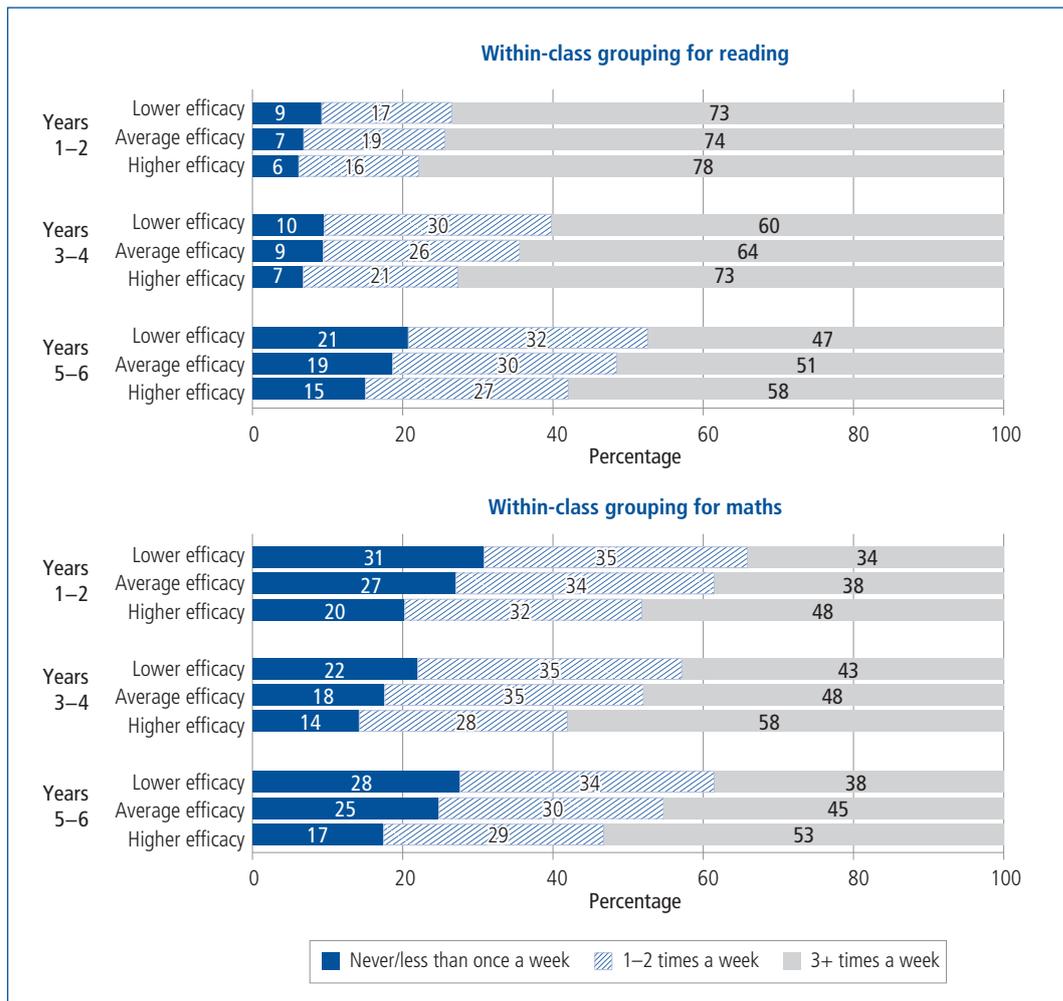
Emphasis when teaching reading and maths

Approaches to teaching reading at Years 1–2 and 3–4 did not differ significantly depending on teachers' levels of self-efficacy. However, teacher self-efficacy was significantly associated with the approach to teaching maths (see Figure 7.9, page 160). Years 1–2 and 3–4 teachers with lower self-efficacy were more likely than teachers with higher self-efficacy to favour a greater emphasis on "learning rules, facts and procedures" when teaching maths, although the number of teachers that favoured this approach was quite small (only 12% of those with lower self-efficacy, and 6–7% with higher self-efficacy).



Notes: Years 1-2: $\chi^2(4, n = 3,134) = 30.5, p < .001$; Years 3-4: $\chi^2(4, n = 3,546) = 17.7, p < .05$. Percentages may not total exactly 100.0% due to rounding.
 Source: LSAC K cohort, Waves 2 and 3

Figure 7.9: Emphasis when teaching maths, by teacher's self-efficacy



Notes: *Within-class grouping for reading*: Years 1-2: not significant; Years 3-4: $\chi^2(2, n = 3,546) = 41.4, p < .001$; Years 5-6: $\chi^2(2, n = 3,325) = 27.7, p < .001$. *Within-class grouping for maths*: Years 1-2: $\chi^2(2, n = 3,141) = 54.2, p < .001$; Years 3-4: $\chi^2(2, n = 3,542) = 59.4, p < .001$; Years 5-6: $\chi^2(2, n = 3,312) = 58.6, p < .001$. Percentages may not total exactly 100.0% due to rounding.
 Source: LSAC K cohort, Waves 2, 3 and 4

Figure 7.10: Within-class grouping for reading and maths, by teacher self-efficacy

Within-class grouping for reading and maths

Teachers with higher confidence in their teaching abilities were significantly more likely to use within-class grouping for reading on a frequent basis at Years 3–4 and 5–6, and to frequently use within-class grouping for maths with all year levels (see Figure 7.10, page 160). For instance, almost three-quarters of Years 3–4 teachers with high levels of self-efficacy reported using within-class grouping for reading more than three times a week, compared with only 60% of those with lower self-efficacy.

7.6 Teaching practices by class characteristics

Finally, teaching practices were compared by (i) class type (single- or multi-grade), (ii) the proportion of students in the class from non-English speaking family backgrounds, and (iii) the proportion of students in the class with diagnosed disabilities.

Single-grade or multi-grade class

At each wave, teachers were asked “Which category best describes your class organisation?” Options were: “Single grade/year level”, “Multi-age/multi-grade (single teacher)”, “Multi-age/multi-grade (team teaching)”, “Ungraded (special education class)”, “Ungraded (alternative school program)”. For these analyses, the multi-age/multi-grade and ungraded categories were combined, resulting in two categories: single-grade and multi-grade. A higher proportion of teachers at Years 5–6 (48%) reported teaching multi-grade classes than teachers at Years 3–4 (41%) and 1–2 (39%).

Teaching practices were compared by class type (single or multi-grade). Table 7.9 provides a summary of the significant results.

Table 7.9: Summary of differences in teaching practices, by class type

Classroom activities	
Directed whole group	Teachers of multi-grade classes used less often (Years 5–6)
Supported small group	Teachers of multi-grade classes used more often (all year levels)
Supported individual	ns
Child-initiated	Teachers of single-grade classes used less often (Years 3–4 and 5–6)
Emphasis in teaching styles	
Reading	ns
Maths	ns
Within-class grouping	
Reading	Teachers of single-grade classes more likely to use 1–2 times a week in Years 1–2, teachers of multi-grade classes used more often in Years 5–6
Maths	Teachers of multi-grade classes used more often (all year levels)

Notes: ns = not statistically significant at any wave based on the results of chi-square test at $p < 0.05$.

Source: LSAC K cohort, Waves 2, 3 and 4

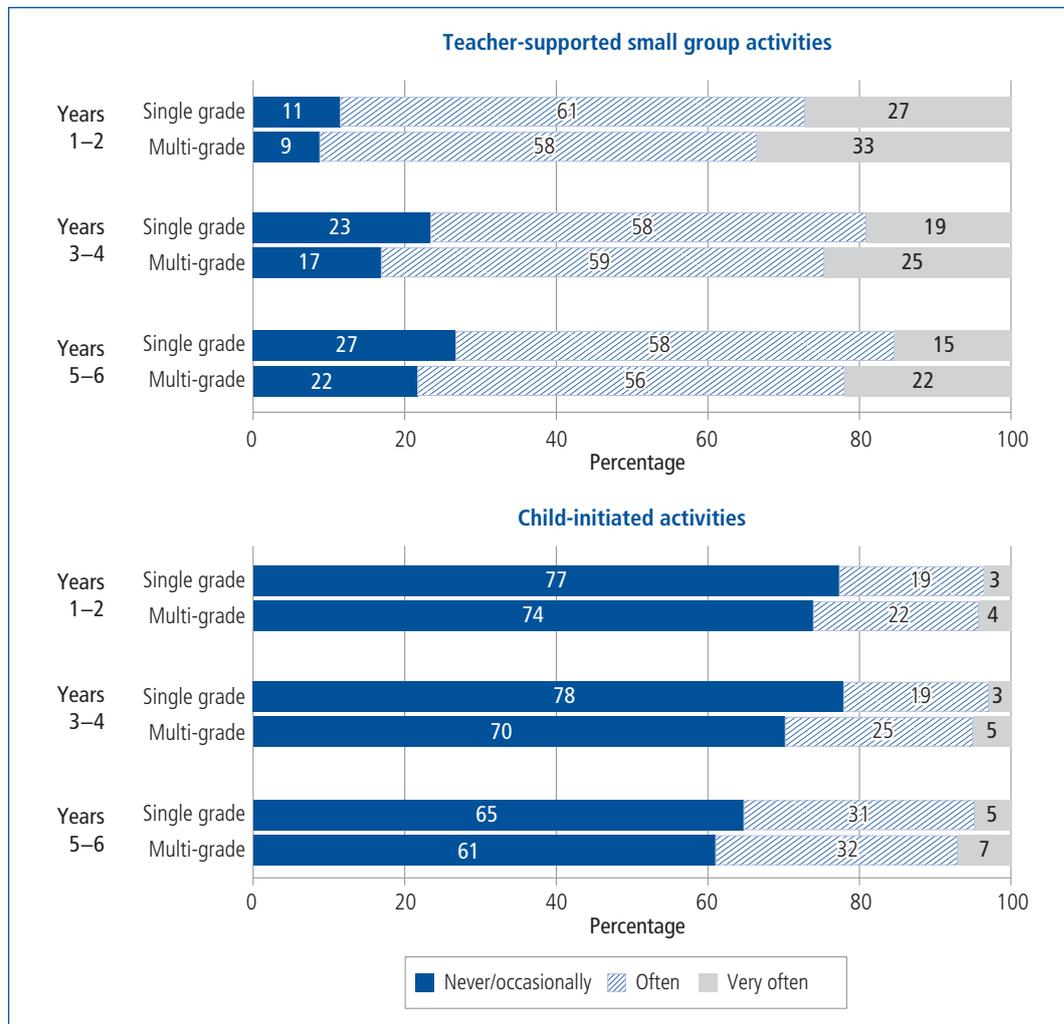
Type of classroom activities

Significant differences were observed in teachers’ use of supported small-group activities, according to class type. Teachers of multigrade classes engaged their students in supported small-group activities more often than teachers of single-grade classes. This difference was evident at all year levels (see Figure 7.11, page 162). For instance, a third (33%) of teachers of multi-grade classes used small-group activities “very often” at Years 1–2 compared with 27% of teachers of single-grade classes.

Conversely, teachers who taught a multi-grade class were significantly more likely than those who taught a single-grade class to report that they “never” or only “occasionally” engaged in directed whole-group activities (12% vs 8%), although this difference was only evident at Years 5–6 ($\chi^2(2, n = 3,333) = 17.0, p < .01$). This difference is to be expected, given that teachers of multi-grade classrooms would be required to provide instruction appropriate to two different year levels.

Class type was also significantly associated with teachers' use of child-initiated activities (see Figure 7.11). Compared to teachers of multi-grade classrooms, teachers of single-grade classes were more likely to report that they never or occasionally used these activities with their Years 3–4 and 5–6 students. Group differences were largest at Years 3–4.

Teachers of single- and multi-grade classes did not significantly differ in their use of supported individual activities at any wave.



Notes: *Teacher-supported small-group activities*: Years 1–2: $\chi^2(4, n = 3,156) = 17.2, p < .01$; Years 3–4: $\chi^2(4, n = 3,583) = 30.5, p < .001$; Years 5–6: $\chi^2(4, n = 3,333) = 28.4, p < .001$. *Child-initiated activities*: Years 1–2: not significant; Years 3–4: $\chi^2(4, n = 3,579) = 29.6, p < .001$; Years 5–6: $\chi^2(4, n = 3,335) = 9.8, p < .05$. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Waves 2, 3 and 4

Figure 7.11: Frequency of teachers' engagement in different types of activities, by class type

Emphasis when teaching reading and maths

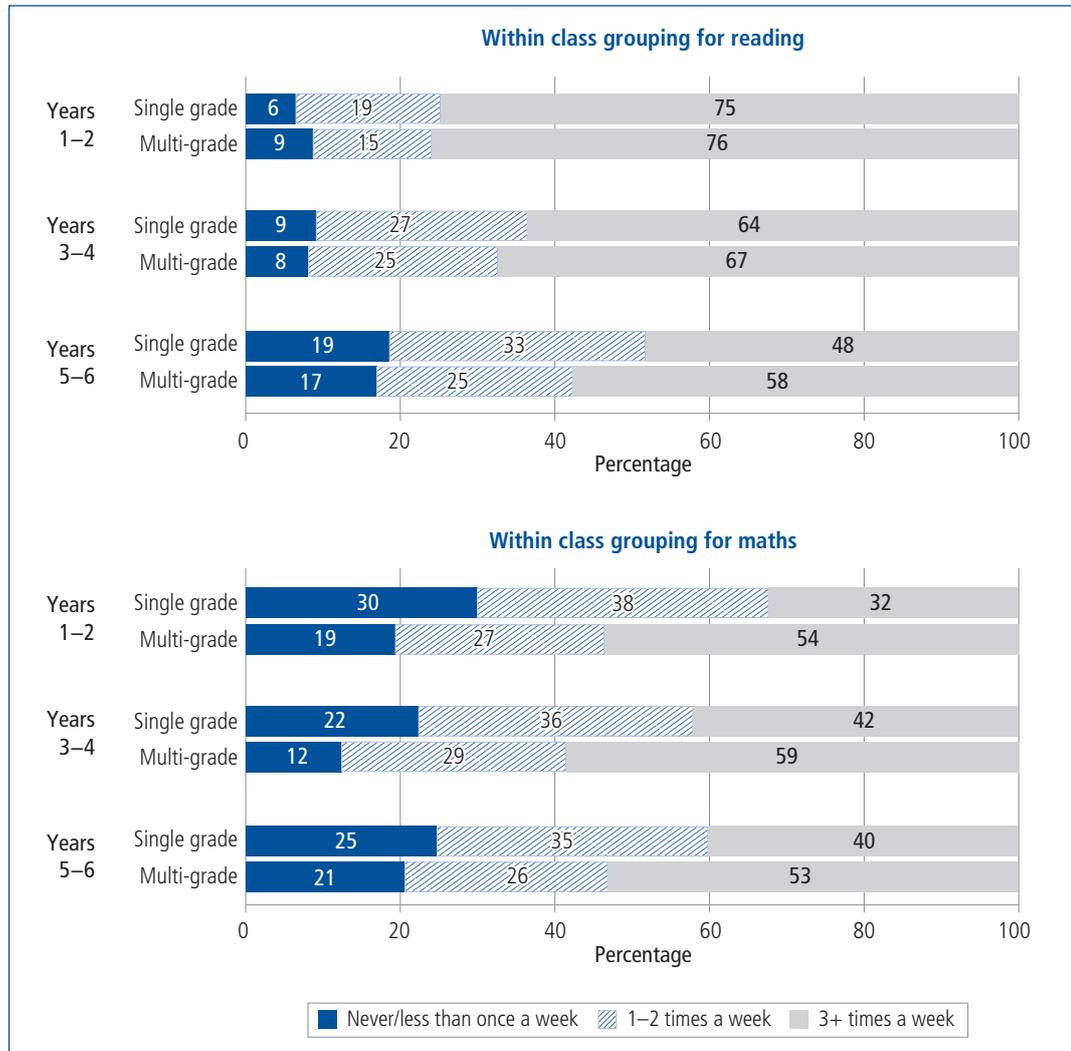
Class type (single- or multi-grade) was not significantly associated with teachers' approaches to teaching reading and maths, at any wave.

Within-class grouping for reading and maths

Some significant differences were found in teachers' use of within-group reading depending upon whether they taught a single- or multi-grade class (see Figure 7.12, page 163). The nature of these differences varied according to year level. For instance, in Years 5–6, teachers of multi-grade classes used within-class grouping for reading more frequently than teachers of single-grade classes (58% of teachers of multi-grade classes reported using these groups “three or more times a week” compared with 48% of single-grade classes). Conversely, in Years 1–2, teachers of single-grade classes were

somewhat more likely than teachers of multi-grade classes to use within-class grouping for reading 1–2 times a week, although the magnitude of this difference was quite small (19% vs 15%).

In comparison, group differences were larger and more consistent when looking at the use of within-class grouping for maths (see Figure 7.12). At all year levels, a notably higher proportion of teachers of multi-grade classes reported more frequently using within-class grouping to teach maths. This difference was most pronounced among teachers in Years 1–2 and 3–4. For instance, more than half (54%) of Years 1–2 teachers of multi-grade classes used within-class grouping to teach maths three or more times a week, compared with about a third (32%) of teachers of single-grade classes.



Notes: *Within-class grouping for reading*: Years 1–2: $\chi^2(2, n = 3,137) = 10.1, p < .05$; Years 3–4: not significant; Years 5–6: $\chi^2(2, n = 3,324) = 32.2, p < .001$. *Within-class grouping for maths*: Years 1–2: $\chi^2(2, n = 3,141) = 139.7, p < .001$; Years 3–4: $\chi^2(2, n = 3,542) = 105.0, p < .001$; Years 5–6: $\chi^2(2, n = 3,312) = 57.1, p < .001$.

Source: LSAC K cohort, Waves 2, 3 and 4

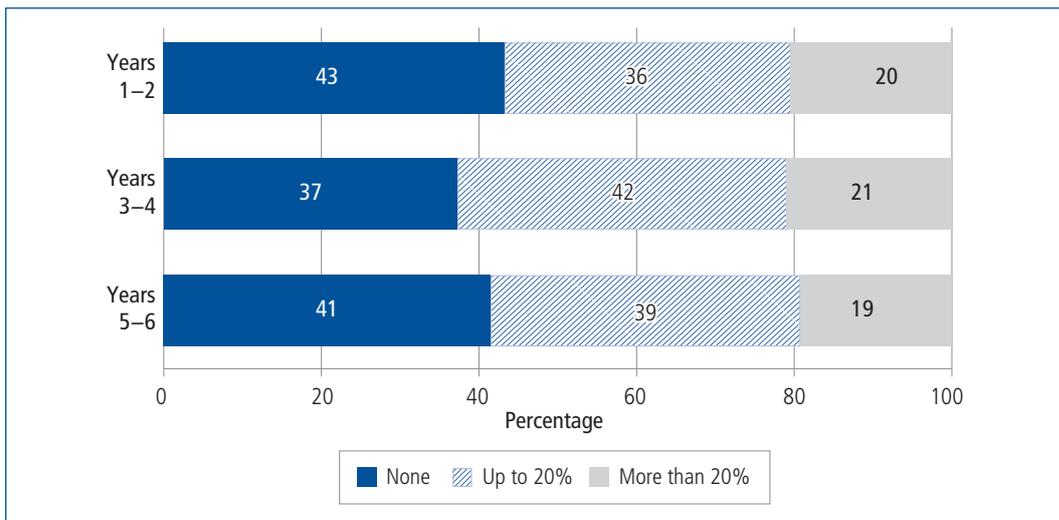
Figure 7.12: Within-class grouping for reading and maths, by class type

Proportion of students from non-English speaking (NES) background

Data were collected at each wave from teachers regarding the number of children in their class that were “from a non-English speaking family background” (hereafter, referred to as NES background). No information was available on their English proficiency. This should be taken into account while interpreting the results.

For these analyses, the number of students in the class who were from a NES background was divided by class size to derive a proportion. Classes were divided into three groups on the basis of the proportion of students from NES backgrounds they contained: “none”, “20% or less”, or “more than 20%”. Approximately one in five teachers (19–21%) at each wave reported that their class was

quite ethnically diverse, with more than 20% of their students having a NES family background (see Figure 7.13).



Notes: Percentages may not total exactly 100.0% due to rounding.
 Source: LSAC K Cohort, Waves 2, 3 and 4

Figure 7.13: Proportion of students from non-English speaking backgrounds, by year level

A few significant differences were observed in teachers’ use of different teaching practices, according to the proportion of students from NES backgrounds in their class (see Table 7.10).

Table 7.10: Summary of differences in teaching practices by proportion of students from NES backgrounds

Classroom activities	
Directed whole group	ns
Supported small group	ns
Supported individual	ns
Child-initiated	Teachers with a high proportion of students from NES backgrounds used less often (Years 5–6)
Emphasis in teaching styles	
Reading	ns
Maths	Teachers with a high proportion of students from NES backgrounds more likely to place equal emphasis on both approaches, and less likely to favour greater emphasis on “talking about and solving mathematical problems” (Years 1–2)
Within-class grouping	
Reading	Teachers with up to 20% students in class from NES backgrounds used less often than those with none or more than 20% (Years 1–2)
Maths	Teachers with a high proportion of students from NES backgrounds used more often (Years 1–2)

Notes: NES = non-English speaking. ns = not statistically significant at any wave based on the results of chi-square test at $p < 0.05$.
 Source: LSAC K cohort, Waves 2, 3 & 4

Type of classroom activities

On the whole, teachers’ use of different classroom activities did not differ in accordance with the proportion of students from NES backgrounds in their class. The only exception related to teachers’ use of child-initiated activities in Years 5–6 ($\chi^2(4, n = 3,196) = 15.2, p < .05$). Teachers whose classes comprised of more than 20% of students from NES backgrounds were less likely than teachers with less ethnically diverse classes to report that they used child-initiated activities “often”. About a quarter (26%) of teachers with more than 20% of students from NES backgrounds in their class used these activities often, compared with about a third of those with some students from NES backgrounds (33%) or none (32%).

Emphasis when teaching reading and maths

The proportion of students in a class from a NES background was not significantly associated with teachers' approaches to teaching reading at any year level.

However, a significant difference was observed in teachers' approaches to teaching maths, depending upon the ethnic diversity of their class, but only at Years 1–2 ($\chi^2(4, n = 3,108) = 14.2, p < .05$). Teachers with a high proportion of students from NES backgrounds were more likely than other teachers to favour an equal emphasis on “talking about and solving mathematical problems” and “learning rules, facts and procedures” (60%) than those with up to 20% students from NES backgrounds (51%) or no students from NES backgrounds (54%).

Within-class grouping for reading and maths

Teachers' use of within-class grouping to teach maths and reading also varied in accordance with the ethnic diversity of their classes, but only at Years 1–2 (see Table 7.11).

Compared to teachers who had a high proportion of students from NES backgrounds in their class and those with no students from NES backgrounds, teachers whose classes comprised of up to 20% of students from NES backgrounds tended to use within-class grouping to teach reading less frequently. In contrast, teachers with more ethnically diverse classes tended to use within-grouping for maths more frequently than other teachers. Almost half (47%) of Years 1–2 teachers whose classes comprised more than 20% students from NES backgrounds used this approach three or more times a week, compared with 37% of those with up to 20% of NES background students and 40% of those with no NES background students.

Table 7.11: Frequency of use of within-class grouping, by proportion of students from NES backgrounds (Years 1–2)

Classroom activity by frequency	Proportion of students from NES backgrounds		
	None %	Up to 20% %	> 20% %
Reading			
Never/less than once a week	6.8	7.9	7.4
1–2 times a week	17.0	20.4	13.8
3+ times a week	76.2	71.7	78.8
Maths			
Never/less than once a week	27.2	27.4	20.6
1–2 times a week	32.7	35.3	32.6
3+ times a week	40.1	37.3	46.8

Notes: *Within-class grouping for reading* (Years 1–2): $\chi^2(2, n = 3,102) = 14.9, p < .05$. *Within-class grouping for maths* (Years 1–2): $\chi^2(2, n = 3,089) = 19.1, p < .01$. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC K cohort, Wave 2

Proportion of students with a diagnosed disability

Data were collected at each wave from teachers regarding the number of children in their class that had “a diagnosed disability (e.g., intellectual, sensory, physical, Autism Spectrum Disorder, developmental delay)”. No information was available on type or severity of disability. This should be taken into account when interpreting the results.

The proportion of students in each class that met this criterion was calculated by dividing the number of students in the class with a diagnosed disability by class size. Using these proportions, classes were classified as having “none”, “up to 10%” and “more than 10%” of students with disabilities.⁶ The distribution of classes with students with disabilities was almost identical in Years

⁶ A cut-off of 10% was selected in favour of a higher cut-off due to the small number of teachers who taught classes with relatively high proportions of disabled students (i.e., less than 4% of teachers taught classes with more than 20% of disabled students). At all waves, less than 20% of teachers reported having two or more students in their class with disabilities, and less than 3% taught five or more disabled students.

1–2 and 5–6, with more than a third of teachers having no students with disabilities in their class, 45–46% teaching classes comprising up to 10% students with disabilities, and 17% of teachers teaching classes in which more than 10% of students had disabilities. At Years 3–4 only 33% of teachers said that none of the children in their class had a diagnosed disability. As it is not possible to determine the severity of these students’ limitations due to their disability, there is likely to be a considerable amount of variation.

Table 7.12 provides an overview of those teaching practices that significantly differed according to the proportion of students in the class with diagnosed disabilities.

Table 7.12: Summary of differences in teaching practices, by proportion of students with disabilities

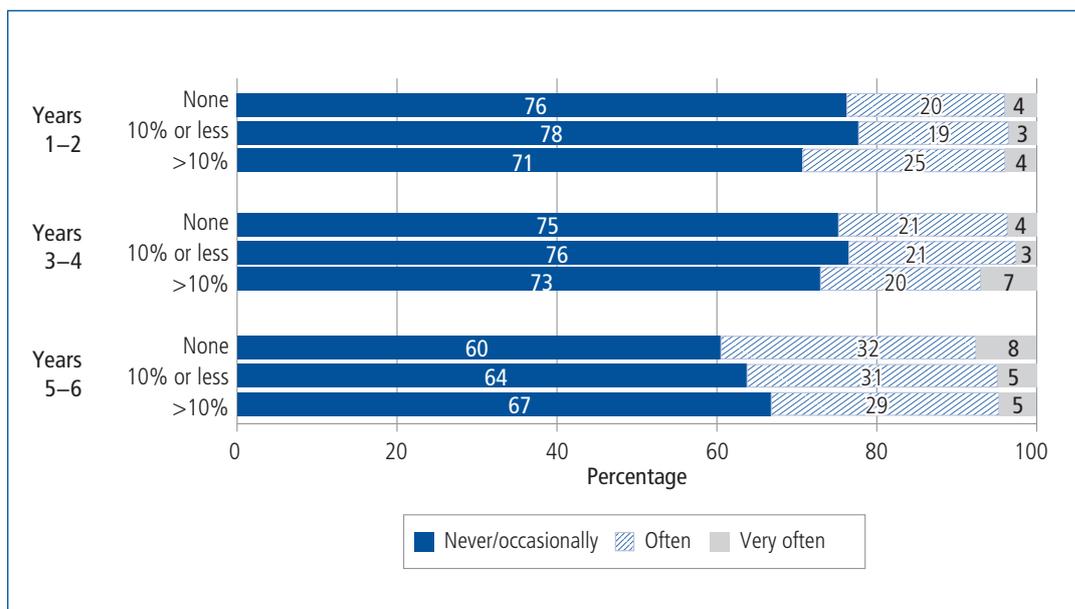
Classroom activities	
Directed whole group	ns
Supported small group	ns
Supported individual	ns
Child-initiated	Teachers with high proportion of students with disabilities more likely to use in Years 3–4, but less likely to use in Years 5–6
Emphasis in teaching styles	
Reading	Teachers with students with disabilities in their class more likely to place greater emphasis on “phonetics and decoding” (Years 1–2)
Maths	ns
Within-class grouping	
Reading	Teachers with students with disabilities in their class used more often (Years 5–6)
Maths	Teachers with students with disabilities in their class used more often (Years 1–2)

Notes: ns = not statistically significant at any wave based on the results of chi-square test at $p < 0.05$.

Source: LSAC K cohort, Waves 2, 3 & 4

Type of classroom activities

It appeared that having students with disabilities in the classroom had little impact on teachers’ use of different classroom activities. The only exception was with child-initiated activities. However, the pattern of group differences was not consistent across waves (Figure 7.14).



Notes: Years 3–4: $\chi^2(4, n = 3,075) = 22.3, p < .01$; Years 5–6: $\chi^2(4, n = 3,196) = 13.6, p < .05$.

Source: LSAC K cohort, Waves 2, 3 & 4

Figure 7.14: Use of child-initiated activities by proportion of students with diagnosed disabilities

In Years 3–4, a slightly higher proportion of teachers who taught classes with more students with a disability reported using child-initiated activities with their students “very often” (7% compared with 3% of those with < 10% of students, and 4% with none). In Years 5–6, teachers with more than 10% of students with diagnosed disabilities were less inclined to engage their students in child-initiated activities, compared to those with no students with diagnosed disabilities. Over two-thirds of teachers whose classes comprised more than 10% of students with diagnosed disabilities never or only occasionally used child-initiated activities, compared to 60% of teachers in classes where no students had a diagnosed disability.

Emphasis when teaching reading and maths

There was some variation in teachers’ approach to teaching reading based on the proportion of students with a disability in their class, but only with younger students. At Years 1–2, teachers of classes with at least one student with a disability were somewhat more likely to favour an increased emphasis on “phonetics and decoding” when teaching their students to read, although the majority of teachers still favoured a more balanced approach to teaching reading ($\chi^2(4, n = 3,116) = 15.0, p < .05$). For instance, 16% of teachers with classes comprising the highest proportions of disabled students and 15% of those with at least one student with a disability reported favouring phonetics and decoding, compared with only 11% of teachers with no students with diagnosed disabilities in their class.

Teachers did not differ in their approach to teaching maths depending upon the number of children with disabilities they had in their class.

Within-class grouping for reading and maths

Some significant differences were found in teachers’ use of within-class grouping to teach reading and maths; however, these were not observed consistently across year levels. For instance, teachers with students with disabilities in their class tended to use within-class grouping to teach reading more frequently in Years 5–6 than those who had no students with a disability in their class ($\chi^2(2, n = 3190) = 20.5, p < .01$). Fifty-seven per cent of teachers with >10% of students with disabilities in their class used within-class grouping three or more times a week, compared with 53% of those with at least one student with a disability and 49% of those with no students with a diagnosed disability.

Similarly, teachers with classes comprising a high proportion of disabled students were also more likely to use within-class grouping to teach maths in Years 1–2. Almost half (49%) of teachers whose classes comprised more than 10% of students with a disability used within-grouping for maths three or more times a week, compared with 40% of those whose classes included at least one student with a disability, and 38% of those who had none ($\chi^2(2, n = 3089) = 19.4, p < .01$).

7.7 Summary

This chapter has provided a comprehensive overview of teaching practices in Australian primary schools. More specifically, this chapter examined how teaching practices differed across year levels and according to a range of school, teacher and class characteristics. Three aspects of teaching practice were examined: (i) types of classroom activities, (ii) approaches to teaching maths and reading, and (iii) within-class grouping for maths and reading. As expected, clear differences were observed in the approaches teachers used with students in different year levels. School, teacher and class characteristics also appeared to influence how teachers worked. An overview of the main findings follows.

Use of classroom activities

Teachers used a variety of teaching approaches in their classrooms, with the majority reporting that they engaged their students in whole group, small group and individual activities on a regular basis. Child-initiated activities, on the other hand, were used much less commonly by teachers. The frequency with which teachers used these activities varied somewhat depending on year level, with supported small group activities being used less frequently as students moved through primary school, and child-initiated activities being used most often with Years 5–6 students.

Teachers' use of different classroom activities varied according to the characteristics of the school that they worked at, the structure and composition of the class that they taught, and their own attributes. Group differences were generally small and centred mainly around how often teachers used small-group activities and child-initiated activities.

Teachers working in independent schools were less likely to use supported small-group activities with students at all year levels, as were teachers with higher levels of experience teaching at Years 3–4. In contrast, the use of supported small-group activities was more common among teachers working at schools with more advantaged student populations (in Years 3–4).

A broad range of school, teacher and class characteristics was associated with teachers' use of child-initiated activities. Teachers working in schools with higher levels of socio-educational advantage tended to engage their students in these activities more often than teachers at other schools (Years 3–4, 5–6). In Years 1–2, the use of child-initiated activities was less common among teachers who were more experienced at that grade level. Those teaching single-grade classes (in Years 3–4 and 5–6) and teachers with a high proportion of students in their class from NES backgrounds (in Years 5–6) also used child-initiated activities less commonly. Teachers' use of these activities also differed according to school sector and the proportion of disabled students within their class, although the nature of these differences varied across year levels.

Additionally, teachers with higher levels of self-efficacy tended to use all types of classroom activities more often than teachers who reported lower levels of self-efficacy. Group differences were strongest for the use of supported small group and supported individual activities.

Emphasis when teaching reading and maths

There was some variation in the approaches teachers took to teaching reading in Years 1–2 and 3–4. While the majority of teachers at each year level favoured an equal emphasis on language structure (i.e., phonetics and decoding) and deriving meaning from text (i.e., reading and comprehending whole texts), teachers were more likely to show a preference for reading and comprehending whole texts with Years 3–4 students than students in Years 1–2.

School, teacher and class characteristics appeared to influence the approaches that teachers used when teaching reading. For instance, compared to those in government or Catholic schools, a higher proportion of teachers working in independent schools reported a preference for phonetics and decoding (in Years 1–2 and 3–4). Teachers with a relatively high proportion of students with a diagnosed disability in their class (> 10%) were also more inclined to place a greater emphasis on this approach (in Years 1–2). On the other hand teachers working in schools ranked high in socio-educational advantage were more likely to favour an emphasis on “reading and comprehending whole texts”, compared to those teachers in less advantaged schools (in Years 3–4). Approaches to teaching reading also varied in accordance with teachers' experience at the year level they were currently teaching. Highly experienced Years 1–2 teachers were more likely to favour an equal emphasis on language structure and deriving meaning from text when teaching reading.

Turning now to maths, most teachers favoured a balanced approach to teaching this subject, and spent time discussing and solving mathematical problems as well as teaching students mathematical rules, facts and procedures. More than a third of Years 1–2 teachers (36%) favoured a greater emphasis on talking about and solving mathematical problems. However, the majority of those teaching Years 3–4 had a strong preference for a more balanced approach.

There was more uniformity in teachers' approaches to teaching maths than there was with teaching reading, with few school, teacher and class characteristics making a difference to their approach to teaching. Teachers who had lower levels of confidence in their teaching abilities were more likely to place greater emphasis on teaching students mathematical rules, facts and procedures (in Years 1–2 and 3–4). Teachers working in independent schools were also more likely to favour this approach (in Years 1–2). In contrast, those who had a high proportion of students in their class from non-English speaking family backgrounds were more likely to favour an equal emphasis on both approaches to teaching maths.

Within-class grouping for reading and maths

The vast majority of teachers reported organising their class in achievement-level groupings for reading and/or maths, particularly with younger students. However, use of within-class grouping for both reading and maths was more frequent among teachers working in government schools (all year levels) and among teachers with higher levels of confidence in their teaching abilities (in Years 3–4 and 5–6 for reading, and at all year levels for maths).

A range of other school, teacher and class characteristics were also associated with teachers' use of within-class grouping for reading; however, these differences were not as consistent, only being observed at particular year levels. For example, among teachers of Years 5–6 students, use of this strategy was more common among teachers working in less advantaged schools, teachers of multi-grade (composite) classes, and those with a relatively high proportion of students with a diagnosed disability. On the other hand, in Years 1–2, within-class grouping was used less regularly for reading if teachers had moderate levels of ethnic diversity (up to 20% of students from NES backgrounds) in their classes.

Class characteristics were also significantly associated with teachers' use of within-class grouping for maths. At all year levels, teachers of multi-grade classes used achievement-level grouping for maths more frequently than teachers of single-grade classes. In Years 1–2, teachers with a high proportion of students in their class from non-English speaking family backgrounds, and those teaching students with diagnosed disabilities also tended to use this strategy more often than other teachers. Use of within-class grouping for maths also differed according to teacher experience. Teachers who had more experience teaching Years 5–6 students tended to use this practice more often than teachers with less experience at this year level.

Limitations

Some limitations of these data analyses should be acknowledged. Firstly, the current chapter examined variations in teaching practices according to a range of school, teacher and class characteristics. These characteristics were selected on the basis on what was available in the LSAC dataset and considerations about chapter readability. As a result, it is likely that other important correlates of teaching practices were not included in our analyses. Secondly, in the interests of readability, the decision was made to limit the scope of these analyses to the K cohort rather than reporting results from both cohorts. Hence, it would be interesting to replicate these analyses with the B cohort to see if a similar pattern of results emerges. Thirdly, ICSEA data were not available at Wave 2, when participants were in Years 1–2, meaning that analyses comparing teaching practices by school educational advantage level were not possible at this wave. Fourthly, student's skill levels within the classroom may differ considerably according to the proportion of children with NES backgrounds and diagnosed disabilities. With more variation in skill levels, teachers may have to use strategies such as ability-based grouping more often. However, there is also likely to be considerable variation within the groups of students who have diagnosed disabilities (depending on the severity of the limitation) and among those from NES backgrounds (depending on levels of English fluency, and it may be the case that these children are actually the higher skilled group). This may contribute to the lack of significant differences in terms of classroom activities. Additionally, missing teacher data resulted in lower sample sizes, affecting these data analyses. Next, data reported in this chapter were collected prior to the implementation of the new Australian Curriculum (which is currently underway). It is possible that variations in teaching practices between states and territories may have affected our findings; however, their influence is unlikely to be large, given that the focus of this chapter was on *how* teachers teach, rather than on *what* they teach. Finally, the measures of teaching practice used in this chapter were all self-reported by the teachers themselves, not objectively measured through observations in the classroom. Hence, it is possible that self-report biases may have influenced study findings.

Conclusion

As the previous summary highlights, teaching practices were not universal. Teachers worked in different ways according to the age of their students, the school where they worked, the structure and composition of their class, and their own characteristics. Group differences were generally quite small and mainly related to the amount of time that teachers devoted to small group and child-initiated activities; the emphases they placed when teaching students to read; and their use

of within-class grouping for reading and maths. Not surprisingly, student year level was a strong correlate of teaching practice, with teachers more likely to favour particular strategies with certain age groups. Teacher self-efficacy was also strongly associated with teachers' use of different teaching practices, particularly the modes of instruction they employed. School sector and class type (single- or multi-grade) were also important differentiators.

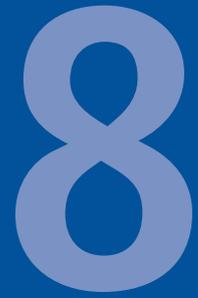
It is not the purpose of this chapter to explain why teaching practices varied in accordance with school, teacher and class characteristics but to provide a snapshot of teaching practices in Australian primary schools. However, it is likely that developmental considerations, and the need to adapt teaching to meet the needs of a wide range of students were among the factors that contributed to these differences. Indeed, findings highlight the ways teachers tailor their teaching to student needs, with within-class grouping appearing to be a popular approach for managing student diversity (in age, ability and cultural background), and teachers of students with disabilities or from non-English speaking backgrounds favouring different approaches to teaching maths and reading (in some year levels).

An important question arising from this research is: What impact does this variation in teacher practice have on student outcomes? Future research examining the interconnections between teacher, student and class characteristics on children's learning would be of benefit in helping to understand which factors work best in promoting student achievement and engagement, and how teaching practices can be best tailored to fit the needs of students.

7.8 References

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Maternal age and family circumstances of firstborn children



Lixia Qu and Ruth Weston

8.1 Introduction

As in other Western countries, the age at which women in Australia become mothers has increased over the last 50 years. In the 1950s–1960s, almost half of all women who became mothers in Australia had their first child in their early 20s; in 2014, 46% of new mothers were aged 30 years and older (Australian Institute of Health and Welfare [AIHW], 2016)¹ and the majority of these births are to cohabiting parents. The proportion of babies born outside marriage has increased from around 5% in the 1950s–1960s to 34% in 2014 (Australian Bureau of Statistics [ABS], 2015).

Studies have found that teenage mothers are particularly likely to be disadvantaged in a range of areas (for Australian studies, see Aitken et al., 2016; Bradbury, 2006; Kalb, Le, & Leung, 2014; Marino, Lewis, Bateson, Hickey, & Skinner, 2016). While having a child when a teenager can limit these mothers' chances of pursuing further education and establishing a career, it appears that those who become mothers as teenagers tend to be already experiencing disadvantaged circumstances in many areas of their lives (e.g., Bradbury, 2006).

Using data from Wave 1 of the B cohort of LSAC, Weston, Soriano, and Qu (2006) compared various circumstances of mothers, according to the age at which they had their first child. The authors found that teenage mothers were the most likely to experience socio-economic disadvantages. However, the women who had their first child in their early 20s were also more likely than those who had their first child at older ages to experience disadvantaged circumstances. Together with the teenage mothers, these mothers were more likely than the older groups to be living without a partner, have low income and low educational attainment levels, and less likely to be employed.² However, they were just as confident in their role as parents and as likely to express warmth to their child, but also slightly more likely to respond harshly towards the child (e.g., become angry with the child, lose their temper, shout at their child).

With regard to older mothers, a great deal of the research has focused solely on the health-related risks for mother and child (Brown, 2016; Li et al., 2013). Women may delay having their first child for many reasons (e.g., changing priorities as they age, earlier relationship separation, inability to find a partner they consider suitable, having a partner who already has children or does not want children, and perceived inability to afford a child) (see Weston, Qu, Parker, & Alexander, 2004). The analyses by Weston et al. (2006) suggested that the women who became mothers at age 38

¹ Indigenous women have children at a younger age than non-Indigenous women in Australia. For instance, 17% of Indigenous mothers and 2% of non-Indigenous mothers who gave birth to a child in 2014 were teenagers, while 10% of Indigenous mothers and 23% of non-Indigenous mothers were aged 35 years and over. These percentages are based on data for all births in 2014, not just first births (AIHW, 2016).

² Using maternal age cut-offs that differed from those used here and analysing the first four waves of LSAC, Baxter (2013a) also found that employment rates were lower among mothers with a lower age at first birth, taking account of various other maternal and family characteristics.

or older tended to be better off than those who became mothers before age 25 across virtually all wellbeing indicators examined. However, compared with the women who became mothers between the ages of 25 and 37, the oldest mothers tended to have lower educational attainment levels and were slightly less likely to be employed. They also tended to have lower gross family incomes than those who had their first child at 25 to 37. It should be noted, however, that the sample of women in the oldest group was small.³

This chapter focuses on the question: Does maternal age have a bearing on the family circumstances in which children are raised over their first 10 years of life? Selected measures of family composition, socio-demographic circumstances and self-reported parenting practices of LSAC mothers are compared according to their maternal age, using the same five maternal age cut-offs as those used by Weston et al. (2006). It extends the earlier study in two ways: by tracking these mothers over 10 years, from 2004–2014 (Waves 1–6), and by including data for K-cohort mothers where possible.

The analyses focus on:

- family composition (family type, number of children and, for partnered mothers, whether in registered marriage or cohabiting);
- mothers' socio-economic circumstances (i.e., educational attainment, maternal employment and the family's financial circumstances); and
- parenting practices.

The next section explains the sample of mothers focused on and the number of mothers represented in each survey wave. This is followed by an outline of the results covering aspects of mothers' living arrangements, indicators of their socio-economic circumstances, and their self-reported parenting practices. A synthesis of these results and a reflection on their meaning are then provided.

8.2 The sample

As explained above, the sample used for this chapter is mothers for whom the LSAC study child was their firstborn child; and the analysis focuses on maternal age (i.e., their age when they became mothers).⁴ Table 8.1 (page 173) shows the number of mothers in each “maternal age” subgroup across the survey waves. Some of the subgroups in these studies, which focused on mothers with B-cohort children in Wave 1, were already quite small (as shown in the top panel of Table 8.1), and became even smaller in later waves due to sample attrition. For this reason, the data for these mothers are combined with those of mothers of K-cohort children where possible. In addition to the omission of all mothers for whom the LSAC study child was not their firstborn, two small groups of other mothers were omitted from the sample: (a) those who were not the primary carer of the study child, given that the information collected from these mothers was more limited; and (b) those who reported in Wave 1 that they had children living elsewhere, where the ages of these children were not recorded.

To overcome the issue of small subgroup sample sizes, the Wave 1 data for mothers of K-cohort firstborn children were combined with the Wave 3 data for mothers of B-cohort firstborn children, as these children were all 4–5 years old. The B- and K-cohort data were also combined when the children were 6–7, 8–9 and 10–11 years old. Data for children at ages 0–1 and 2–3 were only available for mothers of B-cohort children, and data for mothers of K-cohort children in Waves 5 and 6, when their children were over 11 years old, were not included due to small numbers in some subgroups.⁵

After Wave 1, some mothers (and their study child) may have missed a wave and later returned, but the net effect was one of increasing attrition. This net attrition rate was highest for the women who became mothers as teenagers, followed by those who entered motherhood when in their early 20s. For example, for the B-cohort mothers, only 46% of teenage mothers ($n = 61$) and 59% of those in their early 20s ($n = 197$) participated in Wave 6, compared to over 80% of the new mothers in the three older age groups (25+ years). Similarly, among K-cohort mothers, Wave 6 participants

³ Only 102 mothers were in this oldest group.

⁴ In LSAC, 37% of study children in the two cohorts were firstborn.

⁵ For example, there were only 46 K-cohort mothers in the oldest maternal age group (38+ years) in Wave 6. As noted above, maternal age refers to the mother's age when she gave birth to her (firstborn) child.

represented 45% and 57% of those who had their first child when teenagers or in their early 20s respectively ($n = 73$ and 244 respectively) and participated in Wave 6 interviews, compared to over 75% of those who had their first child when aged 25 years and over. (The number of K-cohort mothers in Waves 5 and 6 are not shown in the table.)

Across maternal age and cohort (B or K cohort), systematic differences emerged in some of the characteristics of those who had dropped out of the study by Wave 6, compared to those who continued to participate. For example, of B-cohort mothers in Wave 1, those who had dropped out were more likely to have been single (19% vs 8%), not employed (57% vs 38%), and without any post-school qualification (39% vs 24%). These biases in the results associated with attrition in this chapter were in the same direction for all maternal age groups.

Table 8.1: Mothers of firstborn study children: Sample sizes (n) by age of study child and maternal age⁶

Maternal age (years)	Age of study child (years)					
	0–1	2–3	4–5	6–7	8–9	10–11
	W1 (2004)	W2 (2006)	W3 (2008)	W4 (2010)	W5 (2012)	W6 (2014)
B cohort						
15–19	134	104	88	77	70	61
20–24	331	282	261	244	227	197
25–34	1,160	1,059	1,032	1,019	984	929
35–37	143	137	132	126	123	119
38+	85	83	81	80	77	75
K cohort			W1 (2004)	W2 (2006)	W3 (2008)	W4 (2010)
15–19			112	88	78	73
20–24			332	275	262	244
25–34			1,225	1,127	1,116	1,099
35–37			135	125	125	120
38+			61	57	57	53
B and K cohorts						
15–19	134	104	200	165	148	134
20–24	331	282	593	519	489	441
25–34	1,160	1,059	2,257	2,146	2,100	2,028
35–37	143	137	267	251	248	239
38+	85	83	142	137	134	128

Note: “Maternal age” refers to the mothers’ age at the time they gave birth to their first child (i.e., their study child in this chapter).

As noted above, mothers of B-cohort and K-cohort children were both interviewed in the four waves of data collection when their study child was aged from 4–5 years to 10–11 years old. The patterns of results for each cohort tended to be similar. For simplicity, the results based on the combined samples of the two cohorts are therefore presented, and any clear differences in results are discussed. The results reported in this chapter are based on unbalanced panel data (as shown in

⁶ The sample sizes for B cohort in Wave 1 differed slightly from those used by Weston et al. (2006). The variation was due to the further restriction on the sample in this chapter (focusing on mothers who were interviewed as the primary carer of the study child). In addition, some mothers were found to be ineligible for inclusion because of corrections to the data that occurred after Wave 1. These corrections were based on new information that was made available in subsequent releases of the dataset.

Table 8.1, page 173).⁷ Any clear inconsistencies in the results based on balanced and unbalanced data are discussed below.

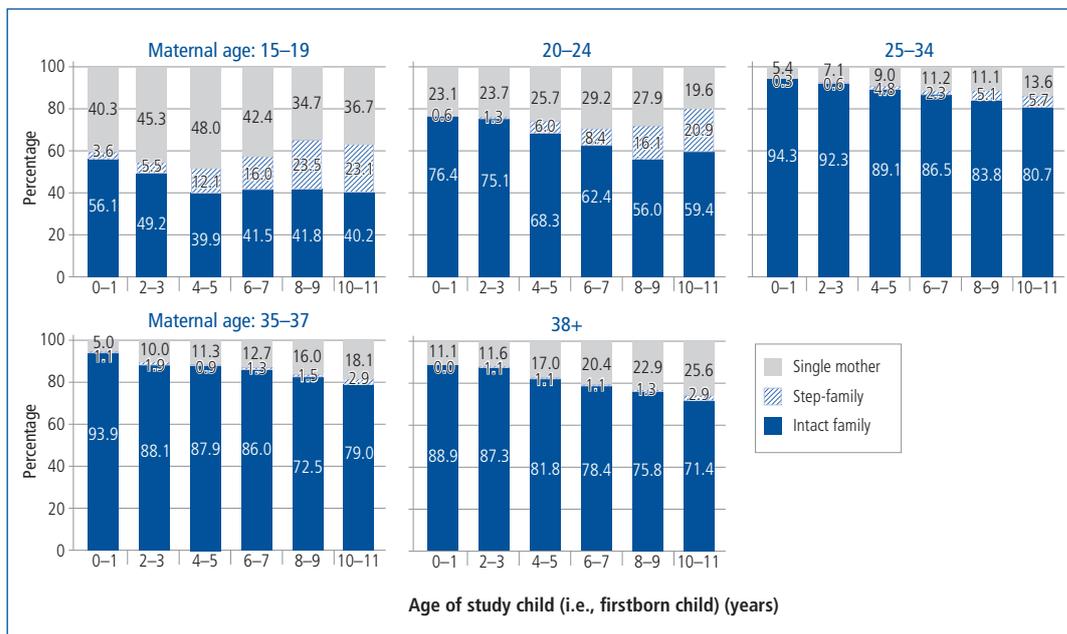
8.3 Living arrangements

This section examines two aspects of the children’s family composition—family type and the subsequent birth of siblings—and for children in couple families, whether their mother was married or cohabiting (regardless of whether their partner was the child’s biological or step-father).

Three family types were identified on the basis of whether the mother was living with their (first) child’s father or with another partner, or whether she was unpartnered. Families headed by single parents (most of whom are single mothers) are considerably more likely than other families to experience multiple disadvantages that are both deep and persistent (McLachlan, Gilfillan, & Gordon, 2013). It is not surprising then, that children in families headed by single mothers have a higher risk of poor outcomes across a range of areas, despite the fact that many children in these families do well (see Qu & Weston, 2012).

The birth of a child typically has many repercussions for existing family members and the family as a whole. For example, financial and time costs for parents are particularly strong when they become parents for the first time, while increases in the costs associated with subsequent births become progressively smaller, reflecting economies of scale in both time and money. However, the bulk of changes occur in the way mothers spend their time, resulting in increases in the gender division of domestic labour (Craig & Bittman, 2005).

Finally, although most couples delay having children until they are married, increasing proportions have children while cohabiting. Parents in cohabiting relationships (including those whose children are born of the relationship) are more likely to separate than those in married relationships—a clearly disruptive experience for children and their parents (see Qu & Weston, 2012).



Note: “Maternal age” refers to the mothers’ age at the time they gave birth to their first child (i.e., their study child in this chapter). For each maternal age group, by age of study child, the percentages in an intact family, step-family and single-mother family add to 100.0, any variation is due to rounding.

Source: Combined data from B and K cohorts as shown in Table 8.1 (page 173).

Figure 8.1: Family type, by maternal age and age of study child

⁷ The analyses were applied to both “balanced” and “unbalanced” panel data, where “balanced” panel data refer exclusively to the information provided by mothers who participated in every wave, and the “unbalanced” panel data focus on all relevant information collected in each wave, including that provided by mothers who did not participated every wave.

Previous research by Weston et al. (2006), which focused on the mothers at the time when their first child was an infant (i.e., LSAC B-cohort children in Wave 1), showed that mothers under 25 years old, especially teenage mothers, were considerably more likely than older mothers to be unpartnered at this time. In subsequent waves of LSAC, some of the mothers who had been living with a partner in Wave 1 had separated, and partnering and re-partnering also occurred.

Figure 8.1 (page 174) depicts the proportions of the LSAC mothers represented in the three family forms across the waves, according to the age they had their first biological or adopted child (remembering that we have excluded all study children who were not firstborns). For simplicity, these three forms are referred to as “intact families”⁸ where the mother was living with the child’s biological father, “step-families” where the mother was living with a partner who is not the biological father of their child, and single-mother families where the mother was not living with a partner.⁹

- In Wave 1, 56% of the youngest mothers were in intact families, compared to 76% of the second youngest group, 94% in the next two age groups, and 89% in the oldest group.
- Mothers who had their first child when teenagers continued to be the least likely to be living with their child’s father, followed by those who became mothers when in their early 20s, while those who became mothers during the relatively “normative years” (between 25–34 years), along with those who were slightly older than this (35–37 years), were particularly likely to have continued living with their child’s father.¹⁰
- The likelihood of living in an intact family tended to decrease across time for all groups, especially for the two youngest groups and the oldest group.
- Across the years (from when the child was an infant to the time the child was 10–11 years), mothers who had their child when a teenager were the most likely of all groups to be single, while those who became mothers at the normative age of 25–34 years were the least likely to be in this family form, with the difference between these two groups being greatest when their child was aged 4–5 years.
- Except when their child was 10–11 years, the women who became mothers in their early 20s were the second most likely of all groups to be single. By the time their child reached 10–11 years, a slightly lower (though not statistically significant) proportion of these mothers were single, compared with mothers in the oldest age group (20% vs 26%).
- While Figure 8.1 shows that the proportion of the oldest group who were in an intact family fell by 18 percentage points across the survey waves, Figure 8.1 also shows these mothers were unlikely to have re-partnered by the time their child was aged 10–11 years, and hence were the second most likely group to be single by this period in their child’s life.

Figure 8.1 shows the proportion of mothers who were living with a partner who was not their (first) child’s father (i.e., they and their child were in a step-family):

- When their child was an infant (aged 0–1 year), only 4% of teenage mothers and 1% (or fewer) of mothers in all other age groups had formed step-families.
- Step-family rates increased to 21–23% by the time the child was 10–11 years for the two youngest groups, 6% for the third youngest group (who became mothers when aged 25–34 years), and 3% for the two oldest maternal age groups.

Table 8.2 (page 176) shows the proportions of partnered mothers who were cohabiting rather than married.

- Of those who were living with a spouse or with a partner when their child was an infant, the teenagers were the most likely to be in a cohabiting relationship (71%), followed by those who became mothers at ages of 20–24 years (45%). Only around one-fifth of partnered mothers in the three older groups were cohabiting.

⁸ This approximates the classification system used by the ABS, where “intact family” refers to a couple family in which all children in the household are the natural or adopted children of both members of the couple.

⁹ The patterns discussed below continued to hold when the analysis was based on the balanced sample of the B cohort. It should also be noted that single mothers may have been living with other adult(s) (e.g., child’s grandparents, uncles, aunts) who may represent a parental figure for the study child.

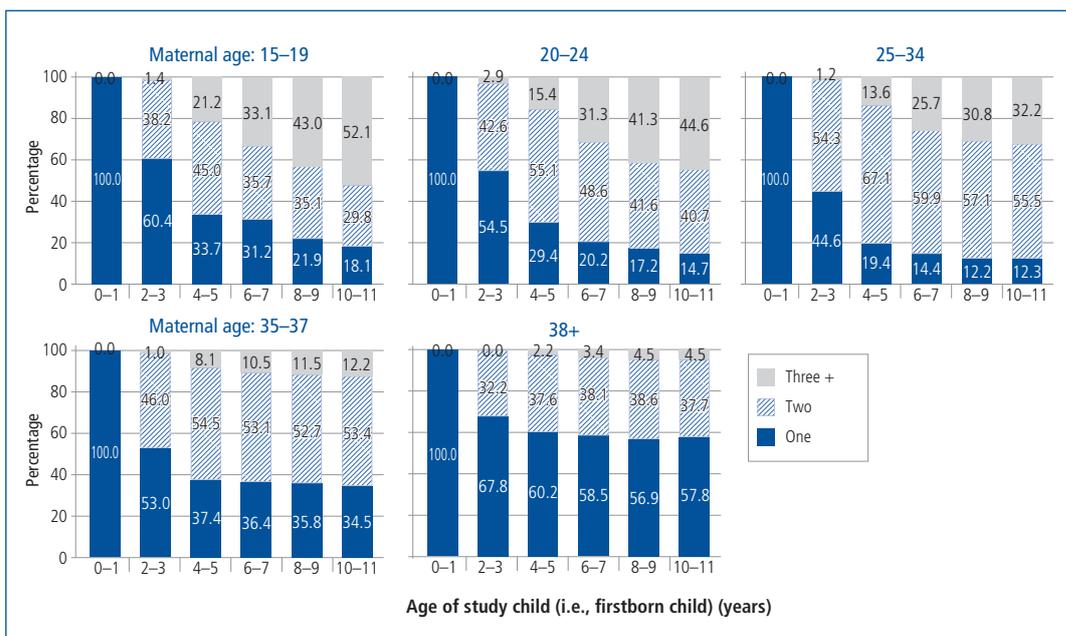
¹⁰ The balanced dataset indicated that virtually all mothers who were living with their child’s father when the child was 10–11 years old were also doing so in each survey wave. However, temporary separations that may have occurred between survey waves would not have been detected.

- Over the years, mothers who had their child when they were teenagers continued to have the highest rate of cohabitation, followed by those who became mothers at ages of 20–24 years. However, for both groups of mothers, the rate of cohabitation fell¹¹ until the time their child was 4–5 years (from 71% to 49% and from 45% to 24% respectively) and then remained stable. In contrast, cohabitation rates were quite stable for the three older groups across the 10-year period.

Table 8.2: Proportion of partnered mothers who were in a cohabiting relationship, by maternal age and age of study child

Age of study child (i.e., first born) (years)	Maternal age				
	15–19	20–24	25–34	35–37	38+
0–1	70.7	44.7	16.6	20.1	18.8
2–3	56.4	35.3	11.9	13.8	19.8
4–5	48.9	23.6	9.8	10.1	18.2
6–7	50.6	25.1	9.1	11.5	17.4
8–9	53.1	28.3	10.9	12.2	15.7
10–11	49.8	29.9	11.8	14.7	15.9
<i>n</i>	59~106	221~451	992~2078	125~239	72~117

Note: “Maternal age” refers to the mothers’ age at the time they gave birth to their first child (i.e., their study child in this chapter).
 Source: Combined data from B and K cohorts as shown in Table 8.1 (page 173).



Notes: “Maternal age” refers to the mothers’ age at the time they gave birth to their first child (i.e., their study child in this chapter). Children include any subsequent new biological or adopted children, along with step-children living in the household. One child means that no children other than the study child were living in the household. For each maternal age group, by age of study child, the percentages with one, two or three or more children add to 100.0, any variation is due to rounding.
 Source: Combined data from B and K cohorts as shown in Table 8.1 (page 173).

Figure 8.2: Number of children in the family, by maternal age at first birth and age of study child

While the discussion above focuses on the relationship status of mothers, Figure 8.2 shows the extent to which family composition changed through the birth (or adoption) of additional children, or through additional children entering the family as a consequence of the (study child’s) mother having formed a new relationship (i.e., step-children).

¹¹ Two factors have contributed to the fall in cohabitation: the separation rate was higher for parents in cohabiting relationships than those in married relationships, and some cohabiting parents subsequently married each other (Qu & Weston, 2012).

- As would be expected, the number of additional children was clearly age-related. By the time their first child was 10–11 years, most mothers in all groups except the oldest group had at least one other child. This was the case for over 80% of mothers who had their first child when under 35 years old, around 65% of mothers who had their first child at 35–37 years, and around 40% in the oldest group.
- In addition, the younger their maternal age, the more likely they were to have had an additional two children (i.e., at least three children in total). Ten years after they had their first child, more than one-half of the youngest group (52%) and 45% of the second youngest group had at least two additional children, compared with only 5% of the oldest group and 12% of the second oldest group.
- Having two children was most common among those who had their first child when aged 25–34 years and 35–37 years (53–55%), and least common for those who became mothers as teenagers (30%).

It is worth noting that the younger their age at the birth of their first child, the more likely mothers were to subsequently have additional children who were half-siblings or step-siblings to the first child (results not shown). For example, by the time their first child was 10–11 years, 29% of mothers in the youngest group and 14% in the second youngest group either had children born of new relationships or step-children in the household, while this applied to under 4% of mothers in the older groups. This pattern reflects the complex family relationships that some mothers in the younger groups and their firstborn children (and the additional children) needed to navigate.¹²

8.4 Socio-economic characteristics

This section focuses on three commonly used domains of socio-economic status: educational attainment level, employment status, and financial wellbeing (self-reported prosperity and whether any financial hardship had been experienced in the previous 12 months).

Education

Mothers' educational attainment was classified into three levels: having left school before Year 12 and not achieved a subsequent qualification (here referred to as having "left school early"); having completed Year 12 or achieved a certificate or diploma but no degree; and having achieved a degree or higher qualification. Table 8.3 (page 178) shows the proportions of mothers in each maternal age group who had left school early and the proportions who had attained a degree or higher qualification (here called "lowest" and "highest" educational attainment levels respectively).

When their child was an infant:

- The majority of teenage mothers had left school early (two in three—a rate that was more than twice that of any other groups).
- A minority of those who had their child in their early 20s had left school early (around one in five), and an even smaller minority had achieved a degree by this stage (around one in ten). The remainder had achieved a non-degree post-school qualification, such as a certificate, or completed year 12 without a non-degree, post-school qualification.
- More than half of the oldest mothers had a degree, but a substantial minority (around one in five) had left school early.
- The overall profiles of mothers who had their child when aged 25–34 years and 35–37 years were the most similar.
- The three older groups of mothers were more than twice as likely as the two younger groups of mothers to have attained a degree or higher qualification.

By the time their child was 10–11 years, differences in the educational profiles of teenage mothers and other mothers *appeared* to have narrowed—especially in relation to the proportions with the lowest attainment level, but also in relation to achieving a degree. The results suggest that:

- Half of the teenage mothers with the lowest educational attainment levels when their child was an infant had completed Year 12 and/or acquired a non-degree, post-school qualification, while

¹² For further information on the complexity of LSAC households across the ten years, see Baxter (2016).

10% of all mothers in this youngest age group had attained a degree or higher qualification. However, these mothers remained the most likely of all groups to have the lowest educational levels.

- Some of the mothers who had their (first) child in their early 20s had also attained a higher education level since having their first child, with the proportion with a degree or higher qualification increasing from 10% to 17%.
- On the other hand, the educational profiles of the three older groups changed little over the ten-year period.

However, the above results do not take into account the fact that attrition rates varied according to maternal age and educational attainment levels. Nor do they take into account the fact that the data for K-cohort mothers were not included until their child was 4–5 years old. As discussed above, some mothers withdrew from one survey wave but then returned, though the overall trend was for accumulating attrition across survey waves. Attrition was most common among teenage mothers, followed by those in their 20s, and was considerably less common among the three older groups. In addition, for each maternal age group, the mothers with the lowest educational attainment level were more likely than the other mothers to withdraw from the study.¹³ Although the number of B-cohort mothers in the two youngest groups who participated in each wave were small (see Table 8.1, page 173), it seems reasonable to suggest that, compared to their older counterparts, those with a very young maternal age would be more likely to complete secondary education and/or further education after their first child was born.

Table 8.3: Proportions of mothers with the highest and lowest levels of educational attainment, by maternal age and age of study child

Age of study child (i.e., firstborn) (years)	Maternal age				
	15–19	20–24	25–34	35–37	38+
Highest (i.e., degree or higher)					
0–1	0.0	10.1	43.0	45.7	52.8
2–3	0.6	10.6	41.6	45.0	48.9
4–5	1.2	12.4	39.4	41.5	41.8
6–7	4.6	12.4	39.8	41.1	43.4
8–9	8.3	15.3	41.2	41.5	43.3
10–11	9.9	17.0	40.9	41.1	43.4
Lowest (i.e., Year 11 or lower)					
0–1	67.7	21.0	10.0	9.7	21.5
2–3	57.3	18.4	10.0	7.3	22.0
4–5	47.3	18.4	13.6	14.0	23.0
6–7	42.1	16.8	12.0	12.8	22.0
8–9	38.8	14.0	10.6	12.5	23.5
10–11	33.0	13.7	10.2	8.2	22.4
<i>n</i>	103~198	281~590	1058~2255	137~267	83~142

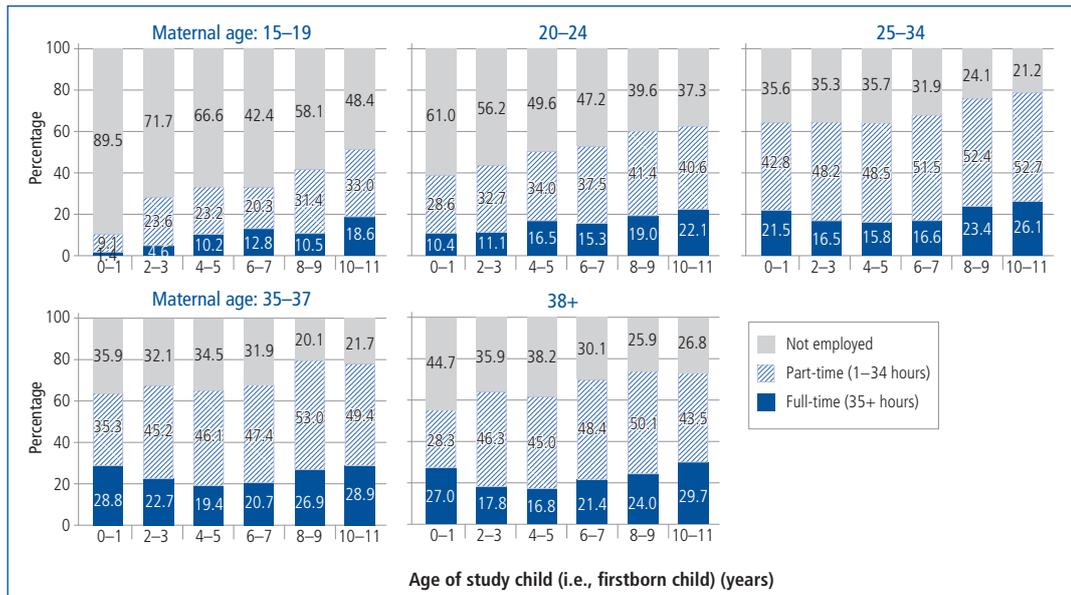
Notes: “Maternal age” refers to the mothers’ age at the time they gave birth to their first child (i.e., their study child in this chapter). Three levels of educational attainment were derived. One group—those who had completed Year 12 and/or acquired a non-degree post-school qualification—are not represented in this figure. The figure is based on the unbalanced panel. The decrease in proportions with a degree or higher qualification over time is a result of sample attrition as well as the combination of cohorts.

Source: Combined data from B and K cohorts as shown in Table 8.1 (page 173).

¹³ A relatively high rate of attrition among people with low educational attainment is commonly observed in longitudinal studies, although the effect is not necessarily large (Schoeni & Wiemers, 2015; Reimondos & Trevenar, 2013; Watson & Wooden, 2009).

Employment

The movement of mothers into the labour force represents one of the most dramatic changes in family life over the last several decades (Baxter, 2013a). In addition to personal characteristics such as educational attainment and career history, family characteristics play a major role in determining the mothers' employment decisions (or aspirations), including hours of work. Of these family characteristics, the age of the youngest child is perhaps the most significant factor for mothers, in general, with family type (couple parents or single parents living with children) also being important (Baxter, 2013b, 2013c). Employed mothers may reduce their paid work hours or leave paid work altogether should they have another child. Figure 8.3 (page 179) depicts the proportion of mothers in each maternal age group who were employed full-time or part-time and the total proportion in paid work over the ten-year period.



Note: "Maternal age" refers to the mothers' age at the time they gave birth to their first child (i.e., their study child in this chapter). The percentage of mothers who were not employed is not shown. For each maternal age group, by age of study child, the percentages working part-time, full-time or not employed add to 100.0, any variation is due to rounding.

Source: Combined data from B and K cohorts as shown in Table 8.1 (page 173).

Figure 8.3: Proportions of mothers who were employed, by maternal age and age of study child

Regarding the overall employment rates (full-time or part-time employment), the following patterns emerged:

- The employment rates of mothers in all age groups increased overall across the ten-year period, though some "dips" in employment rates occurred during this period, most likely reflecting the birth of an additional child.¹⁴
- Not surprisingly, the greatest increase in employment rates occurred for the groups with the lowest employment rates when their child was an infant. These were the two youngest groups, especially the teenagers.
 - Only 10% of the teenagers were employed when their child was an infant. Ten years later, the employment rate for these mothers was more than five times higher, representing just over half of these mothers.
 - The employment rate of mothers who were in their early 20s when their child was an infant increased from 39% to 63% over the ten-year period—that is, from around two in five of these mothers to around three in five.
- The employment rates of the other three groups were more similar across time (especially for those who had their child when aged 25–34 years and 35–37 years).

¹⁴ The merging of the B and K cohorts at age 4–5 may also account for some of the dip in the older age groups at a point where one might expect it to rise.

- Of these three older groups, those who had their child when 38 years or older had the lowest employment rate when their child was born (55% vs 64%), with the gap having narrowed slightly 10 years later (73% vs 78–79%).
- Although the levels of increase in employment rates were greater for the two youngest groups (especially those who had their child when a teenager) than the older groups, the youngest group of mothers continued to have the lowest rates, followed by the second youngest group, across the ten-year period. To some extent, this would be related to their relatively lower levels of educational attainment and their having a larger number of children, on average, compared to mothers who had their first child when older.

The following trends emerged in relation to the proportions of mothers working full-time and part-time:

- With the exception of those in the oldest maternal age group, mothers were considerably more likely to work part-time than full-time across the different periods. When their child was an infant, those in the oldest maternal age group had virtually the same proportions working full-time and part-time (27–28%).
- The proportion of mothers in the two oldest groups who were working full-time fell from the time their child was an infant to age 2–3 years (from 27% to 18% for the oldest group and from 29% to 23% for the second oldest group). A small fall in the proportion working full-time was also apparent for mothers who had their first child at the normative age of 25–34 years (from 22% to 17%).
- Across the ten-year period, the greatest increase in the proportion of mothers working full-time was apparent for the youngest group (from 1% to 19%), followed by the second youngest group (from 10% to 22%).
- The increase in part-time employment rates (which was apparent for all groups) was also greatest for the teenage mothers (from 9% when their child was an infant to 33% when their child was 10–11 years old). Nevertheless, these mothers had the lowest rates of full-time and of part-time work across virtually all years.¹⁵

Financial circumstances

Regardless of their general longer-term direction, a family's financial circumstances can ebb and flow considerably, according to changes in income, non-cash benefits, costs, discretionary spending decisions and so on. These can be affected by many factors, including parental separation or re-partnering, the birth of new children, changes in labour-force circumstances of either parent in the household, changes in care responsibilities (including for children with additional needs, the elderly or other family members), housing tenure and residential relocation. A primary responsibility of families is to meet family members' basic needs for food, housing, clothing, health care and education. Financial circumstances are therefore clearly important to family functioning and the wellbeing of family members. Substantial government support is provided but families that rely solely or mainly on government support may well struggle to make ends meet. As noted above, many couples decide to postpone childbearing until they achieve what they see as a secure financial base. In addition, despite the adage that "money doesn't buy happiness", there is ample evidence that financial difficulties tend to generate a great deal of distress.¹⁶ Financial circumstances can be measured objectively and subjectively. This section focuses on two measures: mothers' assessment of financial circumstances (i.e., a subjective measure) and their experience of financial hardships (measured objectively).

Mothers' assessments of financial circumstances

The subjective measure was based on mothers' responses to the question: "Given your current needs and financial responsibilities, how would you say you and your family are getting on?" Six

¹⁵ When their child was 6–7 years old, the full-time employment rate of teenage mothers was very similar to that of mothers who had their first child when in their early 20s (13% and 15% respectively). In all other periods investigated, the full-time rates of teenage mothers were considerably lower than those of all other groups.

¹⁶ Indeed, some research provides support for the notion that financial difficulties tend to increase parents' distress and thereby impair their parenting behaviour, increasing the risk of child maladjustment (see McConnell, Breikreuz, & Savage, 2011). However, other factors may well be at play. For instance, mental health problems and certain addictions (e.g., addictions to alcohol or other drugs) tend to increase financial difficulties and impair parenting behaviour (see Crossley & Buckner, 2012; Meltzer, Bebbington, Brugha, Farrell, & Jenkins, 2012).

response options were provided: three suggested generally favourable circumstances (“prosperous”, “very comfortable” and “reasonably comfortable”) and the other three suggested some level of struggle (“just getting along”, “poor” and “very poor”). Taken as a single group, the mothers focused on in this chapter most commonly indicated that they were reasonably comfortable across all survey waves (47–51% of all these mothers, regardless of their maternal age). “Just getting along” was the second most common response, applying to 22–31%. In each survey wave, the mothers were more likely to indicate that they and their family were in a “prosperous” or “very comfortable” position (18–26%), than to describe their financial circumstances as “poor” or “very poor” (2–3%).

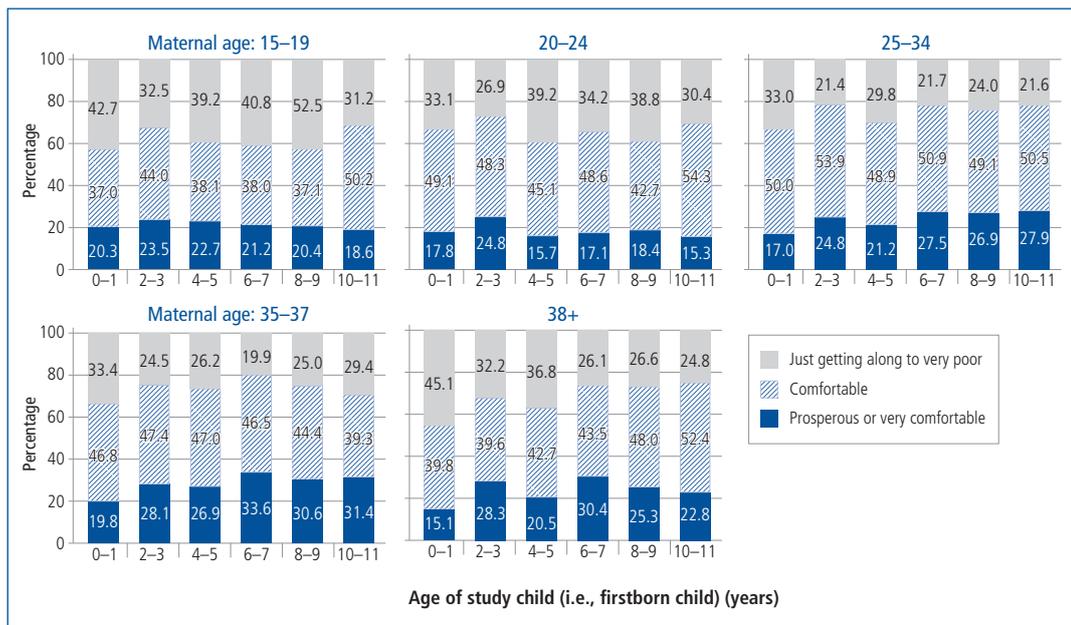
To simplify the comparisons of maternal age groups, we created three categories, classifying the responses as suggesting they were “well-off” (prosperous or very comfortable), “comfortable” (reasonably comfortable) or “struggling” (just getting along, poor or very poor). Figure 8.4 depicts the percentages of mothers providing these assessments according to their maternal age and their child’s age.

When their child was an infant:

- Overall, similar proportions in each maternal age group considered themselves to be well-off (15–20%).
- The proportions of mothers describing their circumstances as reasonably comfortable varied by maternal age, ranging from 37% (the youngest mothers) to 50% (those with a maternal age of 25–34 years).
- The youngest and the oldest groups were the most likely of all groups to indicate that they were struggling at this stage in their child’s life (43–45% vs 33% of all other three groups).

When their child was aged 10–11 years:

- By this stage, all groups most commonly indicated that they were reasonably comfortable, with those with a maternal age of 35–37 years being the least likely to state this (39% vs 50–54%).
- Overall 22–31% indicated that they were struggling, with mothers with a maternal age of 25–34 years being the least likely to state this, followed by the oldest group (25%). Much the same proportions of mothers in the other three groups indicated that they were struggling (29–31%).
- During this period, the greatest diversity between groups emerged in the proportions indicating that they were well-off: such assessments ranged from 15% (for those who had their child in their early 20s) to 31% (for those who became mothers when of 35–37 years old).



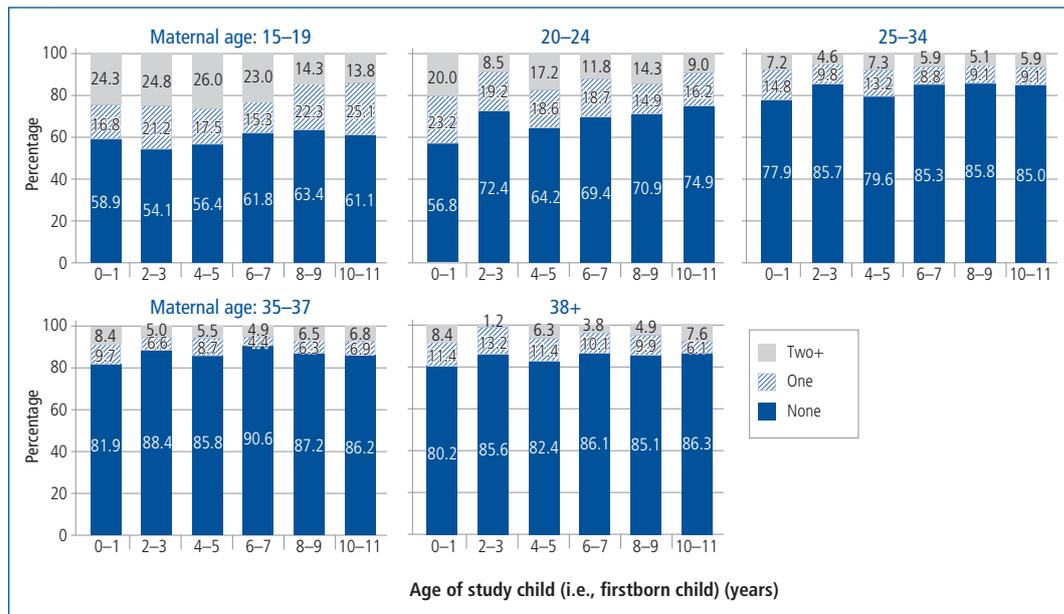
Notes: “Maternal age” refers to the mothers’ age at the time they gave birth to their first child (i.e., their study child in this chapter). For each maternal age, by age of study child, the percentages of mothers describing their circumstances in the ways represented in this figure sum to 100, any variation is due to rounding.

Source: Combined data from B and K cohorts as shown in Table 8.1 (page 173).

Figure 8.4: Proportions of mothers who provided different assessments of their financial circumstances, by maternal age and age of study child

Financial hardship

To assess financial hardship (the more objective of the two measures), parents were asked whether they had experienced the following circumstances over the previous 12 months because they were short of money: they could not pay gas, electricity or telephone bills on time; they could not pay mortgage or rent payments on time; any members of the household went without meals; they were unable to heat or cool their home; they pawned or sold something because they needed the cash; or they sought assistance from a welfare or community organisation.¹⁷ Figure 8.5 shows the proportions of mothers who reported having experienced one or at least two such hardships in the previous 12 months.



Notes: "Maternal age" refers to the mothers' age at the time they gave birth to their first child (i.e., their study child in this chapter). Mothers reporting no hardship are not represented in this figure. For each maternal age, by age of study child, the percentages of mothers describing their circumstances in the ways represented in this figure sum to 100, any variation is due to rounding.

Source: Combined data from B and K cohorts as shown in Table 8.1 (page 173).

Figure 8.5: Proportions of mothers who reported experiencing a single or multiple forms of financial hardship, by maternal age and age of study child

Across all six time-points covering ten years, the two youngest groups were more likely than the older groups to report having experienced at least one form of hardship in the previous 12 months.

When the child was an infant, the patterns of results for the two youngest groups were similar. However, when their child was older, patterns for the youngest groups varied somewhat, whereas the patterns for the three older groups remained fairly similar across the later time points.

- When their child was an infant, women who became mothers as teenagers or in their early 20s were considerably more likely than those in the other three groups to indicate the experience of some form of hardship in the previous 12 months (42–43% vs 18–22%).
- Differences between the three older groups were relatively small.
- Although trends for each group tended to vary somewhat across time, such variation was greatest for the second youngest group. These mothers were most likely to report some form of hardship when their child was an infant (43%) and least likely to do so when their child was 2–3 years old and 10–11 years old (25–28%).

¹⁷ This is a rough indicator of hardship experiences, given that any of the events may have been one-off or repetitive; people who are short of cash may adopt other strategies not listed; for example, borrowing money from family or friends to make ends meet or taking on additional work, perhaps involving cash payments. Furthermore, some experiences/strategies, such as going without meals, would appear to suggest considerable financial hardship, while the level of hardship reflected in an inability to heat or cool the home would vary according to whether the respondent resided in a region with extreme, moderate or very mild temperatures. On the whole, however, any results based on this measure probably provide conservative estimates of hardship, given the limited number of experiences/strategies assessed.

- Across the survey waves, the two youngest groups were also more likely than the older three groups to report at least two different types of hardship experienced in the previous 12 months.
- The youngest group was more likely to report multiple hardship experiences than a single form in the first four survey waves (from when their child was an infant to age 6–7 years). Thereafter, reports of a single form of hardship experience predominated.
- Teenage mothers were the only group who were more prone to report multiple hardships than a single hardship in some periods. Mothers in all other groups were more prone to report a single rather than multiple hardship experiences for some years, and equally prone to report single and multiple hardship experiences for other years.

8.5 Parenting practices

Various studies have suggested that, other things being equal, children tend to do well developmentally where the parenting they receive is generally characterised by high levels of warmth, consistency, inductive reasoning and self-efficacy and low levels of irritability, hostility and over-protectiveness (see Lucas, Nicholson, & Maguire, 2011; Zubrick, Lucas, Westrupp, & Nicholson, 2014). In each of the LSAC waves, parents have been asked a series of questions to gauge the extent to which they adopted these approaches in relation to their study child. In this section, we focus on four of these self-reported behaviours of mothers towards their first child: warmth, inductive reasoning, parenting consistency, hostile/angry parenting (here referred to as parenting harshness).

The *parental warmth scale* was based on parents' responses to six questions about how often they: a) express affection by hugging, kissing and holding this child; b) hug or hold this child for no particular reason; c) tell this child how happy he/she makes you; d) have warm, close times together with this child; e) listening to the child (omit this part if child was 0–1 years) and doing things with him/her; f) feel close to the child both when he/she is happy and when he/she is upset.

The *inductive reasoning scale* was constructed from parents' responses to three items about how often they: a) explain to this child why he/she is being corrected; b) talk it over and reason with the child when he/she misbehaves; c) give the child reasons why rules should be obeyed.

The *parenting consistency scale* was based on five questions: a) When you give this child an instruction or request to do something, how often do you make sure that he/she does it? b) If you tell this child he/she will get punished if he/she doesn't stop doing something, but he/she keeps doing it, how often will you punish him/her? c) How often does this child get away with things that you feel should have been punished? d) How often is this child able to get out of a punishment when he/she really sets his/her mind to it? e) When you discipline this child, how often does he/she ignore the punishment?

The scores derived for parental warmth, inductive reasoning and consistency range from 1 to 5, with higher scores indicating positive parenting practices (i.e., a greater tendency to express warmth, use inductive reasoning and apply consistency).¹⁸ The precise nature of these measures differs somewhat according to the child's age. Not surprisingly, inductive reasoning was not measured for B-cohort children in Wave 1 (when the child was aged 0–1 year). In addition, the measurement of parenting consistency commenced in Wave 3 for B-cohort children (when the children were 4–5 years old).

The *parenting harshness scale* here refers to a measure called “hostile parenting” for Waves 1 and 2 for the B cohort and called “angry parenting” for the remaining waves for the B cohort and all waves for the K cohort.

The hostile parenting scale was based on parents' responses to the following five statements that described their feelings in the previous four weeks: a) I have been angry with this child; b) raised voice with or shouted at this child; c) the child gets on my nerves when crying; d) lost my temper with this child; e) left this child alone in his/her bedroom when the child was particularly irritable or upset. The response options were from 1 (not at all) to 10 (all the time). The scores, the mean of the responses, ranged from 1 to 10, with higher scores meaning that the parent was more frequently hostile towards the child.

¹⁸ Response options for these questions ranged from 1 never/almost never to 5 always/almost. The scores for these scales are the mean of the responses to these items. For the maternal consistency scale, responses to the third, fourth and fifth items were first reversed so that higher scores indicate greater consistency.

The angry parenting scale was based on four questions: a) Of all the times you talk to this child about his/her behaviour, how often is this praise?; b) Of all the times you talk to this child about his/her behaviour, how often is this disapproval?; c) How often are you angry when you punish this child?; d) How often do you feel you are having problems managing this child in general? The response options were from 1 (never/almost never) to 5 (always/almost always). The scores of this scale were the mean of responses to the questions, after the responses to the first item were revised. Higher scores indicate more frequent anger towards the child.

In this chapter, we focus on the proportions of mothers who indicated that they adopted relatively high levels of each parenting practice measured. Relatively high levels of warmth, inductive reasoning and consistency were defined as scores of 4–5 on the relevant 5-point scales. Compared with these behaviours, mothers were considerably less inclined to indicate that they adopted harsh parenting. Indeed, only a small proportion of mothers had scores at the mid-point and above of the harshness scales.¹⁹ For this reason, we used a lower threshold (the mid-point of the scale) in classifying “relatively harsh parenting”. That is, relatively harsh parenting was defined as scores of 5.5–10 on the 10-point scale (used for B-cohort mothers in the first two waves) and as scores of 3.5–5 on the 5-point scale (used for B-cohort mothers in subsequent waves and for K-cohort mothers in all waves).²⁰ The results are shown in Table 8.4 (page 185).

Parental warmth

- Regardless of the age the mothers had their child and the survey wave, most reported a great deal of warmth towards their child (65–98%). This pattern persisted over the ten-year period.
- When their child was an infant, the proportion of mothers who reported a high level of warmth toward their child was similar across the maternal age groups (92–96%).
- The proportions of mothers in all age groups who reported high warmth fell over the ten-year period (from 92–96% when their child was an infant to 64–78% by the time the child was 10–11 years old).
 - This fall was more marked for the teenage mothers (falling by 33 percentage points, compared with 17–20 percentage points for other groups of mothers).
- By the time their child was 10–11 years old, only 64% of teenage mothers reported high parental warmth compared with 73–78% of mothers in other age groups. While women who became mothers in their early 20s were more similar to teenage mothers than older mothers in terms of various socio-demographic characteristics (Weston et al., 2006), they were more similar to the older maternal groups than the teenage mothers in terms of their tendency to report high warmth towards their child.

Inductive reasoning

- Across all time points examined (from when their child was a toddler (2–3 years) to 10–11 years, most mothers reported adopting a high level of inductive reasoning to help their child learn rules and to correct their behaviours (67–90%).
- When their child was a toddler, mothers who had their child when a teenager were the least likely of all the maternal groups to report a high level of inductive reasoning (67% vs 81–90%).
- With the exception of teenage mothers, a greater proportion of mothers reported high inductive reasoning when their child was aged 2–3 years than when their child was either 8–9 years or 10–11 years.
 - The mothers who gave birth to their firstborn when in their teens provided the most variable picture. The proportion reporting high inductive reasoning increased and then declined, peaking when their child was 6–7 years (85%).
 - While the proportions of mothers reporting high inductive reasoning fell for the four older maternal groups, this difference was the largest for the two oldest age groups (representing a 14 percentage point difference over the eight years),²¹ and lowest for those who become mothers in their early 20s (falling by 5 percentage points).

¹⁹ Only 2–16% of all mothers across the six waves of B and K cohorts had scores ranging from the mid-point to the highest point of the two variants of the harshness scales (i.e., “hostile parenting”: scores of 5.5–10 on a scale of 1–10; or “angry parenting”: scores 3–5 on a scale of 1–5).

²⁰ We also compared the mean scores on each parenting practice scale across maternal age groups (results not shown here). The overall pattern of results were consistent with those outlined in this chapter, even though the differences in mean scores across maternal age groups seemed small.

²¹ This fall refers to the difference in percentages between the times when the child was 2–3 years old and 10–11 years old. Of the women who had their child when aged 35–37 years, much the same the proportions reported relatively high use of inductive reasoning when the child was 8–9 and 10–11 years old (around 75% and 76% respectively).

Table 8.4: Parenting practices, by maternal age and age of study child

Age of study child (i.e., firstborn) (years)	Maternal age				
	15–19	20–24	25–34	35–37	38+
Parental warmth: high warmth (%)					
0–1	96.8	91.7	94.4	95.9	92.4
2–3	90.8	96.5	95.9	98.5	96.1
4–5	90.9	91.3	88.8	90.7	87.3
6–7	87.0	88.5	87.8	90.3	89.1
8–9	75.5	80.3	80.9	91.0	83.1
10–11	64.1	74.2	77.1	78.4	72.9
<i>n</i>	94~179	269~542	1043~2146	135~258	82~136
Inductive reasoning: high level of reasoning (%)					
0–1	–	–	–	–	–
2–3	66.7	81.0	85.8	89.9	82.7
4–5	73.2	79.4	82.2	86.1	77.2
6–7	84.8	80.5	83.9	83.2	77.8
8–9	75.3	76.7	79.1	74.5	76.8
10–11	79.2	76.3	76.1	75.9	69.1
<i>n</i>	68~162	210~510	922~2111	123~249	75~136
Parenting consistency: high level of consistency (%)					
0–1	–	–	–	–	–
2–3	–	–	–	–	–
4–5	50.8	57.3	72.6	68.5	67.1
6–7	52.3	66.0	77.6	69.3	64.0
8–9	60.0	64.4	75.0	72.3	62.3
10–11	65.6	68.4	75.1	69.2	56.3
<i>n</i>	128~179	429~541	1999~2144	234~258	128~136
Parenting harshness: relatively harsh (%)					
0–1	2.9	2.3	0.9	0.6	1.4
2–3	8.9	6.7	7.4	1.8	5.9
4–5	24.2	16.3	13.9	9.5	11.9
6–7	16.9	12.8	12.5	11.2	12.2
8–9	21.4	15.0	15.4	11.1	12.0
10–11	19.5	16.4	17.9	12.5	21.2
<i>n</i>	44~179	181~542	895~2144	121~258	72~136

Notes: "Maternal age" refers to the mothers' age at the time they gave birth to their first child (i.e., their study child). a) Scores on the parental warmth, inductive reasoning and consistency scales range from 1 to 5, with higher scores indicating more positive parenting practices in these areas (i.e., greater parental warmth and greater use of reasoning and consistency). In the present analysis, scores of 4–5 were taken as indicating high use of these behaviours. The three items comprising the inductive reasoning scale were not identical in all waves. b) The measure of parenting harshness for the B-cohort for Waves 1 and 2 (when the study children were under 4 years old) differed from the measure used when they were 4–5 years and older, with the nature of items and length of rating scale varying. A 10-point rating scale was used when the children were under 4 years old and a 5-point scale was used thereafter. From age 4 years and over, the same measure was used for two cohorts. Scores ranging from the mid-point and above were classified as reflecting relatively high parenting harshness (i.e., scores of 5.5–10 on the 10-point scale and of 3–5 on the 5-point scale).

Source: Combined data from B and K cohorts as shown in Table 8.1 (page 173).

Parenting consistency

- At least one-half of the mothers reported a high level of parenting consistency across the four time points examined—that is, when their child was 4–5 years old to 10–11 years old (51–78%).
- When their child was 4–5 years, the youngest group of mothers were the least likely of all the groups to report a high level of parenting consistency (51%), followed by the second youngest group (57%). The proportions in the three older groups reporting a high level of consistency were fairly similar (67–73%).
- Over the six-year period examined, the patterns of reports varied across the maternal age groups.
 - For the two youngest groups (especially those who had their child as a teenager), highly consistent parenting appeared to become increasingly prevalent with time. The proportion reporting high consistency increased by 15 percentage points (from 51% to 66%) for the teenage mothers and by 11 percentage points (from 57% to 68%) for those who became mothers when in their early 20s.
 - The proportion of mothers indicating high levels of parenting consistency fell for the oldest group by 11 percentage points (from 67% to 56%).
 - The extent to which mothers reported high levels of parenting consistency remained fairly stable over the six-year period for the two remaining groups of mothers.
- By the time their child was 10–11 years old, the oldest group of mothers were the least likely of all the groups to report high levels of parenting consistency (56%), while those who became mothers when 25–34 years old were the most likely to report this (75%). A similar proportion of mothers in the other three groups indicated that they adopted a high level of parenting consistency (66–69%) at this stage in their child’s life.

Parenting harshness

As discussed above, the threshold for “relatively harsh parenting” was set at the mid-point of the scale, because few parents reported that they engaged in harsh parenting behaviours. Secondly, a 10-point scale was used when the children were infants and 2–3 years old, and a 5-point scale was used when the children were older than this. These differences may have affected the results for the first two waves compared with subsequent waves. Mothers classified as adopting “relatively harsh parenting” were clearly in the minority and at each time point (taken separately), differences between maternal age groups in apparent use of relatively high harshness were not statistically significant.

- Few mothers in each maternal age group indicated that they tended to treat their child relatively harshly when their child was an infant or at age 2–3 years, especially during the former period (reported by 1–3% during infancy and by 2–9% two years later).
- When the child was 4–5 years, 10–24% of mothers appeared prone to treating their child relatively harshly. This apparent increase in reports of relative harshness may be a function of the different sets of questions used by the time the child was 4–5 years old compared with earlier.
- When the child was 4–5 years old, the two youngest groups of mothers (especially those who had their child as teenagers) seemed the most likely of all groups to report being relatively harsh in their parenting (24% and 16% respectively), although, as noted above, differences were not statistically significant. It is worth noting that when analysis was restricted to the B-cohort mothers, the two youngest groups continued to be the most likely of all groups to report relatively harsh parenting in this wave, and virtually the same proportions of B-cohort mothers in these two youngest groups acknowledged such behaviour (19–20%).

From the time the child was 4–5 years to 10–11 years, the patterns varied somewhat across the groups. For instance, mothers in the oldest group were considerably more likely to report relatively harsh parenting when their child was aged 10–11 years than when younger (e.g., 21% when their child was aged 10–11 years vs 12% when their child was 4–5 to 8–9 years). Compared with these mothers, the proportions of other mothers reporting such behaviour were relatively stable, with those aged 35–37 years tending to be the least likely to indicate relatively harsh parenting (e.g., 13% vs 16–21% when the child was 10–11 years). However, as noted above, differences between maternal age groups in the apparent use of relatively high harshness were not statistically significant.

8.6 Summary

Over the last few decades, the age at which women typically have their first child has increased, with over 40% of new mothers now being at least 30 years old. The overall picture, however, is also one of increasing diversity. While many studies have examined the circumstances experienced by women who become mothers as teenagers, for women who become new mothers at older ages, there is a relatively strong focus on the increased health-related risks for mothers and their newborn children.

This chapter extended earlier analysis by Weston et al. (2006), which focused exclusively on Wave 1 data for LSAC mothers firstborn children in the B cohort. In these earlier analyses, mothers were classified into five groups according to the age at which they had their child (here called “maternal age”). The earlier study found that teenage mothers and mothers in their early 20s were more likely to be experiencing disadvantaged circumstances compared with older mothers, with the differences being particularly marked for teenage mothers. In terms of parenting behaviour, all groups tended to indicate that they expressed considerable levels of warmth and avoided harsh parenting.

In the present chapter, we retained a focus on the same five maternal age groups, and we combined the data for mothers of B-cohort firstborn children with those of K-cohort firstborn children where the children were of the same age. The central question was whether maternal age “made any difference” in the long run, in relation to certain living arrangements, socio-economic circumstances and parenting behaviour. We focused on the first six waves of data, which spanned 10 years (from the time the study child was aged 0–1 year to 10–11 years).

Living arrangements covered family type (intact, step- and single-mother families), the relationship status of partnered mothers (cohabiting or married), and number of additional children in the family after Wave 1. We found that, across the ten-year period, women who had their first child when teenagers continued to be the least likely of all groups to be living with their child’s father, followed by those who became mothers when in their early 20s.

Not surprisingly, few if any mothers in each maternal age group had formed a step-family when their child was an infant. The likelihood of doing so increased for the two youngest groups but had hardly changed for the older groups. Some of the new relationships formed after Wave 1 had ended within the period examined. Ten years on, around one in five mothers who were under the age of 25 when their first child was born were in step-families. Nevertheless, across the ten-year period, the likelihood of being single continued to be higher for those who had their first child as teenagers than those who became mothers when aged 25 years and over. This difference had narrowed considerably by the tenth year, because of the greater re-partnering rate apparent for the youngest group. Although, when their child was an infant, mothers in their early 20s were also more likely than older mothers to be single, this difference had largely disappeared ten years later, owing to age-related differences in re-partnering.

The two youngest groups of mothers who were living with a partner, especially the teenage mothers, were more likely than older partnered mothers to be in a cohabiting relationship when their child was an infant. While this pattern continued to hold across the ten-year period, the differences in cohabiting rates among partnered mothers of different maternal ages had narrowed.

Across the ten-year period, women in the oldest group were the least likely to have had any more children, followed by the second oldest group. On the other hand, the younger the maternal age group, the more likely the mothers were to have at least two more children. The two youngest groups were also more likely than other mothers to have had a child with a partner other than the father of their first child, or to have a step-child in their family.

The earlier study (Weston et al., 2006) showed that women who entered motherhood when under 25 years, especially when teenagers, were socio-economically disadvantaged (e.g., they had left school early and did not have any post-school qualifications, they were not employed, and they were more likely to have experienced financial hardship). The current research suggests that the gaps in educational attainment and employment between women who started childbearing at early ages and those who started at later ages continued to hold but had diminished over the subsequent ten years. In addition, women who entered motherhood before age 25 were more likely than other women to experience financial hardship in the subsequent ten years. This difference was reduced somewhat in the subsequent ten years for those who became mothers when in their early 20s but

not for those who commenced motherhood in their teenage years. Despite the fact that the two youngest groups of mothers were more likely than other mothers to experience at least one form of financial hardship across the ten-year period, the two youngest groups were not significantly more likely than the older mothers to indicate that they felt they were struggling financially when their child was 10–11 years old.

Regardless of their maternal age when they had their first child, mothers tended to provide favourable reports of their parenting practices at the different time points examined over the ten-year period. According to their reports, they expressed a great deal of warmth towards their child and a tendency to use inductive reasoning and consistency when correcting their child, and to avoid treating their child harshly. Although reports of the tendency to express warmth did not vary according to maternal age when their child was an infant, the reports of the teenage mothers suggested that they were less likely than other mothers to maintain their high level of parental warmth.

The use of inductive reasoning was first assessed when their child was 2–3 years old, while consistency in parenting was first assessed (for both cohorts) when their child was 4–5 years old. Compared with women who became mothers when older, the youngest group of mothers provided less favourable reports regarding inductive reasoning, parenting consistency and parenting harshness when their first child was relatively young but by the time their child was 10–11 years, such differences had largely disappeared. While women who entered motherhood before age 25 appeared to be increasingly likely to use inductive reasoning and to adopt a consistent stance over time, women who became mothers at a much later age (38+ years) were less likely to indicate using such approaches.

Regarding all the issues examined in this chapter, patterns for the oldest group (who were 38 years or more when they had their child) tended to resemble those of the other two groups of women who became mothers when 25–34 and 35–37 years old. The key exceptions were that the oldest mothers were significantly more likely than those aged 25–34 years to be single when their child was 10–11 years old, and less likely to report that they maintained a consistent approach to parenting and used inductive reasoning.

In summary, women who became mothers before age 25 (especially the teenagers) experienced greater levels of disadvantage than those who became mothers at older ages, although gaps in the areas of disadvantage examined diminished considerably over time. The two youngest groups of mothers were more likely than the other mothers to be living apart from their child's father in Wave 1. By the time their child was 10–11 years old, the mothers of the two youngest groups were the most likely of all groups to have formed a step-family.

The results in this chapter should be interpreted with some caution owing to limitations inherent in the data. Firstly, given that the numbers of women who became mothers either before age 25 or at age 38 or older were small, the results were less reliable for these groups. Secondly, the levels of sample attrition were higher for those who became mothers in their teens or early twenties and systematic differences in the characteristics of those who participated and those who did not may well undermine the strength of the results.

8.7 References

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