

Growing Up In Australia

The Longitudinal Study of Australian Children

ANNUAL STATISTICAL REPORT 2017

Australian Institute of Family Studies



Australian Government
Department of Social Services



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Growing Up in Australia: The Longitudinal Study of Australian Children is conducted in partnership between the Australian Government Department of Social Services, the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS), with advice provided by a consortium of leading researchers from research institutions and universities throughout Australia.

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Foreword

I am pleased to introduce the eighth 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. For the first time in this series, matched data from the Australian Early Development Census (AEDC) is used to investigate differences in children's developmental outcomes at the start of school, depending on the type of early childhood education and care programs they attended at ages 3 and 4.

Children's housing experiences are examined over a 10-year time period, providing new insights about how housing conditions change when parents separate. The chapter on children's use of health care services highlights the differences in the numbers of teenage boys and girls who required medical attention for an injury, with more boys than girls requiring medical attention for breaks, fractures and concussions.

Young people's relationships with their family and friends are a big part of this report, with chapters exploring time adolescents spent with parents and friends as they grow up; their help-seeking behaviours when they face emotional problems; and the quality of attachment and characteristics of their friends.

This report also provides a snapshot of how teenagers are faring in relation to eating problems, the types of actions they take to control their weight and the association between dieting and physical and mental health outcomes.

We hope that the 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

Acknowledgements

We gratefully acknowledge the enormous contribution of the young people, their parents and teachers who have participated in the study.

The Australian Institute of Family Studies thanks the Australian Government Department of Social Services (DSS) for funding this report, and the DSS LSAC team for their feedback on earlier drafts of this report.

We also wish to acknowledge the valuable contributions of the AIFS Survey and Data Management team, the LSAC Consortium Advisory Group, the LSAC team at the Australian Bureau of Statistics and the LSAC interviewers.

For more information about the study, see the LSAC website 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.

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

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Introduction



Children born in the early years of this millennium are growing up in an Australian society different to that experienced by any previous generation. In order to ensure that each child has every chance to experience a happy and healthy start to life, it is essential that policy makers and researchers have access to quality data about children's development in the current economic, social and cultural environment.

Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC) is Australia's first nationally representative longitudinal study of child development. 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.

LSAC provides valuable data about children, their families and their wider environments, and enables researchers and policy makers to have a comprehensive understanding of children's development within Australia's current social, economic and cultural environment.

LSAC has been recognised as a world-leading study of children's development. Alison W. Baulos, the Executive Director of the Centre for the Economics of Human Development at the University of Chicago, notes that:

No other dataset in the world combines good information on time investments in children, frequent measurements of care settings, developmental outcomes, and the possibility to be combined with comprehensive external data sources.

Since 2004, thousands of children, their parents and their teachers have been interviewed. The study has an accelerated cross-sequential design, with two cohorts of children:

- the B ('baby') cohort, who were aged 0–1 year at the beginning of the study (born March 2003–February 2004)
- the K ('kindergarten') cohort, who were aged 4–5 years at the beginning of the study (born March 1999–February 2000).

Table 1.1: Number of study children responding in each wave, B and K cohorts

	Wave 1 (2004)	Wave 2 (2006)	Wave 3 (2008)	Wave 4 (2010)	Wave 5 (2012)	Wave 6 (2014)
B cohort	Age 0–1	Age 2–3	Age 4–5	Age 6–7	Age 8–9	Age 10–11
<i>n</i>	5,107	4,606	4,386	4,242	4,077	3,764
K cohort	Age 4–5	Age 6–7	Age 8–9	Age 10–11	Age 12–13	Age 14–15
<i>n</i>	4,983	4,464	4,332	4,164	3,956	3,537

Source: LSAC Waves 1–6, B and K cohorts

The first wave of data collection was in 2004, with subsequent main waves every two years. The longitudinal nature of the study enables researchers to examine the dynamics of change as children develop, and to go beyond the static pictures provided by cross-sectional statistics. Table 1.1 summarises the ages and sample sizes for the two cohorts across the first six waves of the study.

This design means that from the third wave of the study, the children's ages overlap. That is, children are aged 4–5 years in the first wave for the K cohort and in the third wave for the B cohort.¹

This is the eighth volume in the LSAC Annual Statistical Report (ASR) series. These reports are designed to promote the LSAC study and make its findings accessible to a range of audiences. The aim of the report is to showcase the LSAC data to policy makers, researchers and other interested readers.

The Annual Statistical Report:

- provides an overview of how the LSAC study children are faring across a range of developmental domains, with 'snapshots' of aspects of life, as experienced by Australian children and families, and information about how children's lives are changing as they grow up
- covers topics that are relevant to current policy development and social policy debates
- showcases the breadth of topics that LSAC addresses.

Together, the chapters in this report provide a multi-faceted picture of what is happening in the LSAC children's lives at particular points in time; and also of how the lives of the study children and their families are changing as children grow older. This report should be viewed only as 'selected findings'; a cursory indication of the vast potential of the LSAC data.

In covering the first six waves of the study, this report describes various aspects of children's lives – from their first year of life until age 15. Most of the analysis presented in this report consists of graphs and tables that are relatively easy to interpret. However, some tables contain estimates from regression models. These are less easy to interpret than the descriptive statistics but are included to provide a better understanding of the relationship between two factors, holding other factors constant. For example, in the chapter about housing experiences, estimates of the relationship between housing stress and housing tenure (whether the study child lives in a household where they have a mortgage or pay rent) are presented, holding constant other factors such as household structure and region of residence.

Various types of regressions have been estimated in this report, and while these models are not explained in depth, brief explanations of how to interpret these models are provided in the Technical Appendix (page 143). The Technical Appendix also provides details on the LSAC sample, respondents and collection methods, sampling and survey design and details of the weights supplied in the data to correct for non-response and attrition. Where appropriate, these weights are used in the analysis presented in this report.

Reference

Soloff, C., Lawrence, D., & Johnstone, R. (2005). *LSAC sample design* (Technical Paper No. 1). Melbourne: Australian Institute of Family Studies.

¹ See Soloff, Lawrence, and Johnstone (2005) for more information about the study design.

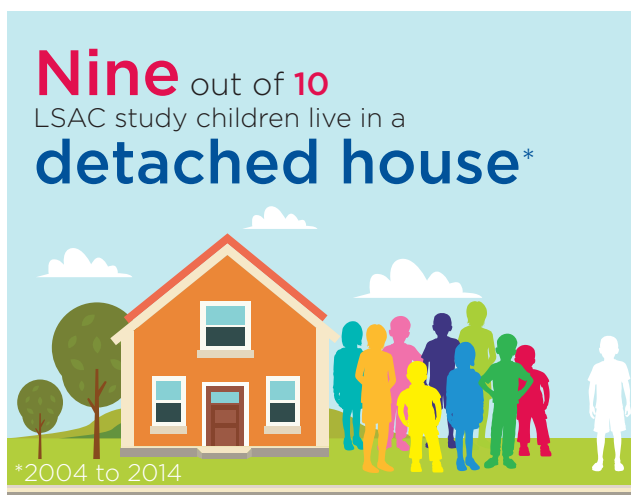
2

Key findings



Children's housing experiences

- Higher density housing, such as apartments and townhouses, now makes up a quarter of Australian housing. From age 4-5 onwards, nine out of 10 LSAC study children were living in a separate (detached) house.
- One in five study children were living in a home that their parents were renting; and around three out of five were living in a home that their parents had purchased and were paying off with a mortgage.



Housing affordability stress

In 2014, around one-third of families with children living in private rental accommodation were experiencing housing affordability stress, compared to less than one in 10 families with children who were paying off a mortgage.

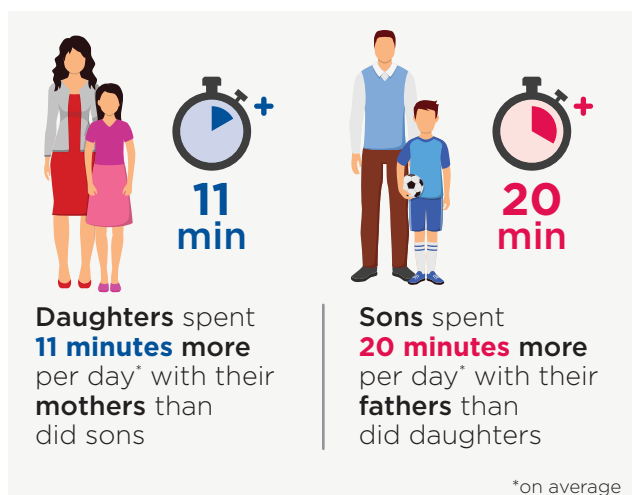


For some families, the experience of housing affordability stress was a result of parental separation – over 40% of children who had moved house around the time of their parents' separation moved into a situation of housing affordability stress.

For most children, living in a household experiencing housing affordability stress was a temporary situation. However, more than a quarter of children who had remained in a single-parent household for two consecutive waves of LSAC also remained in a situation of housing affordability stress.

Who do adolescents spend their time with?

- As children entered adolescence, they spent less time with their parents and more time alone.
- This increase in 'alone time' was partly related to teens staying up late, but also to them spending more time alone throughout the day.
- Across all age groups:
 - Children spent more time with their mother than their father.
 - Girls spent more time with their mother than boys did.
 - Boys spent more time with their father than girls did.
- Regardless of whether children were living in a two-parent or a single-parent family, the total amount of time that children spent with their parents was roughly the same. However, children in single-parent families spent very little time with both parents together.



Teens want to be alone

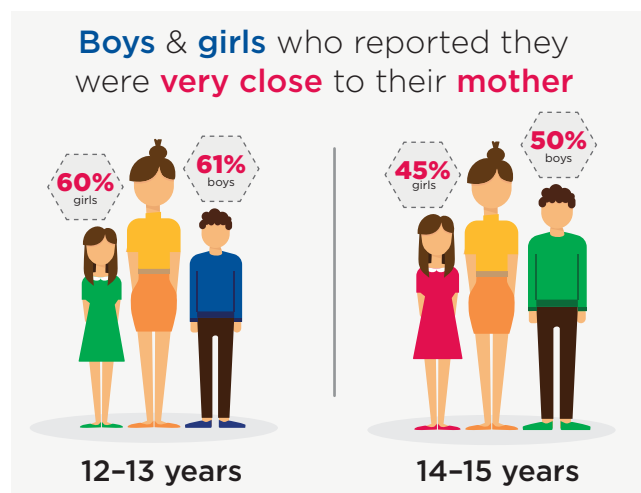
As children get older there is a significant increase in the time they spend alone. On average, 10–11 year olds spent 3.5 hours alone on weekdays and 4.5 hours alone on weekends. At age 14–15, the average amount of time spent alone was 4.7 hours per day on weekdays and 6.3 hours per day on weekends.

This increase in alone time was greater for boys than girls.



Relationships between parents and young teens

- Most young people said that they felt close to their mother and father but:
 - At age 12–13, around 60% of boys and girls said that they were very close to their mother. By age 14–15, these figures dropped to 50% of boys and 45% of girls.
 - At age 14–15, 47% of boys – and only 35% of girls – said that they were very close to their father.
- Reports of mother–child conflict were more common than reports of father–child conflict. Even so, teens were more likely to go to their mother if they had a problem, rather than their father.
- Compared to girls who lived with their biological father, girls who had a step-father reported less positive (step)father–daughter relationships. This was not the case with boys.



Conflict between parents and teens

While 20–30% of parents said that they sometimes disagreed and fought with their child, approximately 5% said that arguments with their child had led to them staying angry with each other for a very long time, or that they had refused to talk to their child after an argument.

Reports of the study child stomping out of the house after an argument were more common among parents of girls – one in four mothers of 14–15 year old girls, and one in five mothers of 14–15 year old boys, said that their child sometimes stomped out of the house after an argument.



Adolescents' relationships with their peers

- At age 12–13 and 14–15, approximately 85% of young people reported having friends who respected their feelings, listened to them and who they trusted.
- Nine out of 10 14–15 year olds said they had friends who were respectful of teachers and worked hard at school.
- More than two in five 14–15 year olds said that their friends disliked school, around one in five said that their friends put popularity above grades, and one in 10 girls and one in six boys said that their friends got into trouble at school.
- Around one in ten 14–15 year olds said that at least some of their friends had engaged in risky behaviours such as trying drugs, smoking cigarettes, drinking alcohol, breaking the law or getting into fights.

Nine out of 10 14–15 year olds

said they had friends who were respectful of teachers and worked hard at school



Bullying among teens

One in five 14–15 year olds reported being the victim of bullying in the past month. However, fewer than one in 10 (7%) admitted to being a bully.



Having friends with high levels of moral behaviour or a positive attitude towards school was associated with a lower likelihood of being a victim of bullying.

Having friends who engaged in more risky behaviours increased the likelihood of being bullied, and also of being a bully.

Adolescent help-seeking

- Around 97% of young people aged 14–15 said that they had sought help for a personal or emotional problem in the past 12 months; and 92% said they would seek help if they had a problem in the future.
- Family and friends were the most common sources of help for 14–15 year olds, but around one in 10 had sought help from a mental health professional, and one in five had used the internet to source help.
- As children got older, fewer sought help from their parents – nine out of 10 sought help from their parents at age 10–11, seven out of 10 at age 14–15.
- Teens with higher levels of self-perceived social support from friends and family were more likely to say they would be willing to seek help in the future than those with inadequate social support.

One in 10 14–15 year olds had sought help from a mental health professional



Help from friends

There were some gender differences in adolescent help-seeking. Among 14–15 year olds, more boys than girls said they would seek help from parents and teachers, while more girls than boys would seek help from friends.



Preschool and children's readiness for school

Ready for school?

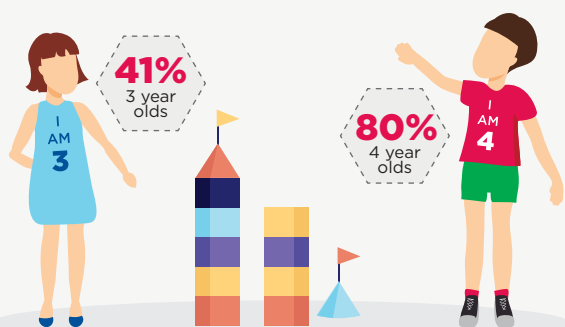
Among children who started school in 2009, around one in four boys, but only one in 10 girls, were considered developmentally vulnerable in at least one of the five domains measured by the Australian Early Development Census:



- physical health and wellbeing
- social competence
- emotional maturity
- language and cognitive skills
- communication skills and general knowledge.

- Children who had not been to preschool, kindergarten or long day care at ages three or four had the highest risk of developmental vulnerability when they started school.
- Compared to children who had attended two years of preschool, for children who had not attended preschool or long day care at ages three or four:
 - the odds of being at risk of vulnerability in the areas of physical health and wellbeing, communication skills and general knowledge were doubled
 - the odds of being at risk of vulnerability in the area of language and cognition were tripled.
- For children who attended long day care at age three and then preschool at age four, the odds of being at risk of vulnerability in the area of language and cognition were 1.5 times higher than those for children who had attended preschool at ages three and four.

Percentage of children attending **preschool** at ages **three** and **four***



*children who started school in 2009

Kids' care and activities before and after school

- At age 6–7, almost one in five children went to a formal outside-school-hours care program, compared to one in 10 children at age 10–11.
- Most primary school children (83% of 6-7 year olds and 90% of children aged 8-9 and 10-11) participated in at least one regular extracurricular activity such as sports, art, music or performance classes.
- Compared to children at independent schools, children at government schools were more likely to attend outside-school-hours care programs and less likely to participate in extracurricular activities provided by the school.
- Children in schools with a lower level of educational advantage were less likely to attend outside-school-hours care or participate in extracurricular activities.

Four out of **five**
primary school kids participated in at least
one regular extracurricular activity



Informal care

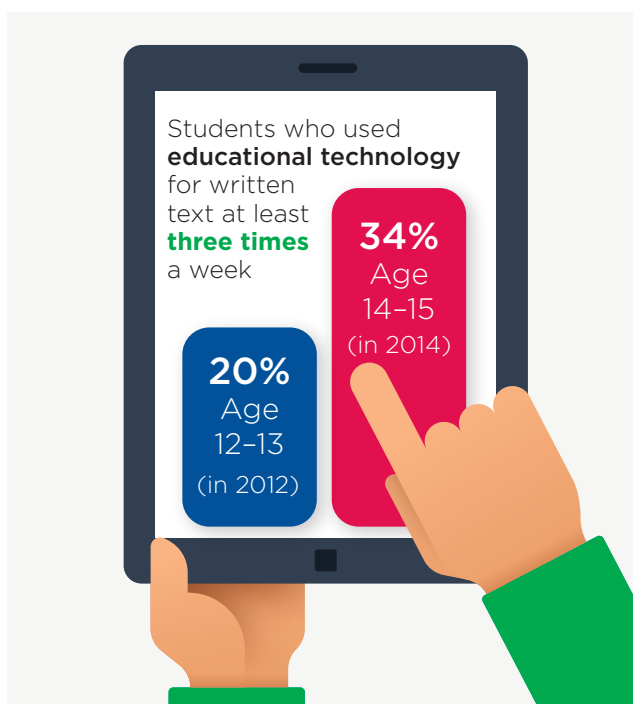
Informal outside-school-hours care was more frequently used than formal care, with almost one in four children in informal care either before or after school.



Across all ages, grandparents were the most common providers of informal before or after school care, with 13–14% of children being cared for by their grandparents. A smaller proportion of children were cared for by people other than their grandparents. The type of informal care varied according to the child's age. For example, around 5% of 10–11 year olds, but less than 2% of 6–7 year olds, were cared for by a sibling under the age of 18.

Use of technology in the classroom

- In primary school classrooms, computers were most commonly used to develop skills in specific academic areas, such as literacy, maths or science.
- In secondary school English classrooms, technology was regularly used to practise basic skills, prepare written text and correspond with others.



Schools and technology

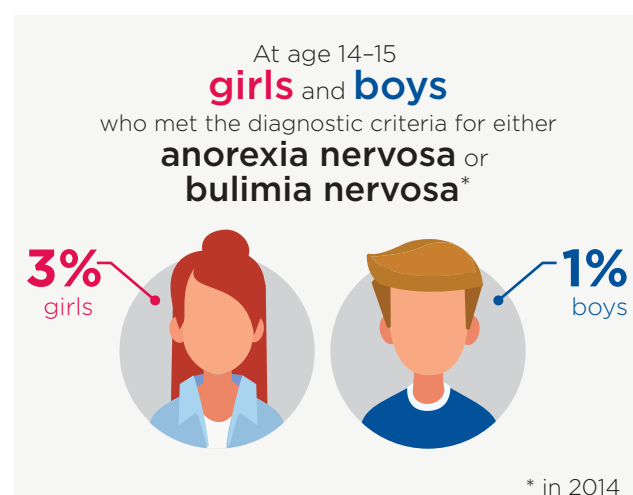
High school English teachers generally had positive views about the use of educational technology in their school – more than four out of five teachers said that their school administration viewed educational technology as a priority and that teachers were interested in integrating ICT into their teaching.

However, around a quarter of secondary school teachers said that the ICT infrastructure and technical support at their school was inadequate.



Eating problems in mid-adolescence

- At age 14–15:
 - 3% of girls and 1% of boys met diagnostic criteria for either anorexia nervosa or bulimia nervosa.
 - One in two girls and one in five boys said that they had been afraid of gaining weight in the last four weeks.
 - Two out of three girls said they would be at least a little concerned, and one in seven said they would be really upset, if they gained one or two kilograms. By contrast, one in two boys said it would not bother them, and one in seven boys said they would be pleased.



Dieting among teens

One in four girls and one in 10 boys consciously restricted their food intake to control their weight.



Among 14–15 year olds who engaged in some form of dieting, around two-thirds of girls and almost half of boys were in the normal weight range. This suggests that most teens diet to either maintain a healthy weight or achieve the thinner body shape typically idealised in Australian society.

Compared to adolescents who were not dieting, those who were restricting their food intake reported:

- more emotional problems
- lower levels of school adjustment
- more social difficulties.

Children's use of health care services

- The use of health care services changed as children got older. For example, the percentage of children who had seen a GP in the past 12 months decreased as they got older, but the percentage who had been to the dentist increased.
- The percentage of children who needed medical attention due to injury also increased as children got older; and the types of injuries changed. In the early years of childhood, cuts and scrapes were the most common injuries requiring medical attention, but in the teenage years, sprains and strains, fractures and broken bones were more common.
- For teenage boys, concussions were also an issue of concern – around 5,000 15-year-old boys across Australia required medical attention for an internal head injury or concussion in 2014.

Accessing health care

Around one in 10 parents reported having difficulties accessing health care services for their children, with reports of access difficulties more common among families with low incomes, those living in regional and remote areas, and those who speak a language other than English.

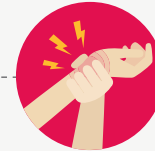
For example, compared to children living in major cities, the odds of having seen a GP in the past 12 months were halved for children and adolescents in regional and remote areas.



Medical attention for boys and girls at age 14–15

Sprain or strain

12% girls



12% boys

Break or fracture

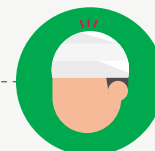
4% girls



11% boys

Internal head injury or concussion

1% girls



4% boys



3

Children's housing experiences

Diana Warren



For most Australians, whether owning or renting their home, the provision of housing for themselves and their families involves substantial expenditure throughout most of their lives. Housing costs are often the largest regular expense to be met from a household's current income (Australian Bureau of Statistics [ABS], 2015). This chapter describes the types of housing that the LSAC study children live in, whether their parents own or rent, the condition of their homes and how often they relocate. The extent to which children experience (short-term or ongoing) housing stress and inadequate housing (e.g. overcrowding, housing in poor condition) is examined. Changes in the housing experiences of children who have moved house and the impact of family separation on housing experiences are also explored.

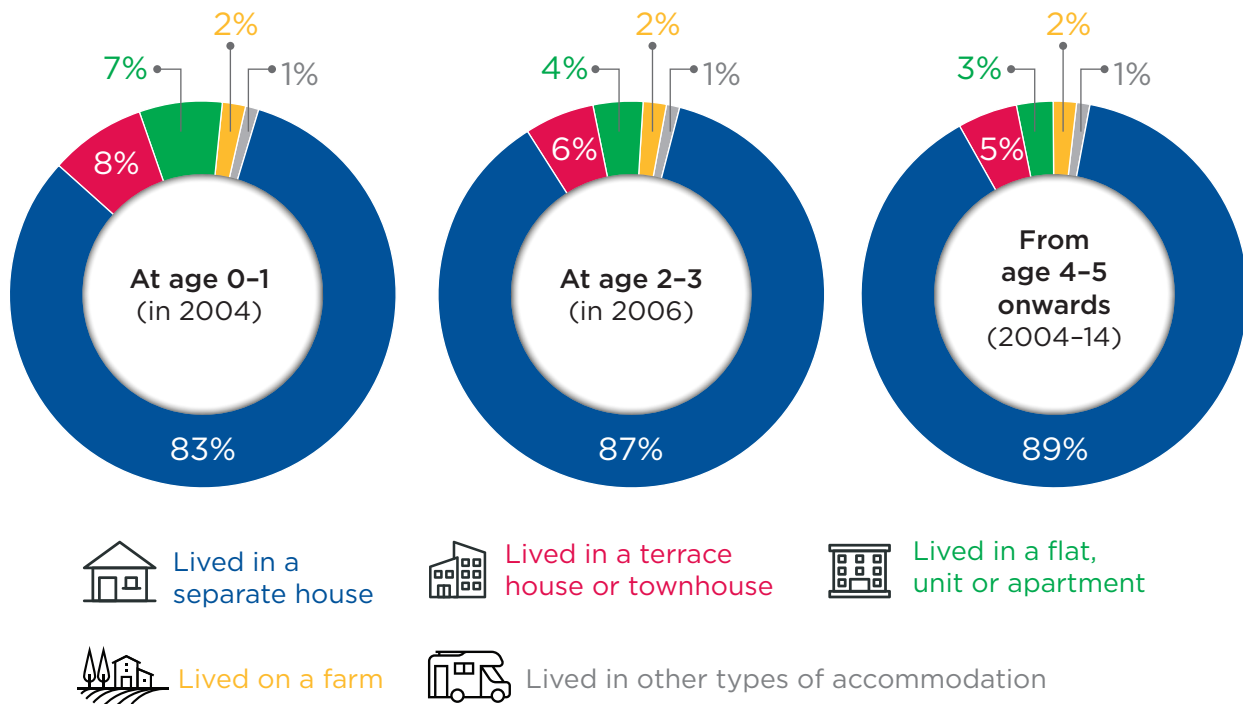
3.1 Types of housing

Data from the 2016 Census show that while separate houses still account for most homes in Australia (72%), there has been a large increase in other forms of dwelling. Higher density residential development, such as flats, apartments, semi-detached, row housing and town housing, now makes up 26% of all Australian housing (ABS, 2017).

The LSAC data show that most children live in a separate (detached) house. This is likely to be because of a preference among families for more living space, while single people and couples without children have a stronger preference for medium- and high-density housing. A 2011 study of housing preferences in Melbourne and Sydney showed that

when making decisions about housing, the presence of children significantly altered households' priorities. The number of bedrooms was the most important consideration, followed by other dwelling features such as the number of living spaces and having a detached house (Weidmann & Kelly, 2011).

Among children in the LSAC B cohort, 83% lived in a detached house at age 0–1 (in 2004). By age 2–3, 87% were living in a detached house. From age 4–5 onwards, the overall percentage of LSAC study children living in each type of housing remained very stable, with almost 90% living in a separate house (Figure 3.1, page 10).

Figure 3.1: Housing type, by age (2004-14)

Notes: $n = 5,058$ at age 0-1 (B cohort); 4,546 at age 2-3 (B cohort); 41,155 for ages 4-5 to 14-15 (B and K cohorts age 4-5 to 10-11 and K cohort age 12-13 and 14-15). Other accommodation includes caravan, cabin, house or flat attached to shop or office. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC Waves 1-6, B and K cohorts, weighted

The type of housing that children live in varies depending on whether or not they live in a metropolitan area and, to a lesser extent, on household income. A higher percentage of children in low-income households live in higher density housing, compared to children in higher income households.

In metropolitan areas, for example, in 2014:

- Of 14-15 year olds in the lowest quartile of equivalised household income, 81% lived in a separate house, compared to 94% of those in households in the highest quartile of the equivalised income distribution.
- Among 14-15 year olds in the lowest quartile of household income:
 - 11% lived in a terrace house or townhouse (compared to 3% of 14-15 year olds in households in the highest income quartile)
 - 8% lived in a flat, unit or apartment (compared to only 2% of those in households in the highest income quartile).

In non-metropolitan areas, in 2014:

- Five per cent of 14-15 year olds were living on a farm, and there was no significant variation in this percentage according to household income.
- However, a higher percentage of 14-15 in households in the lowest quartile of income were living in medium-density housing, with 7% of those in households in the lowest quartile of equivalised household income living in semi-detached houses, terrace houses or townhouses, compared to only 1% of those in households in the highest quartile.



3.2 Housing tenure

Data from the ABS Survey of Income and Housing ([SIH], 2015) show:

- The proportion of Australian households that own their own home (with or without a mortgage) has declined from 71% in 1994–95 to 67% in 2013–14.
- The proportion of households that are renting from a private landlord has risen from 18% in 1994–95 to 26% in 2013–14.

The most recent census data confirm the shift towards renting, with 31% of Australian households now paying a landlord, up from 27% in 1991 (ABS, 2017).

The percentage of Australian households that own their home outright has also continued to decline, with 31% of households owning their home outright in 2016, compared to over 40% in 1991 (ABS, 2017).

Across all waves of LSAC, the majority of study children (55–60%) lived in a household in which their parents were paying off a mortgage (Figure 3.2). The percentage of children living in a home that was owned outright increased with the age of the study child, with 7% of 0–1 year olds (in 2004) living in a home that was owned outright, compared to 17% of 14–15 year olds in 2014.

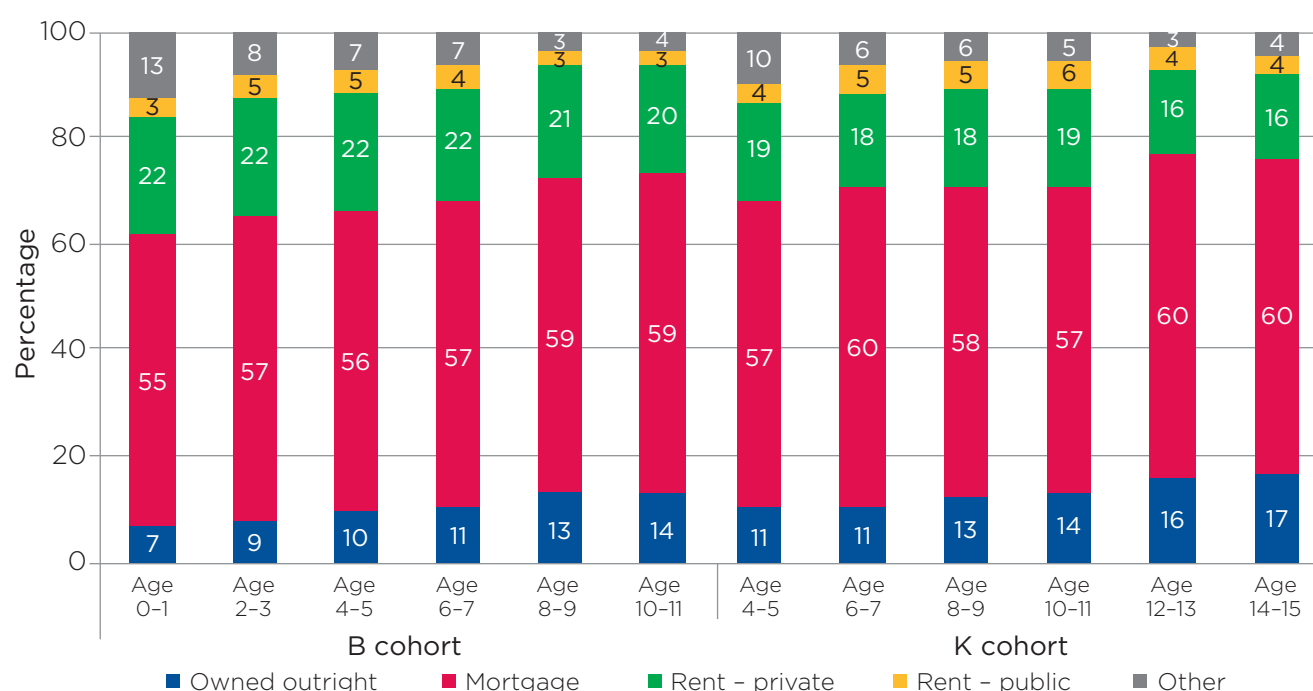
Box 3.1: Housing tenure

The classification of the housing tenure of the LSAC children's families is consistent with that used by the ABS (2015) in the SIH. Households where at least one parent owns the dwelling outright are defined as '*Owner without a mortgage*'. If the study child's primary carer states that there is currently a mortgage or a secured loan against their dwelling, the household is classified as '*Owner with a mortgage*'.

Renters are divided into two different types according to the type of landlord. Those who pay rent to a state or territory housing authority are classified as '*Renter – Public housing*'. Those who pay rent to a private landlord who does not reside in the same household are classified as '*Renter – Private landlord*'.

The category of '*Other housing*' captures those who do not fit into the owner or renter categories, including those paying rent in caravan parks, those who rent from housing cooperatives or community organisations, those who occupy a dwelling rent free and those who occupy their dwelling as part of a life tenure, rent/buy or shared equity scheme.

Figure 3.2: Housing tenure, by cohort and age (2004–14)



Notes: *n* ranges from 5,100 (B cohort, age 0–1) to 3,451 (K cohort, age 14–15). 'Other' includes: those paying rent in caravan parks, those who rent from housing cooperatives or community organisations, those who occupy a dwelling rent free and those who occupy their dwellings as part of a life tenure, rent/buy or shared equity scheme. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC Waves 1–6, B and K cohorts, weighted



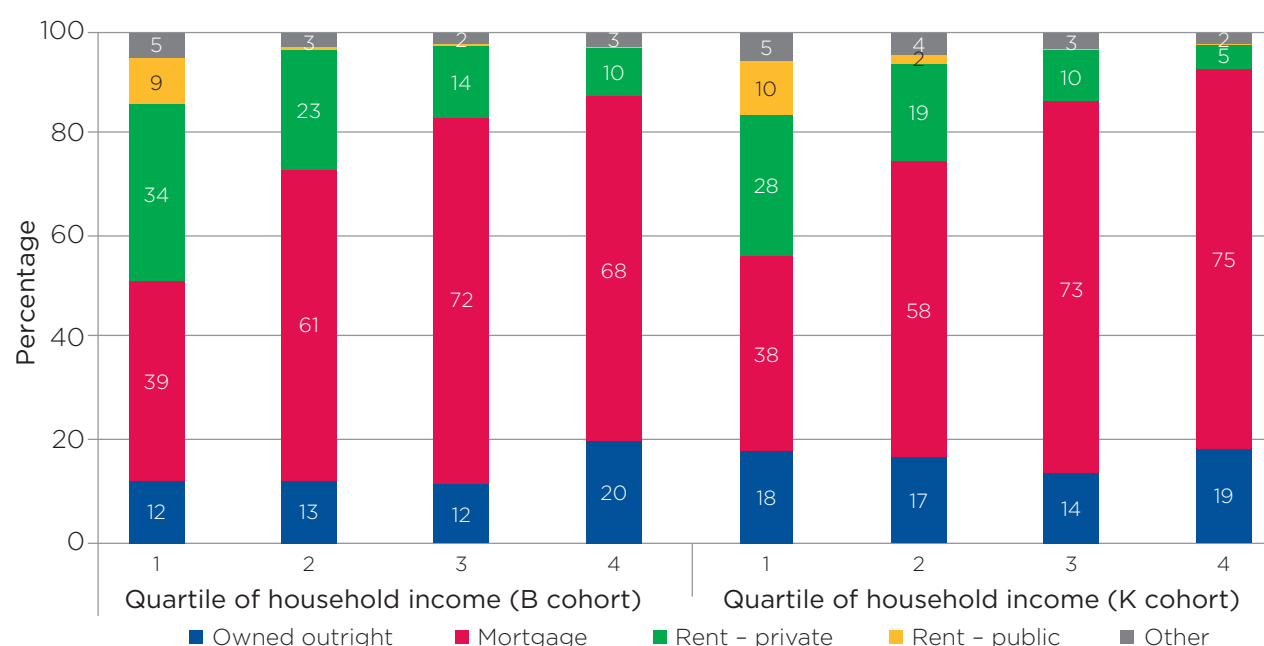
The percentage of LSAC study children aged 10 or younger living in private rental accommodation remained quite stable, at around 20% across all waves (Figure 3.2, page 11). Among children aged 12–13 and 14–15 (in 2012 and 2014), the percentage in private rental accommodation decreased to 16%, as the percentage whose parents either owned

their home outright or were paying off a mortgage increased. Living in other types of housing, such as a house or flat attached to a shop or office, or a caravan or cabin, became less common as children got older – from 13% of 0–1 year olds in 2004 to 4% of 10–11 year olds in the B cohort and 4% of 14–15 year olds in the K cohort in 2014.

Housing tenure varies considerably depending on household income (Figure 3.3). In 2014, living in a privately rented home was much more common among children in households in the lowest quartile of household income. Among 10–11 year olds, for example, just over one-third of those in households in the lowest income quartile were living in a home that was privately rented, compared to 10% of those in the highest income quartile.

Children living in households at the higher end of the income distribution were more commonly living in homes that their parents were buying (with a mortgage) or owned outright. Almost 90% of 10–11 year olds and 94% of 14–15 year olds in households in the highest income quartile were in homes that their parents either owned or were buying, compared to less than 60% of children in households in the lowest quartile of household income.

Figure 3.3: Housing tenure, by quartile of equivalised household income, 2014



Notes: $n = 3,915$ for B cohort and $3,147$ for K cohort. 'Other' includes: those paying rent in caravan parks, those who rent from housing cooperatives or community organisations, those who occupy a dwelling rent free and those who occupy their dwellings as part of a life tenure, rent/buy or shared equity scheme. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC Wave 6, B and K cohorts, weighted

3.3 The cost of housing

Housing costs account for a significant part of household income. Across Australia, in 2014, owners with a mortgage paid an average of \$453 per week, households renting from private landlords paid an average of \$376 per week and households renting from state and territory housing authorities paid an average of \$148 per week (ABS, 2015).

The LSAC data show that the average weekly cost of housing was highest for those families who were living in a metropolitan area and paying off a mortgage (Figure 3.4). The amount that families in metropolitan areas were paying for private rental accommodation increased considerably over the 10-year period between 2004 and 2014. While average rental payments in non-metropolitan areas were significantly lower than those in metropolitan areas, they also increased considerably over this period. However, the rate of increase was not as high as for those in metropolitan areas, particularly between 2008 and 2014.

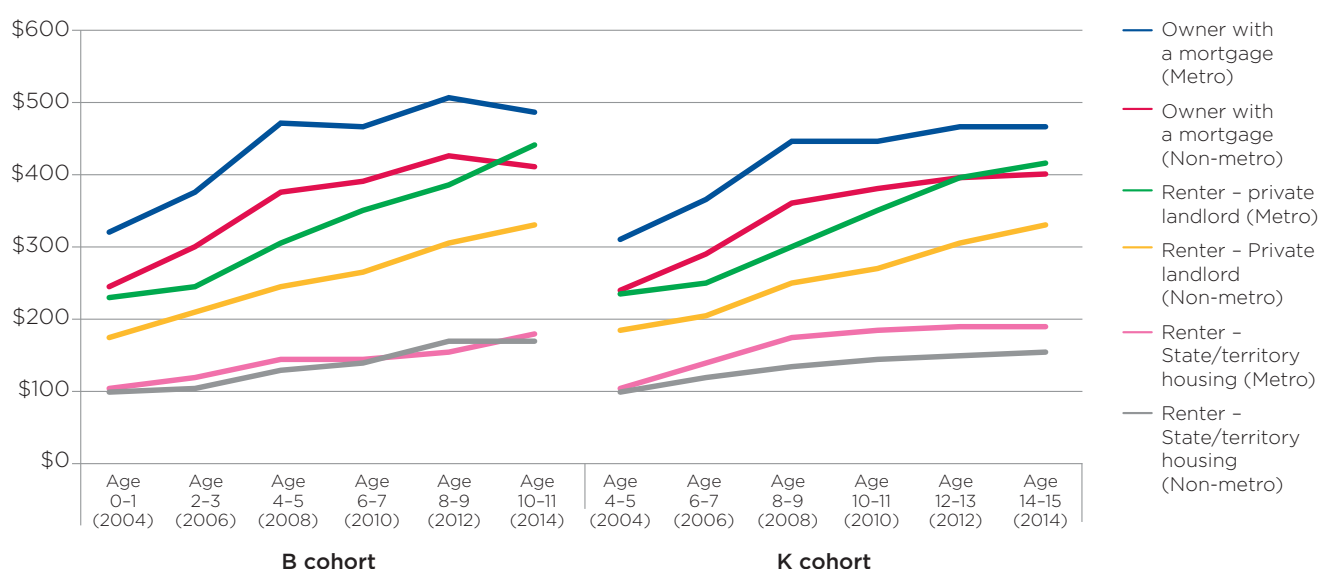
By 2014, families in metropolitan areas paying rent to private landlords were paying more per week, on average, than those who were paying off a mortgage in a non-metropolitan area. This is consistent with ABS data for the Australian population, which show



that for owners with a mortgage, the proportion of household income spent on mortgage costs fell from 18% in 2011–12 to 16% in 2013–14, as a result of an increase in mean gross household income and a period of low home-loan interest rates. However, private renters spent 20% of gross household income on housing costs in 2013–14, the same rate as 2011–12 (ABS, 2015).

Housing affordability stress is an important issue for the wider community, and especially for families. With the increasing cost of purchasing a home and a shift from mortgages to rental accommodation, many families are facing housing affordability stress, despite lower interest rates.

Figure 3.4: Average weekly cost of housing, by housing tenure and location, 2004–14



Notes: *n* ranges from 4,785 (B cohort, 2004) to 2,523 (K cohort, 2014). Values adjusted for inflation to 2014 dollars.

Source: LSAC Waves 1-6, B and K cohorts, weighted

Box 3.2: Housing affordability stress

The 30:40 indicator identifies households as being in housing affordability stress when the household has an income level in the bottom 40% of Australia's income distribution and is paying more than 30% of its income in housing costs.

The underlying assumption is that those on higher incomes who pay more than 30% of their income for housing do so as a choice and that such housing costs have little or no impact on the household's ability to buy life's necessities (Australian Household and Urban Research Institute [AHURI], 2016). The measure of housing stress in this chapter is based on gross rather than disposable household income.

Table 3.1: Percentage of children in households experiencing housing affordability stress, by housing tenure, 2006–2014

	Owner – mortgage (%)	Renter – private (%)	All (%)
B cohort			
Age 2–3 (2006)	7.4	26.1	11.1
Age 4–5 (2008)	8.7	34.0	13.7
Age 6–7 (2010)	7.8	27.6	10.5
Age 8–9 (2012)	8.4	32.5	12.8
Age 10–11 (2014)	8.7	34.0	13.7
K cohort			
Age 6–7 (2006)	9.2	32.0	13.3
Age 8–9 (2008)	8.7	27.6	11.7
Age 10–11 (2010)	8.7	30.7	12.1
Age 12–13 (2012)	9.3	28.8	11.7
Age 14–15 (2014)	7.8	33.3	11.1

Notes: *n* ranges from 5,100 (B cohort, 2006) to 3,027 (K cohort, 2014). Household income not available in Wave 1. Estimates of housing affordability stress for those in public rental and other accommodation not presented here due to the small number of observations.

Source: LSAC Waves 2–6, B and K cohorts, weighted

Overall, 10–14% of LSAC study children were living in a household experiencing housing stress in any particular wave. However, compared to children living in households where their parents were paying off a mortgage, where 7–9% were experiencing housing affordability stress, those living in rental accommodation were much more likely to be

in households experiencing affordability stress. In 2014, around one-third of children in private rental accommodation were living in a household experiencing housing affordability stress (Table 3.1).

By definition, those experiencing housing affordability stress are in the lowest 40% of household incomes. Within this low-income group, it would be expected that households with incomes at the lower end of the income distribution would be more likely to experience financial stress and also housing affordability stress. Research using LSAC data has shown that, compared to children living with two parents, rates of poverty and financial disadvantage are considerably higher among children in single-parent households; and for the vast majority of children living in poverty, at least one parent had government payments as their main source of income (Warren, 2017).

Table 3.2 (page 15) shows that among children in households with the lowest 40% of household incomes, the odds of living in a household experiencing housing affordability stress are:

- 1.5 times higher for those in private rental accommodation, compared to families paying a mortgage
- 1.6 times higher in metropolitan areas, compared to non-metropolitan areas
- almost 15 times higher in single-parent households, compared to couple households
- 4.3 times higher in households where at least one parent has government payments as their main source of income
- reduced by 50% if there are adults other than the study child's parents living in the household, compared to households with no other adults¹
- around 1.5 times higher in all years after 2008, compared to 2006. This result suggests that, after considering factors such as housing tenure, household structure and location, housing affordability stress increased considerably around the time of the Global Financial Crisis (GFC) in 2008 and, as of 2014, has not returned to pre-GFC levels.

¹ Data from the 2016 Census show that there has been a growth in larger households, as rented dwellings account for a larger share of Australia's housing stock; and rental stress is prompting a greater proportion of adult children to stay or move back home (Bleby, 2017). Presumably, housing stress will be reduced by having other adults in the household who are able to contribute to housing expenses (and total household income).

Table 3.2: Predictors of housing affordability stress

	Odds ratio
Housing tenure (ref. = mortgage)	
Rent – private	1.53***
Rent – public	0.19***
Other accommodation	0.13***
Single-parent household	14.92***
Metropolitan area	1.62***
At least one parent has government payments as main source of income	4.29***
Neither parent has post-school education	0.88
Other adults in the household	0.47***
Year of interview (ref. = 2006)	
2008	1.42***
2010	1.51***
2012	1.55***
2014	1.63***
B cohort	1.10***
Constant	0.06***
Log likelihood	-5,608.91

Notes: Sample restricted to those in the lowest 40% of gross household income, $n = 12,954$. Random effects logistic regression
 * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Waves 2–6, B and K cohorts, unweighted

3.4 Housing quality

Many international studies have shown associations between housing circumstances and a range of child outcomes. Research has shown that there is a significant relationship between aspects of housing conditions and specific health outcomes; for example, cold, damp and mould were significantly associated with childhood asthma and respiratory conditions (Dockery et. al., 2010).

In Australia, housing conditions have been shown to be related to a variety of developmental outcomes, including physical health, socio-economic wellbeing and learning. A study of the association between housing conditions and children's developmental outcomes, using the LSAC data, found that while there

was a statistically significant relationship between some housing-related factors and a child's physical health, socio-emotional wellbeing and learning outcomes, the role of housing in shaping children's wellbeing in Australia was quite modest overall (Dockery, Ong, Colquhoun, Li, & Kendall, 2013). While overcrowding had the largest negative impact for learning outcomes; frequent moves, renting rather than owning and being in financial stress were the aspects of housing that were shown to be negatively associated with children's social and emotional wellbeing.

In this section, the LSAC data are used to describe various aspects of housing quality, including overcrowding, neighbourhood liveability and interviewer-observed condition of the dwelling, and the factors associated with children's experiences of poor housing quality.

Overcrowding

In 2015–16, almost 4% of Australian households required at least one additional bedroom to meet the requirements of the household, while 78% of all households had one or more bedrooms more than the minimum number required, based on the Canadian National Occupancy Standard (CNOS) definition of overcrowding (ABS, 2017). However, in households with dependent children, the percentage experiencing overcrowding was higher, with 6% of couple families with dependent children, 11% of single-parent households and 32% of multi-family households experiencing overcrowding in 2015–16 (ABS, 2017). Renters were less likely than home owners to occupy dwellings with more bedrooms than required, with around 60% of renters having surplus bedrooms, compared to 85% of home owners.

The LSAC data indicate that at age 2–3, 6% of children were living in overcrowded households (Table 3.3, page 16). By age 6–7, this percentage had increased to around 9% and, at age 14–15, 8% of study children were living in overcrowded housing.

Overcrowding was much more common among those in households in the lowest quartile of equivalised household income, where up to 20% of children were living in overcrowded conditions, compared to 2–3% of those in the highest quartile of equivalised household income.

Box 3.3: Overcrowding

A commonly used measure of crowding is the Canadian National Occupancy Standard (CNOS), which assesses the bedroom requirements of a household based on the following criteria:

- There should be no more than two persons per bedroom.
- Children less than five years of age of different sexes may reasonably share a bedroom.
- Children five years of age or older of opposite sex should have separate bedrooms.
- Children less than 18 years of age and of the same sex may reasonably share a bedroom.
- Single household members 18 years or older should have a separate bedroom, as should parents or couples.

Using this measure, households that require at least one additional bedroom are considered to experience some degree of overcrowding.



Table 3.3: Percentage experiencing overcrowding, by quartile of equivalised household income

	Quartile of equivalised household income (%)				
	1st	2nd	3rd	4th	All
B cohort					
Age 2-3 (2006)	13.5	6.3	2.7	2.0	6.1
Age 4-5 (2008)	15.7	6.6	3.1	2.2	6.9
Age 6-7 (2010)	18.5	10.8	4.5	2.3	9.0
Age 8-9 (2012)	17.2	10.4	4.3	2.1	8.5
Age 10-11 (2014)	15.6	10.3	5.4	3.4	8.7
K cohort					
Age 6-7 (2006)	17.9	8.4	5.1	2.7	8.5
Age 8-9 (2008)	19.7	10.0	6.1	2.3	9.5
Age 10-11 (2010)	18.9	10.6	5.0	2.9	9.3
Age 12-13 (2012)	18.1	9.0	3.4	#2.0	8.1
Age 14-15 (2014)	15.2	8.3	3.6	3.1	7.6

Note: #Estimate not reliable (cell count < 20).

Source: LSAC Waves 2-6, B and K cohorts, weighted

Table 3.4 (page 17) shows that, after accounting for other factors, the odds of living in a household experiencing overcrowding are:

- 2.2 times higher in households in private rental accommodation and 3.8 times higher among those in public rental accommodation, compared to those living in homes owned outright
- 1.3 times higher in single-parent households, compared to couple households
- almost three times higher in households where at least one parent has government payments as their main source of income
- 1.5 times higher in households where no parent has a post-school qualification
- reduced by 27% for those in households in the highest quartile of equivalised household income, compared to households in the lowest quartile
- 14 times higher if there are adults other than the study child's parents living in the household, compared to households with no other adults
- higher in every interview year since 2008, compared to 2004.

Table 3.4: Predictors of overcrowding

	Odds ratio
Housing tenure (ref. = own outright)	
Mortgage	0.68***
Rent – private	2.21***
Rent – public	3.83***
Other accommodation	3.43***
Single-parent household	1.32**
Metropolitan area	0.94
At least one parent has government payments as main source of income	2.76***
Neither parent has post-school education	1.54***
Other adults in the household	14.05***
Quartile of equivalised household income (ref. = 1st (Lowest) Quartile)	
2nd quartile	1.17
3rd quartile	0.91
4th quartile	0.73**
Year of interview (ref. = 2004)	
2006	1.04
2008	1.29**
2010	1.68**
2012	1.61**
2014	1.34**
B cohort	0.88
Constant	0.002***
Log likelihood	-7534.66

Notes: $n = 42,924$. Random effects logistic regression * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Waves 1–6, B and K cohorts, unweighted

Neighbourhood liveability

Neighbourhood liveability is an important aspect of housing quality, as it is not just the house itself, but access to services and community spaces and also feeling safe in the area that you live in that has an influence on wellbeing.

The percentage of parents reporting low levels of neighbourhood liveability declined as children got older, with almost 7% of parents of 2–3 year olds in 2006 reporting low levels of neighbourhood liveability, compared to 3% of parents of 10–11 year olds and 4% of parents of 14–15 year olds in 2014 (Table 3.5, page 18).

Across all waves of LSAC, children in lower income households were more likely to live in 'less liveable' neighbourhoods. For example, among children aged 2–3 in 2006, 11% of those in the lowest quartile of

equivalised income were living in a neighbourhood that their parents rated low on the liveability scale, compared to 4% of children in households in the highest quartile of equivalised household income.

Box 3.4: Neighbourhood liveability

The LSAC data included a series of questions relating to the liveability of the neighbourhood and available neighbourhood facilities. The responding parent was asked their agreement on a four-point scale with the statements:

- This is a safe neighbourhood.
- There are good parks, playgrounds and play spaces in this neighbourhood.

Responses to these questions were averaged to create the neighbourhood liveability scale. In most waves of LSAC, the scale had a range of 1–4, where 1 means 'strongly agree' and 4 means 'strongly disagree'. Those with a score of 3 or higher were considered to be living in a neighbourhood with poor liveability. However, in Wave 5, the neighbourhood liveability questions were asked on a scale of 1–5 and those with scores of 3.5 or higher were considered to be living in a neighbourhood with poor liveability.

Although additional questions relating to access to public transport and facilities such as shops, banks and medical services were asked in some waves, only the two questions above were asked in all waves. Therefore, the liveability scale used in this analysis is based on these two items.



Table 3.5: Percentage of children living in a neighbourhood with low levels of liveability, by quartile of equivalised household income

	Quartile of equivalised household income (%)				
	1st	2nd	3rd	4th	All
B cohort					
Age 2-3 (2006)	11.2	6.6	5.5	4.2	6.6
Age 4-5 (2008)	7.8	5.6	4.8	2.4	5.2
Age 6-7 (2010)	7.4	4.6	2.5	#1.6	4.0
Age 8-9 (2012)	7.9	4.4	3.6	2.1	4.5
Age 10-11 (2014)	5.1	3.1	2.2	#1.9	3.1
K cohort					
Age 6-7 (2006)	9.9	7.0	4.0	3.9	5.9
Age 8-9 (2008)	9.0	6.8	3.9	3.2	5.7
Age 10-11 (2010)	6.7	5.8	2.4	3.0	4.5
Age 12-13 (2012)	9.9	5.3	4.0	#1.6	5.2
Age 14-15 (2014)	5.8	3.7	#2.6	2.6	3.7

Note: #Estimate not reliable (cell count < 20).

Source: LSAC Waves 2-6, B and K cohorts, weighted

Interviewer observations of housing conditions

Interviewer observations were used to assess characteristics of the home environment including clutter, noise and the condition of the exterior of the home. Around 5% of children were living in households that were described by their interviewer as being in poor or badly deteriorated conditions, with poor external conditions more common for those in lower income households (Table 3.6, page 19). While the percentage of children living in homes in poor external condition ranged from 9–13% among those in households with equivalised household income in the lowest quartile, very few children in households in the top half of the equivalised income distribution (up to 3% in the third quartile and less than 2% in the highest quartile) were living in homes that the LSAC interviewers described as being in poor external condition.

Box 3.5: External condition of the dwelling

Interviewers were asked to record observations about the study child's home, including the external condition of the dwelling. The external condition was rated on a scale of 1–4, with 1 meaning 'badly deteriorated', 2 'poor condition with paint peeling and in need of repair', 3 'fair condition' and 4 'well-kept with good repair and exterior surface'.



Table 3.6: Percentage of children living in households in poor or badly deteriorated condition, by quartile of equivalised household income

	Quartile of equivalised household income (%)				
	1st	2nd	3rd	4th	All
B cohort					
Age 2–3 (2006)	10.3	#2.2	2.2	#1.0	3.9
Age 4–5 (2008)	10.8	2.9	2.0	#0.7	4.1
Age 6–7 (2010)	9.9	3.3	0.8	0.3	3.5
Age 8–9 (2012)	10.9	3.2	2.3	1.6	4.9
Age 10–11 (2014)	10.2	2.8	3.2	#0.9	4.3
K cohort					
Age 6–7 (2006)	11.0	3.5	2.1	0.9	4.4
Age 8–9 (2008)	11.7	4.1	#1.7	#0.9	4.5
Age 10–11 (2010)	12.4	5.3	#1.2	#0.6	4.9
Age 12–13 (2012)	12.7	5.7	#2.0	#0.7	5.3
Age 14–15 (2014)	9.0	3.5	3.0	#1.1	4.2

Note: #Estimate not reliable (cell count < 20).

Source: LSAC Waves 2–6, B and K cohorts, weighted

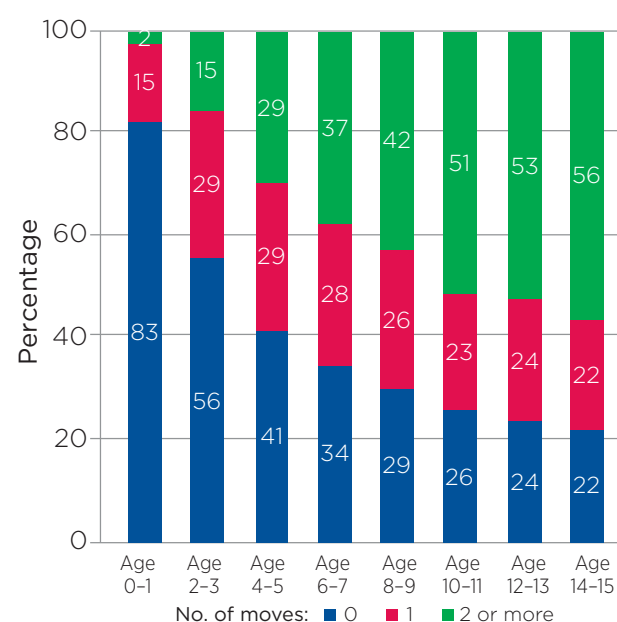
3.5 Moving house and changes in housing quality

Australian families move house quite often. In 2013–14, 1.26 million households (14% of all households) moved house at least once in the previous 12 months (ABS, 2015). While the percentage of couple families with dependent children that had moved at least once in the last 12 months was 14%, similar to that for all households, 21% of single parents with dependent children had moved at least once in the previous 12 months.

At age 0–1, 17% of children had moved at least once. By age 14–15, only 22% had remained in the same home for their entire life – 22% had moved once and 56% had moved house at least twice since birth (Figure 3.5).

Several large-scale studies from the United States have shown that higher levels of residential mobility have a negative influence on children's wellbeing. This is mainly due to disruptions to social connections within neighbourhoods, particularly if children have to move schools and make new friends (Boyle, 2002; Dockery et al., 2010; Harkness & Newman, 2005; Jelleyman & Spencer, 2008). Using LSAC, Taylor and Edwards (2012) found that the developmental outcomes of children may be more sensitive to residential mobility between the ages of four and five years than at older ages. However, it may be the change in family circumstances around the time of the move, such

as parental separation, or changes in parents' work arrangements, resulting in a reduction in household income, rather than the move itself, that contributes to these poorer outcomes.

Figure 3.5: Number of house moves since birth

Notes: Cohorts are combined for ages 4–5 to 10–11. No significant difference in number of homes, by age of study child, between cohorts. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC Waves 1–6, B and K cohorts, weighted

For many children, moving house is likely to be a positive experience, particularly if it involves an improvement in housing quality or moving to a better neighbourhood.

The LSAC data show that changes in household structure are often associated with a residential move.² The percentage of children who had moved house at least once since the previous wave of LSAC was considerably higher among those whose primary carer had either separated or re-partnered during that time (Figure 3.6). For example, among children whose parents had separated between the time that they were aged 4–5 and 6–7, more than half had moved house, compared to 35% of those who were living with only one parent at both ages, and just over 20% of those who had remained in a two parent household.

Moving house became less common as children got older, but even at age 14–15, over 40% of those who had experienced a change in household structure had moved house in the previous two years, compared to a quarter of teens who had remained in a single-parent household, and only 13% of those who had remained in a two-parent household.

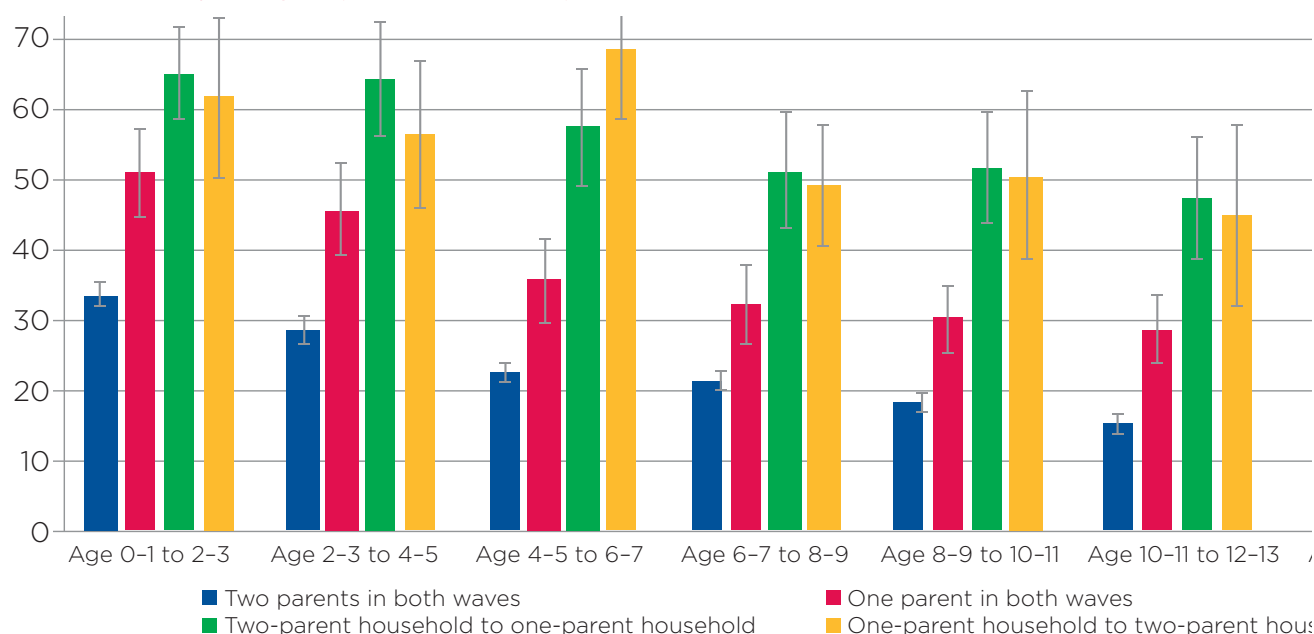
When families move house, most do not move very far. For at least 40% of children, their family's most recent

move was within the same town or suburb, and a further 35–40% had moved within the same area or region. To some extent, the distance that families move depends on the reason for the move. Among children whose families moved house when they were between the ages of 0–1 and 2–3, for example, 57% of those whose parents had separated moved somewhere within the same town or suburb, compared to 44% of those whose parents did not separate around the time of moving house.

Changes in housing conditions

For most children who had lived in a household experiencing housing affordability stress, this was a temporary situation, with 14% of children in the B cohort and 13% of children in the K cohort experiencing housing stress in two or more waves (Table 3.7, page 21). In terms of overcrowding, almost one in five children had lived in overcrowded conditions in at least one wave, while 11–12% had lived in overcrowded conditions in two or more waves. Similarly, around 15% of children had lived in a home that the interviewer considered to be in poor external condition in at least one wave but only around 6% lived in a home in poor external condition in two or more waves.

Figure 3.6: Housing mobility (percentage who moved since the previous wave), by change in parents' relationship status



Notes: Cohorts are combined for ages 4–5 to 10–11. *n* ranges from 4,606 between age 0–1 and 2–3 to 3,266 between age 12–13 and 14–15.

Source: LSAC Waves 1–6, B and K cohorts, weighted

2 Between each wave of LSAC 4–5% of study children went from being in a two-parent household to a one-parent household and 2–3% went from being in a one-parent household to a two-parent household. The percentage of study children who remained in a two-parent household between waves ranged from 85% between ages 0–1 and 2–3 to 78% between ages 12–13 and 14–15; while the percentage who remained in a single-parent household between waves increased from 8% between ages 0–1 and 2–3 to 16% between ages 12–13 and 14–15. See Baxter (2016) for more detailed analysis of changes in family structure in LSAC.

Table 3.7: Persistence of housing difficulties

Number of waves experiencing housing difficulties						
	0 (%)	1 (%)	2 (%)	3 or more (%)	Total (%)	Total (n)
B cohort						
Waves experiencing housing affordability stress	70.0	15.8	7.0	7.2	100.0	2,595
Waves experiencing overcrowding	81.3	7.9	4.4	6.5	100.0	3,419
Waves experiencing poor neighbourhood liveability	81.9	12.2	3.6	2.3	100.0	2,790
Waves in poor housing conditions (interviewer observed)	84.5	9.4	3.7	2.4	100.0	3,186
K cohort						
Waves experiencing housing affordability stress	73.3	14.1	6.2	6.4	100.0	2,290
Waves experiencing housing overcrowding	78.9	9.1	4.1	7.9	100.0	3,243
Waves experiencing poor neighbourhood liveability	83.2	10.7	3.3	2.8	100.0	2,621
Waves in poor housing conditions (interviewer observed)	84.7	9.4	3.5	2.4	100.0	3,000

Notes: Balanced panel. Housing affordability based on Waves 2–6. Percentages may not total exactly 100.0% due to rounding.

Source: LSAC Waves 1–6, B and K cohorts, weighted

To a large extent, neighbourhood liveability is beyond the control of individuals, and improvements in neighbourhood liveability are generally achieved only by moving to a different neighbourhood. Almost 20% of children experienced poor neighbourhood liveability in at least one wave, but only 2–3% were living in neighbourhoods with poor liveability for three or more waves. However, it is possible that the persistence of housing difficulties is underestimated somewhat, as those in households who were experiencing housing difficulties had significantly lower response rates in the subsequent wave of LSAC.³

Looking at changes in housing conditions from one wave of LSAC to the next, study children who remained in two-parent households were the least likely to experience housing affordability stress, with 86% who had moved house and 90% who had not moved since the previous wave experiencing no housing affordability stress (Table 3.8, page 22). On the other hand, at least one in four children who had remained in a single-parent household for two consecutive waves had remained in a situation of housing affordability stress.

Among children whose parents had separated since the previous wave, 41% of those who had moved house and 30% of those who had remained in the same home had moved into a situation of housing affordability stress. On the other hand, those whose primary carer had re-partnered since the previous wave were most likely to have moved out of housing stress, with 39% of those who had moved and 26% of those who had stayed in the same home no longer living in a household experiencing housing affordability stress.



³ For example, among 12–13 year olds who were living in a household experiencing housing affordability stress in 2012, the response rate in 2014 was 79%, compared to 88% for those who were not in households experiencing housing affordability stress in 2012. Similarly, among 12–13 year olds who were living in overcrowded conditions in 2012, the response rate in 2014 was 77%, compared to 87% for those who were not living in overcrowded conditions in 2012.

Table 3.8: Percentage of changes in housing affordability stress, by change in parents' relationship status

	Moved since previous wave (%)				No move since previous wave (%)				All
	Two parents in both waves	One parent in both waves	Two-parent household to one-parent household	One-parent household to two-parent household	Two parents in both waves	One parent in both waves	Two-parent household to one-parent household	One-parent household to two-parent household	
No housing stress	86.0	35.4	48.4	53.6	90.0	48.7	60.8	63.0	81.7
Into housing stress	5.6	17.9	41.3	2.4	3.4	12.6	29.7	4.9	6.4
Out of housing stress	5.8	17.3	4.3	38.5	4.4	14.6	4.5	25.6	6.7
Still in housing stress	2.7	29.5	6.0	#5.5	2.2	24.2	5.1	#6.6	5.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Pooled data ($n = 24,224$). #Estimate not reliable (cell count < 20). Percentages may not total exactly 100.0% due to rounding.

Source: LSAC Waves 2–6, B and K cohorts, weighted

While a high percentage of children with parents who had recently separated were living in households experiencing housing affordability stress, only 10% of children who had moved house around the time their parents separated had moved into overcrowded conditions (Table 3.9). Around 12% of children whose primary carer had re-partnered since the previous wave had moved into overcrowded conditions, regardless of whether or not they had moved house. As a change from a single-parent to a two-parent household makes no difference to the overcrowding measure, this change is presumably because of new (step- or half-) siblings in the household.

Table 3.9: Percentage of changes in overcrowding, by change in parents' relationship status

	Moved since previous wave (%)				No move since previous wave (%)				All
	Two parents in both waves	One parent in both waves	Two-parent household to one-parent household	One-parent household to two-parent household	Two parents in both waves	One parent in both waves	Two-parent household to one-parent household	One-parent household to two-parent household	
No crowding	86.6	74.8	80.4	72.2	91.0	82.4	83.8	71.6	88.4
Into crowded conditions	4.4	9.7	10.4	12.0	2.5	4.7	4.2	12.2	3.6
Out of crowded conditions	6.1	10.4	5.3	11.2	1.4	3.4	3.6	#3.9	2.9
Still in crowded conditions	2.9	5.1	3.9	4.6	5.2	9.6	8.4	12.4	5.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: Pooled data ($n = 27,339$). #Estimate not reliable (cell count < 20). Percentages may not total exactly 100.0% due to rounding.

Source: LSAC Waves 1–6, B and K cohorts, weighted

Among those who had moved house since their last interview, only 4% had moved into a neighbourhood that their parents rated 'poor' in terms of liveability, while 6% moved into a better (more liveable) neighbourhood (Table 3.10).

Most children who had moved house around at the time their parents separated had not moved into a worse neighbourhood in terms of liveability – only 3% had moved into neighbourhoods that their parents rated poor on the neighbourhood liveability scale, while 6% had moved to a more liveable neighbourhood. Among those who changed from a single-parent to a two-parent household around the time of their move, 8% had moved from a 'poor liveability' neighbourhood to a more liveable neighbourhood.

Table 3.10: Percentage of changes in neighbourhood liveability, by change in parents' relationship status

	Parents' relationship status (%)				All
	Two parents in both waves	One parent in both waves	Two-parent household to one-parent household	One-parent household to two-parent household	
Not in low liveability	90.9	85.0	89.6	89.3	89.8
Into low liveability	3.3	6.8	2.9	#1.5	3.7
Out of low liveability	5.1	6.3	6.0	8.3	5.6
Still in low liveability	#0.7	1.9	#1.5	#0.8	0.9
Total	100.0	100.0	100.0	100.0	100.0

Notes: Pooled data ($n = 8,252$). Sample restricted to those who moved house since the previous wave. #Estimate not reliable (cell count < 20). Percentages may not total exactly 100.0% due to rounding.

Source: LSAC Waves 1-6, B and K cohort, weighted

Among children who had moved house since the previous wave, only 3% had moved from a house in good external condition to a house that was in poor condition (Table 3.11). For most children, living in a dwelling considered to be in poor condition was not an ongoing issue, with 9% of children in single-parent households and 7% of children whose parent had re-partnered moving from a home in poor or badly deteriorated condition to a home in good external condition.

Table 3.11: Percentage in changes in external conditions, by change in parents' relationship status

	Parents' relationship status (%)				All
	Two parents in both waves	One-parent in both waves	Separated since previous wave	Re-partnered since previous wave	
Good condition both waves	93.2	84.8	91.2	86.6	91.3
Into poor condition	2.3	4.8	4.0	4.9	3.0
Out of poor condition	3.7	8.7	3.7	7.1	4.7
Still in poor condition	0.7	1.7	1.1	1.4	0.9
Total	100.0	100.0	100.0	100.0	100.0

Notes: Pooled data ($n = 9,291$). Sample restricted to those who moved house since the previous wave. #Estimate not reliable (cell count < 20).

Source: LSAC Waves 1-6, B and K cohort, weighted

Summary

This chapter has provided a picture of the housing experience of Australian children between 2004 and 2014. The LSAC data show that while most children do not live in households experiencing issues such as housing affordability stress, overcrowding or poor neighbourhood liveability, there are some whose families do face these issues. For most families who experience difficulties with housing, these are not ongoing issues.

Around 6% of study children were living in a home that was considered to be in poor external condition in two or more waves of LSAC; and a similar percentage had experienced two or more waves of poor neighbourhood liveability. One in 10 children experienced housing affordability stress or overcrowding in at least two waves of LSAC.

For some children, changes in housing are a result of parental separation and, in these cases, housing affordability is more likely to be an issue. Of children who moved house around the time of their parents' separation, 41% moved into a situation of housing affordability stress.

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4

Who do adolescents spend their time with?

Jennifer Baxter



As children leave childhood and enter adolescence, the amount of time spent with family members declines and the amount of time spent alone increases (Larson & Richards, 1991; Larson & Verma, 1999). There are also notable shifts in parent-child relationships as adolescents' own independence and relationships with peers become more central to their lives (Hill, Bromell, Tyson, & Flint, 2007; Steinberg & Silk, 2002).

This chapter explores who children in the LSAC K cohort spent their time with at ages 10–11, 12–13 and 14–15, based on children's self-reported time use diaries. These time use patterns are examined for boys and girls by age. Differences in time use according to family structure and parental employment are also explored. Family time is generally a positive influence on children and adolescents (Crouter, Head, McHale, & Tucker, 2004; Offer, 2013a). These time use patterns provide insights on the lives of adolescents and highlight circumstances in which they may have more limited opportunities for such time.

Box 4.1: Time use diaries

Study children were asked to complete a time use diary for the day before the home visit for the main LSAC interview, filling out details of their activities in a paper diary. They were instructed to record their activities, in sequence, from when they woke up to when they went to sleep at night. Activities were described in words (e.g. eating, watching TV, personal care), and start and end times of each activity were recorded. The diaries also captured information from children about who was present (i.e. in the same room) for each activity, except for during school lessons and during personal care activities such as bathing and dressing.

During the home visit, interviewers went through the diaries with children to check the quality of the diary data, enter the data into a computer, and classify main and secondary activities and other information.

Time use diaries were completed by the majority of children in responding families (96% in Wave 4, 92% in Wave 5 and 87% in Wave 6).

For further details about the LSAC time use diaries, refer to Corey, Gallagher, Davis, and Marquardt (2014).

4.1 Overview of who adolescents spend time with

The LSAC data show that the amount of time young people spend with their parents declines substantially between the ages of 10–11 and 14–15 (Figure 4.1, page 27). When study children were aged 10–11, the average amount of time spent with parents was 2.6 hours per day on weekdays and 5.4 hours per day on weekends. By age 14–15, this had dropped to 2.2 hours on weekdays and 4.3 hours on weekends.

Time spent with siblings (without parents present) also declined with age, from 2.8 hours per day on weekdays and 5.9 hours per day on weekends at age 10–11 to only 1.8 hours per day on weekdays and 3.4 hours per day on weekends at age 14–15.

Box 4.2: Who adolescents spend their time with

The time use diary data were used to estimate the number of minutes per day study children spent:

- with parents (Most children live with their biological parents but this can also include time spent with a step-parent or a parent living elsewhere. People other than parents may also be present.)
- with their siblings (without parents present)
- with other adults (without parents or siblings present, and not at school)
- at school
- with other children (without parents or siblings, and not at school or with other adults)
- alone.

Note that time without adults present (with siblings, other children or alone) does not necessarily mean that children are unsupervised. For example, when adolescents report being alone at home, this will include time spent in their bedroom with parents or others elsewhere in the house.

For this chapter, categories were created so they added to children's total awake time, without double counting any of the time. It should be noted that children are awake for longer as they increase in age from 10–11 years (a little under 14 and a half hours) to 12–13 years (a little over 14 and a half hours) to 14–15 years (15 hours).

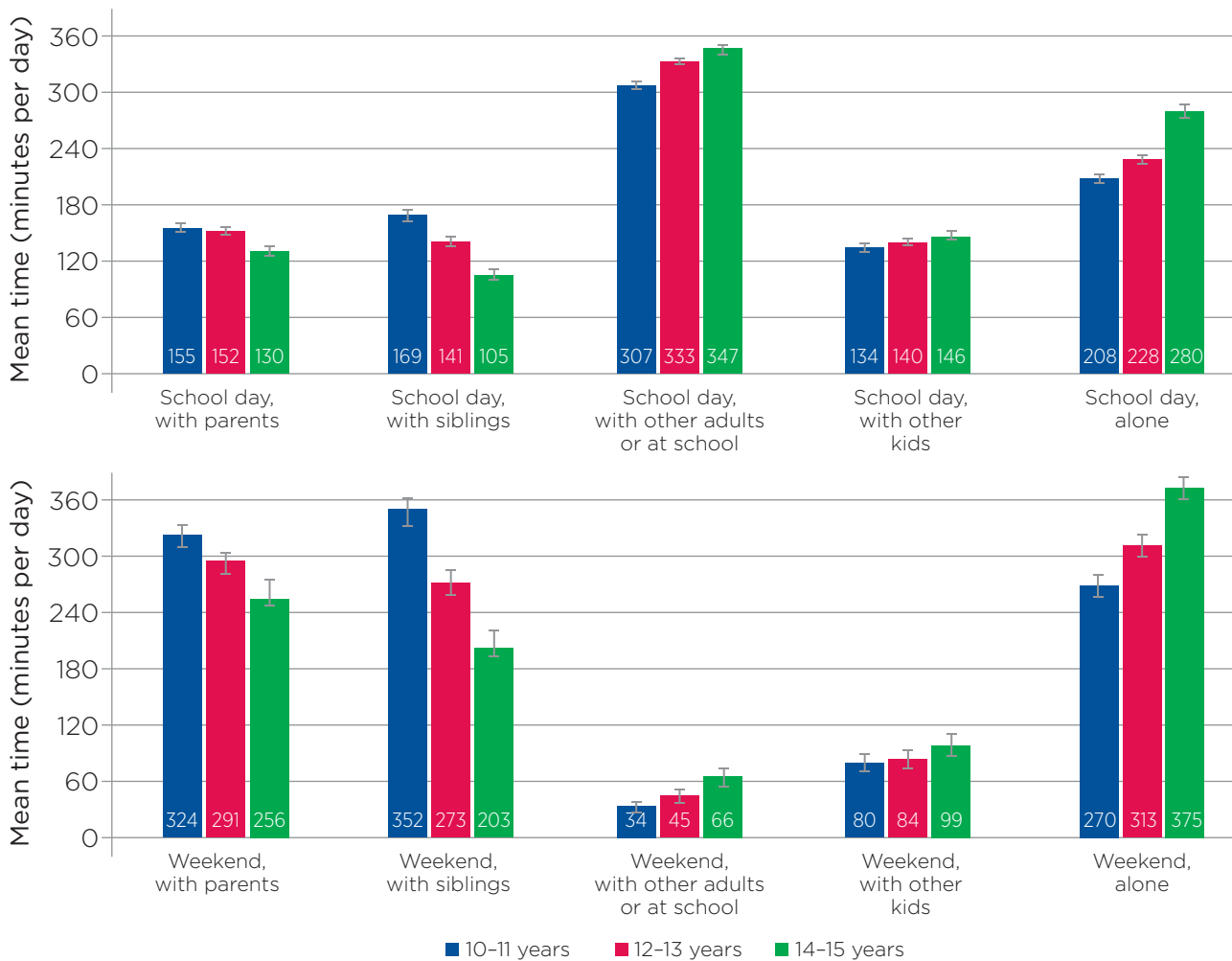
Compared to 10–11 year olds, 12–13 and 14–15 year olds spent around half an hour more per day at *school*.

Time with *non-parental adults* includes time in child care and doing extracurricular activities. It does not vary much by age on school days but increases with age on weekends.

The amount of time children spent *with children who are not siblings* (outside of time at school, with other adults or with their parents or siblings) actually changes very little over these ages. At age 10–11, the average amount of time spent with other children is 2.2 hours per day on weekdays and 1.3 hours per day on weekends. By age 14–15, the average time spent with other children is only 12 minutes more on weekdays and 19 minutes more on weekends.

On school days and weekend days, there is a significant increase in the amount of time children *spend alone*. On average, 10–11 year olds spent 3.5 hours alone on weekdays and 4.5 hours alone on weekends. At age 14–15, the average amount of time spent alone was 4.7 hours per day on weekdays and 6.3 hours per day on weekends.



Figure 4.1: Who children spend time with at 10–11, 12–13 and 14–15 years

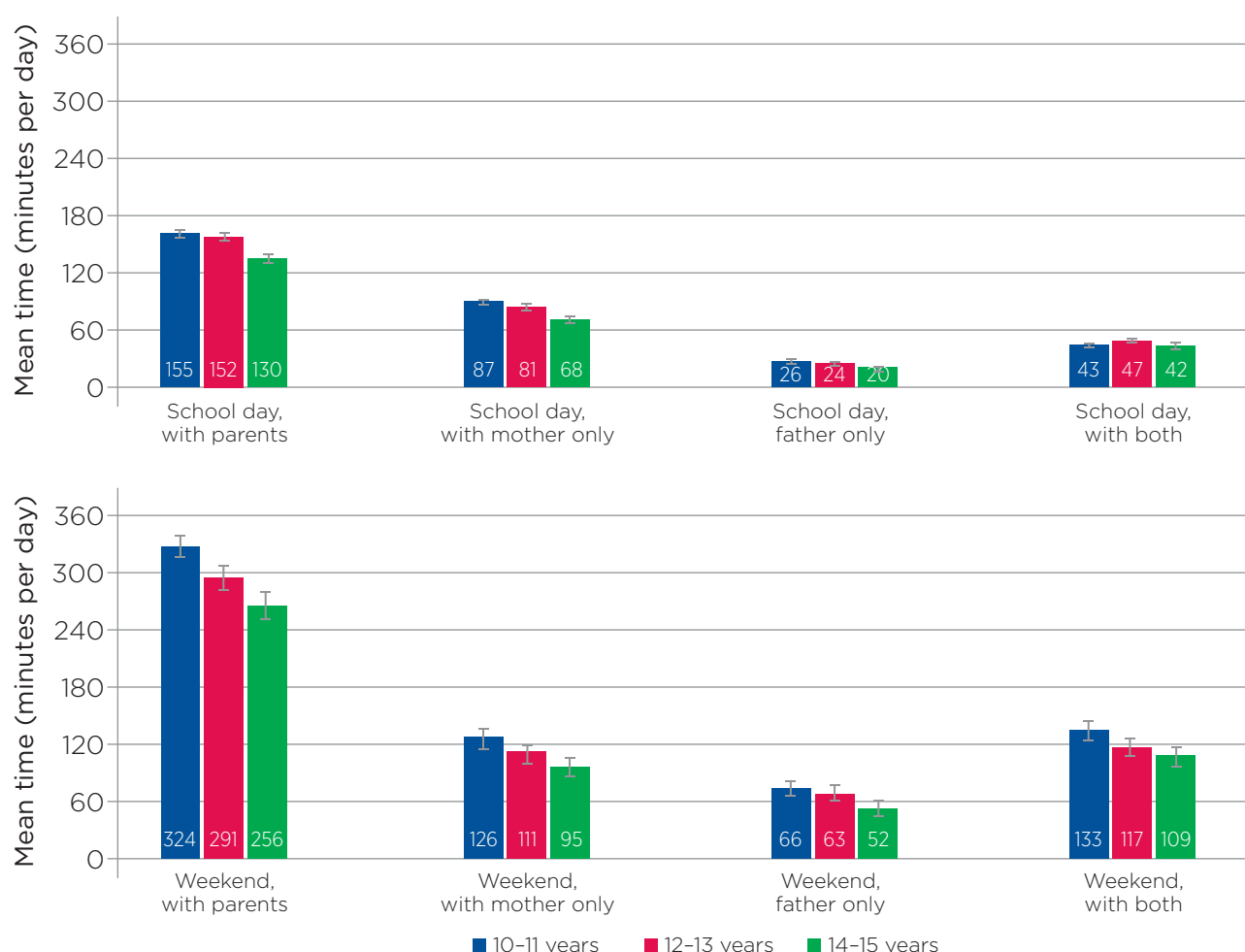
Notes: Weekday diaries are excluded if children did not attend school on that diary day. Wave 4: $n = 2,089$ for school-day diaries and 815 for weekend diaries. Wave 5: $n = 1,958$ for school-day diaries and 740 for weekend diaries. Wave 6: $n = 1,430$ for school-day diaries and 651 for weekend diaries.

Source: LSAC Waves 4–6, K cohort, weighted

4.2 Time spent with parents

Time use research shows that, on average, children of varied ages spend more time with their mothers than their fathers (e.g. Baxter, 2015; Bryant & Zick, 1996; Craig, 2006). In Australia, this is at least partly explained by mothers spending fewer hours in paid work than fathers. It is therefore expected that in looking at who teens spend their time with, time with mothers will be greater than time with fathers (Dubas & Gerris, 2002; Offer, 2013b). The LSAC data confirm that adolescents spent considerably more time with their mother than with their father, particularly on weekdays (Figure 4.2, page 28).

- On school days, much of children's time with parents was time with only their mother. Smaller amounts of time were spent with both parents together and smaller amounts again with only their father. For school days, it was time with only mother that declined with age, more so than other types of parent time.
- Compared to school days, children spend more time on weekend days with parents overall. This corresponds to greater amounts of time in any of the parent categories – mother only, father only or both parents together.

Figure 4.2: Amount of time children spend with mothers and fathers at 10–11, 12–13 and 14–15 years

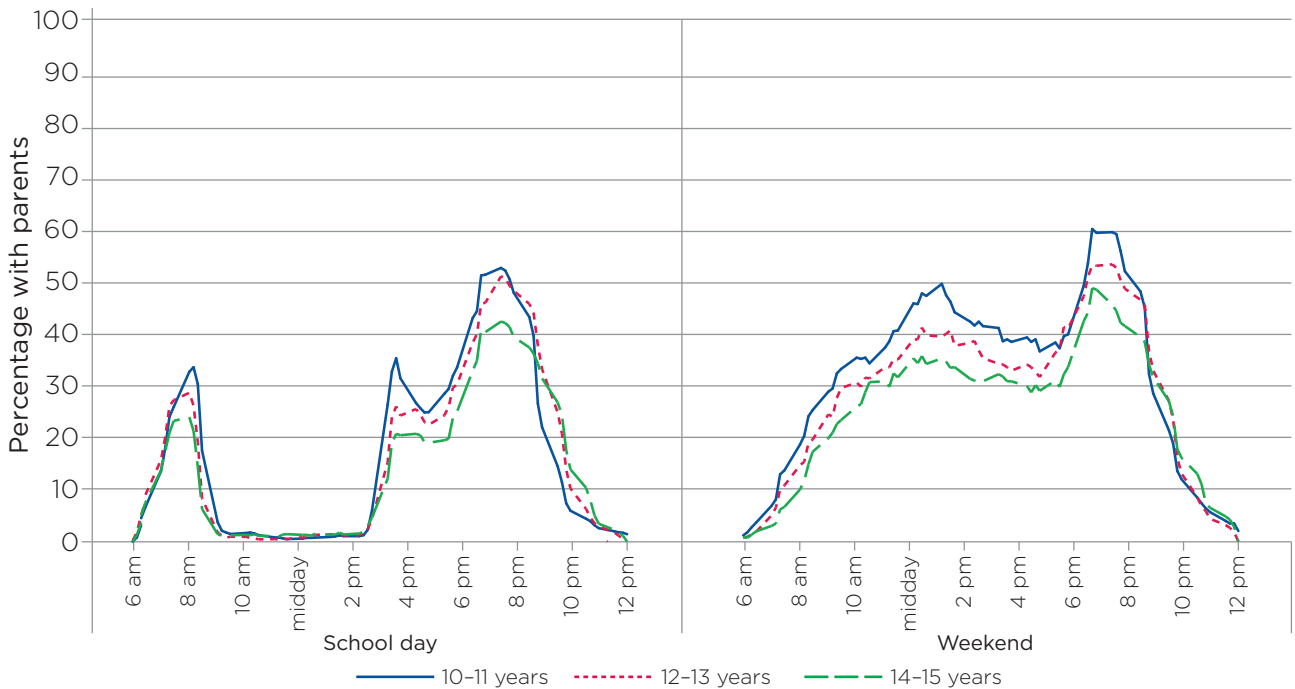
Notes: Weekday diaries are excluded if children did not attend school on that diary day. *n* for school-day diaries: Wave 4 = 2,089; Wave 5 = 1,958; Wave 6 = 1,430. *n* for weekend diaries: Wave 4 = 816; Wave 5 = 740; Wave 6 = 651.

Source: LSAC Waves 4–6, K cohort, weighted

4.3 Who adolescents spend time with throughout the day

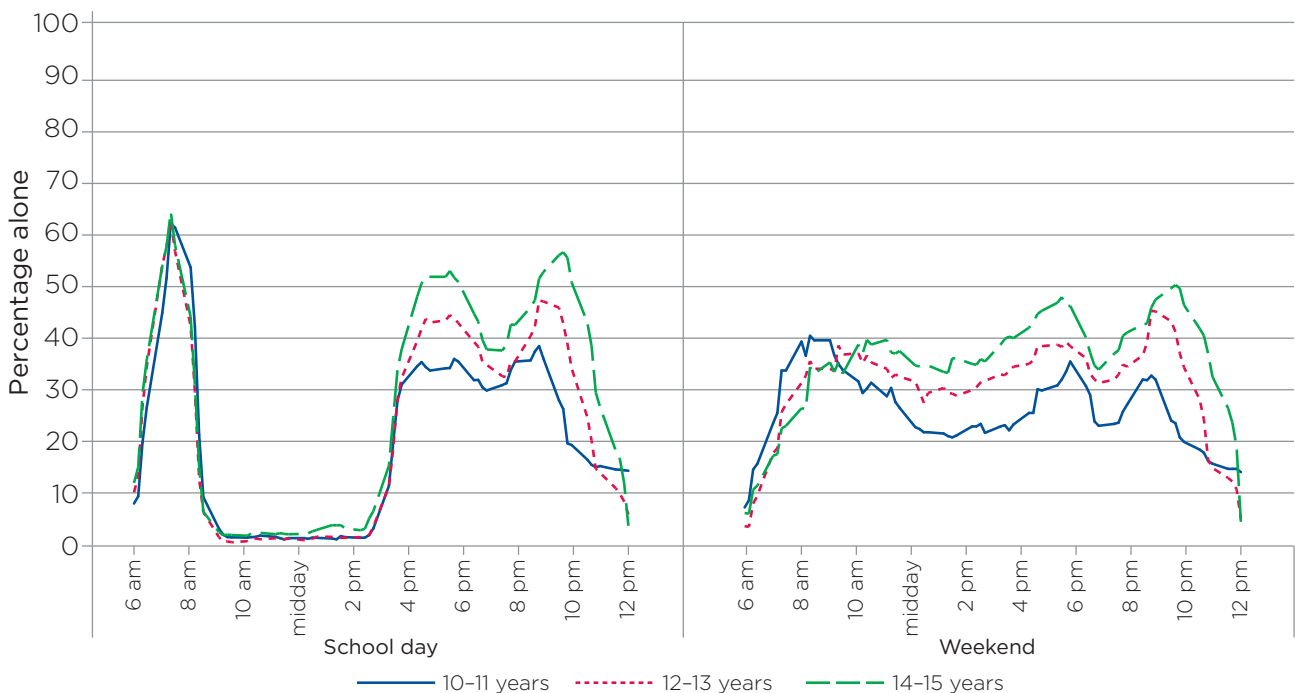
Additional insights about children's time use can be gained by looking at the times that children are with different people, or alone, throughout the day. In terms of time spent with parents, the peak time for adolescents is around the time of the evening meal. For example, on school days, 52% of 10–11 year olds were with their parents between 7 pm and 7.15 pm, compared to 50% at 12–13 years and 42% at 14–15 years (Figure 4.3, page 29). Looking at a broader time frame, 82% of children at 10–11 years were with their parents at some time between 6 pm and 7.30 pm on school days, compared to 77% at 12–13 years and 69% at 14–15 years.

There was also a morning peak and an after-school peak on school days. However, the after-school peak disappeared for children at 12–13 and 14–15 years. This is likely to be a result of fewer parents picking their children up from school as children get older. On weekend days, there was still an evening peak but there was no morning peak. There was a gentler peak around lunchtime, with 30–40% of children with parents through the daytime hours. As children got older, the percentage who were with their parents declined at most times of day. The exception is the late evening hours, reflecting some older children staying up to a later time.

Figure 4.3: Percentage of children spending time with parents across the day

Notes: The diary data were aggregated into 15-minute blocks to allow derivation of whether parents were present at some time in each 15-minute period. Who children were with was only explored for times children were awake. Wave 4: $n = 2,089$ for school-day diaries and 816 for weekend diaries. Wave 5: $n = 1,958$ for school-day diaries and 740 for weekend diaries. Wave 6: $n = 1,430$ for school-day diaries and 651 for weekend diaries.

Source: LSAC Waves 4-6, K cohort, weighted

Figure 4.4: Percentage of children alone across the day

Notes: The diary data were aggregated into 15-minute blocks to allow derivation of whether parents were present at some time in each 15-minute period. Who children were with was only explored for times children were awake. Wave 4: $n = 2,089$ for school-day diaries and 816 for weekend diaries. Wave 5: $n = 1,958$ for school-day diaries and 740 for weekend diaries. Wave 6: $n = 1,430$ for school-day diaries and 651 for weekend diaries.

Source: LSAC Waves 4-6, K cohort, weighted

A significant change in children's time use as they get older is the increase in the time they spend alone. On weekends, at most times of the day, adolescents aged 14–15 years are more likely to be alone than they were at younger ages (Figure 4.4, page 29). On weekdays, it is the after school and evening times when children are increasingly spending time alone as they grow older.

4.4 Factors related to who adolescents spend time with

A range of factors contribute to adolescents spending different amounts of time with others or alone. As well as age differences, who children spend their time with is expected to vary for boys and girls. For example, some studies have found that girls spend significantly more time with their mothers than boys do, while boys spend more time with their fathers than girls do (see Dubas & Gerris, 2002).

Family composition is another key factor associated with who children spend time with. In particular, it is expected that children who live predominantly with one parent will spend less time with their other parent, with many spending no time with their other parent when measured through a one-day time diary.¹ Also, when children have siblings at home, they are likely to spend less time alone and more time with family. This may also spill over to children having less time with their parents, if those parents have to allocate some of their time to the siblings.

Parents' work hours are another important factor associated with the amount of time adolescents spend with their mothers and fathers (Bianchi, 2000; Craig, 2007; Nock & Kingston, 1988). While some studies have reported that children's time use does not vary with their mother's work hours (Bryant & Zick, 1996; Dubas & Gerris, 2002), previous findings for Australia using LSAC (Baxter, 2010, 2015) show that mothers' as well as fathers' work hours contribute to the variation in adolescents' time use.

For partnered parents, coordinating each person's work commitments with caring for children may mean that one parent spends more time with children when the other parent works longer hours, beyond any association between their own work hours and time with children. Internationally, findings about this are

mixed, with some studies finding no such association (Yeung, Sandberg, Davis-Kean, & Hofferth, 2001) but others finding that fathers spend more time with children when the mother is employed (Baxter, 2015; Hofferth & Sandberg, 2001).

While links between parental employment and parent-child time are strongest for younger children, work hours may still be relevant to older children and young adolescents (Dubas & Gerris, 2002). Longer work hours by parents will reduce their availability to be at home and may result in children spending more time with siblings, non-family members or alone.

Estimates of the characteristics associated with who adolescents spend their time with, after accounting for the factors described above (Table 4.1, page 31), show that:

- As adolescents grew older, they spent more of their awake time alone. This increase in alone time was greater for boys than girls.
- Time spent either in school or with other adults increased with age but did not vary for boys and girls.
- At age 10–11, girls spent an average of 10 minutes per day less with their siblings compared to boys. As children grew older, they spent less time with their siblings. This decline in time with siblings was greater for boys than for girls.
- There were no significant differences in the average amount of time spent with other children, according to the age and gender of the study child.
- Compared to those who lived with two parents, there was no significant difference in the total amount of time that adolescents in single-parent households spent with at least one parent. However, those in single-father households spend somewhat more time in school (nine minutes more) and less time alone (39 minutes per day), compared to those who lived with two parents.
- The more co-resident siblings, the less time adolescents spent with their parents. Compared to those with no siblings, adolescents with two or more siblings spent an average of 31 minutes less per day with their parents, 12 fewer minutes with non-parental adults and 43 fewer minutes per day alone.

¹ Note that in these data, mothers and fathers could be step-parents. Some children classified as living with a single parent may also have another (non-parental) adult in the household (see Baxter (2017) for more information about complex families). The number of study children who live with their single father is quite small, and this is especially so among those completing a weekend diary. It is expected that children who live predominantly with one parent will spend less time with their other parent, with many spending no time with their other parent when measured through a one-day time diary.

Table 4.1: Factors associated with amount of time adolescents spend with their parents, other family members, other people and alone (variation in minutes per day)

	With parent(s)	With siblings (but not parents)	With non-parental adults	School	With other children (not at school)	Alone
Girls (ref. = boys)	-3	-10**	4	1	2	2
Child age (ref. = 10–11 years) ^a						
12–13 years	-6	-26***	1	10***	2	27***
14–15 years	-40***	-61***	14***	12***	3	105***
Household structure (ref. = two parents) ^b						
Single mother	-8	6	-2	2	1	0
Single father	-3	4	14	9*	11	-39**
Number of siblings (ref. = none)						
1	-17**	62***	-13***	-3	-10*	-16**
2+	-31***	103***	-12***	-4	-9	-43***
Mothers' work hours (ref. = not employed) ^c						
1–14	6	-3	0	4	2	-9
15–24	-7	-2	2	3	14***	-13*
25–34	-9	0	9**	4*	15***	-21***
35+	-14**	-2	9***	3*	16***	-10*
Fathers' work hours (ref. = not employed) ^c						
1–34	2	-9	0	4	0	10
35–44	0	-4	-2	3	-3	4
45–54	1	-8	-1	5*	4	-5
55+	9	-2	3	5*	-4	-10

Notes: $n = 10,699$ observations for 4,203 children. Linear regression, * $p < .05$; ** $p < .01$; *** $p < .001$. Data for weekdays and weekends were pooled, and an indicator for 'type of diary day', which captures whether the diary relates to a school day, a weekend day or a weekday that is not a school day, was included in the model. ^a Additional gender/age interaction terms are included to test whether differences in time use by age were different for boys and girls. ^b The household structure measure included an 'other' category, not shown in the table. ^c Two parental employment variables are included, one for mothers' work hours and one for fathers' work hours. Each has a category for 'not present', to allow for families in which children live only with one parent. Different hours groupings are used for mothers versus fathers given the very different distributions of their work hours.

Source: LSAC Waves 4–6, K cohort, weighted

In terms of parents' working hours:

- Mothers' and fathers' work hours do not have a major impact on the total amount of time that adolescents spend with their parents. The only significant difference was that adolescents spent an average of 14 minutes less per day with their parents if their mother worked full-time hours, rather than being not employed.
- After accounting for other factors, there was no significant association between fathers' working hours, and the amount of time that adolescents spent with their parents, siblings, with others or alone.
- There was no association between mothers' work hours and the amount of time that adolescents spent with their siblings. However, when mothers worked 25 hours or more per week, adolescents did spend longer with other adults (nine minutes more per day), compared to those whose mothers were not employed. Similarly, if mothers worked 15 hours or more per week, adolescents spent more time with other children (around 15 minutes more per day) compared to children with not-employed mothers. Adolescents' alone time was also associated with mothers' work hours. Adolescents had less time alone when mothers worked 15 or more hours per week, compared to those with mothers who were not employed.

4.5 Differences in time spent with mother and father

While there was little difference in the amount of time that children spent with their parents overall, according to household structure and parents working hours, there were significant differences in the amount of time that children spent with just their father, or just their mother, and with both parents (Table 4.2):

- As would be expected, compared to children living with two parents, those living with a single mother spent significantly less time with their father, and those living with a single father spent significantly less time with their mother.
- Children in single-father families spent significantly more time in total with their father than those in two-parent households, balancing out much of the lost time with their mother.
- Compared to adolescents in two-parent families, children in single-mother families spent only a little more time with their mother but they spent less time in total with their father. This meant they spent more time with only their mother, and less time with only their father or with both parents, compared to adolescents in two-parent families.
- The amount of time that adolescents spend with only their mother and only their father varies with different parental work hours, with adolescents whose mothers worked longer hours spending less time with only their mother and more time with only their father. However, increases in mothers' work hours are not related to differences in the amount of time adolescents spend with both parents together.

Table 4.2: Factors associated with amount of time spent with parents (minutes per day)

	With mother only	With father only	With both parents	Total with mother	Total with father	Total with parents
Girls (ref. = boys)	17***	-14***	-5	11**	-20***	-3
Child age (ref. = 10–11 years) ^a						
12–13 years	-8*	-1	3	-5	2	-6
14–15 years	-30***	-8**	-2	-32***	-10*	-40***
Household structure (ref. = two parents) ^b						
Single mother	100***	-24***	-85***	16*	-109***	-8
Single father	-67***	146***	-81***	-148***	65***	-3
Number of siblings (ref. = none)						
1	-9	-4	-4	-13**	-8	-17**
2+	-13**	-7*	-10**	-24***	-18***	-31***
Mothers' work hours (ref. = not employed) ^c						
1–14	-1	7*	1	0	7	6
15–24	-14***	6*	1	-14***	7	-7
25–34	-17***	10**	-2	-19***	8	-9
35+	-26***	14***	-1	-27***	12*	-14**
Fathers' work hours (ref. = not employed) ^c						
1–34	16*	-1	-13*	3	-14*	2
35–44	19***	-11***	-7	12	-18**	0
45–54	28***	-15***	-12*	16*	-27***	1
55+	34***	-13***	-12*	23***	-25***	9

Notes: $n = 10,699$ observations for 4,203 children. Linear regression, * $p < .05$; ** $p < .01$; *** $p < .001$. Data for weekdays and weekends were pooled, and an indicator for 'type of diary day', which captures whether the diary relates to a school day, a weekend day or a weekday that is not a school day, was included in the model. ^a Additional gender/age interaction terms are included to test whether differences in time use by age were different for boys and girls. ^b The household structure measure included an 'other' category, not shown in the table. ^c Two parental employment variables are included, one for mothers' work hours and one for fathers' work hours. Each has a category for 'not present', to allow for families in which children live only with one parent. Different hours groupings are used for mothers versus fathers given the very different distributions of their work hours.

Source: LSAC Waves 4–6, K cohort, weighted

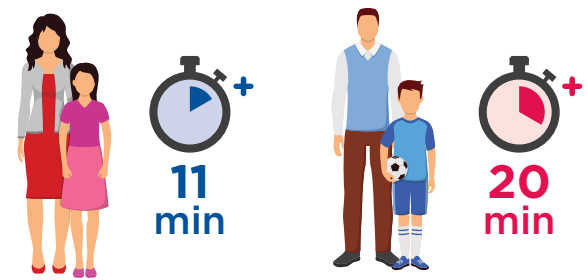
When fathers work long hours, we see no effect on the total amount of time that adolescents spend with their parents but they spend less time in total with their father, less time with him alone, and more time with only their mother. Compared to adolescents whose father was not employed, those with employed fathers spent a bit less time with both parents together. Having a father who worked long hours did not seem to affect the amount of time adolescents spent with both parents together.

There were also some differences in the amount of time that adolescents spent with only their mother, or only their father, according to the gender of the study child:

- On average, girls spent 11 minutes more per day with their mothers than boys did, while compared to girls, boys spent 20 minutes more per day, on average, with their fathers. This related to differences in time spent with those parents alone, with girls spending 17 more minutes per day with only their mother compared to boys, and boys spending 14 minutes more per day with only their father compared to girls (Figure 4.5).
- There were few statistically significant differences in children's time with parents when comparing their time at 12–13 years to their time at 10–11 years. However, at age 14–15, adolescents were spending significantly less time with their parents than they did at age 10–11. This had the greatest effect on time with their mother, as younger children tend to spend a considerable amount of their non-school time with their mother.
- The decline in the amount of time that adolescents spent with their mother, and in the overall amount of time with parents, between 10–11 years and 14–15 years was greater for boys than for girls.



Figure 4.5: Time adolescents spent with only their mother, or only their father



Daughters spent **11 minutes more** per day* with their **mothers** than did sons

Sons spent **20 minutes more** per day* with their **fathers** than did daughters

*on average

Summary

Using time use diaries, collected at ages 10–11, 12–13 and 14–15, this chapter provides new information about who adolescents spend their time with at different times of the day. Overall, the amount of time that adolescents spend with their parents declined as they grew from 10–11 and 12–13 years to 14–15 years. Balancing this decline in parental time, the main change was that children were spending more time alone.

At all ages, children spend more time with their mothers than with their fathers, and they were more likely to be with their mother alone, rather than with their father alone.

Girls spent more time than boys with only their mother and likewise boys spent more time than girls with only their father. These gendered patterns did not vary significantly across the ages of children explored here. However, the total amount of time children spent with their mothers did vary somewhat for boys and girls, in that both boys and girls spent a significantly lower amount of time with their mothers at age 14–15 years compared to 10–11 years.

Time with parents was related to family characteristics, including household structure and number of siblings. However, compared to children living with both parents, children in single-parent families did not have a large deficit in the total amount of time they spent with their parents, although they tended to have little time in which both parents were present.

When mothers worked longer hours, children spent less time with their mother and a little longer with their father. Similarly, when fathers worked longer hours, children spent less time with their father and more time with their mother. Maternal employment was also associated with children spending more time with non-family members. However, fathers' work hours were not associated with different amounts of total parental time, time spent with others or time spent alone.

As children grew older, the amount of time they spent alone increased substantially. This finding is consistent with previous research on children's time use (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996). This was partly related to children spending more time awake in the evening but it was also related to their being more often alone throughout the day. On average, children who lived with their father and not their mother, those with more siblings, and those whose mother worked longer part-time hours spent less time alone.

At age 14–15, children spent more time in school or with other adults compared to when they were aged 10–11 and 12–13. However, we did not find that children were increasingly spending time only with other children. It was expected that they might spend more time with peers as they grew older, and the lack of evidence of this occurring perhaps suggests that these increases will happen as children grow older again and have more independence from their parents. It is possible also that access to social media and online communication is facilitating these young adolescents to spend time with their peers in different ways to that of adolescents of previous generations.

The time use diaries capture much more detail than has been used here, and in future analysis, the children's activities and locations can also be incorporated. This will strengthen this work, in particular for the examination of children's time alone and with other children, to explore what it is that children are doing at these times.

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5

Relationships between parents and young teens

Maggie Yu and Jennifer Baxter



Parent–child relationships evolve as children grow. This is particularly the case as children enter adolescence and their independence and relationships with peers become more central to their lives (Hill, Bromell, Tyson, & Flint, 2007; Steinberg & Silk, 2002). Despite this increased focus on peers, family relationships remain central to children’s lives during the early adolescent years and remain positive for many adolescents (Smart, Sanson, & Tounbourou, 2008). Research has shown that a positive parent–child relationship is predictive of better outcomes for adolescents (Fosco, Stormshak, Dishion, & Winter, 2012; Hoeve et al., 2009; Steinberg & Silk, 2002). Understanding how parent–child relationships develop as children move into adolescence can provide insights that may help families, teachers and service providers best support these relationships in this important period of life.

This chapter describes parent–child relationships at ages 10–11, 12–13 and 14–15 years. The quality of adolescents’ relationships with parents is explored using a number of measures that provide different views on this relationship. These measures include children’s reports of enjoyment in spending time with their parents; their closeness to their mother and father; who they talk to when they have a problem; and parents’ reports of conflict with their children. In this chapter, we focus on relationships with parents who are living in the study child’s main household.¹



¹ Within the primary carer household there are single as well as couple parents, and biological as well as step-parents. Around 15% of the mothers are single mothers while only 2% of the fathers are single fathers. Most mothers and fathers are biological parents (99% of mothers and 94% of fathers).

5.1 Enjoying time spent with parents

The majority of young people aged 10–11, 12–13 and 14–15 years said that they enjoyed spending time with their parents, with a substantial proportion saying it was ‘definitely true’ (Figure 5.1). However, the percentage of boys and girls who said they enjoyed spending time with their mothers and fathers (‘definitely true’) decreased as study children got older – from around 70% at age 10–11 to just over 50% at age 14–15.

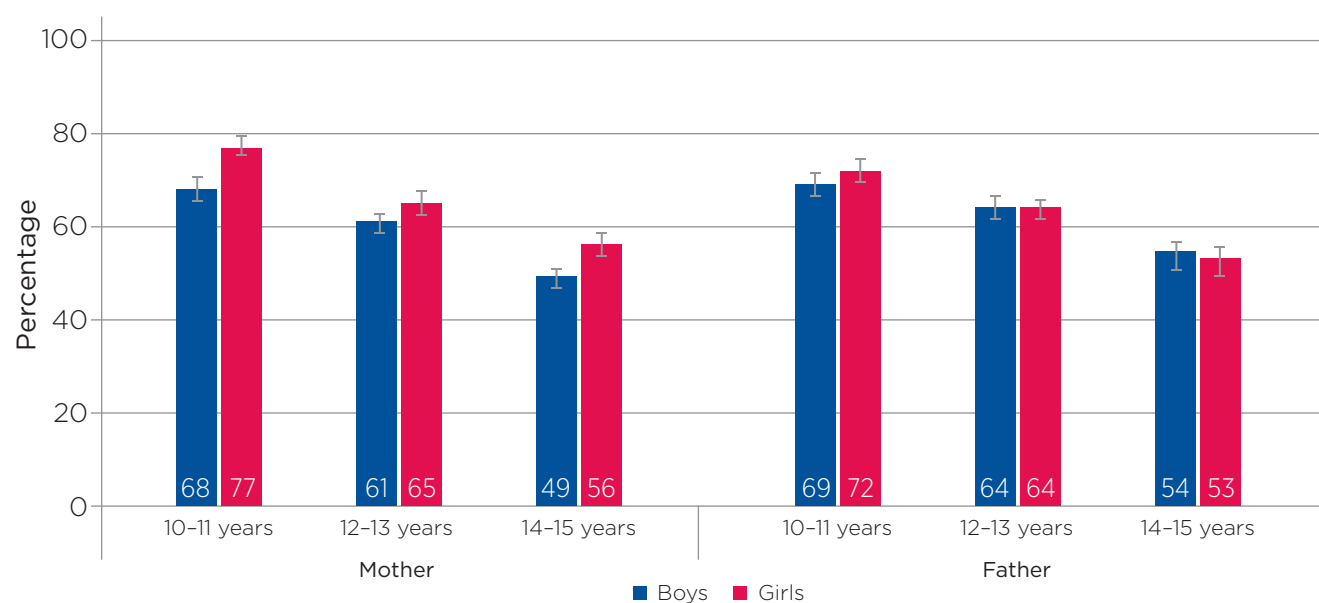
Across all age groups, a higher percentage of girls than boys reported that they definitely enjoyed spending time with their mother, but similar percentages of boys and girls said that they definitely enjoyed spending time with their father.



Box 5.1: Enjoying time spent with parents

At ages 10–11, 12–13 and 14–15 years, LSAC study children were asked whether it was ‘definitely true’, ‘mostly true’, ‘mostly not true’ or ‘definitely not true’ that they enjoyed spending time with their mother and with their father.

Figure 5.1: Enjoyment of time spent with parents, by age and gender of study child



Notes: The percentages refer to study children's reports that it was ‘definitely true’ that they enjoy time spent with their father and their mother. For reports about mothers, $n = 3,986$ at 10–11 years, 3,726 at 12–13 years and 3,240 at 14–15 years. For reports about fathers, $n = 3,346$ at 10–11 years, 3,161 at 12–13 years and 2,734 at 14–15 years.

Source: LSAC Waves 4, 5 and 6, K cohort, weighted

5.2 Closeness with parents

Most adolescents said that they felt either 'very close' or 'quite close' to their mother and father. However, the proportion of adolescents reporting feeling 'very close' to their mothers and their fathers decreased between 12–13 and 14–15 years (Figures 5.2 and 5.3).



Box 5.2: Closeness with parents

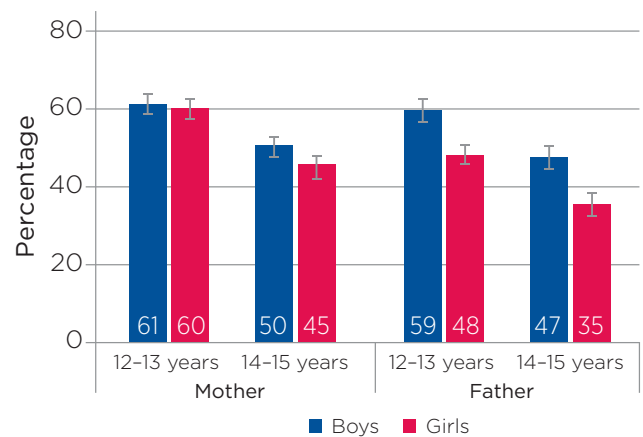
At ages 12–13 and 14–15 years, LSAC study children were asked to choose from 'very close', 'quite close', 'not very close' and 'not close at all' in responding to the question, 'How close do you feel to your mum/dad?'.

At age 12–13, around 60% of boys and girls said that they were very close to their mother. By age 14–15, 50% of boys and only 45% of girls said they were very close to their mother.

For boys, the percentage reporting being very close to their father was similar to that for their mother. However, fewer girls reported being very close to their fathers than to their mothers – at age 14–15, 47% of boys, but only 35% of girls, said that they were very close to their father.

The percentage who said that they enjoyed spending time with their mother and father was higher than the percentage who said they were very close with each parent, particularly for girls. For example, while 53% of girls at 14–15 years old said they enjoy spending time with their father, only 35% said they felt very close. This suggests that for some adolescents, especially girls, time spent with their parents is enjoyable, even though they don't consider their relationship to be a very close one.

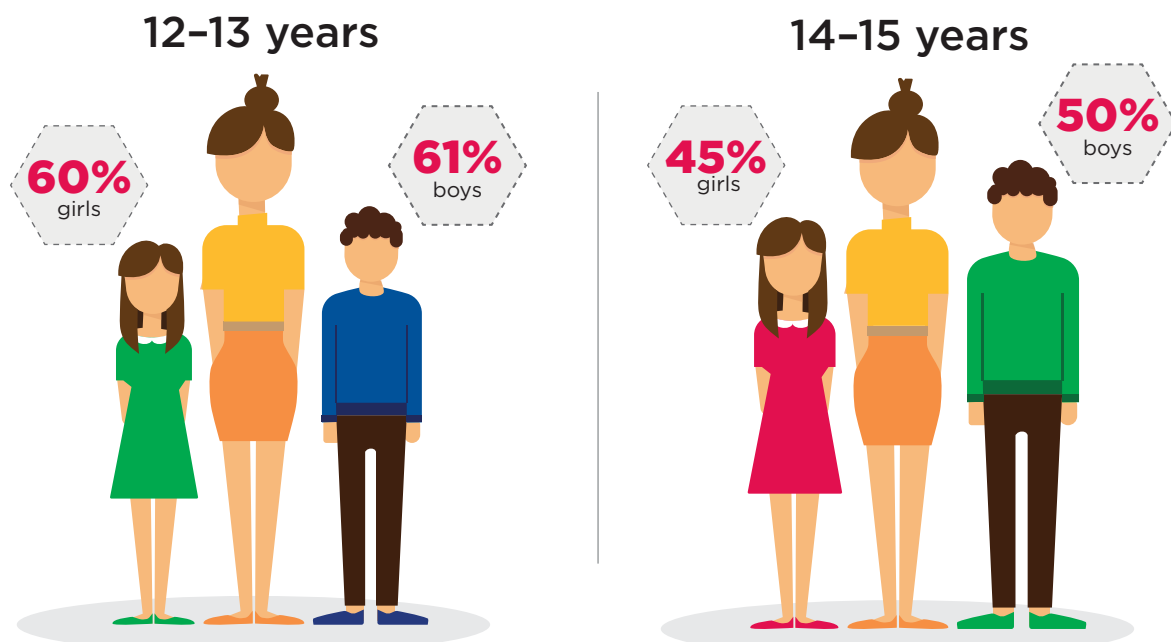
Figure 5.2: Adolescents' reports of feeling very close to their parents at 12–13 and 14–15 years



Notes: For reports about mothers, $n = 3,691$ at 12–13 years and 3,199 at 14–15 years. For reports about fathers, $n = 3,007$ at 12–13 years and 2,591 at 14–15 years.

Source: LSAC Waves 5 and 6, K cohort, weighted

Figure 5.3: Boys and girls who reported they were very close to their mother



5.3 Going to parents with problems

Young people's ability and willingness to talk to their parents about problems is an important indicator of a healthy parent–child relationship. The LSAC data show that most 10–11 and 12–13 year olds felt comfortable talking to either of their parents if they had a problem.



Box 5.3: Who would you go to if you had a problem?

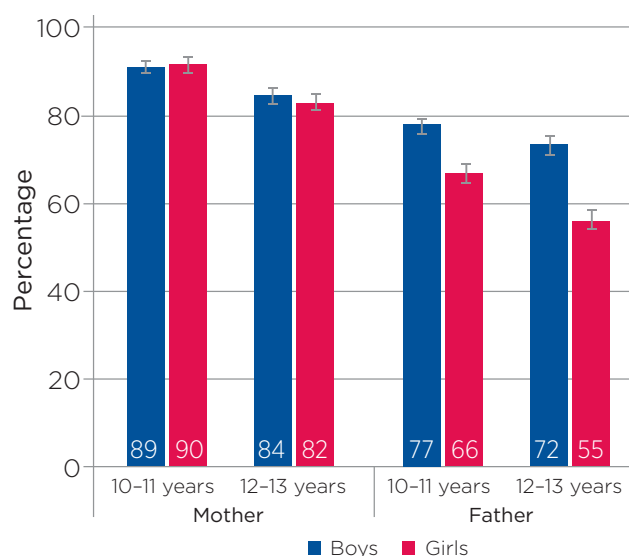
At ages 10–11 and 12–13 years, LSAC study children were asked who they would go to if they had a problem. They were given a list of possible people including their mother, their father, other relatives, friends and teachers.

They could choose as many people as they liked from the list.

Overall, adolescents were more likely to say that they would go to their mother if they had a problem, rather than their father. It was less common for children to say they would go to a parent about a problem at age 12–13 than it was at age 10–11 (Figure 5.4).

- At age 10–11, around 90% of boys and girls said they would go to their mother if they had a problem. Only 77% of boys and 66% of girls said they would go to their father.
- At age 12–13, over 80% of boys and girls said they would go to their mother with a problem. Only 72% of boys and 55% of girls said they would go to their father.

Figure 5.4: Children's reports of who they would go to with problems, at 10–11 and 12–13 years



Notes: For reports about mothers, $n = 4,066$ at 10–11 years and 3,846 at 12–13 years. For reports about fathers, $n = 3,429$ at 10–11 years and 3,250 at 12–13 years.

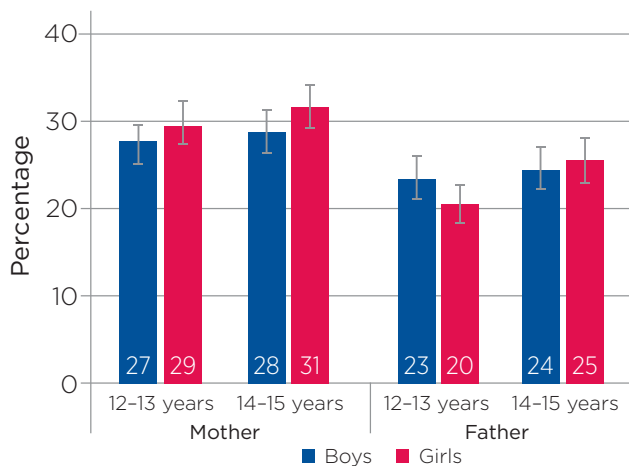
Source: LSAC Waves 4 and 5, K cohort, weighted



5.4 Conflict between adolescents and their parents

Rapid physical, emotional and social changes in adolescence may result in heightened conflict and diminished closeness within some parent–child relationships (Laurson & Collins, 2009). Overall, around 30% of mothers reported having at least some parent–child conflict when their child was 12–13 years old, and a similar proportion of mothers reported some conflict when their child was aged 14–15. Fathers' reports of experiencing parent–child conflict were slightly lower than those of mothers. There were no significant differences in the percentage of parents reporting some conflict, depending on the gender of the study child (Figure 5.5).

Figure 5.5: Parents' reports of at least some conflict with the study child



Notes: For conflict reported by mothers, $n = 3,726$ at 12–13 years and 3,266 at 14–15 years. For conflict reported by fathers, $n = 2,414$ at 12–13 years and 2,289 at 14–15 years.

Source: LSAC Waves 5 and 6, K cohort, weighted

Some aspects of parent–child conflict are more prevalent than others. While 20–30% of parents say that they sometimes disagree and fight with their child, it is quite rare for parents to report that arguments with their child lead to them staying angry with each other for a very long time, or that they refuse to talk to their child (Figures 5.6 and 5.7, page 40).

A higher percentage of mothers, compared to fathers, reported experiencing some conflict with their child. With the exception of mothers' reports of the study child stomping out of the house, reports of experiencing these types of conflict, at least sometimes, were slightly higher when study children were aged 14–15, compared to age 12–13.



Box 5.4: Parents' reports of conflict with their children

Parents of 12–13 and 14–15 year olds were asked about the frequency of experiencing six common situations that are indicative of conflict with the study child:

- We disagree and fight.
- We bug each other.
- We yell at each other.
- We stay angry for a very long time.
- I refuse to talk to the study child.
- The study child stomps out of the house.

Mothers and fathers responded separately using a five-point scale (1 = not at all, 2 = a little, 3 = sometimes, 4 = pretty often, 5 = almost all the time). From these responses, average conflict scores were derived for mothers and fathers, ranging from 1 to 5, with higher scores indicating more conflict between parent and child. At both time points, average conflict scores for mothers and fathers were less than 2, indicating that most parents were not experiencing a lot of conflict with their child.

For analysis of specific types of parent–child conflict, parents were considered to have experienced 'at least some' conflict with their child, if their average conflict score was 2 or higher.

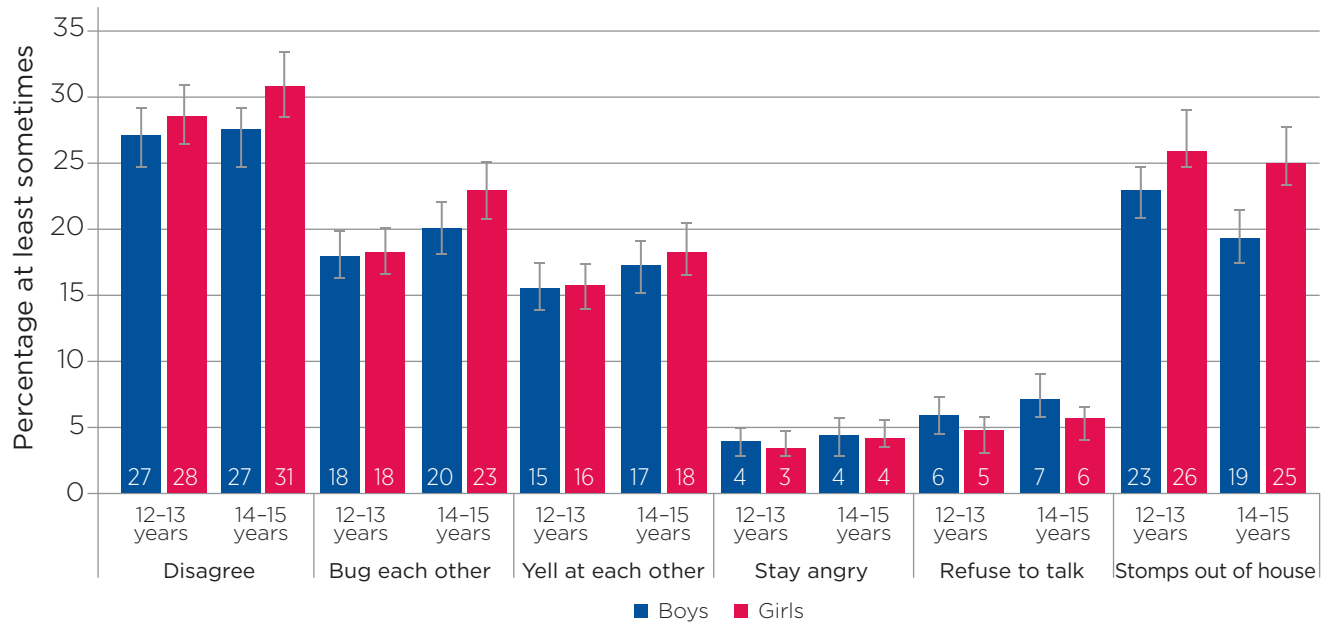
For analysis of the association between parent-reported conflict and children's reports about their relationship with their parents, conflict scores were categorised as:

- no conflict (score of 1 to below 1.4)
- little conflict (scores of 1.4 to below 2)
- some conflict (scores of 2 or above).

Approximately one quarter of parents were in this 'some conflict' category.

Reports of the study child stomping out of the house as a result of parent–child conflict were more common among mothers and fathers of girls, with larger gender differences in this behaviour when study children were aged 14–15, compared to age 12–13. A quarter of mothers of girls aged 14–15 years old said that their daughter sometimes stomped out of the house, compared to 19% of mothers of boys aged 14–15 (Figure 5.6). Fathers' reports of this type of conflict were similar to those of mothers, with 24% of fathers of girls aged 14–15 years old saying that this sometimes happened, compared to only 16% of fathers of boys aged 14–15 (Figure 5.7). For other types of parent-reported conflict, there were no significant differences depending on the gender of the study child.

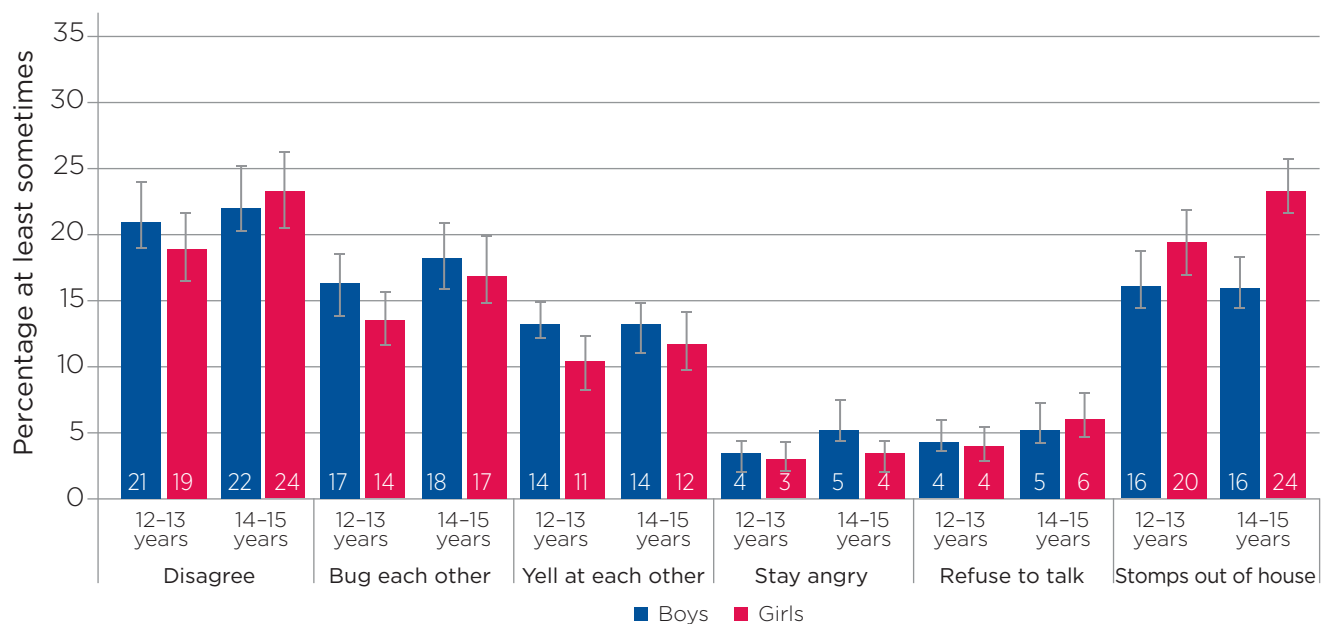
Figure 5.6: Mothers' reports of at least 'sometimes' experiencing specific types of conflict with their teenage child



Note: $n = 3,707$ at 12–13 years and 3,251 at 14–15 years.

Source: LSAC Waves 5 and 6, K cohort, weighted

Figure 5.7: Fathers' reports of at least 'sometimes' experiencing specific types of conflict with their teenage child



Note: $n = 2,381$ at 12–13 years and 2,252 at 14–15 years.

Source: LSAC Waves 5 and 6, K cohort, weighted

5.5 Do children's reports of relationship quality correspond to parents' reports of conflict?

Higher levels of parent-reported conflict are related to more distance in the parent–child relationship, as indicated by children's reports. When parents report experiencing some conflict in their relationship with their child, children are less likely to enjoy spending time with their parents, less likely to feel very close to them, and less likely to go to them if they have a problem (Figures 5.8 and 5.9, page 42).²

At ages 12–13 and 14–15, the percentage of boys and girls who said that they enjoyed spending time with their mother, felt very close to their mother and would go to their mother with problems (at age 12–13) was significantly lower among those whose mother reported experiencing some conflict with the study child, compared to those whose mothers reported no conflict (Figure 5.8). For example, at age 12–13, the percentage of boys and girls who said they would go to their mother with problems, was 88% among those whose mother reported having no conflict with their child, compared to 77% of boys and 78% of girls whose mother reported having some conflict with the child.

At age 14–15, 59% of boys and 55% of girls whose mother said they had no parent–child conflict said they were very close to their mother, compared to 43% of boys and only 30% of girls whose mother reported having some conflict with the study child. The differences were more obvious among girls than boys at age 14–15. This suggests that mother–child conflict may have a stronger impact on mothers' relationships with their daughters than with their sons.

There were also significant differences in child-reported relationship quality, according to fathers' reports of conflict with the study child (Figure 5.9). For example, at age 12–13, 56% of girls and 64% of boys whose fathers reported experiencing no conflict with their child said they were very close to their father, compared to 33% of girls and 53% of boys whose father reported some conflict. At age 14–15, 64% of girls and 60% of boys whose fathers reported no conflict said they enjoyed spending time with their father, compared to only 39% of girls and 47% of boys whose father said there had been some conflict. At 12–13 and 14–15 years, these differences were more obvious among girls than boys. This suggests that, as was the case for mothers, father–child conflict may have a stronger impact on fathers' relationships with their daughters than with their sons.

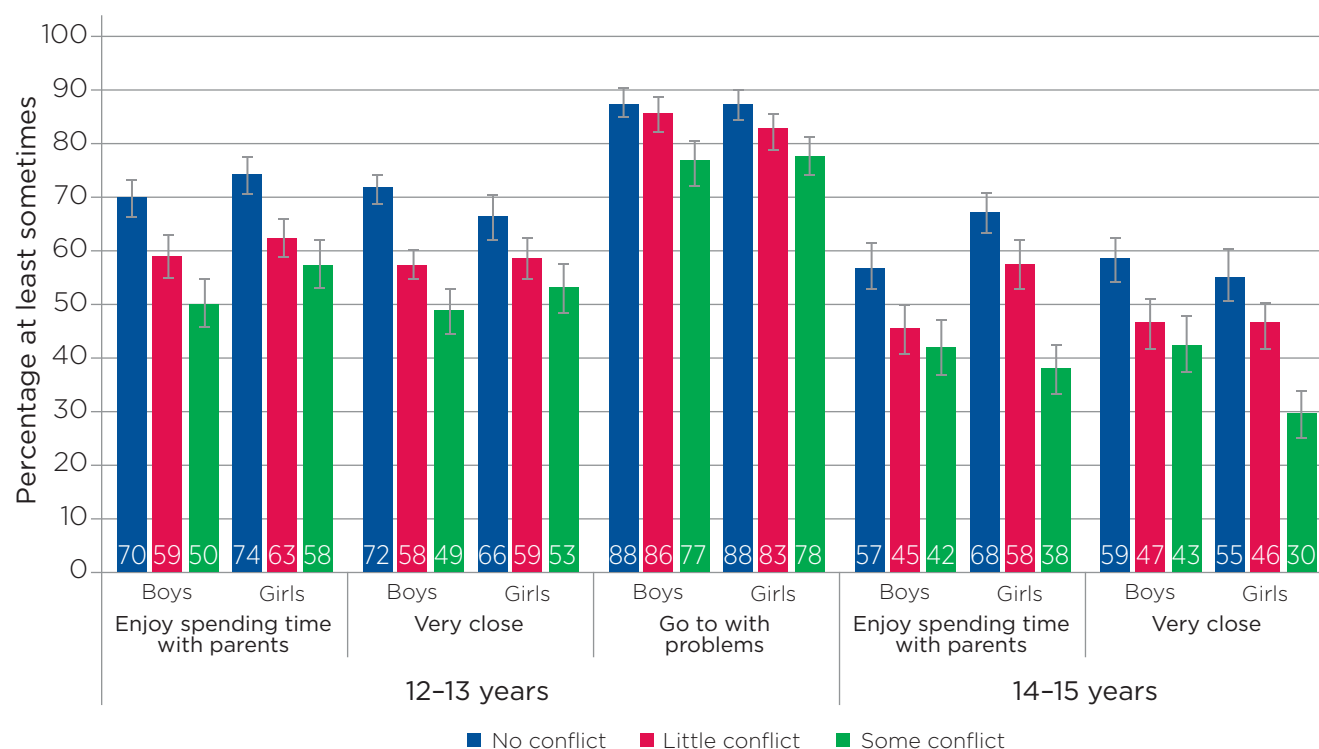
Nevertheless, it is important to note that the levels of conflict parents reported were not high, even in the 'some conflict' group. It is therefore not surprising that even among parents who reported 'some conflict' with their child, high proportions of children were not distant from their parents.

In particular, it is interesting to note that at age 12–13 years, 78% of children whose mothers reported experiencing some conflict with the study child said that they would go to their mother if they had a problem. At age 12–13, there was no significant difference in the percentage of boys who said they would go to their father if they had a problem, regardless of the level of father-reported conflict. However, for girls, the percentage who said that they would go to their father with a problem was significantly lower among those whose father reported having at least some conflict with their daughter (49%, compared to 61% of girls whose father reported no conflict).



² For mother–child relationships and father–child relationships, the associations between child and parents' reports are statistically significant at the 5% level.

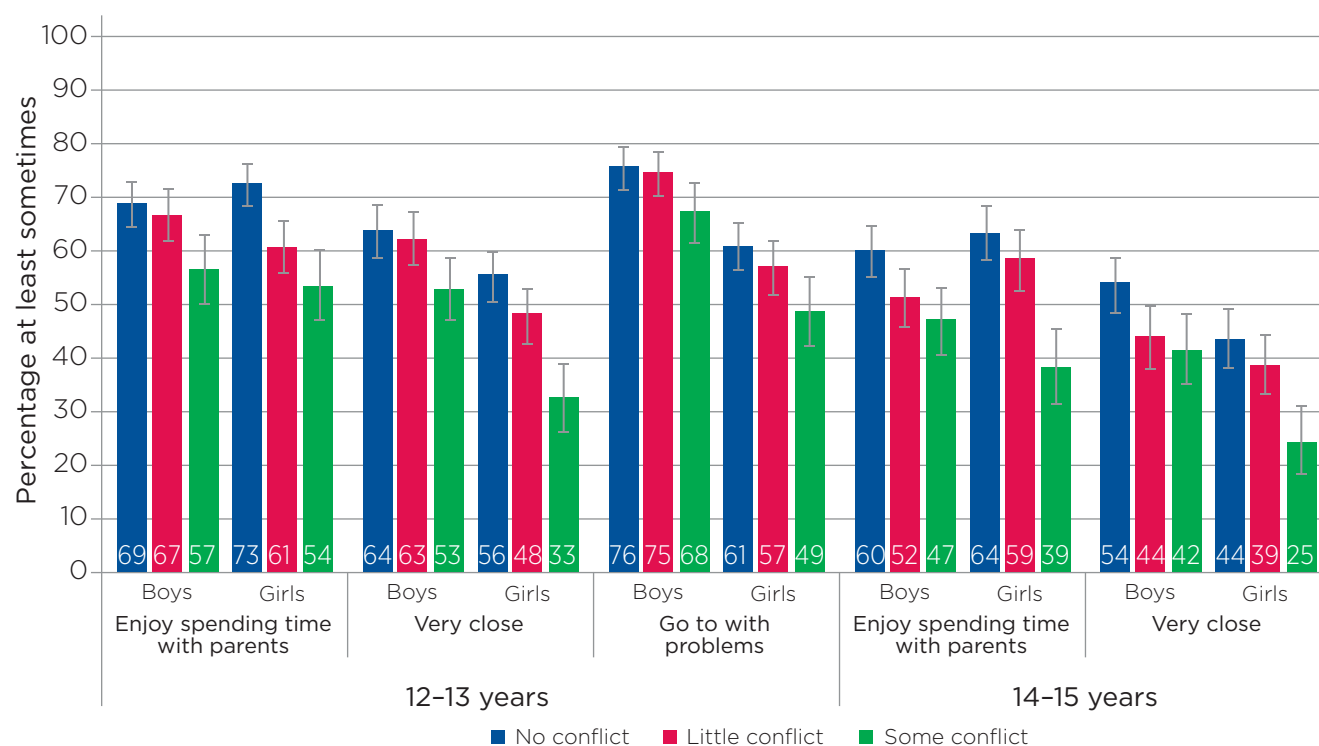
Figure 5.8: Association between mother-reported conflict and child-reported relationship quality at 12-13 and 14-15 years



Notes: $n = 3,707$ at 12-13 years and 2,381 at 14-15 years. 'Go to with problems' not measured at 14-15 years.

Source: LSAC Waves 5 and 6, K cohort, weighted

Figure 5.9: Association between father-reported conflict and child-reported relationship quality at 12-13 and 14-15 years



Notes: $n = 3,161$ at 12-13 years and 2,252 at 14-15 years. 'Go to with problems' not measured at 14-15 years.

Source: LSAC Waves 5 and 6, K cohort, weighted

5.6 Differences in the parent–child relationship, according to child and family characteristics

While most adolescents generally report positive relationships with their mother and father, some parent–child relationships appear to become more strained as children progress through the early teenage years. Fewer study children reported feelings of being very close with their parents or enjoying time with their parents when they were 14–15 years old, compared to when they were aged 12–13.

For boys, after accounting for family and child characteristics, there were no significant differences between parent–child relationships in single-parent households, compared to those living with two parents (Table 5.1, page 44).³ However, there were differences related to socio-economic position, as well as the birth order and pubertal status of the study child:

- Compared to mothers reporting on the amount of conflict they have with their eldest or only child, the odds of mothers reporting some conflict with their youngest child were reduced by around 30%.
- The odds of reporting some mother–child conflict were reduced by around 40 percentage points among mothers in the top 75% of the socio-economic position scale, compared to those in households in the lowest quartile of socio-economic position.
- Compared to 14–15 year olds in the lowest quartile of socio-economic position, the odds of boys reporting that they enjoy spending time with their father were 1.4 times higher for those in the middle 50% and 1.5 times higher for boys living in households in the top 25% of the socio-economic position scale.
- Similarly, the odds of boys reporting that they were very close to their father were 1.7 times higher for those in the highest 25% of the socio-economic position scale, compared to boys in households in the lowest 25%.
- Compared to boys who were in the early stages of puberty at age 14–15, the odds of saying that they enjoy spending time with their mother were reduced by 40 percentage points among boys in the later stages of puberty; and the odds of boys saying that they were very close to their father were reduced by a similar amount if boys were in the mid or late stages of puberty.

For girls, after taking other child and family characteristics into consideration, there were no significant differences in parent–child relationships in single-parent households, compared to those living with two parents (Table 5.2, page 44). However, compared to girls who were living with their biological father, the odds of saying they enjoy spending time with their father were reduced by around 40% among girls living with a step-father; and compared to biological fathers, the odds of reporting some conflict with their (step)daughter were 2.4 times higher among step-fathers.

At age 14–15, all girls in the LSAC sample were either in the late or post pubertal stage, and there were no significant differences in parent–child relationships, according to pubertal status. There were, however, significant differences according to birth order, language spoken at home and socio-economic status:

- The odds of girls reporting being very close to their mother are reduced by around 40 percentage points for girls who are the middle child, compared to girls who are the eldest or only child.
- Compared to girls who are the eldest or only child, the odds of saying that they enjoy spending time with their father are reduced by around 30 percentage points if they are the middle child; and the odds of reporting being very close to their father are reduced by 30–40 percentage points if they are the middle or youngest child in the family.
- Compared to girls whose parents speak a language other than English at home, the odds of reporting enjoying spending time with their father were 1.5 times higher if their parents only spoke English at home.
- The odds of reporting being very close to their mother were 1.4 to 1.6 times higher among girls in households in the top 75% of the socio-economic position scale, compared to those in the lowest 25%. Compared to girls in households in the lowest 25% of the socio-economic position scale, the odds of girls saying they enjoyed spending time with their father were 1.3 times higher among those in the middle 50% of socio-economic position.

³ At age 14–15, very few children were living with a mother who was not their biological mother. For boys, there were no significant differences in relationships with step-parents (step-mothers or step-fathers), compared to biological parents.

Table 5.1: Factors influencing boys' relationships with their parents at age 14–15

Characteristic	Odds ratio (mothers)			Odds ratio (fathers)		
	Enjoy time together	Very close	Some conflict	Enjoy time together	Very close	Some conflict
Single parent (vs two-parent household)	0.8	0.9	1.1	0.9	0.7	0.6
Step-parent (vs biological)	2.3	0.2	0.7	1.4	0.5	0.8
Birth order (ref. = oldest or only child)						
Middle	1.0	0.8	0.8	0.8	0.7	0.9
Youngest	1.1	0.9	0.7*	0.9	0.9	1.0
English spoken by parents at home (vs language other than English)	1.0	0.9	1.3	1.1	1.1	1.0
Family socio-economic position (ref. = lowest 25%)						
Middle 50%	0.9	1.0	0.6***	1.4*	1.3	0.7
Highest 25%	0.9	1.1	0.6**	1.5*	1.7**	0.8
Pubertal status at age 14–15 (ref. = pre/early puberty)						
Mid puberty	0.7	0.9	1.0	0.7	0.6*	0.7
Late/post puberty	0.6*	0.7	0.9	0.8	0.6**	0.7
Total (n)	1,612	1,587	1,573	1,385	1,309	1,114

Notes: Odds ratios based on logistic regressions. 'Single parent' includes single mothers when exploring child relationships with mothers, and single fathers when exploring child relationships with fathers. Statistically significant associations are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Wave 6, K cohort, weighted

Table 5.2: Factors influencing girls' relationships with their parents at age 14–15

Characteristic	Odds ratio (mothers)			Odds ratio (fathers)		
	Enjoy time together	Very Close	Some conflict	Enjoy time together	Very close	Some conflict
Single parent (vs two-parent household)	0.8	1.0	1.2	1.5	1.3	0.3
Step-parent (vs biological)	4.8	1.0	0.7	0.6*	0.3	2.4**
Birth order (ref. = oldest or only child)						
Middle	0.9	0.6**	0.9	0.7*	0.6**	0.9
Youngest	1.0	0.9	0.8*	1.0	0.7*	1.1
English spoken by parents at home (vs language other than English)	1.0	0.9	1.1	1.5*	0.9	1.6
Family socio-economic position (ref. = lowest 25%)						
Middle 50%	1.3	1.6***	0.9	1.3*	1.4	1.1
Highest 25%	1.0	1.4*	0.9	1.3	1.2	1.1
Pubertal status at age 14–15 (ref. = late puberty)						
Post puberty	0.9	0.9	0.9	0.9	0.9	0.9
Total (n)	1,477	1,462	1,442	1,233	1,168	982

Notes: Odds ratios based on logistic regressions. 'Single parent' includes single mothers when exploring child relationships with mothers, and single fathers when exploring child relationships with fathers. At age 14–15, all girls were either in the late or post pubertal stages. Statistically significant associations are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Wave 6, K cohort, weighted

Summary

As children grow into adolescence, parent–child relationships change. Young people increasingly seek independence from their parents, as relationships with others take on more importance. Despite these changes, parents usually remain integral to their children’s lives (Steinberg & Silk, 2002).

Consistent with other research (Laursen & Collins, 2009), we find that most young people held positive views about their relationships with their (co-resident) mothers and fathers, based on their feelings of closeness to them and their reports of enjoying time with them and going to them with problems. However, the quality of parent–child relationships decreased slightly over time; and these patterns varied slightly by gender of parent and child.

Early adolescence has been shown to be a time of increased emotional and physical distancing from parents, and one in which increases in conflict are apparent (Steinberg, 2001). However, we find relatively low levels of conflict between mothers and children and fathers and children. Overall reports of parent–child conflict when children were 10–11 were similar to those at age 12–13. At both time points, reports of conflict between mothers and their children were more common than reports of father–child conflict.

There were clear associations between child-reported measures of parent–child relationship quality and the parent-reported conflict measure. When the parents reported having little or no conflict with their children, children were significantly more likely to report enjoying spending time with their parents, feeling very close to their parents and going to their parents with problems.

The factors associated with parent–child relationship quality at age 14–15 differed depending on the gender of the study child. For girls, but not for boys, reports of relationships with fathers were less positive if they were describing their relationship with their

step-father, rather than their biological father; and step-fathers were more likely than biological fathers to report having some conflict with daughters. For boys, pubertal status was an important factor, with boys in the later stages of puberty less commonly reporting enjoying time with their mother or being very close to their father, compared to boys in the earlier stages of puberty.

For girls and boys, reports of parent–child relationship quality were more positive among those in households at the higher end of the socio-economic scale, compared to those in the lowest quartile. These differences are likely to be at least partly due to differences in the types of activities that parents and children do together, with those at the higher end of the socio-economic scale able to afford a wider range of leisure activities.

However, it is important to note that we have not looked at all key family characteristics that may make a difference to parent–child relationships; in particular, we have not taken account of the harmony or quality of other relationships within the household. If parents themselves are in conflict, this may have implications for parenting and for their relationships with their children. Other factors that may influence family functioning and parent–child relationships include the physical and mental health of family members, financial stress and other stressful life events that may have occurred within the family.

In addition, this chapter has focused only on parent–child relationships within the household of the children’s primary carer. Some adolescents have more complex parental relationships, with parents living in two households. LSAC collects information about these relationships from the study children and, potentially, the parents living in another household, which could fill out this picture. These young people may face additional challenges in negotiating high quality parental relationships.

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6

Adolescents' relationships with their peers

Sarah Gray, Helena Romaniuk and Galina Daraganova



Peer relationships are very influential in adolescence. During this time, when young people are developing autonomy from their parents, peers become a significant source of social and emotional support (Gorrese & Ruggieri, 2012). Strong peer attachments have been associated with better psychological wellbeing (Balluerka, Gorostiaga, Alonso-Arbiol, & Aritzeta, 2016; Gorrese, 2016). In addition to attachment, the attitudes of adolescents' friends can have both positive and negative influences on a range of behavioural, social-emotional and school outcomes (Alexander, Piazza, Mekos, & Valente, 2001; Ryan, 2001).

When adolescents experience problems in their peer relationships, such as bullying, it can have significant psychological, physical, academic and social-emotional consequences for both victims and perpetrators (Craig & Pepler, 2003). The quality of adolescents' attachments with their peers and the attitudes of their friends may be associated with their likelihood of being involved in bullying.

Given the significance of peer relationships for adolescents' development, it is important to understand the nature of these relationships. The purpose of this chapter is to provide a snapshot of the peer relationships of Australian adolescents, by describing peer

attachments, peer group attitudes, and peer problems as they are reported by young people in mid-adolescence. In addition, the relationship between features of adolescents' peer relationships and their status as a victim and/or perpetrator of bullying is examined.





Box 6.1: Peer attachments

The quality of peer attachments was measured in the LSAC K cohort at Waves 5 and 6 using items adapted from the Peer Attachment Scale of the Inventory of Peer and Parental Attachment. The scale included in LSAC is made up of two subscales: trust (four items) and communication (four items).

- *Trust* reflects the degree of mutual understanding and respect in peer relationships. Adolescents rate how well statements such as 'I feel my friends are good friends' and 'I trust my friends' reflect their peer relationships on a five-point scale from '1 = Almost always true' to '5 = Almost never true'. At age 14–15 years old: mean (SD) = 6.7 (3.0), range: 4–20; and at 12–13 years old: mean (SD) = 6.4 (3.1), range: 4–20. (*SD: standard deviation).
- *Communication* reflects the extent and quality of communication in peer relationships. Adolescents rate how well statements such as 'My friends sense when I'm upset about something' and 'My friends encourage me to talk about my difficulties' reflect their peer relationships on a five-point scale from '1 = Almost always true' to '5 = Almost never true'. At age 14–15 years old: mean (SD) = 8.8 (3.6), range: 2–20; and at 12–13 years old: mean (SD) = 8.6 (3.8), range: 3–20. (*SD: standard deviation).
- A measure of overall peer attachment was also created by summing across all items. At age 14–15 years old: mean (SD) = 15.5 (6.0), range: 8–40; and at 12–13 years old: mean (SD) = 14.9 (6.3), range: 8–40. (*SD: standard deviation).

Higher scores on the trust, communication and overall peer attachment measures reflect poorer peer attachments. Scores on each scale were divided into two groups with attachments scoring one standard deviation above the mean categorised as 'low peer attachment', and all other scores labelled 'relatively high peer attachment'. The categorisation was done for the whole sample separately for both age groups.

6.1 Positive peer attachments in adolescence

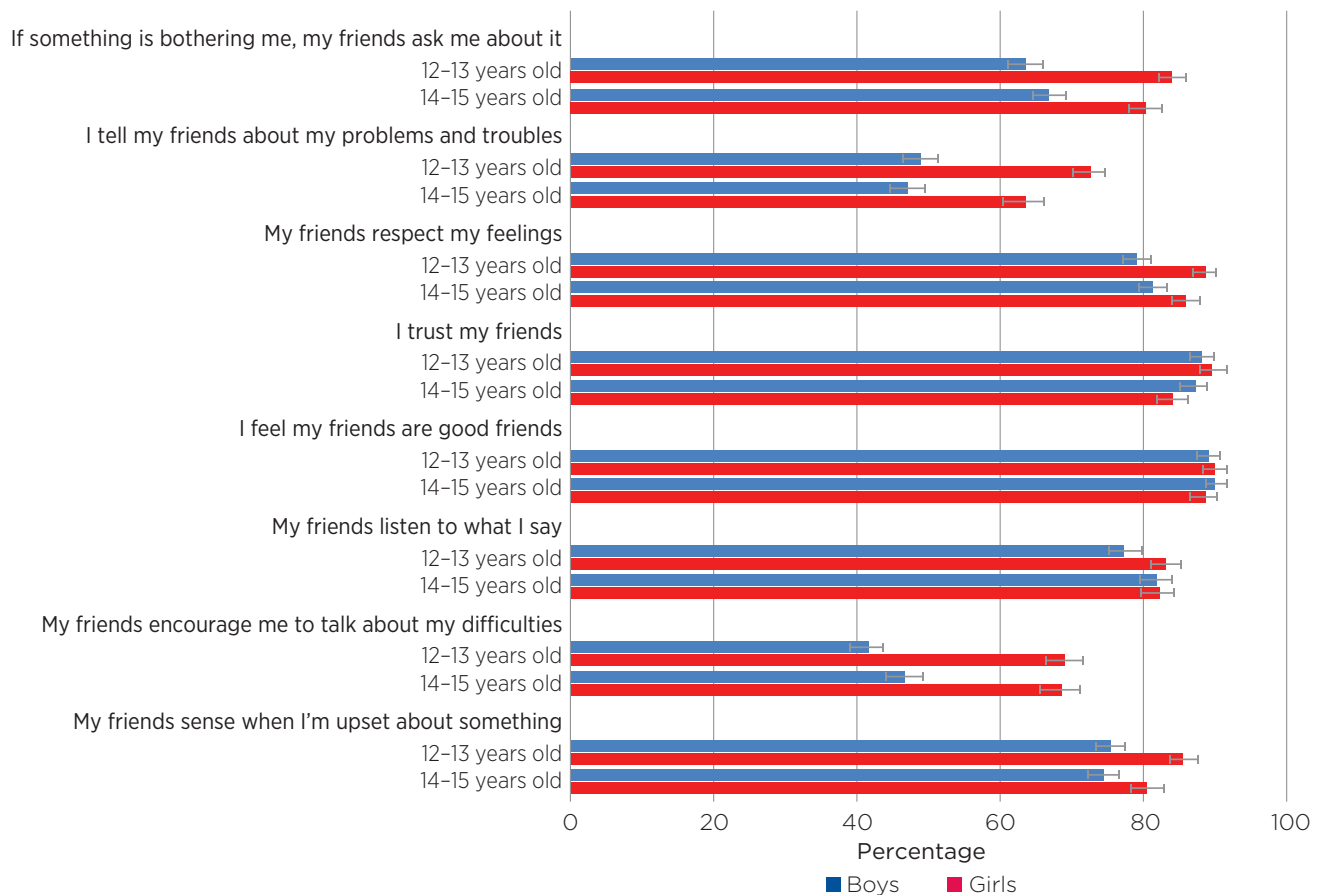
Peer attachments refer to the specific bond between one or a few peers. Secure peer attachments are characterised by bonds that satisfy adolescents' basic needs for emotional support and a 'safe haven' (Balluerka et al., 2016). Some research shows that girls tend to report higher levels of attachment to their peers than do boys. This may be due to differences in the nature of female and male friendships; with girls placing more importance on closeness and open communication in their friendships than boys (Gorrese & Ruggieri, 2012).

The quality of peer attachments in girls and boys was examined at two time points in early adolescence – around the time they started secondary school (at age 12–13) and two years later (at age 14–15). The beginning of secondary school is an important transition for adolescents, and this change in school context can result in rapid changes in friendship groups and peer social support networks. This can potentially lead to instability in peer attachments (Desjardins & Leadbeater, 2011).

At 12–13 and 14–15 years of age, 80–90% of adolescent boys and girls reported having good friends who they trusted and who they felt respected their feelings and listened to them (Figure 6.1, page 49). In both age groups, more than three quarters also reported that their friends sensed when they were upset about something.

Fewer adolescents reported that they told their friends about their problems and troubles, and that their friends encouraged them to talk about their difficulties. However, more girls than boys said that these were characteristics of their peer relationships; for example, at ages 12–13 and 14–15, almost 70% of girls and around 45% of boys said their friends encouraged them to talk about their difficulties.

More girls than boys reported high levels of communication in peer relationships (Table 6.1, page 49). For example, at age 12–13, 91% of girls and 78% of boys reported high levels of communication with their peers. High levels of trust with peers was reported by around 85% of boys in both age groups, and by 88% and 85% of girls at ages 12–13 and 14–15 respectively.

Figure 6.1: Peer attachment items, by gender


Note: 12-13 years old: Boys: $n = 1,952$; Girls: $n = 1,887$; 14-15 years old: Boys: $n = 1,701$; Girls: $n = 1,643$.

Source: LSAC Waves 5 and 6, K cohort, weighted

Table 6.1: Proportion of 12-13 and 14-15 year olds with high peer attachment, by gender

Peer attachment	12-13 year olds		14-15 year olds	
	Girls % [95% CI]	Boys % [95% CI]	Girls % [95% CI]	Boys % [95% CI]
High levels of trust	88.3 [86.5 - 89.8]	84.2 [82.3 - 85.9]	84.7 [82.7 - 86.5]	86.2 [84.3 - 87.9]
High levels of communication	91.1 [89.5 - 92.5]	77.9 [75.8 - 79.9]	88.3 [86.3 - 90.0]	81.1 [79.1 - 83.0]
High overall peer attachment	90.5 [88.9 - 91.8]	80.4 [78.4 - 82.4]	87.1 [85.1 - 88.9]	83.0 [80.9 - 84.8]
Total (n)	1,887	1,953	1,643	1,702

Source: LSAC Waves 5 and 6, K cohort, weighted

To further explore stability in peer attachments during adolescence, the proportion of adolescents who reported high peer attachment at neither, one of or both ages 12-13 and 14-15 were examined (Table 6.2, page 50). The majority of adolescents (75% in total) reported high levels of peer attachment at both 12-13 and 14-15 years; while around one fifth reported high peer attachments at only one of these time points (Table 6.2). Only 5% of adolescents reported no high

peer attachment at either age. More girls than boys (80% versus 70%) reported high peer attachment at both 12-13 and 14-15 years.

Overall, adolescent reports of their levels of peer attachment were very similar and stable at ages 12-13 and 14-15. Given this stability, the remainder of the chapter will focus on data collected about peer relationships at age 14-15.

Table 6.2: Proportion of adolescents with high levels of peer attachment at neither, one, or both 12–13 and 14–15 years, by gender

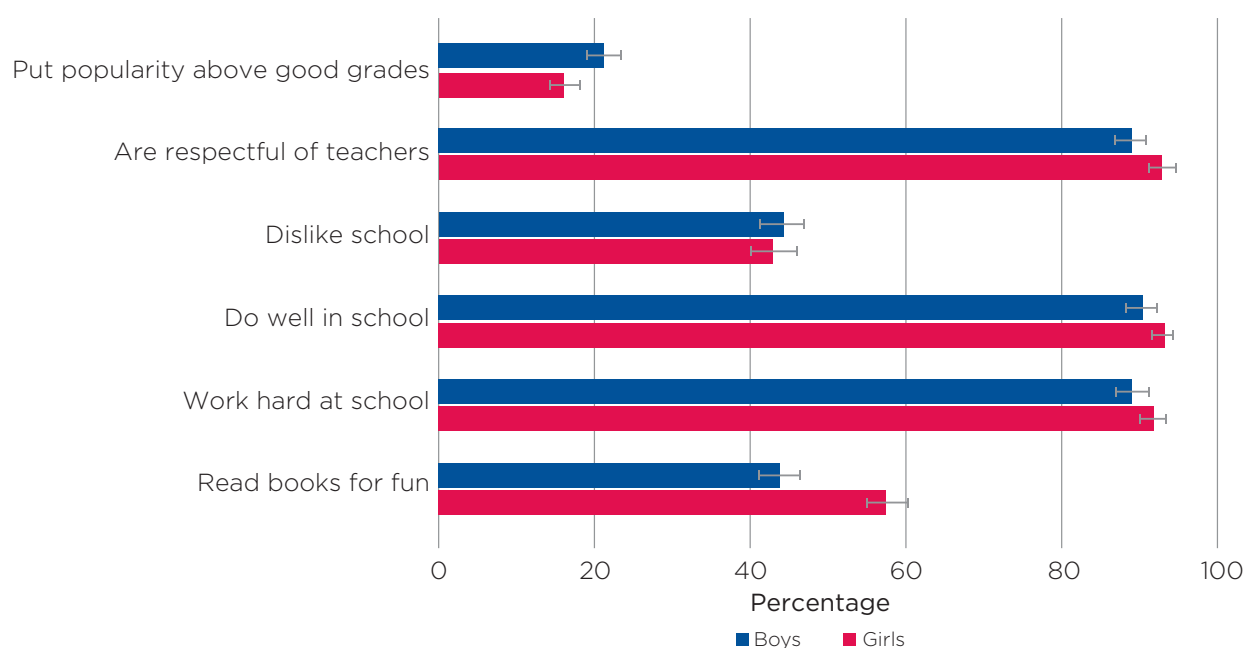
Number of waves of high peer attachment	Overall % [95% CI]	Girls % [95% CI]	Boys % [95% CI]
Not at 12–13 or 14–15 years	5.2 [4.3 – 6.3]	3.5 [2.6 – 4.7]	6.8 [5.4 – 8.5]
At one of 12–13 or 14–15 years	20.0 [18.4 – 21.7]	16.8 [14.7 – 19.2]	23.1 [20.6 – 25.7]
At both 12–13 and 14–15 years	74.8 [73.0 – 76.6]	79.7 [77.1 – 82.1]	70.2 [67.5 – 72.7]
Total (n)	3,071	1,513	1,558

Source: LSAC Waves 5 and 6, K cohort, weighted

6.2 Peer group attitudes

The attitudes of an adolescents' peer group can have both positive and negative influences. While adolescents tend to select friends who have similar attitudes to them, they are also strongly influenced by the behaviour of their peers (Ryan, 2001). Research shows that adolescents are more likely to engage in risky behaviours, such as smoking, if they have friends who engage in those behaviours (Alexander et al., 2001). Alternatively, having high-achieving friends can influence adolescents' own academic achievement and enjoyment of school (Ryan, 2001).

At age 14–15 years, the majority of adolescents reported that at least some of their friends exhibited a positive attitude towards school and academic achievement (Figure 6.2). For instance, around 90% of girls and boys spent time with peers who were respectful of teachers, did well in school and worked hard at school (Figure 6.3, page 51). Almost 60% of girls and 44% of boys reported that their friends read books for fun. On the other hand, over 40% of girls and boys reported that their friends dislike school, and around one in five said that their friends put popularity above grades.

Figure 6.2: Proportion of 14–15 year olds who reported positive academic attitudes as being true for some, most or all of the peers they spend time with

Note: Boys: $n = 1,703$; Girls: $n = 1,643$.

Source: LSAC Wave 6, K cohort, weighted

Box 6.2: Peer group attitudes

Peer group attitudes were measured in the LSAC K cohort at Wave 6 using items adapted from the 'What my Friends are Like' questionnaire and the Australian Temperament Project. Respondents were asked to indicate whether a range of positive and negative attitudes reflected the kids they spent time with (from school, their neighbourhood or elsewhere) on a five-point scale from '1 = None of them' to '5 = All of them'.

The peer group attitudes are categorised into four types of attitudes, and scale scores were obtained for each of these by summing responses across items (higher scale scores indicated peer groups that were higher on that specific characteristic):

- Positive orientation toward academic achievement (six items): for example, 'Kids you know read books for fun' and 'Kids you know work hard at school'. Two items were reverse coded for scale calculation ('Kids you know dislike school' and 'Kids you know put popularity above good grades'). Mean (SD) = 21.9 (3.8), range: 6–30. (*SD – standard deviation).
- Peer group moral behaviour (seven items): for example, 'Kids you know get into trouble' and 'Kids you know are mean to other kids'. All items were reverse coded for scale calculation, with the exception of 'Kids you know go to religious services'. Mean (SD) = 28.7 (3.3), range: 5–35. (*SD – standard deviation).
- Peer group risky behaviour (5 items): for example, 'Kids you know drink alcohol' and 'Kids you know have broken the law'. Mean (SD) = 6.5 (2.7), range: 5–25. (*SD – standard deviation).
- A measure of total positive peer group attitudes including all items measuring positive orientation toward academic achievement and peer group moral behaviour. Mean (SD) = 57.5 (6.9), range: 8–73. (*SD – standard deviation).

Scores on each of the four scales were divided into two groups with peer groups scoring one standard deviation below the mean categorised as 'low' on each of the attitudes, and all other scores categorised 'high' on the specific attitudes. The categorisation was done for the whole sample separately for both age groups.

Figure 6.3: Adolescents who said they had friends who were respectful of teachers and worked hard at school

Nine out of **10**
14–15 year olds

said they had friends who were respectful of teachers and worked hard at school

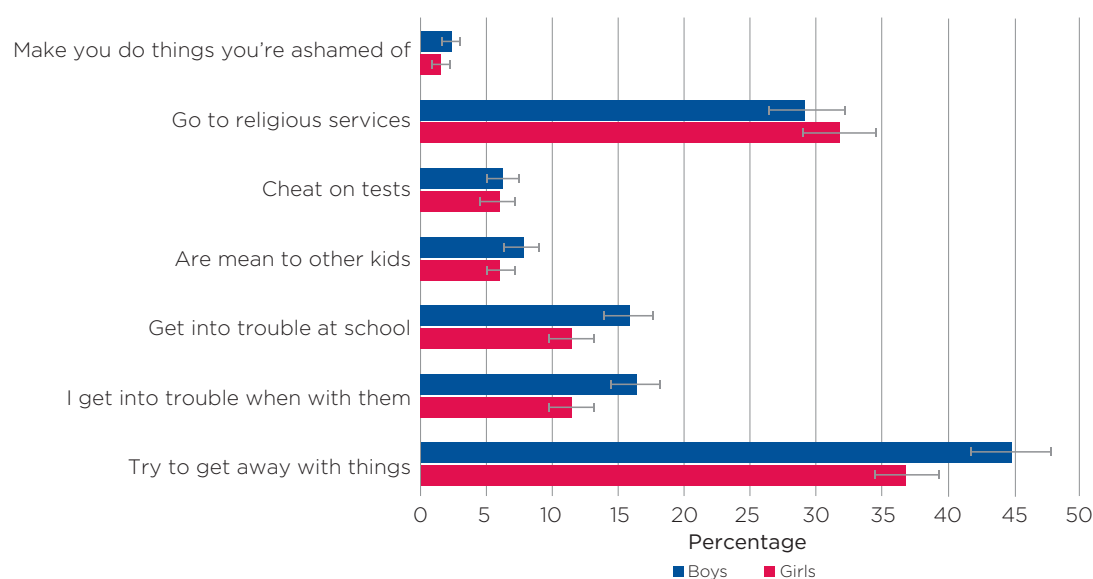


For most adolescents, the moral attitudes of their peers were not problematic. Only around 7% of girls and boys reported that their friends cheated on tests and were mean to other kids, while 11% of girls and 16% of boys reported that their friends got into trouble at school (Figure 6.4, page 52). Only a tiny proportion of girls and boys (2%) said that their friends made them do things they were ashamed of. Around 40% of girls and boys reported that their friends tried to get away with things but for many this could reflect normal adolescent behaviour of 'testing the boundaries'.

Around 5–7% of girls and boys said that some, most or all of their friends engaged in risky behaviours such as trying drugs, smoking cigarettes, breaking the law and getting into fights (Figure 6.5, page 52). About 14% of girls and 10% of boys said they had friends who drank alcohol, which is similar to the proportion of 14–15 year olds who previously reported having consumed an alcoholic drink (Homel & Warren, 2016).

Overall, 86% of girls and 82% of boys reported that their peer groups were characterised by high levels of positive attitudes (Table 6.3, page 52). More specifically, a positive orientation toward academic achievement characterised the peer group of 85% of girls and 79% of boys. Slightly more girls (88%) than boys (80%) reported that their friends exhibited high levels of positive moral behaviour. Around one in eight girls and boys aged 14–15 reported that their friends engaged in high levels of risky behaviours.

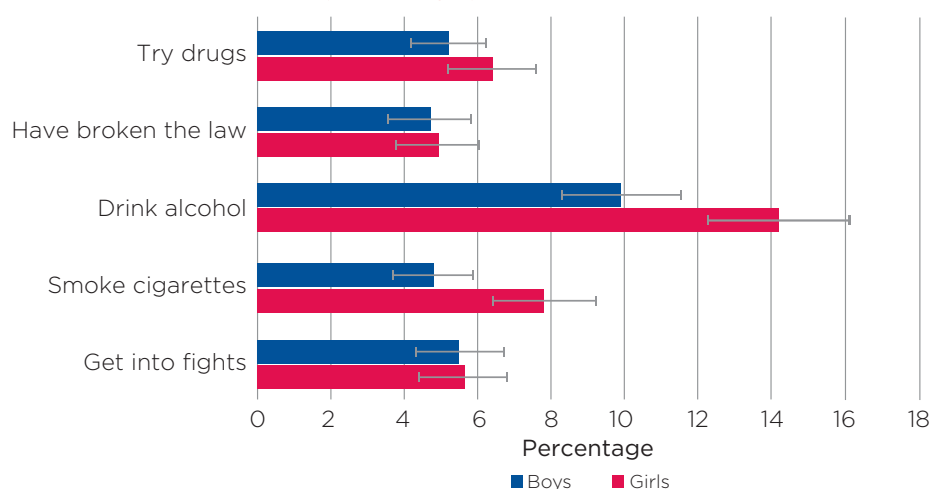
Figure 6.4: Proportion of 14–15 year olds who reported moral behaviour attitudes as being true of some, most or all of the peers they spend time with



Note: Boys: $n = 1,703$; Girls: $n = 1,643$.

Source: LSAC Wave 6, K cohort, weighted

Figure 6.5: Proportion of 14–15 year olds who reported risky behaviour attitudes as being true of some, most or all of the peers they spend time with



Note: Boys: $n = 1,703$; Girls: $n = 1,643$.

Source: LSAC Wave 6, K cohort, weighted

Table 6.3: Proportion of 14–15 year olds with friendship groups displaying positive and negative peer group attitudes, by gender

Peer group attitudes	Girls % [95% CI]	Boys % [95% CI]
Total positive peer group attitudes	86.0 [83.8 – 87.9]	82.1 [79.7 – 84.2]
Positive orientation toward academic achievement	84.6 [82.6 – 86.5]	78.8 [76.3 – 81.0]
Positive moral behaviour	87.6 [85.8 – 89.2]	80.3 [78.1 – 82.4]
Negative risky behaviour	12.5 [10.8 – 14.6]	10.2 [8.6 – 12.0]
Total (n)	1,643	1,704

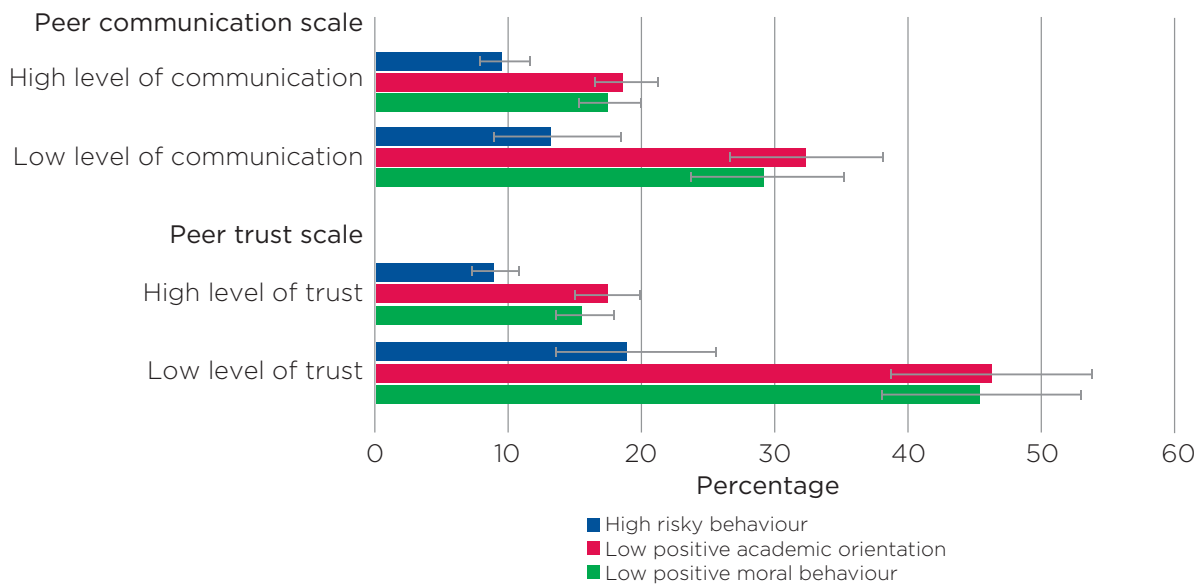
Source: LSAC Wave 6, K cohort, weighted

Peer group attitudes by peer attachments

Adolescent boys and girls with poorer peer attachments were more likely to report that their friendship group is characterised by high levels of risky behaviour and low levels of positive attitudes (Figure 6.6 and Figure 6.7). For instance, around 35% of girls and 45% of boys with low levels of trust in their peer attachments reported that their friends demonstrated lower levels of positive moral behaviours. However, low levels of positive moral

behaviour characterised the friendship groups of fewer than 10% of girls and 15% of boys who reported high levels of trust in their peer attachments. Around 30% of boys and girls with low levels of peer communication reported that their peer groups demonstrated few positive attitudes towards academic achievement, compared to 13% of girls and 19% of boys with peer attachments characterised by high levels of communication.

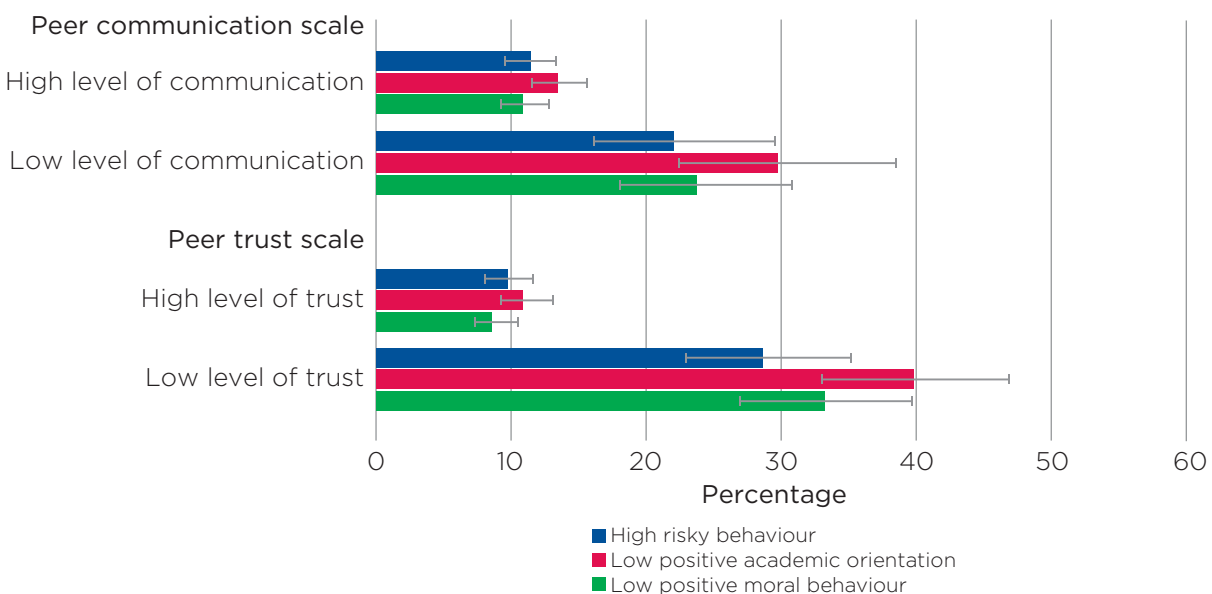
Figure 6.6: Boys' peer group attitudes by peer attachments at age 14-15



Note: $n = 1,703$.

Source: LSAC Wave 6, K cohort, weighted

Figure 6.7: Girls' peer group attitudes by peer attachments at age 14-15



Note: $n = 1,643$.

Source: LSAC Wave 6, K cohort, weighted

6.3 Adolescents' experiences of bullying

While positive peer relationships are associated with good adolescent adjustment and wellbeing, problems in adolescent peer relationships can be detrimental. Bullying in particular is a major adolescent health concern internationally (Craig et al., 2009). It can take direct forms such as physical and verbal aggression and indirect forms such as social exclusion (Craig et al., 2009). Gender differences have been found in the types of bullying experienced by adolescents. Boys are more likely to experience physical aggression, whereas girls are more likely to experience social aggression such as isolation and gossip (Carbone-Lopez, Esbensen, & Brick, 2010; Craig & Pepler, 2003).



Box 6.3: Bullying victims and perpetrators

Bullying has been defined as intentional and repeated aggressive behaviour towards a peer that causes them harm (Smith et al., 1999). At Wave 6, study children (age 14–15 years) were asked to report on their experiences of both bullying victimisation and perpetration.

LSAC study children were asked whether or not in the past month (30 days) they were the victim (e.g. 'kids hit or kicked me on purpose', 'kids said mean things to me or called me names') or perpetrator (e.g. 'I hit or kicked someone on purpose', 'I said mean things to someone or called someone names') of a range of bullying acts. Those who reported being victims or perpetrators of bullying were also asked how frequently the bullying had occurred in the past month from '1 = once or twice' to '3 = several times a week'.

Based on their responses to these items, adolescents were considered to have been a victim of bullying if they reported being victim to an act of bullying on at least a single occasion in the last month. Adolescents were considered to have been a bully if they reported perpetrating an act of bullying on at least a single occasion in the last month.

At age 14–15 years, almost one in five adolescents (19%) reported being a victim of bullying in the previous month. The proportion of adolescents who were victims was similar for girls and boys (about 19%). A smaller proportion of adolescents reported bullying others (7% in total), with about 5% of girls and 10% of boys reporting that they had bullied others in the previous month. Around 6% of adolescents reported bullying others and also being a victim.

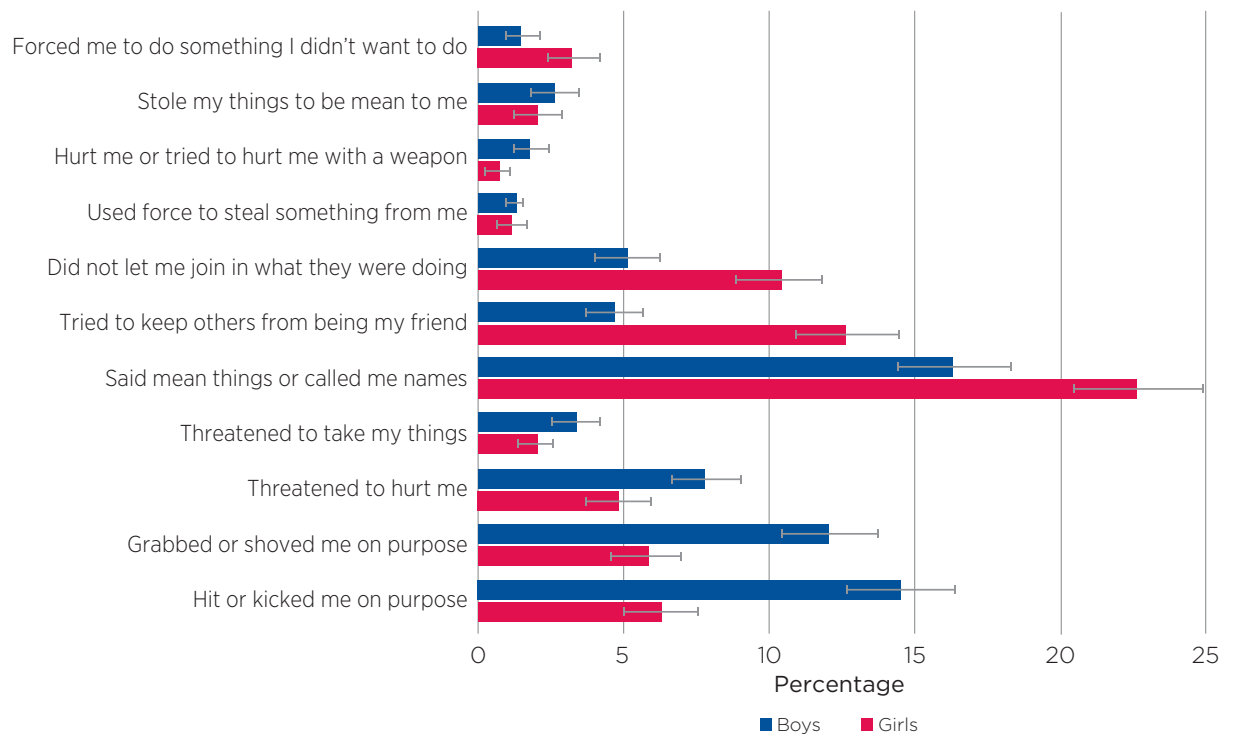
Looking at more specific acts of bullying that adolescents reported being the victim of:

- The most common act across both boys (16%) and girls (23%) was someone saying mean things or name calling (Figure 6.8, page 55).
- More boys than girls reported experiencing physical aggression; for example, 14% of boys and 6% of girls reported being hit or kicked on purpose.
- Acts of social exclusion were more common amongst girls; for example, 13% of girls and 5% of boys reported that someone 'tried to keep others from being my friend'.

The most common act of bullying that both boys (9%) and girls (8%) reported perpetrating was saying mean things to someone or name calling, which is not surprising, given this was also the most frequent act of bullying reported by victims (Figure 6.9, page 55). More boys than girls reported being physically aggressive towards others. For example, 8% of boys and 2% of girls reported grabbing or shoving someone on purpose. Around 4% of boys and 2% of girls had threatened to hurt someone. A similar proportion of boys and girls (1–3%) reported engaging in acts of social exclusion, such as not letting someone join in with what they were doing or preventing others from being friends with their victim. All other bullying acts were reported by less than 1% of 14–15 year olds.



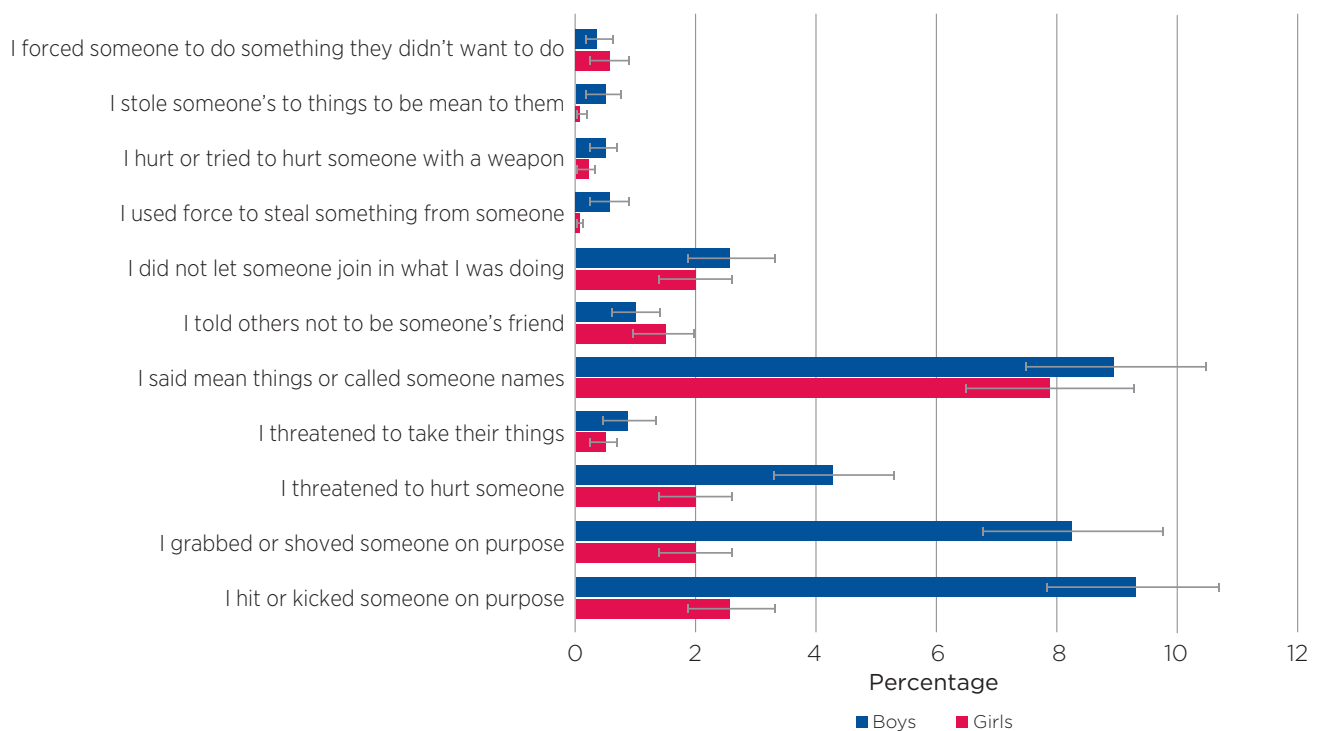
Figure 6.8: Proportion of 14–15 year olds who reported being a victim of bullying in last 30 days, by gender



Note: Boys: $n = 1,702$; Girls: $n = 1,641$.

Source: LSAC Wave 6, K cohort, weighted

Figure 6.9: Proportion of 14–15 year olds who reported bullying in last 30 days, by gender



Notes: Boys: $n = 1,702$; Girls: $n = 1,641$.

Source: LSAC Wave 6, K cohort, weighted

Associations between bullying and features of adolescent peer relationships

Research suggests that high levels of peer attachment and having close friends helps to protect adolescents from involvement in bullying (Goldbaum, Craig, Pepler, & Connolly, 2003; Murphy, Laible, & Augustine, 2017). In addition, high levels of social support from peers may buffer the negative impact of bullying on adolescents' emotional wellbeing (Hodges, Boivin, Vitaro, & Bukowski, 1999; Papafratzeskakou, Kim, Longo, & Riser, 2011).

The types of peers that adolescents are friends with may also be associated with their bullying involvement. For instance, research suggests that bullies tend to hang out with other bullies, and peers who are aggressive or antisocial (Espelage & Holt, 2001). Victims of bullying are also more likely to be friends with other children who have also been victimised or who lack characteristics to successfully defend against bullying (Rodkin & Hodges, 2003).

The association between adolescents' status as a victim or bully in the past month and their peer attachments and peer group attitudes was examined, taking into consideration other factors such as self-efficacy, empathy and prosocial behaviour.

Table 6.4 shows that the odds of being a victim of bullying at age 14–15 were:

- halved for adolescents with high peer attachments compared to those with low peer attachments
- two times higher for adolescents whose friends were engaged in high levels of risky behaviours compared to those whose friends did not engage in these behaviours
- halved for those whose friendship group was characterised by high levels of moral behaviour compared to low levels of moral behaviour
- reduced by 30% for adolescents whose friends valued academic achievement, compared to those whose friends did not value academic achievement.

The odds of having been a bully at age 14–15 were:

- two times higher for adolescents whose friends engaged in risky behaviours compared to those whose friends did not engage in these behaviours
- reduced by 60% for adolescents whose friendship group was characterised by high levels of moral behaviour, compared to those whose friendship group had lower levels of moral behaviour
- reduced by 40% for girls compared to boys.

The odds of being a victim and a bully were similar to the odds of being a bully.

Table 6.4: Predictors of being a victim or a bully in the past month at age 14–15 years

	Victim	Bully	Victim and Bully
High peer attachment	0.48***	0.74	0.63*
Peer group attitudes			
High peer orientation toward academic achievement	0.72*	0.71	0.82
High peer moral behaviour	0.50***	0.36***	0.31***
High peer risky behaviour	2.08***	2.14***	1.76*
Female gender	1.20	0.58**	0.47***

Notes: $n = 3,288$. Odds ratios (OR) are shown. Estimates are adjusted for family socio-economic status and adolescents' self-reported self-efficacy, empathy and prosocial behaviour to account for factors that may potentially explain the association between peer relationships and bullying. * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Wave 6, K cohort, weighted



Summary

This chapter provides a picture of the quality of peer relationships of Australian children around the time of mid-adolescence and sheds some light on the attitudes of adolescents' friends. Understanding who adolescents choose to spend their time with can help us to understand their own attitudes and behaviours. The majority of adolescents (86% of girls and 82% of boys) reported that their friendship groups displayed positive attitudes, including positive attitudes towards school and academic achievement and positive moral behaviour. Only a small proportion, around one in eight, reported that high levels of risky behaviours characterised the friends they spent time with.

Bullying is a major source of stress arising from adolescents' interactions and relationships with their peers, and a major public health concern facing schools and policy makers. The findings from this chapter show that around one fifth of adolescents aged 14–15 reported being the victim of bullying in the past month. However, only around 7% of adolescents admitted to being perpetrators of bullying.

The data show that having positive peer attachments, friends with a positive orientation towards academic achievement or high levels of moral behaviour were each associated with a reduced likelihood of being a victim of bullying. Conversely, having friends who engaged in high levels of risky behaviours was associated with a greater likelihood of having been the victim of bullying. Only peer group attitudes, and

not peer attachment, were associated with being a perpetrator of bullying. Adolescents whose peers had shown high levels of moral behaviour were less likely to have reported that they had bullied someone, while those whose peers engaged in more risky behaviours were more likely to have reported that they had been a bully.

This chapter raises a number of important questions for future work in this area. A better understanding of the causal role that different features of adolescents' friendships play in their social-emotional development will help to inform how peer relationships can be targeted by efforts to promote adolescent wellbeing and prevent and treat the development of psychological difficulties.

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7

Adolescent help-seeking

Sarah Gray and Galina Daraganova



Adolescence is a period of complex developmental transition, characterised by heightened vulnerability to emotional and behavioural problems (Steinberg, 2005). Globally, mental health disorders are experienced by one in four young people aged 13–24 years (Belfer, 2008). Despite the high prevalence of mental health problems during adolescence, many young people do not seek help for their problems. Lawrence and colleagues (2015), for example, found that one third of Australian adolescents with a mental disorder had not accessed formal help (e.g. from health and school services). The reluctance of adolescents to seek professional help for their problems presents a significant barrier to the delivery of appropriate and timely care and can place them at greater risk of developing severe or extended mental health problems (Rickwood, Deane, & Wilson, 2007).

Understanding who adolescents go to for help for their personal and emotional problems is important to inform appropriate pathways of care. This chapter describes the past help-seeking behaviours and future help-seeking intentions of adolescents, focusing on who adolescents go to for help. The help-seeking behaviours and intentions of adolescents who are experiencing symptoms of mental health difficulties are compared with those of adolescents with no symptoms of mental health difficulties.



7.1 Who do adolescents go to for help?

Adolescents may be more willing to seek help for their personal and emotional problems from informal sources, including family members and friends (Lawrence et al., 2015; Rickwood, Deane, Wilson, & Ciarrochi, 2005). This can be viewed as less confronting than talking to an unknown professional (Raviv, Sills, & Wilansky, 2000). Internet and telephone mental health services are also being increasingly utilised by young people, and are advantageous because they are easily accessible, informative and commonly anonymous (Australian Institute of Health and Welfare, 2014). They also reduce many of the barriers to adolescent help seeking including geographical boundaries, service fees, stigma and embarrassment (Kauer, Mangan, & Sanci, 2014; Nicholas, 2004).



Box 7.1: Help-seeking measures in LSAC

Help seeking was measured when study children in the LSAC K cohort were aged 10–11 (Wave 4), 12–13 (Wave 5) and 14–15 (Wave 6) years.

At Waves 4 and 5, children were asked, 'If you had a problem, who would you talk to about it?' and indicated whether or not they would talk to a range of sources (e.g. mum, dad, teacher).

At Wave 6, adolescents were asked whether they had sought help for a personal or emotional problem in the last 12 months from a wider range of sources (e.g. parent, friend, teacher, family doctor, mental health professional and phone and internet services). They also reported on how likely it is that they would seek help from the same sources for a personal or emotional problem in the next four weeks.

The LSAC data show that at each adolescent age group, more adolescents reported help seeking from friends and parents than from teachers. At age 10–11, for example, 90% of young people said they would talk to their mother about a problem, while only 42% would talk to a teacher in the future (Table 7.1, page 61). At age 14–15, 69% reported seeking

help for a personal or emotional problem from either parent, while 25% sought help from a teacher in the last 12 months (Table 7.2, page 61). Help seeking from mental health professionals or doctors, measured only at age 14–15, was reported by only 9% and 6% of adolescents respectively.

Figure 7.1: 14–15 year olds who sought help from a mental health professional

One in 10 14–15 year olds had sought help from a **mental health professional**



As adolescents grow older and experience increasing independence and evolving relationships, it is possible that the source of help they seek for a personal or emotional problem will change (Rickwood et al., 2007). Previous research has also consistently reported gender differences in help seeking, with females being more likely than males to seek help from friends (Rickwood et al., 2005; Sen, 2004). The LSAC data show that the percentage of study children who said that they would seek help from parents, friends and teachers if they had a problem changed as they got older; but willingness to seek help from a friend was more common for females than males at each age (Figure 7.2, page 62). For example:

- At age 10–11, 92% of boys and girls said that they would seek help from a parent, compared to only 70% of boys and 63% of girls at age 14–15.
- At age 10–11, 54% of boys and 68% of girls they would seek help from a friend if they had a problem, while at age 12–13, 63% of boys and 83% of girls said they would seek help from a friend.
- Willingness to seek help from a teacher was most common at age 10–11, when 45% of boys and 40% of girls reported they would do so. By age 14–15, only around a third of boys and 28% of girls said they would be willing to seek help from a teacher.

Table 7.1: Who adolescents would talk to about their problems at age 10–11 and 12–13

Who would you talk to about a problem?	10–11 years old		12–13 years old	
	%	95% CI	%	95% CI
Mum	89.5	88.2 – 90.6	82.4	80.8 – 83.9
Dad	67.0	65.2 – 68.7	58.5	56.6 – 60.5
Friend	60.7	58.9 – 62.5	72.5	70.8 – 74.1
Another relative	35.3	33.4 – 37.2	29.1	27.4 – 30.9
Teacher	42.1	40.2 – 44.0	29.8	28.0 – 31.6
Sibling ^a	29.8	28.0 – 31.6	34.3	32.3 – 36.3
Other	9.9	8.6 – 11.3	9.6	8.6 – 10.8
No one	2.3	1.8 – 3.0	3.1	2.5 – 3.9
Total (n)	3,408		3,387	

Note: ^a Comprises only those who reported having siblings, 10–11 years: $n = 3,127$ (91.8%) and 12–13 years: $n = 3,060$ (90.3%).

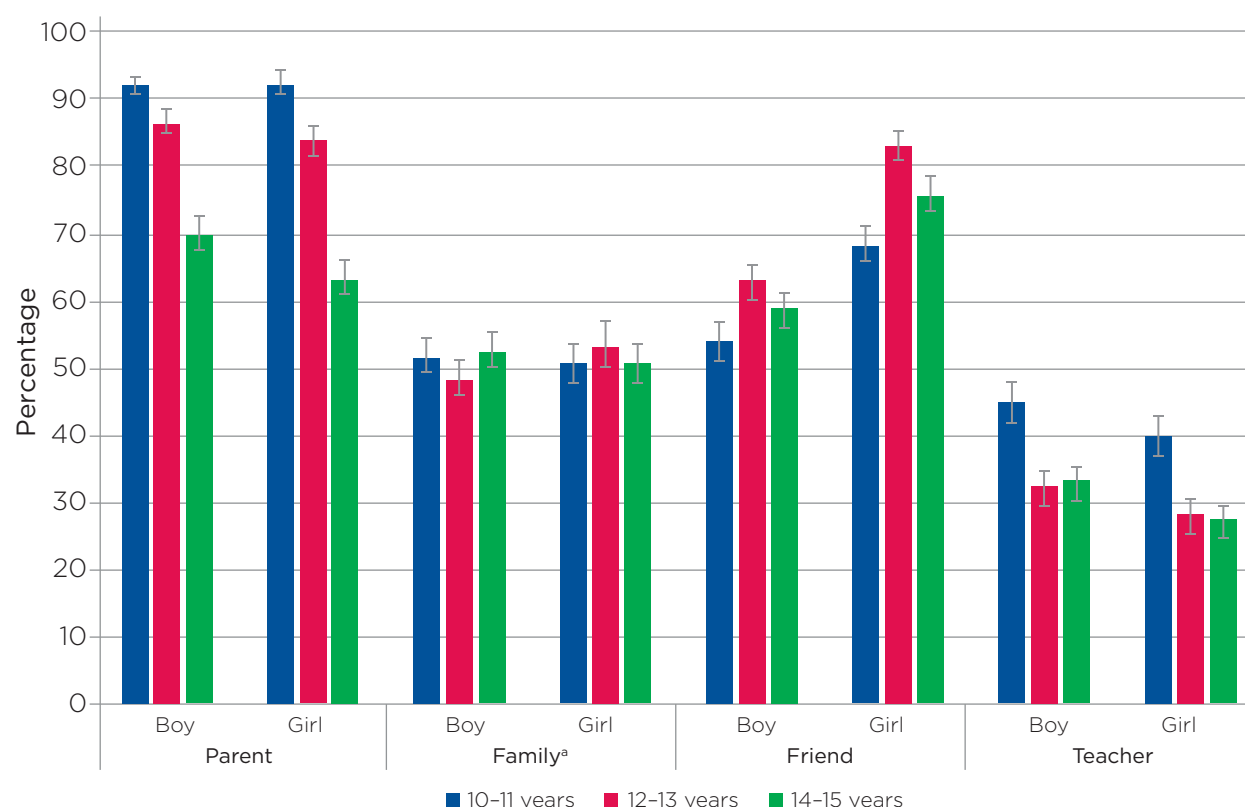
Source: LSAC Waves 4 and 5, K cohort, weighted

Table 7.2: Help seeking for personal and emotional problems, 14–15 year olds

Help source for personal or emotional problems	Sought help in past 12 months ^a		Would seek help in next 4 weeks	
	%	95% CI	%	95% CI
Boyfriend/girlfriend ^b	78.1	73.5 – 82.1	75.0	70.0 – 79.4
Boyfriend/girlfriend ^c	37.7	34.7 – 40.8	37.3	34.4 – 40.4
Friend	73.5	71.6 – 75.3	66.6	64.7 – 68.4
Parent	68.7	66.7 – 70.6	66.4	64.6 – 68.2
Brother/sister ^d	35.2	33.2 – 37.3	41.4	39.3 – 43.6
Other relative/family member	23.0	21.1 – 25.1	33.4	31.5 – 35.3
Teacher	24.5	22.7 – 26.4	23.8	22.2 – 25.5
Other school staff	14.6	11.1 – 16.3	20.7	19.2 – 22.3
Other adult	11.6	10.3 – 13.1	14.3	13.0 – 15.8
Mental health professional	8.7	7.4 – 10.0	18.0	16.5 – 19.7
Family doctor/GP	6.4	5.4 – 7.5	14.3	12.9 – 15.7
Internet	19.5	18.0 – 21.1	19.3	17.8 – 20.9
Phone helpline	2.4	1.8 – 3.2	8.4	7.5 – 9.5
Someone not listed above	0.8	0.5 – 1.2	1.1	0.7 – 1.5
Not sought help from anyone	2.7	2.1 – 3.5	–	–
Total (n)	2,842		3,342	

Notes: ^a Only adolescents who indicated they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours. ^b Comprises only those who reported ever having a boyfriend or girlfriend, $n = 1,657$ (49.6%). ^c Comprises only those who reported having a boyfriend or girlfriend at the time of interview, $n = 498$ (15.4%). ^d Comprises only those who reported having siblings, $n = 2,949$ (88.2 %).

Source: LSAC Wave 6, K cohort, weighted

Figure 7.2: Willingness to seek help from parents, family, friends and teachers across three time points, by gender

Note: * Parents excluded.

Source: LSAC Waves 4, 5 and 6, K cohort, weighted

Help-seeking behaviours and intentions at age 14-15 years

Not every adolescent reports experiencing emotional or personal problems but a vast majority do (Table 7.3). About 91% of 14-15 year old girls and 81% of 14-15 year old boys reported having any emotional or personal problems within the past 12 months. When adolescents do have a problem, they might seek help from formal, informal or

non-face-to-face sources (e.g. internet, phone helpline), though there can be discrepancies between adolescents' intentions to seek help and their actual help-seeking behaviour (Rickwood et al., 2005). Therefore, in order to fully understand adolescents' help-seeking behaviour, measuring both their behaviour and their intentions can be beneficial.

Table 7.3: Any emotional and personal problems of 14-15 year olds in the past 12 months, by gender

	Any emotional or personal problems in the past 12 months					
	All		Girls		Boys	
	%	95% CI	%	95% CI	%	95% CI
Yes	85.7	84.3 – 87.0	90.5	88.6 – 92.0	81.2	79.0 – 83.2
No	14.3	13.0 – 15.7	9.5	8.0 – 11.4	18.8	16.8 – 21.0
Total (n)	3,324		1,636		1,688	

Source: LSAC Wave 6, K cohort, weighted



Box 7.2: Help-seeking behaviours and intentions at 14–15 years of age

At Wave 6, comprehensive data were collected on adolescents' help-seeking behaviours in the past 12 months, as well as their help-seeking intentions in the next four weeks. Based on this data, adolescents were classified as having demonstrated:

- *formal help-seeking behaviours* if they responded 'yes' to seeking help in the past 12 months from any formal source (teacher, other school staff, family doctor/GP, mental health professional)
- *informal help-seeking behaviours* if they responded 'yes' to seeking help in the past 12 months from any informal source (boyfriend/girlfriend, friend, parent, brother/sister, other relative/family member, other adult)
- *non-face-to-face (non-F2F) help-seeking behaviours* if they responded 'yes' to seeking help in the past 12 months from any non-F2F source (internet, phone helpline).

These categories are not mutually exclusive, as adolescents may seek help from multiple formal, informal or non-F2F sources.

Similar categories were created for adolescents' help-seeking intentions. Those who said they 'definitely would' or 'probably would' seek help from any formal/informal/non-F2F source in the next four weeks were considered to have formal/informal/non-F2F help-seeking intentions respectively.

Overall, around 37% of adolescents reported seeking help from any formal source in the past 12 months, while 40% said it was likely that they would seek formal help if they had a personal or emotional problem in the next four weeks (Table 7.4, page 64). Compared to formal sources such as mental health professionals, seeking help from informal sources such as a friend, sibling or parent, was more common among adolescents. Around 95% reported that they did seek help and 89% said that they would seek help from an informal source. Non-F2F help seeking was the least common help-seeking strategy (21% in the past 12 months and 23% in the next four weeks).

At age 14–15, there were some gender differences in adolescent help-seeking behaviours (Table 7.4). Girls generally reported more help-seeking behaviours and intentions than boys across formal, informal and non-F2F help sources. Still, it appears that the majority of 14–15 year olds did seek some type of help when they needed it, with 97% of girls and boys reporting that they sought some type of formal, informal or non-F2F help in the last 12 months for personal or emotional problems; and 95% of girls and 89% of boys saying they would be willing to seek help if they had a personal or emotional problem in the next four weeks.

Adolescents with emotional or personal problems who sought formal, informal, or non-F2F help in the past 12 months also indicated that they were more likely to seek help via the same source in the next four weeks (Figure 7.3, page 64). Around 70% of adolescents with emotional or personal problems who used formal help sources in the past 12 months reported that they would use a formal help source in the next four weeks if they were to have a problem. This was compared to only 25% of adolescents who had an emotional problem in the last 12 months but had not used any formal help sources.

Compared to those who had not used non-F2F help in the past 12 months, those who had were also more likely to say they would use a non-F2F help source in the next four weeks if they had a problem (10% vs 60%). Similarly, adolescents who had used informal help for an emotional or personal problem in the last 12 months were more likely to use this source in future (90%) than those who had not sought help from their friends and families in the past. The results were similar for boys and girls.

Table 7.4: Past and future help-seeking behaviours from formal, informal and non-F2F sources of 14–15 year olds, by gender

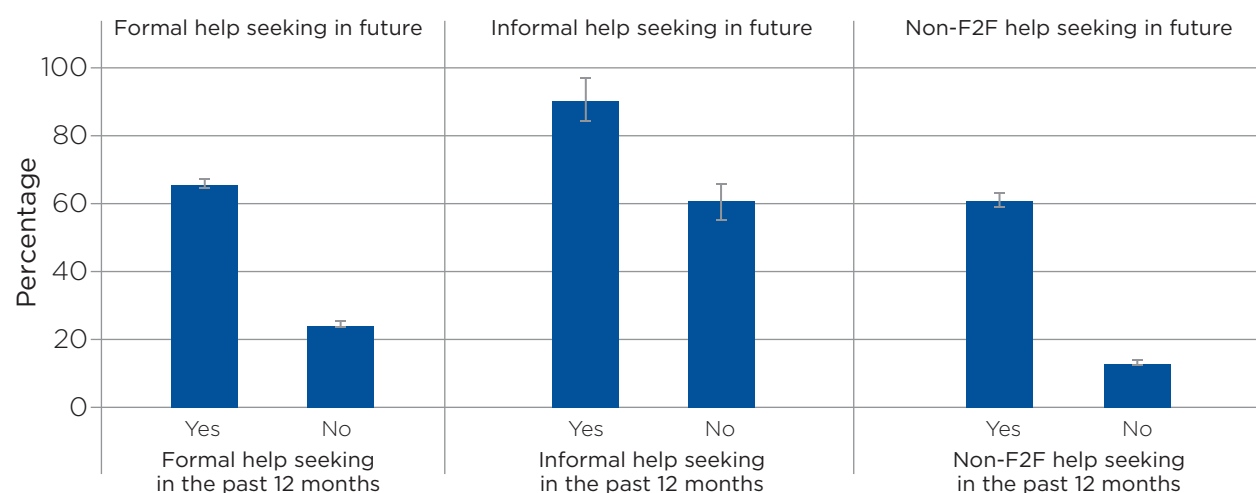
Sought help in the past 12 months ^a						
Help source	All (n = 2,842)		Girls (n = 1,483)		Boys (n = 1,359)	
	%	95% CI	%	95% CI	%	95% CI
Formal	36.8	34.8 – 38.9	37.7	34.8 – 40.6	35.9	33.1 – 38.9
Informal	95.2	94.2 – 96.0	96.2	94.9 – 97.1	94.2	92.6 – 95.5
Non-F2F	20.7	19.1 – 22.3	22.9	20.6 – 25.3	18.3	16.1 – 20.8
Any source	97.2	96.4 – 97.9	97.3	96.2 – 98.2	97.1	95.9 – 98.0

Would seek help in the next 4 weeks						
Help source	All (n = 3,342)		Girls (n = 1,641)		Boys (n = 1,701)	
	%	95% CI	%	95% CI	%	95% CI
Formal	40.0	38.1 – 42.0	37.8	35.2 – 40.5	42.0	39.3 – 44.8
Informal	89.0	87.7 – 90.2	91.4	89.8 – 92.7	86.8	84.8 – 88.6
Non-F2F	22.5	20.9 – 24.1	24.9	22.6 – 27.3	20.2	18.1 – 22.4
Any source	91.7	90.7 – 92.7	94.5	93.3 – 95.6	89.1	87.3 – 90.6

Notes: Help-seeking behaviours are not mutually exclusive. Differences are statistically significant if confidence intervals do not overlap.

^a Only adolescents who indicated that they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours.

Source: LSAC Wave 6, K cohort, weighted

Figure 7.3: Future help-seeking behaviours based on past help-seeking behaviours

Notes: Only adolescents who indicated that they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours. Help-seeking behaviours are not mutually exclusive. Differences are statistically significant if confidence intervals do not overlap.

Source: LSAC Wave 6, K cohort, weighted

7.2 Help seeking in adolescents with symptoms of mental health difficulties

Anxiety and depression are two of the most common mental health disorders experienced by Australian children and adolescents. Among young people aged 12–17, 7% experience an anxiety disorder, while 5% experience a major depressive disorder (Lawrence et al., 2015). Many more young people experience symptoms that do not meet the threshold for clinical diagnosis of these conditions. Rates of self-harm are also alarming among Australian adolescents, with one in ten 12–17 year olds reporting that they have ever self-harmed (Lawrence et al., 2015).

Adolescents experiencing symptoms of mental health difficulties are those most often in need of help and support. Understanding who these adolescents go to for help for their personal and emotional problems can help to identify opportunities to promote help seeking and better inform pathways to professional services (Rickwood et al., 2007). Some studies (e.g. Sheffield, Fiorenza, & Sofronoff, 2004) found that, compared to adolescents with no signs of psychological distress, those experiencing psychological distress are more likely to seek help, while other studies (e.g. Wilson, Rickwood, & Deane, 2007) found the opposite was true.

Box 7.3: Mental health difficulties

At age 14–15 (Wave 6), the LSAC K cohort reported on various aspects of their mental health, including symptoms of depression and anxiety and their history of self-harm.

Depressive symptoms were measured using the Short Mood and Feelings Questionnaire (Angold et al., 1995).

Anxiety symptoms were measured using the Spence Children's Anxiety Scale (Spence, 1998).

On both measures, adolescents can be categorised as either having symptoms or having no symptoms of these mental health difficulties.

Self-harm was measured using a single item on which adolescents indicated whether they had hurt themselves on purpose in any way in the past 12 months.

Depression

Depressive symptoms were reported by 26% of all 14–15 year olds, with 19% of boys and 34% of girls reporting symptoms. Overall, 91% of adolescents with symptoms of depression reported seeking help (from any source) for a personal or emotional problem in the last 12 months, compared to 81% of those with no symptoms (Table 7.5, page 66). Similar proportions of adolescents with and without symptoms, 90% and 92% respectively, reported intentions to seek help if they had a personal or emotional problem in the next four weeks. The differences were statistically significant.

Compared to those with no symptoms of depression, a higher proportion of adolescents with symptoms of depression reported seeking help from formal and non-F2F sources in the previous 12 months (Table 7.6, page 66). For example, 51% of 14–15 year olds with symptoms of depression reported seeking formal help and 33% reported seeking non-F2F help, while only 33% of those without symptoms of depression reported seeking formal help and 17% sought non-F2F help.

It was also more common for adolescents with symptoms of depression, compared to those with no symptoms, to say that it was likely that they would seek formal help (50% with symptoms versus 41% without symptoms) and non-F2F help (37% with symptoms versus 20% without symptoms) if they had a personal or emotional problem in the next four weeks. However, there was no difference in informal help seeking between adolescents with and without symptoms of depression. Informal help seeking was preferred by the majority of adolescents.

Overall, a larger proportion of girls with depressive symptoms reported seeking help, compared to boys with depressive symptoms (Figure 7.4, page 67). For example, among adolescents with symptoms of depression, 52% of girls and 45% of boys reported seeking formal help; and 37% of girls and 27% of boys reported seeking non-F2F help.

Table 7.5: Comparison of help-seeking behaviours and intentions of adolescents with and without symptoms of depression at age 14-15, overall and by gender

	Depressive symptoms					
	All		Girls		Boys	
	No %	Yes %	No %	Yes %	No %	Yes %
Help seeking in past 12 months						
No help seeking	19.5	8.7	14.5	7.0	23.4	11.7
Any source	80.5	91.3	85.5	93.0	76.6	88.3
Total (n)	2,464	856	1,095	543	1,373	313
Help seeking in next 4 weeks						
No help seeking	7.8	9.7	4.8	6.6	10.0	14.8
Any source	92.2	90.3	95.2	93.4	90.0	85.2
Total (n)	2,482	860	1,095	545	1,384	315

Source: LSAC Wave 6, K cohort, weighted

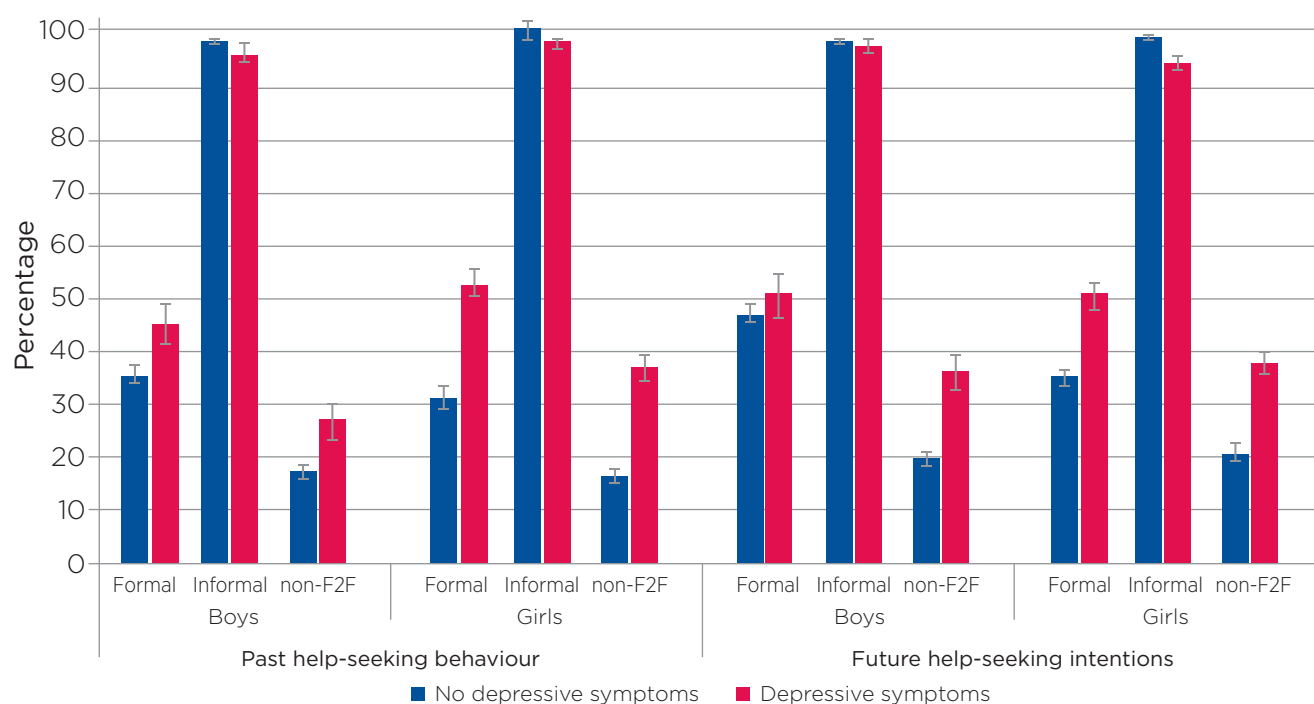
Table 7.6: Comparison of help-seeking behaviours and intentions of adolescents with and without symptoms of depression at age 14-15, by source of help

Type of help	Help-seeking behaviour			
	In the past 12 months ^a		In the next 4 weeks	
	No depressive symptoms % (n = 1,978)	Depressive symptoms % (n = 783)	No depressive symptoms % (n = 2,287)	Depressive symptoms % (n = 776)
Formal	33.1	50.5	41.3	50.1
Informal	98.5	96.7	97.9	94.6
Non-F2F	16.5	33.0	20.2	36.9

Note: ^a Only adolescents who indicated that they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours.

Source: LSAC Wave 6, K cohort, weighted



Figure 7.4: Help-seeking behaviours and intentions of adolescents with and without symptoms of depression at age 14-15, by source and gender

Notes: Only adolescents who indicated that they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours. Differences are statistically significant if confidence intervals do not overlap.

Source: LSAC Wave 6, K cohort, weighted

Anxiety

Symptoms of anxiety were reported by 16% of all 14-15 year olds, with 8% of boys and 25% of girls reporting symptoms. Patterns of help seeking among adolescents with and without symptoms of anxiety are similar to those for depressive symptoms (Table 7.7). Overall, 93% of adolescents with anxiety symptoms

reported seeking help (from any source) in the last 12 months, compared to 82% of those with no anxiety symptoms. A similar proportion of adolescents with and without anxiety symptoms, 93% and 92% respectively, reported intentions to seek help if they had personal or emotional problems in the next four weeks.

Table 7.7: Comparison of help-seeking behaviours and intentions of adolescents with and without symptoms of anxiety at age 14-15, overall and by gender

	Anxiety symptoms					
	All		Girls		Boys	
	No %	Yes %	No %	Yes %	No %	Yes %
Help seeking in past 12 months						
No help seeking	18.5	7.3	13.9	5.9	22.0	11.7
Any source	81.5	92.7	86.1	94.1	78.0	88.3
Total (n)	2,789	530	1,230	404	1,559	126
Help seeking in next 4 weeks						
No help seeking	8.4	7.3	5.0	6.9	11.1	8.7
Any source	91.6	92.7	95.0	93.1	88.9	91.3
Total (n)	2,809	532	1,236	405	1,573	127

Source: LSAC Wave 6, K cohort, weighted

Compared to adolescents with no anxiety symptoms, more adolescents with anxiety symptoms reported past help seeking from either formal or non-F2F sources (Table 7.8). For example, 51% of those with anxiety symptoms, and 35% of those without, reported formal help seeking; while 36% of those with anxiety symptoms, and 18% of those without, reported non-F2F help seeking.

Adolescents with symptoms of anxiety also more commonly reported willingness to seek help than those without symptoms if they had personal and

emotional problems in the next four weeks from formal sources (48% with symptoms versus 43% without) and non-F2F sources (39% of those with symptoms versus 22% of those without). A similar proportion of adolescents with and without anxiety symptoms, 93% and 98% respectively, reported they would seek informal help in the next four weeks. Similar proportions of males and females with anxiety (95% and 90% respectively) reported willingness to seek help from informal sources in the future (Figure 7.5).

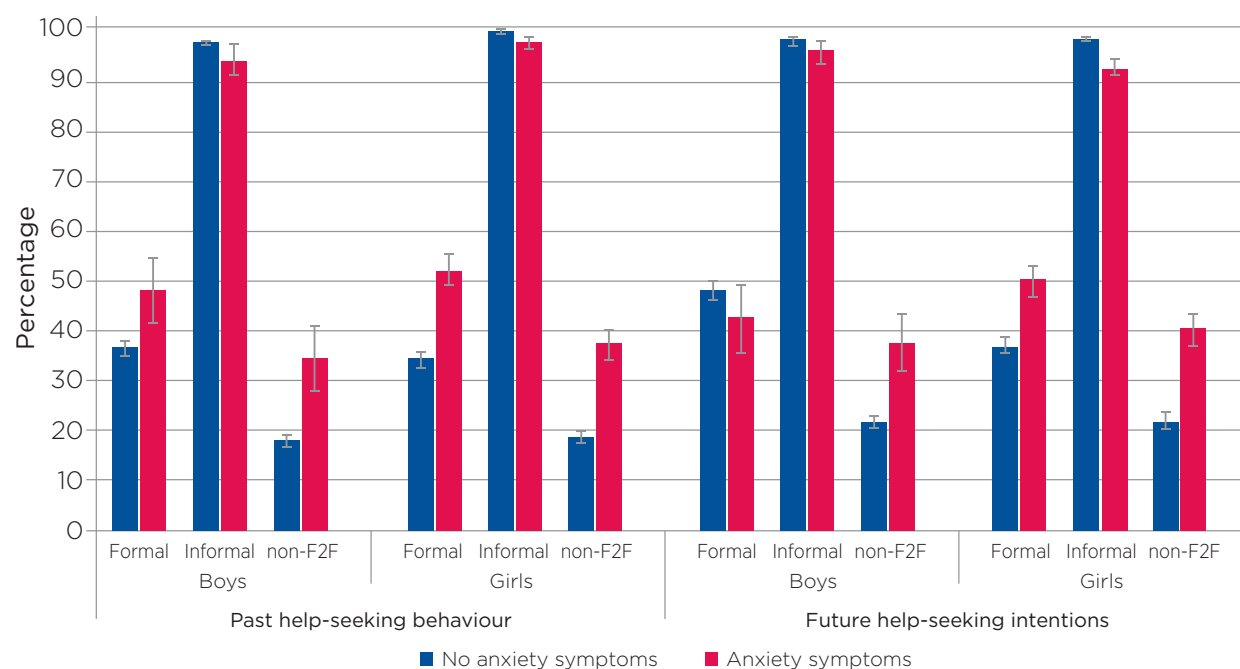
Table 7.8: Comparison of help-seeking behaviours and help-seeking intentions of adolescents with and without symptoms of anxiety at age 14-15, by source of help

Type of help	Help-seeking behaviour			
	In the past 12 months ^a		In the next 4 weeks	
	No anxiety symptoms % (n = 2,264)	Anxiety symptoms % (n = 496)	No anxiety symptoms % (n = 2,570)	Anxiety symptoms % (n = 492)
Formal	35.1	50.8	42.8	47.9
Informal	98.3	96.1	97.9	92.9
Non-F2F	18.0	36.4	21.6	39.3

Note: ^a Only adolescents who indicated that they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours.

Source: LSAC Wave 6, K cohort, weighted

Figure 7.5: Help-seeking behaviours and intentions of adolescents with and without symptoms of anxiety at age 14-15, by source and gender



Notes: Only adolescents who indicated that they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours. Differences are statistically significant if confidence intervals do not overlap.

Source: LSAC Wave 6, K cohort, weighted

Self-harm

Almost 10% of all 14–15 year olds reported self-harming in the past 12 months, with 4% of boys and 15% of girls reporting an act of self-harm. Patterns of help seeking among adolescents who had self-harmed are similar to those for depression and anxiety (Table 7.9). Overall, 95% of adolescents who had self-harmed reported seeking help from any source in the last 12 months, compared to 82% who had not self-harmed.

A similar proportion of adolescents who had (93%) and had not (92%) self-harmed reported intentions to seek help (from any source) if they had personal or emotional problems in the next four weeks (Table 7.9). Compared to adolescents who had not self-harmed in the last 12 months, more adolescents who had self-harmed reported having sought help from formal and non-F2F sources (Table 7.10). For example, more than half of those who self-harmed (58%) reported seeking formal help, compared to 35% of those who had not self-harmed.

Adolescents who had self-harmed also more commonly reported that they would seek formal help (54% versus 42% of those who had not) and non-F2F help (38% versus 23% of those who had not) if they had a personal or emotional problem in the next four weeks. Rates of past informal help seeking were similar across adolescents who had and had not self-harmed.

As was the case for girls with symptoms of depression or anxiety, girls who reported having self-harmed were more likely to seek formal help than boys; that is, 63% of girls and 40% of boys sought help formally in the last 12 months (Figure 7.6, page 70). However, there was no significant gender difference in informal non-F2F help seeking among adolescents who had self-harmed, with 32% of boys and 41% of girls who reported having self-harmed in the past 12 months saying that they had sought non-F2F help, and around 95% of boys and girls saying they sought informal help in the past 12 months. Gender differences in help-seeking intentions, according to whether they had self-harmed in the past 12 months, were similar to those for help-seeking behaviour.

Table 7.9: Comparison of help-seeking behaviours and intentions of adolescents who have and have not self-harmed at age 14–15

	Self-harm					
	All		Girls		Boys	
	No %	Yes %	No %	Yes %	No %	Yes %
Help seeking in past 12 months						
No help seeking	18.0	5.0	13.1	5.0	22.0	6.0
Any source	82.0	95.0	86.9	95.0	78.0	94.0
Total (n)	2,999	301	1,389	231	1,610	70
Help seeking in next 4 weeks						
No help seeking	8.3	7.5	5.2	6.6	10.9	10.3
Any source	91.7	92.5	94.8	93.4	89.1	89.7
Total (n)	3,017	302	1,395	231	1,622	71

Source: LSAC Wave 6, K cohort, weighted

Table 7.10: Comparison of help-seeking behaviours and intentions of adolescents who have and have not self-harmed at age 14–15, by source

Type of help	Help-seeking behaviour			
	In the past 12 months ^a		In the next 4 weeks	
	No self-harm % (n = 2,459)	Self-harm % (n = 286)	No self-harm % (n = 2,769)	Self-harm % (n = 276)
Formal	35.1	57.5	42.4	53.5
Informal	98.0	97.2	97.3	94.9
Non-F2F	19.0	38.9	22.9	37.9

Note: ^aOnly adolescents who indicated that they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours.

Source: LSAC Wave 6, K cohort, weighted

Figure 7.6: Help-seeking behaviours and intentions of adolescents who have and have not harmed at age 14-15, by source and gender



Notes: Only adolescents who indicated that they have had any emotional or personal problems in the last 12 months were reporting on past help-seeking behaviours. Differences are statistically significant if confidence intervals do not overlap.

Source: LSAC Wave 6, K cohort, weighted

7.3 Predictors of formal, informal and non-F2F help-seeking behaviours

Two factors that have been shown to influence adolescents' help-seeking behaviours are gender and the presence of mental health difficulties. However, there are also a range of other factors that can influence adolescents' decisions about seeking help when they have a problem. The availability of adequate social support such as close relationships with peers and family may be one such factor. Previous research suggests that adolescents with greater levels of self-perceived social support (e.g. from family and friends) may be more likely to seek help from their informal networks, compared to those who experience less supportive relationships (Rickwood & Braithwaite, 1994; Sheffield et al., 2004). While some early evidence suggests that adolescents with more close friends may indeed be less likely to seek professional help (Sherbourne, 1988), other studies have found no relationship between social support and formal help seeking (Rickwood & Braithwaite, 1994; Sheffield et al., 2004). It will be useful to better understand which factors, among the range of factors associated with adolescent help seeking, are the best predictors of formal, informal and non-F2F help seeking.

Table 7.11 (page 71) shows that the odds of seeking formal help for personal or emotional problems in the past 12 months were:

- two times higher for adolescents who had a history of self-harming (in the last 12 months) compared to those who had not self-harmed
- 1.6 times higher for adolescents with symptoms of depression and 1.4 times higher for adolescents with symptoms of anxiety, compared to those with no symptoms.

Adolescents who had experienced self-harm in the past 12 months and had good relationships with parents and peers were more likely to seek formal help in the next four weeks if they have a personal or emotional problem than those with no mental health symptoms and poor relationships with others. Compared to boys, girls were less likely to report seeking formal help in the next four weeks. The odds of adolescents reporting that they would seek formal help in the next four weeks were:

- 1.4 times higher for adolescents with a history of self-harming in the last 12 months compared to those who had not self-harmed

Table 7.11: Predictors of formal, informal and non-F2F help-seeking behaviours

	Odds of formal help seeking		Odds of informal help seeking		Odds of non-F2F help seeking	
	past 12 months	next 4 weeks	past 12 months	next 4 weeks	past 12 months	next 4 weeks
Depressive symptoms	1.6***	1.2	1.5**	0.9	1.7***	1.4**
Anxiety symptoms	1.4*	1.1	1.2	0.9	1.6***	1.3
Self-harm act	2.0***	1.4*	1.5	1.2	1.7***	1.2
Female gender	1.0	0.7***	1.8***	1.7***	1.1	0.9
Low SEP ^a (reference)						
Middle SEP	1.0	0.9	1.1	1.1	1.2	1.2
High SEP	0.9	0.9	1.0	1.0	1.5**	1.3
Good parent relationship	1.1	1.4**	1.1	2.8***	0.8*	0.7*
Good peer relationship	1.1	1.8***	1.1	2.5***	1.0	1.5**
Currently in relationship	1.0	0.9	2.4***	1.5	1.4*	0.9
Past formal help-seeking behaviour	n.i.	5.1***	n.i.	n.i.	n.i.	n.i.
Past informal help-seeking behaviour	n.i.	n.i.	n.i.	2.6***	n.i.	n.i.
Past non-F2F help-seeking behaviour	n.i.	n.i.	n.i.	n.i.	n.i.	8.5***
Total (n)	3,259	3,279	3,259	3,279	3,259	3,279

Notes: Odds ratios (OR) are shown. * $p < .05$; ** $p < .01$; *** $p < .001$. n.i. = not included. ^aSEP = socio-economic position.

Source: LSAC Wave 6, K cohort, weighted

- 30 percentage points lower for females compared to males
- 1.8 times higher for adolescents with good peer relationships and 1.4 times higher for adolescents with good parent relationships, compared to those with poor relationships
- 5.1 times higher for adolescents who sought formal help in the past 12 months compared to those who did not seek formal help in the past.

Informal help seeking in the past 12 months was more often reported by girls than boys, adolescents with symptoms of depression than without any depressive signs, and among those in a relationship at the time of interview. In particular, the odds of adolescents seeking informal help for personal or emotional problems in the past 12 months were:

- 1.5 times higher for adolescents with symptoms of depression compared to those with no symptoms
- 1.8 times higher for girls than boys
- 2.4 times higher for adolescents who were in a relationship at the time of the interview.

Compared to boys and adolescents with poor relationships with others, girls and adolescents with good relationships with parents and peers were also more likely to seek informal help for personal or emotional problems in the next four weeks. Adolescents' intentions to seek informal help were:

- 1.7 times higher for girls than boys

- 2.8 times higher for adolescents with good relationships with their parents and 2.5 times higher for adolescents with good relationships with their peers, compared to those with poor relationships
- 2.6 times higher for adolescents who sought informal help in the past 12 months compared to those who did not seek informal help.

Non-F2F help-seeking behaviour was more common among adolescents with mental health symptoms, from higher socio-economic background and who were in a relationship at the time of the interview, compared to those with no mental health symptoms, from low socio-economic background and without a boyfriend/girlfriend. Compared to adolescents with poor relationship with parents, adolescents with good relationships with parents were less likely to use non-F2F help seeking in the past 12 months. The odds of adolescents seeking non-F2F help for personal or emotional problems in the past 12 months were:

- 1.7 times higher for adolescents who have a history of self-harming, compared to those who have not self-harmed
- 1.7 times higher for adolescents with symptoms of depression and 1.6 times higher for adolescents with anxiety symptoms, compared to those with no symptoms
- 1.5 times higher for adolescents from a high socio-economic background compared to adolescents from a low socio-economic background

- 20 percentage points lower for adolescents with a good relationship with parents
- 1.4 times higher for adolescents who are currently in a relationship.

Table 7.11 (page 71) also shows that, after accounting for other factors, the odds of adolescents reporting they would seek non-F2F help in the next four weeks were:

- 1.4 times higher for adolescents with symptoms of depression compared to those with no symptoms
- 30 percentage points lower for adolescents with a good relationship with parents
- 1.5 times higher for adolescents with good peer relationships, compared to those with poor relationships
- 8.5 times higher for adolescents who sought non-F2F help in the past 12 months compared to those who did not seek non-F2F help.

Summary

This chapter has provided a picture of the help-seeking behaviours and intentions of Australian adolescents aged from 10–11 to 14–15 years. The LSAC data show that the majority of adolescents who reported having a personal or emotional problem did seek help (97%); and 91% would seek help for personal or emotional problems in the future, whether that be from a formal, informal or non-F2F source.

Informal sources, such as family and friends, were the most common sources of help for adolescents, though as adolescents grow older fewer adolescents reported seeking help from parents (90% at 10–11 years old vs 69% at 14–15 years old). Also, if adolescents with emotional or personal problems used formal or non-F2F help sources in the previous 12 months, they were more likely to use the same sources in the immediate future.

This chapter confirms previous research on the association between adolescent help seeking and gender, mental health difficulties and social support. Adolescents with mental health difficulties were found to be more likely to seek help than those without such difficulties. However, when considering informal help seeking, the presence of mental health difficulties is more strongly associated with past help-seeking behaviours than with adolescents' reports of willingness to seek help in the future. For both formal and informal help sources, adolescents with higher levels of self-perceived social support from peers and parents are more willing to seek help in the future than those with inadequate social support.

The chapter raises a number of questions that will be important lines of enquiry for future work and which will help to directly inform practice and policy around adolescent help seeking for mental health difficulties.

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8

Preschool and children's readiness for school

Diana Warren, Galina Daraganova and Meredith O'Connor



Starting primary school is an important time in the lives of children and their families. This transition can be an exciting but challenging time in a child's life, with many new expectations and demands. The development of appropriate skills and capabilities in early childhood can help children to negotiate the transition to school and meet these new demands (Duncan et al., 2007). Children's early development as they begin school is vitally important to their educational pathways – those who begin school with strong academic skills generally continue to perform well, while children who start school with weaker skills tend to continue to struggle (Goldfeld, O'Connor, Quach, Tarasuik, & Kvalsvig, 2015). Therefore, it is critical to support children's early development so that they begin school with strong skills that can set them on a path to success.

Helping children to thrive at school requires supporting their development well before they enter the school setting. One way to promote learning and social-emotional development before children start school is through attendance at preschool.

This chapter explores the relationship between attendance at early childhood education and care at ages three and four and children's developmental outcomes when they start school, using data linked to LSAC from the Australian Early Development Census (AEDC).

Disclaimer: This chapter uses data from the Australian Early Development Census (AEDC). The AEDC is funded by the Australian Government Department of Education and Training. The findings and views reported are those of the author and should not be attributed to the Department or the Australian Government.



8.1 Attendance at preschool and long day care

In Australia, 'preschool' (known as 'kindergarten' in some states and territories) refers to structured, play-based education, provided by a qualified early childhood teacher prior to starting compulsory schooling (Council of Australian Governments Productivity Agenda Working Group, 2008). A large body of research suggests that attending high quality preschool settings before starting school can promote children's readiness to begin school (Goldfeld et al., 2016; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2010).

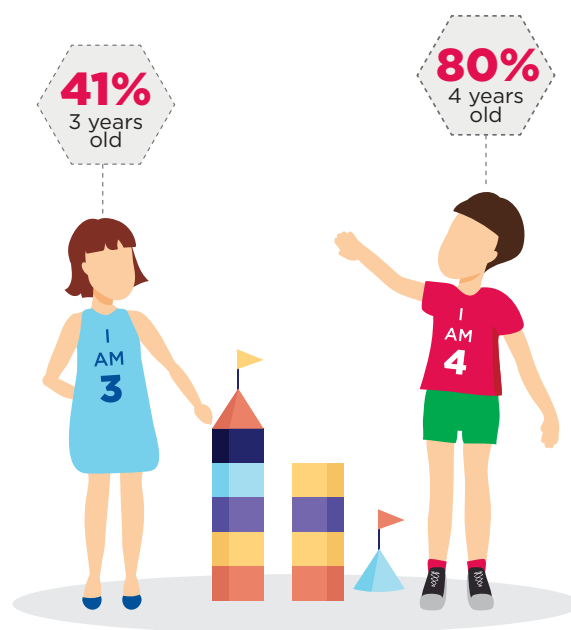
In recognition of the importance of early childhood education, preschool education in Australia has undergone a significant restructure in recent years. In November 2008, the Council of Australian Governments (COAG) endorsed a new National Partnership Agreement on Early Childhood Education. Under this agreement, the Commonwealth, state and territory governments committed to ensuring that by 2013, all children in the year before formal schooling would have access to high quality early childhood education programs delivered by a degree-qualified early childhood teacher, for 15 hours per week, 40 weeks of the year (COAG, 2009).

Prior to this commitment, there were no nationally agreed or consistent standards for staffing across the child care and preschool sector. Previous studies have shown that, at the time, there was a considerable amount of variation in the early childhood education and care experiences of children before starting school. This was partly due to distinct state and territory provisions, but also due to the need for parents to make manageable and affordable arrangements for work-related child care (Harrison & Ungerer, 2005). The type and level of qualification of the teacher or carer was linked mainly to the age of the children, the size of the group and the type of setting, with older preschoolers typically being cared for by better qualified staff, but only in some settings and some states (Elliott, 2006).

While there is still considerable variation in the quality of preschool programs offered today, the LSAC study children started school before the introduction of funding for universal access to preschool for four year olds; and they are likely to have had widely varying experiences in terms of both attendance at early childhood education and care, and the quality of the

programs they attended. The LSAC data show that the B cohort children had a range of early childhood education and care experiences before starting school. Most children who started school in 2009 (80%) attended a preschool program when they were four years old (Table 8.1, page 75). At three years of age, attendance at preschool was lower, at 41%, with a further 38% of three year olds attending a long day care program.¹

Figure 8.1: Percentage of children attending preschool at ages three and four



Note: Children who started school in 2009.

Box 8.1: Information about preschool attendance in LSAC

In LSAC, the study child's main carer (usually their mother) is asked a series of questions about the study child's attendance at early childhood education and care (ECEC) settings. When study children were aged 4–5, parents report about the child's ECEC arrangements at the time of interview. Parents also provide information retrospectively, about the ECEC programs their child had attended in the previous year.

Parents report about children's attendance at a range of different types of early childhood education and care settings, such as stand-alone preschools, preschools attached to a school, and preschool within long day care centres.

¹ Note that these rates of preschool attendance of four year olds are lower than current attendance rates. In 2014, 95% of four-year-old children were enrolled in a preschool program in the year before full-time schooling, an increase from 91% in 2013 and 86% in 2012. However, the percentage of three year olds attending preschool in Australia has dropped slightly in recent years, from 18% in 2012 to 15% in 2012 and 2013. (Warren, O'Connor, Smart, & Edwards, 2016).

In this chapter, we do not differentiate between stand-alone preschool and preschool programs provided within a long day care setting or at a school. These differences in setting are likely to reflect state provisions, and it is the learning opportunities provided by the preschool program that are expected to benefit children's development, regardless of the setting in which this occurs.

Table 8.1: Children's early childhood education and care experiences before starting school

	%
ECEC attendance at age 3	
No formal care	21.0
Long day care without a preschool program	38.2
Preschool ^a	40.8
Total	100.0
ECEC attendance at age 4	
No formal care	8.6
Long day care without a preschool program	11.7
Preschool ^a	79.7
Total	100.0
ECEC attendance at ages 3 and 4	
No formal ECEC – age 3 and 4	4.6
Long day care without a preschool program – age 3 and 4	10.5
Preschool ^a – age 3 and 4	38.1
No formal ECEC at age 3, preschool at age 4	15.6
Long day care without a preschool program at age 3, preschool at age 4	25.9
Other	5.2
Total	100.0

Notes: Sample restricted to children who started school in 2009, and had information about ECEC at age three and four ($n = 3,035$). Other includes those who had attended preschool or long day care at age three but not at age four. ^a Preschool includes stand-alone preschool and preschool as part of long day care settings.

Source: LSAC Wave 3, B cohort, weighted

Most children who were going to a preschool program at age three continued on to preschool at age four, with 38% of children who started full-time school in 2009 participating in two years of preschool. Just over a quarter went from long day care at age three to preschool at age four. A smaller percentage (16%) had not participated in any ECEC program at age three before starting preschool at age four. Around one in 10 children went to long day care without a preschool program at age three and age four. However, very few (5%) participated in no formal early education or care at all before starting school.



8.2 Characteristics associated with children's attendance at preschool and long day care

The decision about whether a child attends a preschool or long day care program is not random. Parents who place a high value on their children's education, and those who are more socio-economically advantaged, may be more likely to enrol their children in a high quality preschool program. Data from the 2008 Child Care Survey (Australian Bureau of Statistics [ABS], 2009) indicate that:

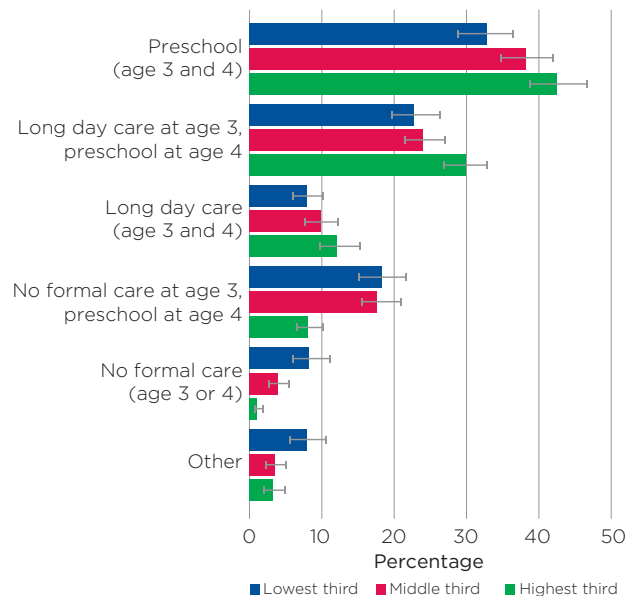
- Children living in more disadvantaged areas were less likely to attend preschool than children in less disadvantaged areas.
- Children who spoke English as their main language at home were more likely to attend a preschool program.
- Children in couple families were more likely to go to preschool than children in single-parent families; and, in couple families, the likelihood of a child attending preschool increased with household income.

Preschool participation rates have also been shown to vary according to the parents' level of education, particularly the education level of the mother, with participation in preschool highest among children whose mother had a degree qualification (Australian Institute of Health and Welfare [AIHW], 2005). There is also evidence that children in rural and remote areas of Australia and children of Aboriginal and Torres Strait Islander background are less likely to attend preschool than other Australian children. In some cases, services in Indigenous or remote areas do not exist; while in others, transport or distance may be a significant barrier to attendance (AIHW, 2005).

Among LSAC study children who started school in 2009, there were significant differences in the combination of ECEC programs they had attended at ages three and four, depending on their household income, their parents' education, as well as other factors such as their parents' employment status, whether they had older or younger siblings, and whether they spoke a language other than English at home.

For example, attendance at preschool at ages three and four was significantly higher among children in households in the highest third of equivalised household income, compared to those living in households in the lowest third (Figure 8.2). While around 18% of children in households in the lower two thirds of the income distribution went to preschool at age four without any ECEC program at age three, less than 10% of children in households at the higher end of the income distribution attended no formal care at age three, before going to preschool at age four.

Figure 8.2: Participation in early childhood education and care at ages three and four, by equivalised household income at age four



Note: Sample restricted to those who started full-time school in 2009 ($n = 2,944$). Preschool includes stand-alone preschool and preschool as part of long day care settings. Long day care includes only long day care without a preschool program.

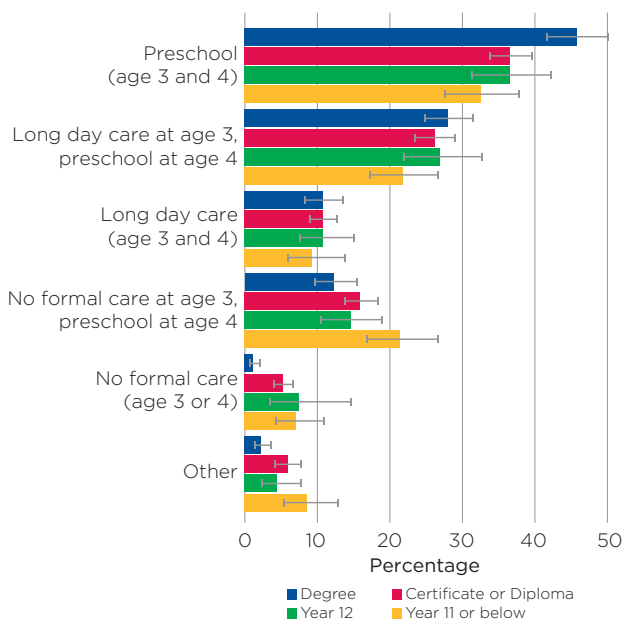
Source: LSAC Wave 3, B cohort, weighted

There were also clear differences in ECEC participation patterns depending on parents' education (Figure 8.3). Among children with at least one parent with a degree qualification, 45% attended preschool at age three and four, compared to 36% of children whose parents' highest level of education was a trade certificate, diploma or Year 12, and 32% of children with parents who had not completed Year 12.

Children who attended preschool at ages three and four might have had a more cognitively stimulating home environment than those who had other ECEC arrangements, as parents who put a high value on preschool are also more likely to 'invest' in the home learning environment, not only financially but also by spending time doing activities that are likely to be beneficial for their child's developmental outcomes. One of the most important aspects of the home learning environment is how often children are read to (Kalb & van Ours, 2014).

The LSAC data show that children who were read to at least six days per week at age 2–3 were more likely to have attended preschool at ages three and four than those who were read to only two days per week or less often (Figure 8.4).

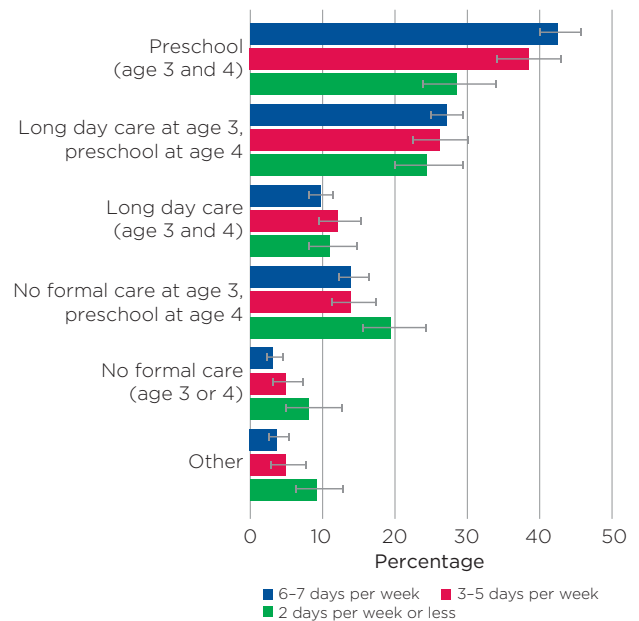
Figure 8.3: Participation in early childhood education and care at ages three and four, by highest level of parental education



Notes: Sample restricted to those who started full-time school in 2009 ($n = 3,034$). For children in two-parent households, this is the highest level of education attained by either the mother or the father. For children in single-parent households, this is the highest level of education of their resident parent. Preschool includes stand-alone preschool and preschool as part of long day care settings. Long day care includes only long day care without a preschool program.

Source: LSAC Wave 3, B cohort, weighted

Figure 8.4: Participation in early childhood education and care at ages three and four, by how often the study child was read to at age 2–3



Note: Sample restricted to those who started full-time school in 2009 ($n = 3,034$). Preschool includes stand-alone preschool and preschool as part of long day care settings. Long day care includes only long day care without a preschool program.

Source: LSAC Waves 2 and 3, B cohort, weighted



8.3 Preschool as an opportunity to promote healthy development

Today, most Organisation for Economic Co-operation and Development (OECD) countries have near universal coverage of preschool in the year before starting school (OECD, 2017). However, it has been suggested that attending high quality preschool programs for a longer duration may be even more beneficial. For example, data for 57 OECD countries from the Programme for International Student Assessment (PISA) in 2015 show that, after accounting for socio-economic differences, children who attended early childhood education for at least two years performed better, on average, than others at age 15. (OECD, 2017).

Most studies of preschool participation find a significant benefit for cognitive outcomes in the short term. However, evidence about the long-term cognitive and social benefits of preschool programs is mixed. Some studies, such as those of Siraj-Blatchford, Taggart, Sylva, Sammons, and Melhuish (2008) and Berlinski, Galiani, and Manacorda (2008), have concluded that preschool attendance has long-term academic and social benefits for all children. Others, including Magnuson, Ruhm, and Waldfogel (2007a, 2007b), have found that the academic benefits of preschool attendance tend to fade over time, and that preschool attendance may be associated with poorer behavioural outcomes in the long term.

In Australia, Warren and Haisken-DeNew (2013) used data from LSAC to examine the effect of attendance at preschool programs in the year prior to formal schooling on NAPLAN outcomes in Year 3. They found a significant positive association between preschool attendance and Year 3 NAPLAN test scores, with the most significant effects in the domains of reading, spelling and numeracy. Further, children who had a preschool teacher with a relevant degree or diploma qualification had significantly higher NAPLAN scores, on average, than those who had not attended preschool, suggesting that there are significant benefits to be gained from preschool teachers who are specifically trained in developmentally appropriate teaching practices for young children.

Much of the existing analysis of the impact of preschool programs on later developmental outcomes

has focused on programs that are designed for children aged 4-5 years. There is little evidence to suggest that the estimated benefits of these programs will be the same for three-year-old children. Based on the evidence presented to the 2014 Productivity Commission Inquiry into Childcare and Early Childhood Learning in Australia, the Productivity Commission (2014) recommended that ‘an analysis of the effectiveness of the existing arrangements in improving development outcomes and evidence drawn from relevant Australian and overseas research is necessary before any decisions can be made on the value of extending the universal access arrangement to younger children’.

Matched data from the Australian Early Development Census (AEDC) allows us to explore the association between attendance at early childhood education and care programs in the two years before starting full-time schooling and developmental outcomes at the start of school.

Developmental outcomes at the start of primary school

In 2009, Australia became the first country in the world to collect national data on the developmental health and wellbeing of all children as they start their first year of full-time school. The Australian Early Development Census (AEDC) is a national measure of children’s development. The data for the AEDC are collected every three years using the Australian version of the Early Development Instrument (EDI), adapted from Canada (Australian Government, 2016). The Australian version of the Early Development Instrument consists of approximately 100 questions across five key domains that are closely linked to child health, education and social outcomes.






As the first AEDC cycle was conducted in the year that the majority of the LSAC B cohort children started school, this provided a valuable opportunity to link children’s LSAC data with their AEDC results, allowing researchers to investigate associations between aspects of the early lives of the LSAC study children and their developmental outcomes.

Box 8.2: How early developmental outcomes are measured in the AEDC

The Australian Early Development Census (AEDC) is a teacher-rated checklist that provides information about children's development in their first year of school, conducted as a national census every three years. To date, there have been three cycles of the AEDC: in 2009, 2012 and 2015.

In each cycle, teachers have provided information about over 250,000 Australian children starting school, with over 95% coverage of eligible children. In 2009, 261,147 children completed the AEDC, representing 98% of the estimated population of five year olds in Australia (Brinkman, Gregory, Goldfield, Lynch, & Hardy, 2014).

Five important domains of children's early development are measured using 96 items:

Domain	Subdomains	Example question
 Physical health and wellbeing	<ol style="list-style-type: none"> 1. Physical readiness for the school day 2. Physical independence 3. Gross and fine motor skills 	How would you rate this child's proficiency at holding a pen, crayon or brush?
 Social competence	<ol style="list-style-type: none"> 1. Overall social competence 2. Responsibility and respect 3. Approaches to learning 4. Readiness to explore new things 	Would you say this child plays and works cooperatively with other children at the level appropriate for his/her age?
 Emotional maturity	<ol style="list-style-type: none"> 1. Prosocial and helping behaviour 2. Anxious and fretful behaviour 3. Aggressive behaviour 4. Hyperactivity and inattention 	If there is a quarrel or dispute, would you say this child will try to stop it?
 Language and cognitive skills (school-based)	<ol style="list-style-type: none"> 1. Basic literacy 2. Interest in literacy/numeracy and memory 3. Advanced literacy 4. Basic numeracy 	Would you say this child is able to write simple words?
 Communication skills and general knowledge	<ol style="list-style-type: none"> 1. Communication skills and standard knowledge 	How would you rate this child's ability to tell a story?

For each of the five AEDC domains, children receive a score between zero and ten, where zero is most developmentally vulnerable.

AEDC domain scores are calculated for each individual child where enough valid responses have been recorded. In the first data collection cycle (2009), a series of cut-off scores was established for each of the five domains:

- Children falling below the 10th percentile were categorised as 'developmentally vulnerable'.
- Children falling between the 10th and 25th percentiles were categorised as 'developmentally at risk'.
- All other children were categorised as 'developmentally on track'.

See Brinkman and colleagues (2014) for a comprehensive description of the items used in the AEDC. Domain images in this text box are sourced from the *AEDC National Report 2015* (www.aedc.gov.au).



The eligible LSAC sample for linkage to the AEDC data was 2,765 children whose parents provided valid consent at Wave 4 interviews, who participated in the study at the time of linkage and who started the first year of school in 2009. For these 2,765 children, the LSAC-AEDC data matching process successfully linked 2,459 records (Bandara et al., 2018).

The percentage of children who were considered developmentally vulnerable in the linked LSAC-AEDC cohort is smaller than that for the Australian population (Table 8.2). In each domain, less than 10% of LSAC study children in the matched AEDC sample were considered developmentally vulnerable;

and the percentage of children in the top half of the national AEDC distribution was higher, particularly in the domains of physical health and wellbeing, language and cognitive skills, and communication skills and general knowledge. However, in terms of demographic characteristics including sex of the study child, Indigenous status, language background, socio-economic status and state or territory of residence, there were only small differences between the matched LSAC-AEDC cohort and the national AEDC data. Because children needed to be in their first year of school in 2009 for matching to be possible, children with linked data were slightly younger, on average, than that of the national population.²

Table 8.2: Developmental vulnerability of children at school entry

AEDC domains	Developmentally vulnerable	Developmentally at risk	Developmentally on track		Total
	Below 10th percentile (%)	10–25th percentiles (%)	26–50th percentiles (%)	51–100th percentiles (%)	
Physical health and wellbeing	6.2 [5.3 – 7.3]	12.9 [11.5 – 14.3]	19.4 [17.8 – 21.0]	61.6 [59.5 – 63.5]	100.0
Social competence	6.4 [5.5 – 7.5]	13.2 [11.9 – 14.7]	23.3 [21.7 – 25.1]	57.0 [55.0 – 59.0]	100.0
Emotional maturity	6.9 [5.9 – 8.0]	13.9 [12.5 – 15.3]	25.4 [23.7 – 27.2]	53.8 [51.8 – 55.9]	100.0
Language and cognitive skills	4.2 [3.5 – 5.2]	10.8 [9.6 – 12.1]	23.2 [21.5 – 24.9]	61.8 [59.8 – 63.8]	100.0
Communication skills and general knowledge	5.0 [4.2 – 6.0]	13.6 [12.2 – 15.0]	19.4 [17.8 – 21.0]	62.4 [60.4 – 64.4]	100.0

Note: $n = 2,289$.

Source: LSAC Wave 3, B cohort with linked AEDC data for all five domains, unweighted³

Among Australian children who started school in 2009, 24% had AEDC scores that indicated they were developmentally vulnerable on one or more of the AEDC domains (CCCH & TICHR, 2009). Using the matched LSAC-AEDC sample, only 17% of children were developmentally vulnerable on one or more domains (Table 8.3, page 81). This suggests that children in the LSAC-AEDC linked cohort have slightly stronger early developmental outcomes than children across the Australian population.

About one in six children in the matched LSAC-AEDC cohort were vulnerable in at least one domain of their development as they started school, about 8% were vulnerable in two or more domains and just over 3% in three or more domains. Many more of these children

were in the category of ‘vulnerable or at risk’; that is, they had scores below the 26th percentile. Over 40% were vulnerable or at risk in at least one of the AEDC domains, 27% in two or more domains and 15% were considered vulnerable or at risk in three or more domains (Table 8.3).

It was much more common for boys than for girls to be developmentally vulnerable, or at risk of vulnerability, in more than one domain. For example, 11% of boys and 4% of girls were developmentally vulnerable in two or more domains; and 21% of boys and 9% of girls were either developmentally vulnerable, or at risk of vulnerability in three or more domains.

² For further details about the LSAC-AEDC linkage process and the demographic profile of the LSAC-AEDC cohort, compared to the National AEDC sample, refer to Bandara, Siphthorp, Sufi, and Daraganova (2018).

³ Unweighted data have been used as LSAC-AEDC sample is a censored sample of children in a particular year level and does not include children who entered school earlier or later based on eligibility criteria. For details see Bandara et al. (2018).

Table 8.3: Developmental vulnerability and risk of vulnerability across AEDC domains

	Boys (%)	Girls (%)	Total (%)
Developmentally vulnerable (Scores below the 10th percentile)			
In at least one domain	22.8 [20.5 – 25.3]	10.3 [8.7 – 12.3]	16.8 [15.4 – 18.4]
In two or more domains	10.9 [9.2 – 12.8]	4.2 [3.2 – 5.5]	7.7 [6.7 – 8.8]
In three or more domains	4.9 [3.8 – 6.2]	#1.4 [0.9– 2.3]	3.2 [2.6 – 4.0]
Developmentally vulnerable or at risk of vulnerability (Scores in the 0–25th percentiles)			
In at least one domain	51.1 [48.3 – 53.9]	31.9 [29.3 – 34.7]	41.9 [39.9 – 43.9]
In two or more domains	34.1 [31.5 – 36.8]	19.1 [16.9 – 21.5]	26.9 [25.1 – 28.7]
In three or more domains	21.3 [19.0 – 23.6]	8.7 [7.2 – 10.5]	15.2 [13.8 – 16.8]

Notes: $n = 2,289$. #Estimate not reliable (cell count < 20).

Source: LSAC Wave 3, B cohort with linked AEDC data for all five domains, unweighted

Developmental outcomes at school entry, by preschool attendance at ages three and four

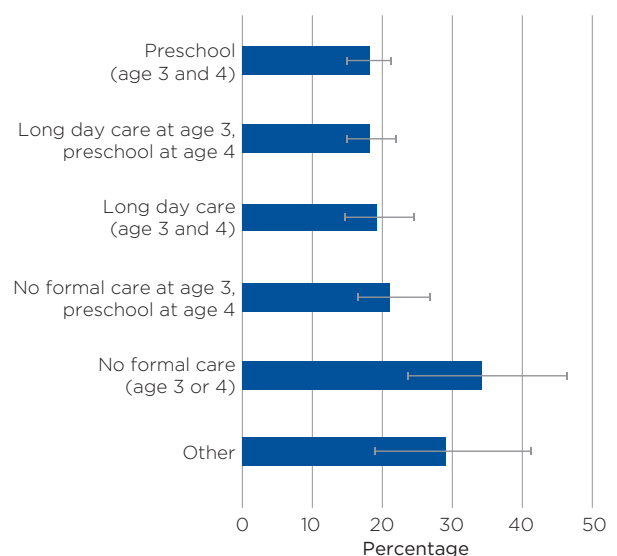
Across all AEDC domains, the percentage of children who were either developmentally vulnerable, or at risk of vulnerability, was highest among those who had not participated in any formal early childhood education and care at age three or four, and also among those who had attended some early childhood education but did not go to preschool at age four (those in the 'other' category). However, for the domains of social competence and emotional maturity, these differences were not statistically significant.

On the physical health and wellbeing domain, the percentage of children who were developmentally vulnerable, or at risk of vulnerability, was significantly lower among those who attended preschool at ages three and four, and those who went from long day care at age three to preschool at age four, compared to children who attended no formal ECEC program at age three or four (Figure 8.5). However, this difference may be due to the health limitations of children who are vulnerable in this domain. That is, some children may have not attended any ECEC program due to their health limitations.

For the AEDC domains related to cognitive skills (language and cognition; communication and general knowledge), the percentage of children who were developmentally vulnerable or at risk of vulnerability was significantly higher among those who did not

attend any formal ECEC program at age three or four, compared to those who attended either preschool or long day care at both ages, and children who went from no formal care at age three to preschool at age four (Figures 8.6 and 8.7, page 82). These differences suggest that participating in an early childhood education program may have a positive influence in terms of children's cognitive development.

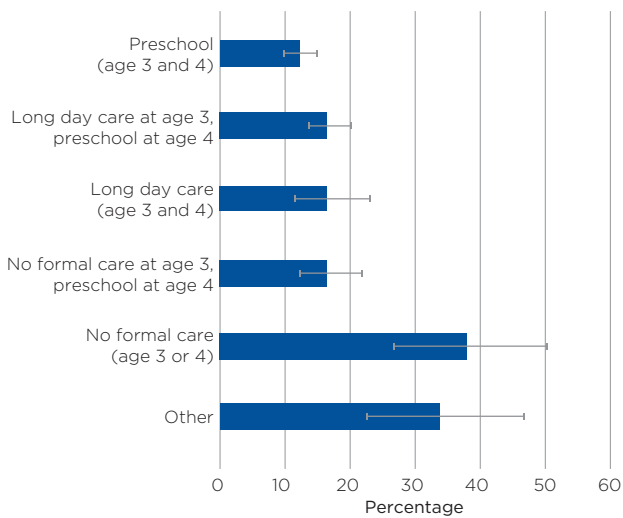
Figure 8.5: Children vulnerable or at risk on the physical health and wellbeing domain, by ECEC arrangements at ages three and four



Note: $n = 2,279$. Preschool includes stand-alone preschool and preschool as part of long day care settings. Long day care includes only long day care without a preschool program.

Source: LSAC Wave 3, B cohort, matched LSAC-AEDC sample, weighted

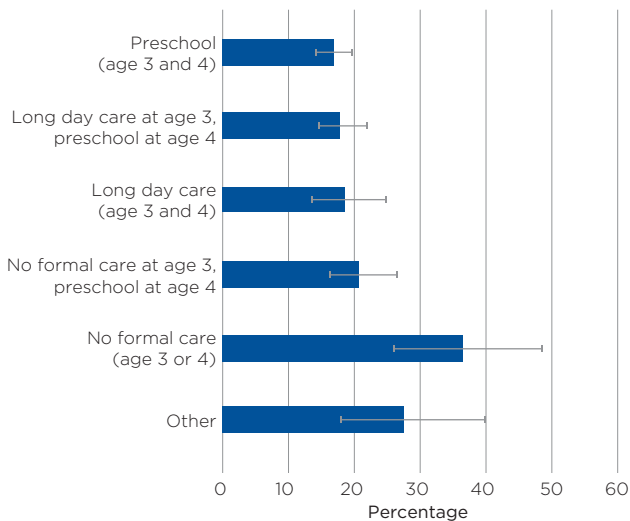
Figure 8.6: Children vulnerable or at risk on the language and cognitive skills domain, by ECEC arrangements at ages three and four



Note: $n = 2,279$. Preschool includes stand-alone preschool and preschool as part of long day care settings. Long day care includes only long day care without a preschool program.

Source: LSAC Wave 3, B cohort, matched LSAC-AEDC sample, weighted

Figure 8.7: Children vulnerable or at risk on the communication skills and general knowledge domain, by ECEC arrangements at ages three and four



Note: $n = 2,279$. Preschool includes stand-alone preschool and preschool as part of long day care settings. Long day care includes only long day care without a preschool program.

Source: LSAC Wave 3, B cohort, matched LSAC-AEDC sample, weighted

In general, there was no significant difference in the percentage of children who were vulnerable depending on whether they attended preschool, long day care or a combination of both. This is likely to be at least partly due to the amount of variation in the quality of long day care and preschool programs at the time. In particular, before the introduction of universal access to preschool for four year olds, not all preschool programs were led by a degree qualified early childhood teacher.

After controlling for a range of other characteristics that are known to influence developmental outcomes, such as parental education, household income, gender of the child and whether the child was read to frequently in early childhood, there are significant associations between patterns of attendance at preschool and long day care at ages three and four and physical health, language and cognition, and communication and general knowledge when children start primary school (Table 8.4, page 83).



Table 8.4: Association between preschool attendance at three and four years of age and vulnerability in children's development at school entry

	Odds ratios					
	Physical health and wellbeing	Social competence	Emotional maturity	Language and cognition	Communication and general knowledge	At least one domain
ECEC attendance at ages 3 and 4 (ref. = preschool ages 3 and 4)						
No formal care (age 3 or 4)	2.2**	1.3	0.7	3.3***	1.8*	1.8
No formal care at age 3, preschool at age 4	1.3	0.8	0.8	1.4	1.2	1.2
Long day care without a preschool program (age 3 and 4)	1.2	0.9	0.9	1.6	1.3	1.8**
Long day care without a preschool program at age 3, preschool at age 4	0.9	1.1	1.2	1.5*	1.0	1.2
Other	1.7	1.2	1.0	2.5**	1.5	1.7

Notes: $n = 2,049$. Odds ratios from Logistic Regression Model * $p < .05$; ** $p < .01$; *** $p < .001$. Estimates are adjusted for sex of study child, parents' highest level of education, equivalised household income, whether the study child speaks a language other than English at home, birth order (at age 4-5), parents employment status when the study child was aged 4-5, how frequently the study child was read to at age 2-3 and the number of out-of-home activities the parents did with the study child at age 2-3 (e.g. library, museum, cultural events) and whether the study child has an ongoing health condition at age 2-3. Preschool includes stand-alone preschool and preschool as part of long day care settings. Long day care includes only long day care without a preschool program.

Source: LSAC Waves 2 and 3, B cohort, matched LSAC-AEDC sample, unweighted

Compared to children who attended preschool at age three and age four:

- The odds of being vulnerable or at risk on the physical health and wellbeing domain were more than doubled; and the odds of being vulnerable or at risk on the communication and general knowledge domain were 1.8 times higher for those who had no formal care at age three or four.
- The odds of being vulnerable or at risk on the language and cognitive skills domain were 3.3 times higher for those who had no formal care at age three or four; 1.5 times higher for children who went to long day care at age three and preschool at age four, and 2.5 times higher for those who had attended some early childhood education at age 3 but did not go to preschool or long day care at age four (those in the 'other' category).
- The odds of being vulnerable or at risk on at least one of the five domains were almost doubled for children who attended long day care without a preschool program at age three and age four.

Across all AEDC domains, the odds of being developmentally vulnerable, or at risk of vulnerability, were higher for boys than for girls, ranging from 1.6 times higher for physical health and wellbeing to 4 times higher for emotional maturity.

Other factors were also important for specific domains:

- Compared to children who had no ongoing issues at age 2-3, the odds of being vulnerable or at risk of vulnerability on the physical health and wellbeing domain were 1.5 times higher for children who had an ongoing health condition.⁴
- For the social competence domain:
 - Parental education was a significant factor. Compared to children whose parents' education level was Year 11 or lower, for those with at least one parent with a certificate or diploma, the odds of being vulnerable or at risk of vulnerability were 35 percentage points lower, and for those with at least one parent with a degree, the odds were almost halved.
 - Compared to children in households with equivalised income in the lowest quartile, for those in households in the second quartile, the odds of being vulnerable or at risk were 1.5 times higher.
 - Compared to children in households with two parents who were both employed, the odds of being developmentally vulnerable, or at risk of vulnerability, was almost doubled for children in single-parent households where their parent was employed.

⁴ Children were considered to have an ongoing health condition if their primary carer reported that they had a condition which has lasted, or is expected to last, for at least 12 months which causes the child to use medicine prescribed by a doctor (other than vitamins) or more medical care, mental health or educational services than other children

- For the emotional maturity domain:
 - Compared to children whose parents' education level was Year 11 or lower, for those with at least one parent with a degree, the odds of developmental vulnerability or risk of vulnerability were reduced by almost 40 percentage points.
 - Compared to children with no siblings, the odds of developmental vulnerability or risk of vulnerability were reduced by almost 40 percentage points for children who were the eldest child, middle child or a twin, and halved if the study child was the youngest child in the family.
- In terms of language and cognitive skills:
 - Compared to children whose parents' education level was Year 11 or lower, for those with at least one parent with a degree, the odds of developmental vulnerability or risk of vulnerability were halved.
 - Compared to children who were read to by an adult on two days per week, or less often, at age 2–3, the odds of vulnerability or risk of vulnerability were 40 percentage points lower for children who were read to six or seven days per week.
- On the communication and general knowledge domain:
 - Compared to children whose parents' education level was Year 11 or lower, for those with at least one parent with a certificate or diploma, the odds of being vulnerable or at risk of vulnerability were 40 percentage points lower, and for those with at least one parent with a degree, the odds were more than halved.
 - Compared to children in two-parent families where both parents were employed, the odds of vulnerability or risk of vulnerability were 1.4 times higher for children in two-parent households where their father was employed and their mother was not in paid employment.
 - The odds of vulnerability on this domain was 1.7 times higher if the study child had an ongoing health condition, compared to children who did not.

While these results suggest that there is a significant association between participation in early childhood education programs and developmental outcomes at the start of school, it is important to keep in mind that these associations should not be considered causal. It may be that children who are developmentally vulnerable are less likely to attend preschool or long day care, rather than early childhood education having

a 'protective influence' in terms of developmental outcomes. More complex analysis, such as propensity score matching, would be needed to determine if these associations could be considered to be a 'causal effect'.

Further, while no significant associations between preschool attendance and social and emotional development were found, this does not necessarily mean that attendance at a high quality preschool or long day care program has no influence on these outcomes. That is, among children in the 'developmentally on track' category, children who attended a preschool or long day care program may have higher scores on the social and emotional development than those who attended no formal care. However, this can only be determined using a more precise measure of development (i.e. percentiles covering the whole distribution, rather than a single indicator of vulnerability).



Summary

This chapter describes participation in long day care and preschool programs at ages three and four for LSAC study children who started full-time schooling in 2009; and examines the association between preschool participation at ages three and four and school readiness, across the five domains of the Australian Early Development Census (AEDC).

These children started school before the introduction of funding for universal access preschool for four year olds, and therefore their levels of attendance at early childhood education and care programs were quite different to those of three and four year olds today. Almost 40% attended preschool at ages three and four, a quarter went from long day care at age three to preschool at age four; and a further 16% attended no formal care at age three before starting preschool at age four. Only 5% did not participate in any formal education or care program before starting school.

The decision about whether a child attends a preschool or long day care program is not random. The LSAC data show that children in higher income households, and those whose parents had degree qualifications, were more likely to have attended a preschool program at age three and also age four. Children who attended two years of preschool are also more likely to receive higher levels of 'parental investment' at home. For example, children who were read to on six or seven days per week at age 2–3 were more likely to have attended two years of preschool than children who were read to less frequently.

Matched data from the AEDC shows that there is an association between preschool experiences and children's development at school entry, particularly for those developmental domains closely related to learning. However, this relationship should not be interpreted as causal on the basis of the data presented here, as some factors associated with the decision to enrol a child in a preschool program are also strong predictors of children's developmental outcomes (e.g. parental education). However, considered in the context of others' work, these data reinforce that preschool is a potentially important policy lever for promoting children's readiness to take advantage of the learning opportunities in the school setting (O'Connell, Fox, Hinz, & Cole, 2016).

In recent years, the percentage of children attending preschool at the age of four has increased to over 95%, due to universal access. However, the percentage of three year olds attending a preschool program has fallen slightly. Further research is needed to assess

how universal access to preschool for four year olds might affect the mix of children attending ECEC programs at age three, and how preschool attendance will influence the longer term outcomes for a more contemporary group of children.

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9

Kids' care and activities before and after school

Pilar Rioseco, Jennifer Baxter and Diana Warren



Working parents often have to juggle family and work responsibilities, including organising different types of care for their children while they are at work. Once children reach school age, care before or after school hours is an important resource for families. The availability of care for school-aged children outside-school-hours has had a significant impact on labour market outcomes of parents over time (Malcolm, Wilson, & Davidson, 2002), and many parents state they would not be able to work if these services were not available (Winefield et al., 2011). Characteristics of the school may also play an important role, as different types of schools may provide different services to parents.

This chapter explores parents' use of formal and informal care before or after school and how this varies according to children's age and family and school characteristics. We also explore children's participation in extracurricular activities provided by the school and other organisations. For some families these may be a substitute for outside-school-hours care.



9.1 What types of formal and informal care are parents using?

Box 9.1 Formal and informal care

In this chapter, we focus on children in the B cohort of LSAC, who were still in primary school in Wave 6 (in 2014). In Waves 4–6 of LSAC, when the B cohort children were aged 6–7, 8–9 and 10–11, the study child's primary carer was asked detailed questions about the types of child care and extracurricular activities their child attended.

In terms of outside-school-hours care, parents were asked, 'Who currently provides care for the study child before school?' A number of formal and informal types of care were listed (see Table 9.1, page 89) and parents could select multiple answers. A similar question was asked about after-school care arrangements.

Formal care is regulated care away from the child's home (Australian Bureau of Statistics [ABS], 2017). The main types of formal care are long day care, before and after school care, family day care and occasional care.

Informal care is non-regulated care either in the child's home or elsewhere. It includes paid or unpaid care by siblings, grandparents, other relatives, friends, neighbours, nannies or babysitters and other organisations such as crèche services at gyms and health centres (ABS, 2017).



Previous Australian research has shown that, for school-aged children:

- Informal before- and after-school-hours care is more commonly used than formal care (ABS, 2017).
- Formal outside-school-hours care programs are more frequently attended by children in the early years of primary school, compared to children aged 10 and older (ABS, 2010; Capizzano, Tout, & Adams, 2000).
- Grandparents are the most commonly used source of informal before- and after-school-hours care (ABS, 2014; Cassells & McNamara, 2006).

The LSAC data confirm that informal outside-school-hours care was more frequently used than formal care, with almost one in four children in informal care either before or after school; and the percentage of children attending formal care decreasing from 18% at age 6–7 to 11% at age 10–11 (Table 9.1, page 89).¹ Still, from age 6–7 to age 10–11, around two-thirds of children did not attend any formal or informal outside-school-hours care. This suggests that many parents arranged their work commitments so that their children did not require regular outside-school-hours care.

Across all ages, grandparents were the most common providers of informal before or after school care, with 13–14% of children being cared for by their grandparents. A smaller proportion of children were cared for by people other than their grandparents. There were some differences in the percentages of children receiving particular types of informal care, according to their age. For example, around 5% of 10–11 year olds, but less than 2% of 6–7 year olds, were cared for by a sibling under the age of 18.



¹ The analysis presented here combines before and after school care, as the number of children in care before school was relatively small. Overall, 12% of all LSAC study children aged 6–11 had a non-parental care arrangement before school, with 8% in informal care and 4% in formal care. In contrast, 30% of children were in non-parental care after school.

Table 9.1: Percentage of children in formal or informal before or after school care

	Age 6–7 (2010) (%)	Age 8–9 (2012) (%)	Age 10–11 (2014) (%)
Formal care before or after school	17.8	15.2	11.1
School-based program	15.2	13.2	9.7
Other formal care (child care centre not at a school or family day care)	2.7	2.1	1.5
Informal care before or after school	21.2	23.0	25.0
Grandparent	13.8	13.4	13.8
Non-relative aged 18+ (friend, neighbour, nanny or other person)	5.7	5.7	4.8
Sibling, other relative or other person aged <18	1.5	3.2	4.8
Parent living elsewhere	2.2	2.7	3.3
Sibling or other relative aged 18+	1.8	2.3	3.6
No formal or informal before or after school care =	66.2	66.7	67.7
Total (n)	4,242	4,085	3,764

Note: As some families use more than one type of formal and/or informal care arrangement, the percentage who used each specific type of care does not sum to the percentage who used any formal/informal care.

Source: LSAC Waves 4–6, B cohort, weighted

9.2 Outside-school-hours care, by family structure and parents' employment arrangements

Family characteristics, particularly family structure and parents' working hours, are important determinants of children's care arrangements (e.g. Capizzano et al., 2000). However, for some families, the availability of suitable formal care and the child's willingness to attend care can influence parents' work arrangements. Previous research has shown that mothers of school-aged children generally have more responsibility for the care of the children than fathers do (De Vaus, 2004); and that mothers often stay out of the labour force or alter their working hours to care for their children (Hand & Baxter, 2013). It has also been found that children are more likely to be in care when both parents work full-time or a single parent works full-time (Capizzano et al., 2000).

Most LSAC study children live with two parents (Table 9.2, page 90). Among children in couple households, the most common parental employment arrangement was one in which the father worked full-time and the mother worked part-time. The next most common arrangement was that of a father working and the mother not in paid employment, although this became less common as children got older, with 27% of parents having this arrangement when the study child was aged 6–7, compared to 19% when the study child was aged 10–11.

Around 15% of 6–7 and 8–9 year olds and 17% of 10–11 year olds lived in single-mother households. At least half of the children in single-mother households had a mother who was in paid employment, with around one-third of single mothers working part-time, and the percentage of single mothers in full-time work increasing from 16% of mothers when their children were 6–7 years old, to 27% when their children were aged 10–11.

Across all age groups, around 1% of LSAC children were living in single-father households; and among those in single-father households, most had a father who was employed.

Children living with a single mother working full-time were the most likely to be in either formal or informal before or after school care (Figure 9.1, page 91). Almost 90% of 6–7 year olds in single-mother households where their mother worked full-time were in some type of outside-school-hours care. With 56% going to informal care and 47% attending formal care, it seems many children in single-parent households attend both formal and informal care. At age 10–11, around 60% of children in single-mother families where their mother worked full-time were in informal outside-of-school-hours care and only around 20% were in formal care.

Table 9.2: Household structure and parents' employment arrangements, by age group

	Age 6–7 (2010) (%)	Age 8–9 (2012) (%)	Age 10–11 (2014) (%)
Couple family	83.2	82.8	81.6
Father and mother both working full-time	11.1	15.7	18.1
Father working full-time, mother working part-time	31.9	32.8	31.2
Father working less than full-time, mother working (any hours)	7.1	6.7	8.2
Father working (any hours), mother not working	26.9	22.4	18.6
Jobless couple	6.2	5.2	5.5
Single-mother family	15.1	15.2	16.6
Not working	7.4	6.4	6.1
Working part-time	5.3	5.8	6.1
Working full-time	2.4	3.0	4.4
Single-father family	0.7	0.8	0.8
Other family type	1.1	1.2	1.2
Total (n)	4,242	4,085	3,759

Notes: Employed mothers who are on leave or otherwise absent from work are classified as 'not working'. Categories based on hours worked (full-time = 35+ hours). 'Father working less than full-time' includes fathers not working. Over 90% of fathers in the 'father working any hours, mother not working' group work full-time. The number of observations of children in single-father households was too small for reliable estimates of fathers' employment status.

Source: LSAC Waves 4–6, B cohort, weighted

Among children in single-mother households where their mother worked part-time, 58% of 6–7 year olds (in 2010) attended some type of before or after school care, with 36% in informal care and 34% attending formal care. At age 10–11, 45% of children in single-mother households where their mother worked part-time attended some type of outside-school-hours care, with 33% in informal care and 20% in formal care.

Compared to children in couple families where one or both parents did not work full-time, children in couple families where both parents were in full-time employment more commonly attended outside-school-hours care. Among children with two parents working full-time, 68% of 6–7 year olds, around 60% of 8–9 year olds and over half of 10–11 year olds attended some type of before- or after-school-hours care.

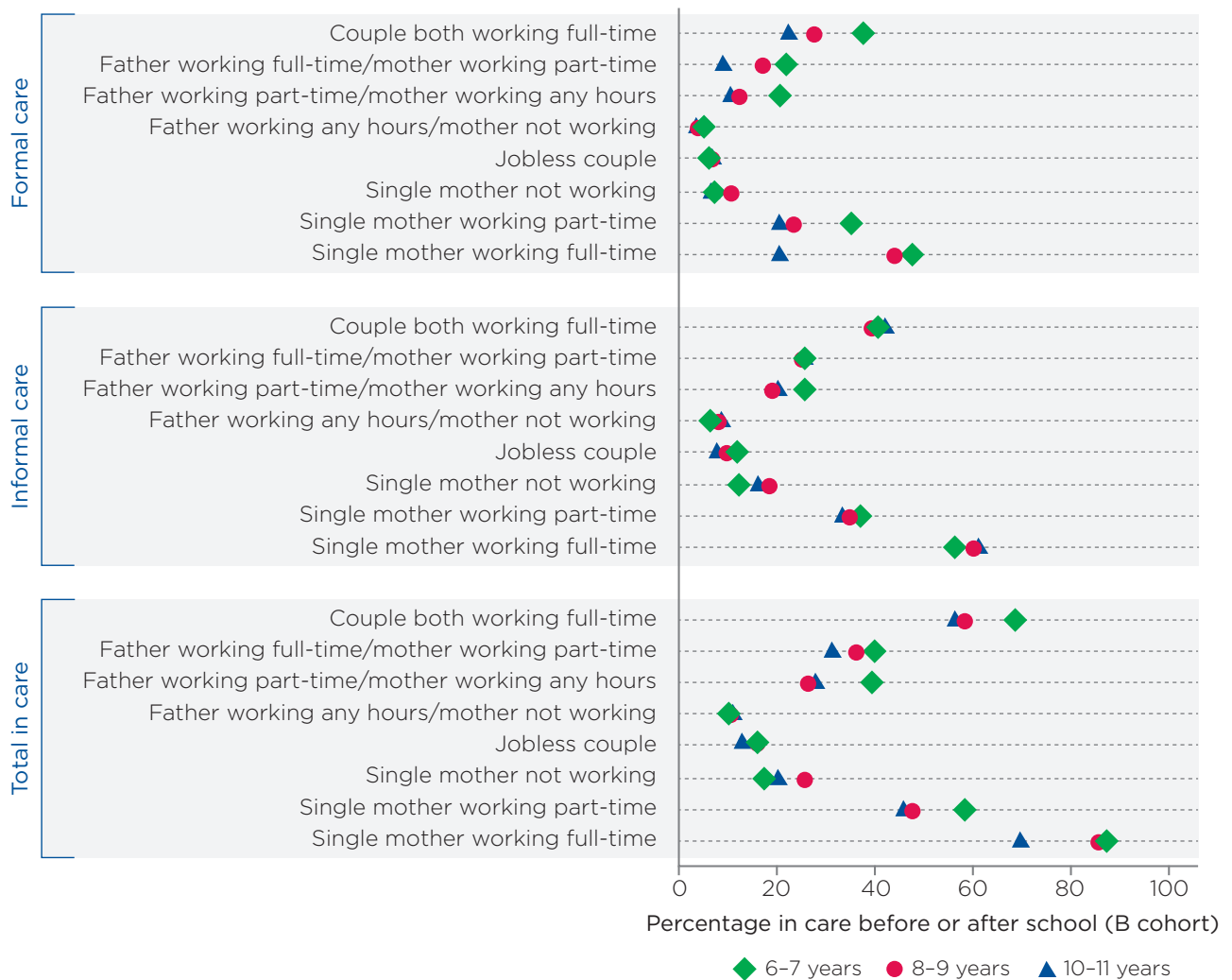
These figures suggest that a considerable percentage of families (30–40%) where parents worked full-time were able to balance work and family responsibilities without the use of regular formal or informal child care. In some families, this is likely to have been achieved through flexible work arrangements, shift work, self-employment or a combination of these job characteristics.



Across all age groups, around 40% of children in two-parent households where both parents worked full-time received informal outside-school-hours care. The percentage of children with two parents working full-time who attended formal before or after school care declined as children got older – from 37% of 6–7 year olds to 22% of 10–11 year olds.

Compared to children in couple households where both parents worked full-time, and children in households with a working single mother, children in all other family types were less likely to be in outside-school-hours care. For example, across all age groups, less than 5% of children in couple households where their father was in paid employment (but their mother was not) attended formal outside-school-hours care.

Figure 9.1: Formal and informal outside-school-hours care, by household structure and parents' employment arrangements



Notes: Employed mothers who are on leave or otherwise absent from work are classified as 'not working'. Categories based on hours worked (full-time = 35+ hours). 'Father working less than full-time' includes fathers who are not employed. Care arrangements for single-father households and 'other' household types are not presented due to the small number of observations.

Source: LSAC Waves 4-6, B cohort, weighted

9.3 Factors associated with attendance at outside-school-hours care

Aside from household structure and parents' employment arrangements, a number of other family and school characteristics, such as household income and school sector, are associated with children's participation in school-based outside-school-hours care. For example, some schools may provide more options in terms of before or after school care and extracurricular activities than others; and higher income households are likely to have a wider range of choices in terms of the type of school their children attend, outside-school-hours care and extracurricular activities.



Table 9.3: Factors associated with children's attendance at school-based outside-school-hours care

	Odds ratio
Family structure and parents' employment status (ref. = couple family, both parents working full-time)	
Couple family	
Father working full-time, mother working part-time	0.38***
Father working less than full-time, mother working any hours	0.33***
Father working (any hours), mother not working	0.08***
Jobless couple	0.19***
Single-mother family	
Not working	0.56
Working part-time	2.29***
Working full-time	2.07**
Single father family	0.47
Other family type	0.24*
Age of study child (ref. = 6–7 years)	
8–9 years	0.49***
10–11 years	0.21***
School type (ref. = government)	
Catholic	0.85
Independent	0.50***
Equivalised household income (ref. = lowest third)	
Middle	3.15***
High	7.44***
Non-metro region (ref. = metro)	0.32***
Has older siblings (ref. = no)	0.31***
Has younger siblings (ref. = no)	0.77*
Constant	0.21**
Log likelihood	-3630.30
Total (n)	11,405

Note: Random effects logistic regression. * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Waves 4–6, B cohort, unweighted

The LSAC data show that, after accounting for a range of school and family characteristics, there are significant differences in the odds of a child attending formal outside-school-hours care, depending on their family structure and their parents' employment arrangements (Table 9.3). For example, compared to children in two-parent households where both parents

work full-time, the odds of a child attending formal before- or after-school-hours care are:

- more than doubled among children in single-mother households where their mother works either full-time or part-time
- reduced by more than 60 percentage points for children in couple households where the father works full-time and the mother works part-time, and in couple households where the mother is in paid employment (either full- or part-time) and the father does not work full-time
- reduced by over 90 percentage points among children in couple households where the father is employed and the mother is not in paid work
- reduced by 81 percentage points for children in couple households where neither parent is in paid employment.

Household income was also an important factor associated with attendance at formal outside-school-hours care. After accounting for other characteristics of the household, including household structure and parents' work arrangements, compared to children living in households in the lowest third of the equivalised household income distribution, the odds of attending formal outside-school-hours care were tripled among children living in households in the middle third, and 7.4 times higher for children in households with the highest equivalised incomes.

There were also significant differences in attendance at outside-school-hours care according to the type of school the child was attending and aspects of the child's household, including whether they lived in a regional or metropolitan area, the age of the study child, and whether they had older or younger siblings:

- Compared to children attending a government school, the odds of attending formal outside-school-hours care were halved for those attending an independent school.
- Compared to children living in metropolitan areas, the odds of attending formal outside-school-hours care were 68 percentage points lower among those living in non-metropolitan areas.
- Compared to children without older siblings, the odds of attending formal before- or after-school-hours care were reduced by almost 70 percentage points for those who did have an older brother or sister; and compared to children who had no younger siblings, the odds of attending formal outside-school-hours care were reduced by 23 percentage points for those with a younger brother or sister.
- The odds of attending formal outside-school-hours care were significantly lower for older children compared to younger children. Compared to when

the study children were aged 6–7 (in 2010), the odds of attending formal outside-school-hours care were halved for 8–9 year olds and reduced by almost 80 percentage points for children aged 10–11.

Matched school ICSEA data were only available for B cohort children at ages 6–7 and 8–9.² When the model was run for this subgroup with the ICSEA measure included, the estimates of the association between parental employment and participation in formal outside-school-hours care were similar to those in Table 9.3, page 92. The level of educational advantage of the child's school was also an important predictor. Compared to children attending a school in the lowest third of the national ICSEA distribution, the odds of attending formal outside-school-hours care were tripled for children who went to a school in the middle third of the ICSEA distribution, and 4.8 times higher for those in the highest third.

9.4 Participation in extracurricular activities

Most children aged 6–11 years old participated in some type of extracurricular activity (Table 9.4, page 94). Participation in extracurricular activities was slightly less common among younger children, with 83% of 6–7 year olds (in 2010) participating in at least one extracurricular activity, compared to around 90% of 8–9 and 10–11 year olds.

Participation in extracurricular activities provided by the school was also more common among older children, with 22% of 6–7 year olds in 2010 attending these activities, compared with 42% of 8–9 year olds in 2012 and 46% of 10–11 year olds in 2014. Overall, the most common school-provided extracurricular activities were art, music or performance classes and team sports.

In terms of extracurricular activities provided by organisations other than the child's school, individual sports were most popular, followed by team sports and then art, music or performance classes. While participation in school-provided team sports increased considerably as children got older, the percentage of children participating in outside-school team sports remained quite steady, at around 34–39% between the ages of 6–7 and 10–11. However, the percentage of children participating in outside-school individual sports was higher among younger children, with 47%

of 6–7 year olds in 2010 participating in an individual sport activity that was not provided by the school, compared to 39% of 10–11 year olds in 2014.



Box 9.2: Extracurricular activities

Parents were asked, 'In the last 12 months, has the study child regularly participated in any of the following activities?':

- community group or club (e.g. scouts, guides or cultural group)
- team sport (e.g. football, cricket or netball)
- individual sport, coached or lessons (e.g. swimming, tennis, karate or gymnastics)
- art, music or performance lessons (e.g. piano, dance, choir or drama)
- classes to improve academic skills (e.g. remedial reading or extra tutoring)
- classes to learn new skills (e.g. computing or learning another language)
- religious services or classes
- other activities.

In Waves 3, 4 and 6, the following definition of 'regular' was provided: 'Regular means at least once a week, for three months or more; for example, a sports season.'

In Waves 3 and 4, parents were told to exclude activities done as part of the child's normal outside-school-hours care.

Parents were also asked whether the activity was provided by the child's school.

The percentage of children participating in outside-school religious classes remained steady as children got older, with 12% of 6–7 year olds, and 11% of 8–9 and 10–11 year olds attending these classes. On the other hand, participation in outside-school academic classes increased from 3% of 6–7 year olds to almost 10% of 10–11 year olds; and involvement in community groups increased from 6% of 6–7 year olds to 12% of 10–11 year olds.

² Index of Community Socio-Educational Advantage (ICSEA) scores represent the level of educational advantage of each school, based on information relating to parents' occupation, education and language background. This information is obtained from student enrolment records (direct data) and ABS census data (indirect data) (ACARA, 2012). ICSEA values range from around 500 (representing the most educationally disadvantaged backgrounds) to about 1,300 (representing the most educationally advantaged backgrounds) (ACARA, 2012).

Table 9.4: Percentage of children participating in extracurricular activities, at school and elsewhere

	Age 6–7 (2010) (%)	Age 8–9 (2012) (%)	Age 10–11 (2014) (%)
Extracurricular activity provided by school			
Community group	0.8	1.5	1.7
Team sports	5.7	15.3	24.0
Individual sports	4.8	9.3	9.0
Art/music/performance	7.3	21.1	23.2
Academic class	2.0	3.1	2.9
New skills class	1.7	2.6	2.9
Religious class	6.0	10.9	9.4
Any activity provided by school	21.9	41.7	45.8
Extracurricular activity not provided by school			
Community group	5.9	10.8	11.8
Team sports	34.2	38.9	36.5
Individual sports	46.8	45.2	39.2
Art/music/performance	23.7	22.9	20.5
Academic class	3.0	7.5	9.5
New skills class	2.4	2.9	2.2
Religious class	12.3	11.3	11.0
Any activity not provided by school	76.1	78.5	75.5
Any extracurricular activity	82.8	89.7	90.6
Total (n)	4,237	4,047	3,693

Note: As some children participate in more than one extracurricular activity, the percentage who participated in each specific activity does not sum to the percentage who engaged in any extracurricular activity.

Source: LSAC Waves 4–6, B cohort, weighted

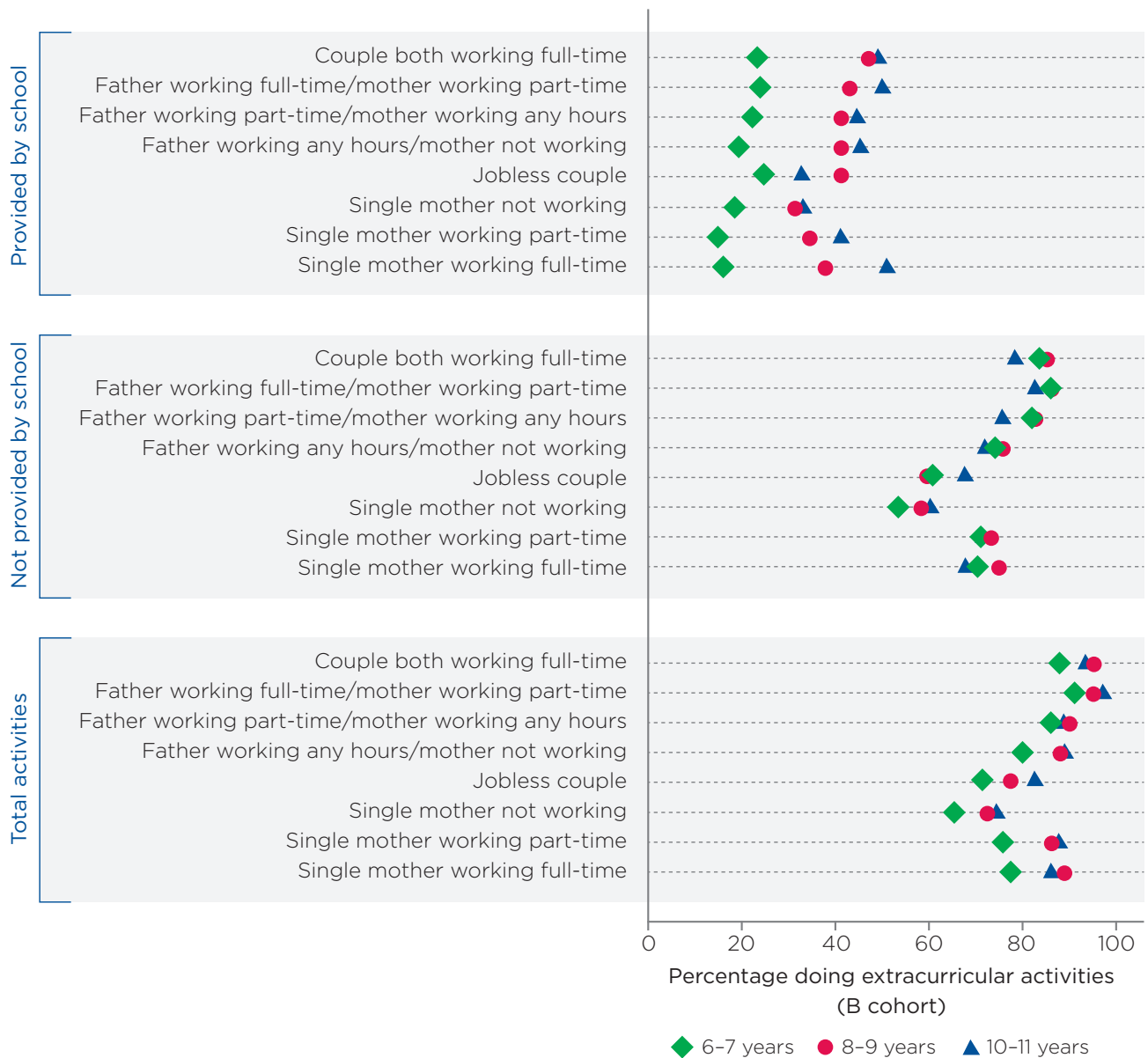
9.5 Extracurricular activities, by household structure and parents' employment arrangements

Across all age groups a higher percentage of children in couple families with a working mother and a father employed full-time participated in extracurricular activities (over 90%) compared with children in families with other household structures and parental working arrangements (Figure 9.2, page 95).

Children with single mothers who were not in paid employment and children in jobless couple families were the least likely to attend extracurricular activities provided by either the school or by other organisations. At age 6–7, the gap in participation between children living in jobless households and children whose parents were employed was larger for activities provided by other organisations than

for activities provided by the school. For example, 24% of 6–7 year olds in couple households where both parents worked full-time attended a school provided extracurricular activity, as did 24% of children in couple households where neither parent was in paid employment, and 19% of children in single-mother households where the mother was not employed.

However, 83% of 6–7 year olds in couple households where both parents worked full-time attended a non-school provided extracurricular activity, compared to 61% of those in couple households where neither parent was employed and 54% of 6–7 year olds in a single-mother household where their mother was not in paid employment.

Figure 9.2: Extracurricular activities, by household structure and parents' employment arrangements

Notes: Employed mothers who are on leave or otherwise absent from work are classified as 'not working'. Categories based on hours worked (full-time = 35+ hours). 'Father working less than full-time' includes fathers who are not employed. Extracurricular activities for single-father households and 'other' household types are not presented due to the small number of observations.

Source: LSAC Waves 4-6, B cohort, weighted

9.6 Characteristics associated with participation in extracurricular activities

While household structure and parents' employment arrangements are the main predictors of children's attendance at school-based outside-school-hours care, there are likely to be other characteristics of the child, their family and the school they attend that are associated with whether or not they participate in extracurricular activities provided either by their school or by other organisations.

After accounting for the age of the study child, as well as characteristics of their household and the school that they attended, there were no significant differences in the odds of a child attending school-provided extracurricular activities according to their household structure or parents' work arrangements (Table 9.5).

Table 9.5: Factors associated with children's participation in extracurricular activities

	Odds ratio	
	Attendance at extracurricular activities provided by the school	Attendance at extracurricular activities not provided by the school
Family structure and parents' employment status (ref. = couple family, both parents working full-time)		
Couple family		
Father working full-time, mother working part-time	1.06	1.30**
Father working less than full-time, mother working any hours	0.99	1.18
Father working (any hours), mother not working	0.99	0.86
Jobless couple	0.96	0.62***
Single-mother family		
Not working	0.83	0.53***
Working part-time	0.95	0.78
Working full-time	0.95	0.72*
Single father family	1.00	0.31**
Other family type	1.17	0.18***
School type (ref. = government)		
Catholic	1.99***	1.66***
Independent	2.90***	0.77**
Equalised household income (ref. = lowest third)		
Middle	1.11	1.93***
High	1.49***	3.16***
Non-metro region (ref. = metro)	0.84**	0.94
Has older siblings (ref. = no)	0.99	1.06
Has younger siblings (ref. = no)	0.97	0.88
Age of study child (ref. = 6–7 years)		
8–9 years	2.96***	0.99
10–11 years	3.77***	0.70***
Log likelihood	-6854.38	-5173.68
Total (n)	11,333	11,333

Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Waves 4–6, B cohort, unweighted

However, compared to children in two-parent households where both parents work full-time, the odds of a child participating in an extracurricular activity that is not provided by the school were:

- 1.3 times higher for children in two-parent households where the father worked full-time and the mother worked part-time
- almost halved for children in single-mother households in which the mother was not in paid employment and reduced by almost 40 percentage points for children in two-parent households where neither parent was in paid work
- reduced by 28 percentage points for children in single-mother households where their mother worked full-time
- reduced by almost 70 percentage points for children in single-father families.

While the odds of attending outside-school-hours care were significantly lower for older children compared to younger children, the odds of participating in a school-provided extracurricular activity increased considerably as children got older. Compared to when the study children were aged 6–7, the odds of participating in a school-based extracurricular activity were almost tripled when they were aged 8–9; and 3.8 times higher for 10–11 year olds. However, the opposite is true for non-school provided extracurricular activities. Compared to when the study children were aged 6–7, the odds of participating in a non-school-based extracurricular activity were reduced by 30 percentage points at age 10–11.

As was the case with formal outside-school-hours care, household income was an important factor related to participation in extracurricular activities. Compared to children living in households in the lowest third of the equivalised household income distribution, the odds of participating in a school-provided extracurricular activity were 1.5 times higher, and the odds of participating in a non-school-provided activity were 3.2 times higher among children living in households in the highest third of the equivalised income distribution.

Compared to children who attended a government school, the odds of participating in a school-provided extracurricular activity were doubled for children who

went to a Catholic school and almost 3 times higher for children who went to an independent school. On the other hand, while the odds of participating in a non-school-provided extracurricular activity were 1.7 times higher among children who attended a Catholic school, compared to those who attended a government school, children who went to an independent school were less likely to participate in non-school-provided extracurricular activities. This may be because independent schools generally provide a wider range of extracurricular activities than government and Catholic schools do, so parents with children in independent schools are less likely to substitute school-provided extracurricular activities for formal outside-school-hours care and non-school-provided activities.

Availability of activities is also a factor for children living in non-metropolitan areas, with the odds of attending a school-provided extracurricular activity 16 percentage points lower for children who lived in a non-metropolitan area, compared to those in metropolitan areas.³

Summary

This chapter provides new insights on school-aged children's before- and after-school care arrangements and extracurricular activities. Overall, informal care was more frequently used than formal care. While formal arrangements were more frequent among younger children, a higher proportion of older children (aged 10–11) were in informal care. Grandparents were the most common type of informal care for 6–11 year olds, while school-based programs were the most common formal care arrangement.

Most LSAC children aged 6–11 years participated in extracurricular activities, either provided by the school or provided by other organisations. The most popular school-provided activities were team sports and art, music or performance classes; while the most popular activities provided by other organisations were individual sports and team sports.

Family structure and parents' working arrangements were important factors associated with attendance at before- or after-school-hours care, with families

³ Matched school ICSEA data was only available for B cohort children at ages 6–7 and 8–9. When the model was run for this subgroup with the ICSEA measure included, the estimates of the association between parental employment and participation in extracurricular activities were similar to those in Table 9.5. In terms of school educational advantage, participation in extracurricular activities was more common among children who went to more advantaged schools. Compared to children in the lower third of the national ICSEA distribution, the odds of participation in school-provided extracurricular activities were 1.6 times higher for children in schools in the top third of the ICSEA distribution. The odds of participating in an extracurricular activity that was not provided by the school were also higher among children who attended more advantaged schools (doubled for children in schools in the middle third of the ICSEA distribution and tripled for those in the top third). This may reflect the availability of school-provided activities, and also differences in the availability of extracurricular activities in the local area.

where parents worked more hours (a single mother working full-time or couple both working full-time) making the most use of formal or informal before- or after-school care. Children in working couple families were the most likely to participate in extracurricular activities; and the lowest participation rates were among children with parents who were not in paid employment.

Participation in extracurricular activities was much more common than attendance at informal or formal outside-school-hours care. This finding suggests that for most children, extracurricular activities are done for enjoyment, to keep fit and healthy or, in the case of academic classes, to improve the child's school outcomes.

The economic resources of the family were also relevant to children's participation in outside-school-hours care and extracurricular activities, with children in higher income families being more likely to participate in formal care and extracurricular activities.

Children attending government schools were more likely to attend outside-school-hours care programs and less likely to participate in extracurricular activities provided by the school, compared with children attending independent schools. On the other hand, compared to children in government schools, children attending independent schools were less likely to participate in extracurricular activities that were not provided by the school. It is possible that, on average, independent schools offer more opportunities for extracurricular activities than government schools.

The level of educational advantage of schools (ICSEA) was also relevant, with children in schools with lower educational advantage being less likely to attend outside-school-hours care and also less likely to participate in extracurricular activities (provided either by the school or other organisations), even after accounting for their family's economic resources. This suggests that school resources matter when it comes to programs offered to families. The increased availability of affordable extracurricular activities (either at school or outside of school) for children in disadvantaged communities may help close the gap between the experiences of children living in disadvantaged communities and those who are not.

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10

Use of technology in the classroom

Suzanne Vassallo and Diana Warren



The use of information and communication technology (ICT) in schools has increased dramatically in recent years (Orlando, 2014). This has been driven by the recognition that students need to be skilled in the use of these technologies in order to participate effectively in an increasingly digital world (Buabeng-Andoh, 2012; De Bortoli, Buckley, Underwood, O'Grady & Gebhardt, 2013); as well as a growing awareness of the benefits of digital technology for learning (Dwyer, 2007); and policies and programs aimed at increasing students' access to and use of ICT (Dandolo Partners, 2013; Moyle, 2010), such as the government-funded Digital Education Revolution (DER) reform package (2008–13) and school 'Bring Your Own Device (BYOD) programs'.¹

Using data collected between 2006 and 2014, this chapter provides a description of the types of activities that educational technology is used for in primary and secondary school classrooms, and how often ICT is used. Teachers' views about technology use in the classroom, and the extent to which teachers' views and use of technology differ according to teacher and school characteristics are also explored.



¹ See Dandolo Partners (2013) for details of the DER reform package, and Janssen & Phillipson (2015) for a description of BYOD programs.

10.1 Use of computers in primary school classrooms

In primary school classrooms, computers were most commonly used to assist students to develop specific skills in academic areas (Figures 10.1 and 10.2, page 101). For both cohorts of LSAC study children, use of computers for this purpose became more frequent as children got older. However, it is difficult to know how much of this increase was due to age-related factors, such as differing curriculum requirements for ICT use in different year levels; how much was due to policy changes such as the DER package; and how much was simply a time-related effect, due to technological advances and increased availability of education technology (e.g. education apps) over this time period.



Box 10.1: Teachers' reports of technology use in the classroom

As part of the LSAC study, teachers of the study children were asked to complete a questionnaire, providing information about the study child, such as their personality and behaviour, as well as aspects of school life. They were also asked about their qualifications and teaching experience:

- For primary students, their main classroom teacher completed a questionnaire.
- For secondary students, it was their English teacher who provided this information.

Across all age groups, around 50% of teachers of children in the K cohort reported using computers for developing specific skills once or twice a week; and the percentage who reported doing this at least three times a week increased from 15% when the children were aged 6–7 to 31% when children were aged 10–11 (Figure 10.1, page 101).

Compared to teachers of the K cohort children, teachers of B cohort children reported using computers for developing specific skills more

frequently – around 50% of teachers of 6–7 and 8–9 year olds reported doing so once or twice a week, while the percentage who reported using computers for this purpose at least three times a week increased from 26% for teachers of 6–7 year olds in 2010 to 43% of teachers of 10–11 year olds in 2014 (Figure 10.2, page 101).

Box 10.2: Use of computers in primary school classrooms

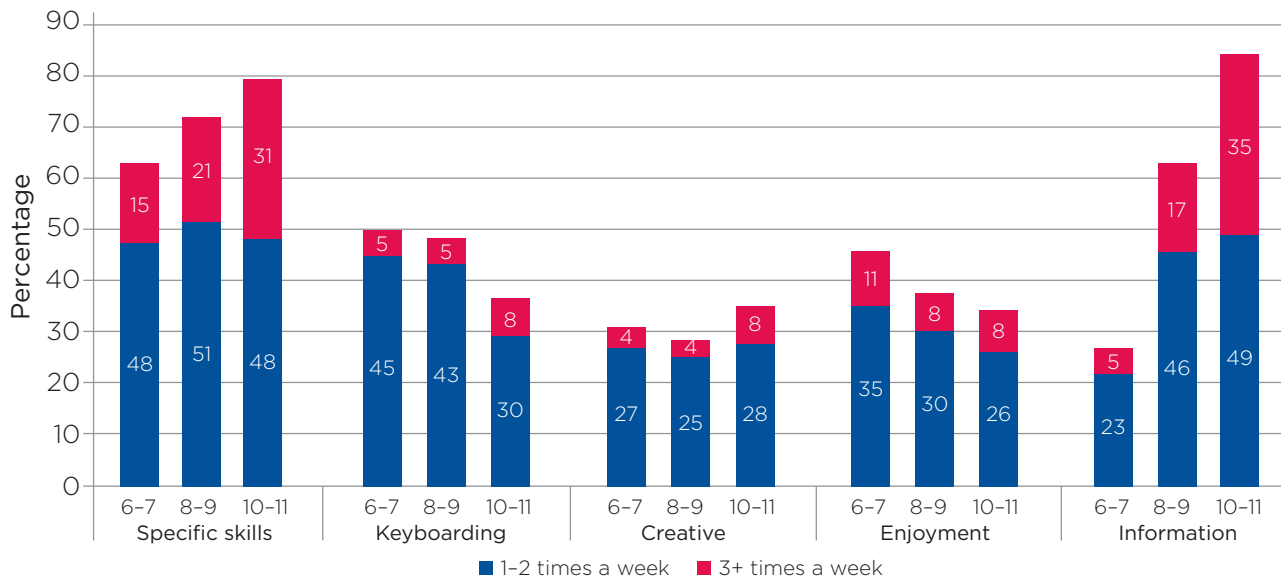
Teachers of primary school children were asked how often children in their class used computers for the following purposes:

- to develop specific skills in academic areas (e.g. literacy, mathematics or science activities)
- to learn keyboarding skills
- for creative activities (e.g. design in visual arts, composing music, animation)
- for enjoyment (e.g. games)
- to access information (e.g. using the internet to look for information).

Teachers could choose from the following options: 'Daily', 'Three or four times a week', 'Once or twice a week', 'Two or three times a month', 'Once a month or less' and 'No computer facilities available'.

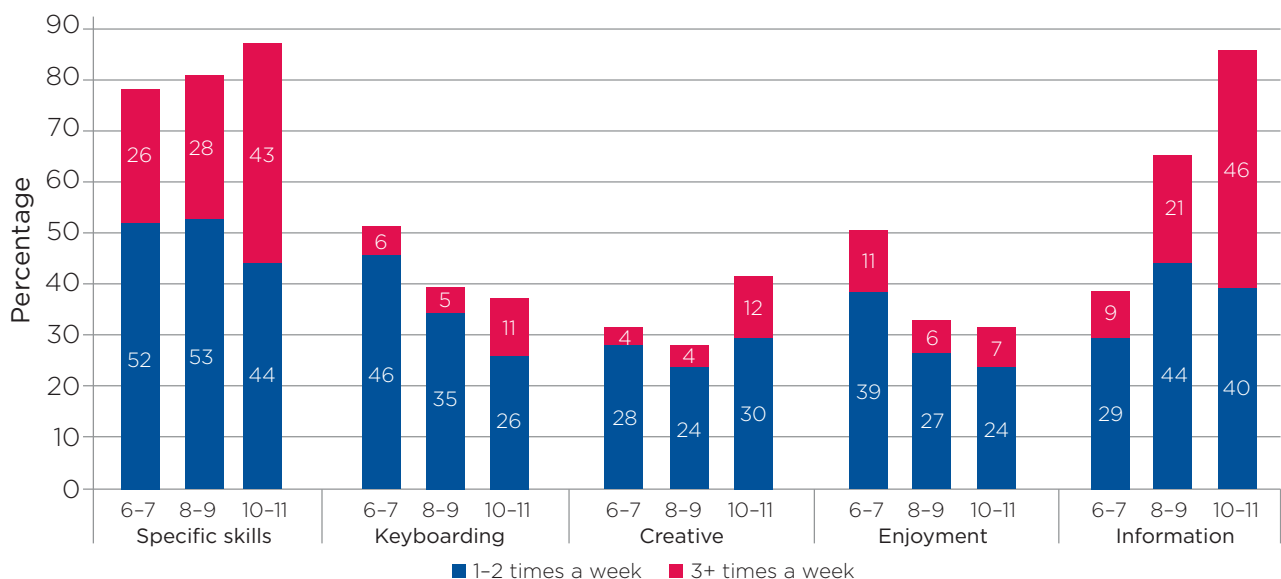
Classroom use of computers to access information was more frequent for older children than younger children. The frequency of engagement in this activity, by age group, was quite similar for both cohorts. For example, 28% of 6–7 year olds in 2006 and 38% of 6–7 year olds in 2010 used computers to access information at least once a week; compared to 84% of 10–11 year olds in 2010 and 86% of 10–11 year olds in 2014. This suggests that age-related differences are primarily a reflection of the age-appropriateness of the activity, rather than other factors, such as policy changes or technological advances over time.

The use of computers for other purposes (i.e. to learn keyboarding skills, for creative activities and for enjoyment) was relatively less common, with similar patterns of classroom use, by age group, for children in both LSAC cohorts. For example, the use of computers for keyboarding and for enjoyment became less frequent as children got older. In both cohorts, around 50% of teachers of 6–7 year olds reported using computers for keyboarding skills at least once a week, compared to around 40% of teachers of 10–11 year olds.

Figure 10.1: Use of computers in primary school, by purpose, students aged 6–7 (2006) to 10–11 (2010)

Notes: Sample restricted to teachers who gave valid responses for all five uses of technology. $n = 2,834$ (Wave 2), 3,322 (Wave 3) and 3,233 (Wave 4).

Source: LSAC Waves 2–4, K cohort (teacher reports), weighted

Figure 10.2: Use of computers in primary school, by purpose, students aged 6–7 (2010) to 10–11 (2014)

Notes: Sample restricted to teachers who gave valid responses for all five uses of technology. $n = 3,188$ (Wave 4), 3,345 (Wave 5) and 2,909 (Wave 6).

Source: LSAC Waves 4 to 6, B cohort (teacher reports), weighted

The most likely reason for this finding is that, presumably, by the age of 10–11 most children have developed adequate keyboarding skills, and therefore less classroom time is spent on this activity. However, it is also possible that technological advances may have contributed to this decrease with age, with the use of touch screen devices becoming more common over time.

Use of computers for enjoyment during class time also became less frequent as children progressed through primary school. Around 50% of teachers in both cohorts reported that their students used computers for enjoyment at least once a week at age 6–7, compared to around one-third of teachers 10–11 year olds. It is likely that as children get older, the amount of class time available to use computers for entertainment is reduced substantially, as the intensity of academic activities increases.

10.2 Teachers' use of educational technology in secondary school English classes

In secondary school English classrooms, educational technology was most frequently used to learn or practise basic skills such as reading, prepare written text, correspond with others and conduct research.



Box 10.3: Use of educational technology in secondary schools

When study children in the K cohort were aged 12–13 and 14–15 (Waves 5 and 6), their English teachers were asked, 'In the class in which you teach this student English, how frequently do your students perform the following activities using educational technology?'

- prepare written text (e.g. word processing, desktop publishing)
- create or use graphics or visual displays (e.g. graphs, diagrams, pictures, maps)
- learn or practise basic skills (e.g. reading)
- conduct research (e.g. internet searching)
- correspond with others (e.g. students, teachers, experts) via email, network, or internet
- contribute to blogs or wikis
- use social networking websites
- develop and present multimedia presentations
- create art, music, movies or webcasts.

As these questions were asked only about activities in English classes, it is important to note that these responses may not reflect the use of technology in other classes, in particular, for subjects such as science, technology, mathematics or visual arts.

Use of educational technology in English classes was more frequent when study children were aged 14–15, compared to when they were 12–13. This is likely to be partly due to time-related effects such as an increase in the availability of educational technology,

as well as differing curriculum requirements for ICT use in different year levels. It may also be a result of schools starting to implement BYOD policies (Thomson, 2015).

About a third (34%) of English teachers said that their students used educational technology to prepare written text at least three times a week at age 14–15 (in 2014), compared to 20% of teachers when students were aged 12–13 (in 2012) (Figure 10.3). Similarly, a higher percentage of teachers of 14–15 year olds (38%) said their students used educational technology at least three times a week to learn or practise basic skills compared to 27% of teachers of 12–13 year olds. The use of educational technology for correspondence was also notably higher at age 14–15 (29%) than at 12–13 (17%).

Less than 10% of English teachers said that their students used educational technology at least three times a week for other purposes (e.g. to create graphics, to contribute to blogs or wikis, for social networking, to develop or present multimedia presentations or to create art, music, etc.). This is, perhaps, not surprising, considering that some of these activities may not be particularly relevant to the English curriculum (Figure 10.4, page 103).

Figure 10.3: Use of educational technology to prepare written text by age group

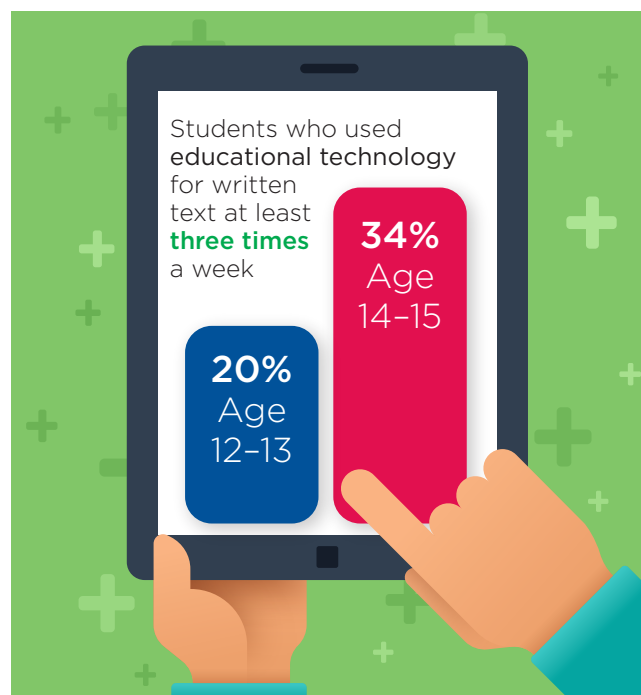
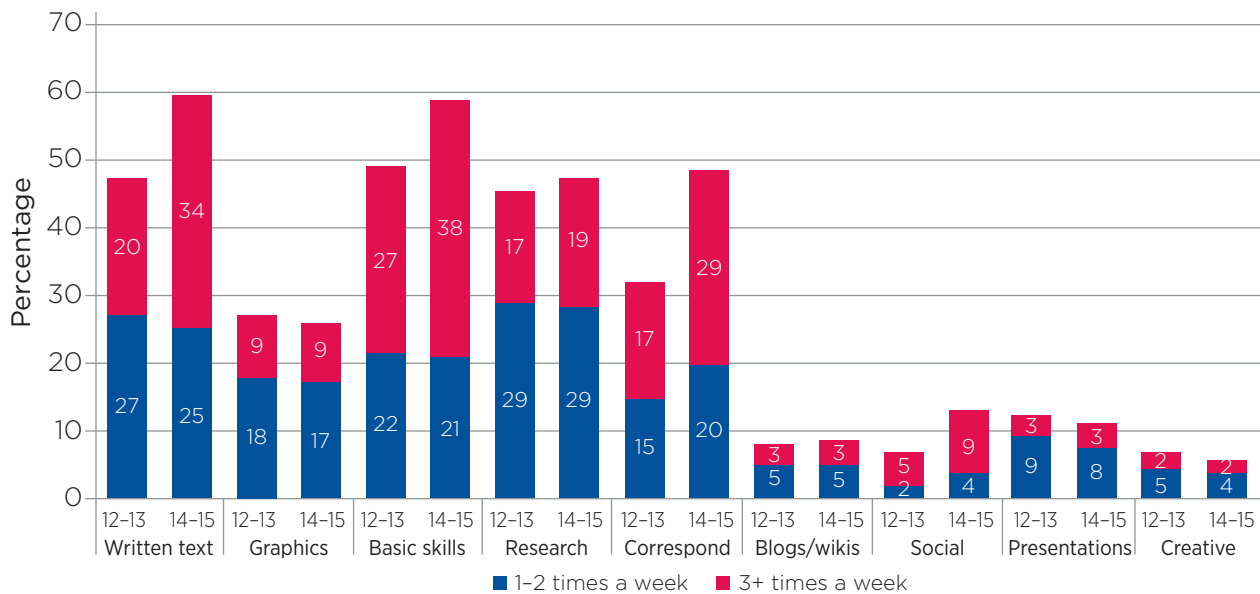


Figure 10.4: Use of educational technology in secondary school English classes, by activity type and student age (teacher reports)

Notes: Sample restricted to teachers who gave valid responses for all nine uses of technology. $n = 2,819$ (Wave 5) and $n = 2,376$ (Wave 6).

Source: LSAC Waves 5 and 6, K cohort (English teacher reports), weighted

10.3 Factors associated with classroom technology use

A range of factors may influence teachers' use of technology in the classroom. For example, student grade level is likely to influence the types of activities and the frequency with which teachers use educational technology with their students (Dwyer, 2007). Teacher experience may affect a teacher's willingness and ability to integrate technology use into their everyday teaching (Lau & Sim, 2008; Russell, Bebell, O'Dwyer & O'Connor, 2003; Smerdon, Cronen, Lanahan, Anderson, Iannotti & Angeles, 2000), while geographic location and school educational advantage may influence school resources (Organisation for Economic Cooperation and Development [OECD], 2013; Thomson, 2015). Use of technology may also differ depending on the school sector, as a result of differences in the amount and sources of funding they receive, which may result in differences in levels of ICT resources available. There may also be sector differences in school policies regarding ICT use.

Factors related to computer use in primary school classrooms

Even after factors such as school sector and teacher experience were taken into account, teachers of older primary school students were much more likely to report that their students used computers at least once a week to access information and, to a lesser extent, to develop

specific skills and for creative activities (Table 10.1, page 104). Compared to teachers of 6–7 year olds:

- The odds of teachers of 8–9 year olds using computers to access information in the classroom were more than 4 times higher, and for teachers of 10–11 year olds, the odds were 15 times higher.
- The odds of teachers using computers to develop specific skills were 1.4 times higher when students were aged 8–9; and doubled if students were aged 10–11.

However, teachers of younger students (age 6–7) were more likely to use computers for enjoyment and to practise keyboarding skills, than teachers of 8–9 and 10–11 year olds.

There were significant associations between school sector and teachers' reports of use of technology for specific activities. Compared to teachers in government schools:

- The odds of teachers in Catholic schools using computers for teaching specific skills, creative activities and for accessing information were 1.2, 1.1 and 1.4 times higher, respectively.
- The odds of teachers in independent schools using computers for teaching specific skills were 15 percentage points lower; and the odds of using computers in the classrooms for enjoyment (games) were 22 percentage points lower.

For all activity types, the odds of using computers in the classroom at least once a week differed according to the teacher's experience level. Generally speaking, teachers with more than five years of teaching experience used computers in class more often than those who had been teaching for less than five years. This finding is consistent with other studies that have found that more experienced teachers tend to be better at integrating technology use into their classroom teaching, and therefore use educational technology more often (Lau & Sim, 2008; Russell et al., 2003).

There were also some differences depending on whether the study child lived in a major city or a regional or remote area.² Compared to teachers in schools in major cities:

- The odds of using computers to teach specific activities were 16 percentage points lower for teachers in outer regional or remote areas.
- The odds of using computers to access information were 16 percentage points lower among those in inner regional areas, and 24 percentage points lower among those in outer regional or remote areas.

- However, the odds of using computers in the classroom for games (enjoyment) were 1.1 times higher for teachers in inner regional areas and slightly higher again (1.15 times) among teachers in outer regional and remote areas.

After accounting for the age of students, school sector, teacher experience and regional differences, significant differences in classroom computer use remained between teachers of the B and K cohort children – teachers of B cohort children had increased odds of classroom computer use to develop specific skills, to access information and for creative activities, but reduced odds of using computers for keyboarding skills and enjoyment.

It is likely that much of this difference between teachers of the B and K cohort children is a time-related effect, due to technological advances and increased availability of education technology (e.g. education apps). These differences may also be partly due to policy changes such as the BYOD program and DER package that came into effect during this time.

Table 10.1: Factors associated with primary school teachers' use of computers in the classroom (odds ratios)

Characteristics	Use of computers for this activity at least once a week				
	Specific skills	Keyboarding skills	Creative activities	Enjoyment	Access information
Age (ref. = 6–7 years)					
8–9 years	1.39***	0.76***	0.85***	0.57***	4.26***
10–11 years	2.24***	0.55***	1.38***	0.50***	15.16***
Sector (ref. = government)					
Catholic	1.17**	0.98	1.13**	0.99	1.41***
Independent	0.85**	1.09	0.93	0.78***	0.90
Years of teaching experience (ref. = <5 years)					
5 to <10 years	1.40***	1.10	1.20***	1.11*	1.23***
10 to <20 years	1.62***	1.07	1.13*	1.22***	1.45***
20+ years	1.79***	1.12**	1.09	1.19***	1.54***
Region of residence (ref. = major city)					
Inner regional areas	0.97	1.04	0.93	1.10*	0.84***
Outer regional or remote Australia	0.84**	0.97	0.89	1.15*	0.76***
B cohort (ref. = K cohort)	1.93***	0.89***	1.08*	0.93*	1.35***
Total (n)	19,691	19,280	19,237	19,457	19,424

Notes: Random effects logistic regression models, odds ratios reported. * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Waves 4–6, B cohort and Waves 2–4, K cohort (pooled data), unweighted

² While acknowledging that some students may have to travel a considerable distance between home and school, this analysis presumes that the majority of students attend a school relatively close to their home, and that the school they attend is in a similar geographical location to their home.

Factors related to technology use in secondary school English classrooms

In this section, we examine the factors related to English teachers' use of technology in the classroom for 12–13 year olds in 2012. In addition to teacher-reported information, we look at matched data about school NAPLAN performance levels (Box 10.4) and the level of educational advantage of the school (measured by the Index of Community Socio-Educational Advantage, ICSEA), which are also available for this group (Box 10.5).



Box 10.4: School NAPLAN performance

A measure of school performance was created, based on matched school-level NAPLAN data. For each year level where NAPLAN data were available for the school, school performance for each of the five domains (Reading, Numeracy, Spelling, Writing and Language conventions) was rated on a five-point scale with 1 meaning 'Well below average' and 5 meaning 'Well above average'. The school's rating for each domain was averaged and three categories were created, representing overall school NAPLAN performance of 'Below average', 'Average' and 'Above average'.

Note that matched school-level NAPLAN data were only available for 2008, 2010 and 2012.

After accounting for a range of characteristics of the school and the English teachers' experience level, Table 10.2 (page 106) shows that the odds of using technology during English classes differed considerably depending on school sector.

Box 10.5: Index of Community Socio-Educational Advantage (ICSEA)

The Index of Community Socio-Educational Advantage (ICSEA) scores represent the level of educational advantage of each school, based on information relating to parents' occupation, education and language background. This information is obtained from student enrolment records (direct data); and the Australian Bureau of Statistics (ABS) census data (indirect data) (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2012).

ICSEA values range from around 500 (representing extremely educationally disadvantaged backgrounds) to about 1,300 (representing schools with students with very educationally advantaged backgrounds) (ACARA, 2012). In this chapter, school ICSEA scores are divided into quartiles, with quartile 1 representing the most disadvantaged 25% of schools and quartile 4 representing the most advantaged schools.

Matched ICSEA scores were only available from 2008 to 2012. Therefore, we only have school ICSEA values for LSAC K cohort children from ages 8–9 to 12–13 and B cohort children at ages 6–7 and 8–9.

English teachers in Catholic and independent schools had significantly higher odds of using technology in the classroom (for a variety of purposes) than English teachers in government schools. These ranged from 1.5 times higher for the use of technology for research and the preparation of graphics and visual displays in independent schools to 3.3 times higher for the use of technology for corresponding with others in Catholic schools. The only exception was using technology for creating art, music, movies or webcasts. For these activities, which are relatively infrequent in secondary school English classes, there was no significant difference depending on school sector.

In terms of school NAPLAN performance, the only activity for which there was a significant difference, after accounting for other characteristics of the school and teachers' experience, was corresponding with others. Compared to English teachers in schools with below average NAPLAN performance, the odds of classes using technology to correspond with others were 1.7 times higher among teachers in schools with average NAPLAN results, and 2.7 times higher for teachers in schools with above average performance in NAPLAN.

Table 10.2: Factors associated with secondary school English teachers' use of technology in the classroom, students aged 12–13

Characteristics		Written text	Graphics or visual display	Use of technology at least once a week (odds ratios)						Art, music, movies, webcasts
				Basic skills	Research	Correspond with others	Blogs or wikis	Social networking	Multimedia presentations	
School sector (ref. = government)										
Catholic	2.07***	1.83***	1.56**	2.30***	3.28***	2.30***	2.48***	1.85**	1.47	
Independent	1.79***	1.52**	1.22	1.52**	2.53***	1.83**	1.74*	1.59*	1.35	
School NAPLAN performance (ref. = below average)										
Average	1.21	1.18	1.09	1.26	1.70***	1.26	1.20	1.21	1.24	
Above average	0.88	0.95	0.93	0.93	2.69***	1.53	1.06	0.98	1.07	
Years of teaching experience (ref. = <5 years)										
5 to <10 years	1.03	1.22	1.34*	1.41*	0.96	1.70*	1.63	1.36	1.27	
10 to <20 years	1.17	1.36*	1.32*	1.20	0.99	1.56*	1.27	1.30	0.80	
20+ years	1.86***	1.49**	1.39**	1.75***	0.89	1.24	1.14	1.10	0.83	
Region of residence (ref. = major city)										
Inner regional	0.81	0.80	0.83	0.80	0.79	0.61*	0.52*	0.79	0.62	
Outer regional	1.06	0.77	1.10	1.08	1.18	0.63	0.70	0.90	0.79	
Remote	0.76	0.56	1.29	1.35	0.78	0.59	0.27	0.44*	0.06***	
ICSEA quartile (ref. = 1st (lowest) quartile)										
2nd	0.90	0.90	0.95	1.00	0.65	0.87	0.81	0.75	0.78	
3rd	0.85	0.75	0.92	0.85	0.81	0.66	0.75	0.73	0.56	
4th	1.48	1.03	0.93	1.31	0.92	0.88	1.04	0.97	0.99	
Total (n)	3,030	3,004	2,991	3,020	2,955	2,855	2,780	2,970	2,879	

Notes: Logistic regression models, odds ratios reported. * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Wave 5, K cohort (teacher reports), weighted

Teaching experience was also related to how often technology was used in English classes for particular activities. As was the case for primary school teachers, secondary school English teachers with more than five years of experience used educational technology more often than those who had been teaching for less than five years. After accounting for a variety of school characteristics, compared to English teachers with less than five years of teaching experience:

- The odds of using technology to prepare written text at least once a week were almost doubled among teachers with over 20 years' experience.
- The odds of weekly use of technology to create graphics or visual displays were 1.4 times higher among teachers with 10–20 years' experience, and 1.5 times higher among teachers who had been teaching for at least 20 years.
- The odds of using technology to teach basic skills, such as reading, were around 1.3 times higher for teachers with at least five years' experience.
- The odds of using educational technology in English classes to contribute to blogs and wikis at least once a week were 1.7 times higher for teachers with 5–10 years of experience, and 1.6 times higher for those with 10–20 years of experience.
- The odds of using technology for research during English classes were almost doubled for teachers who had been teaching for 20 years or more.

For some classroom activities, there were differences in the odds of weekly use of technology, according to whether the school was in a major city or a regional or remote area. Compared to teachers in major cities:

- The odds of weekly classroom use of educational technology to create blogs or wikis were 40 percentage points lower, and the odds of using technology for social networking were halved for teachers in inner regional areas.
- The odds of weekly use of technology for multimedia presentations were reduced by almost 60 percentage points, and the odds of using technology in the classroom for activities such as creating art, music, movies or webcasts were reduced by over 90 percentage points for teachers of students who live in remote areas.

After controlling for other factors, there was no significant association between the level of school educational advantage (ICSEA) and secondary school teachers' technology use in English classes. This lack of statistical significance is likely to be due to the high level of correlation between school sector, school performance and school ICSEA. For example, compared to government schools, independent schools are more likely to be in the highest ICSEA quartile; and it is likely that many high ICSEA schools are also high-performing schools in terms of NAPLAN outcomes.

10.4 Teachers' views about the use of technology at school

Research suggests that if teachers feel confident using educational technology, can see the value in the use of ICT in the classroom, have access to adequate equipment and feel supported in the use of educational technology, they are more likely to integrate educational technology into their teaching (Buabeng-Andoh, 2012; Gilakjani, 2013).

Teachers' responses to the LSAC questions about their views of the use of educational technology in the teaching program at their school were generally positive; and, overall, the responses of teachers of 12–13 year olds in 2012 and teachers of 14–15 year olds in 2014 were very similar. Over 90% of secondary school English teachers agreed that the teachers at their school were interested in using technology in classroom instruction; about 85% reported that technology use was a priority of the school administration, and a similar proportion agreed that students used a range of educational technology in the classroom (Figure 10.5, page 108).

Views about their training in the use of technology were also quite favourable, with close to 80% of teachers agreeing that training was sufficient. At least three quarters also believed that funding for educational technology was being spent appropriately at their school. However, 30% of teachers said that the technology infrastructure at their school was inadequate; and more than a quarter said that technical support for educational technology was inadequate, as was teacher training on integrating technology use into classroom instruction.

Teachers' views about technology use at their school varied depending on a variety of factors, including their teaching experience and some of the characteristics of the school. Table 10.3 (page 109) shows that, among English teachers of 12–13 year olds in 2012, views about the use of technology at school differed considerably depending on whether they were teaching at a government, Catholic or independent school.³

³ This analysis was limited to teachers of 12–13 year olds in 2012, as teachers' views were very similar in 2012 and 2014, and matched school-level NAPLAN and ICSEA data were not available for teachers of 14–15 year olds.

Box 10.6: Teachers' views on educational technology

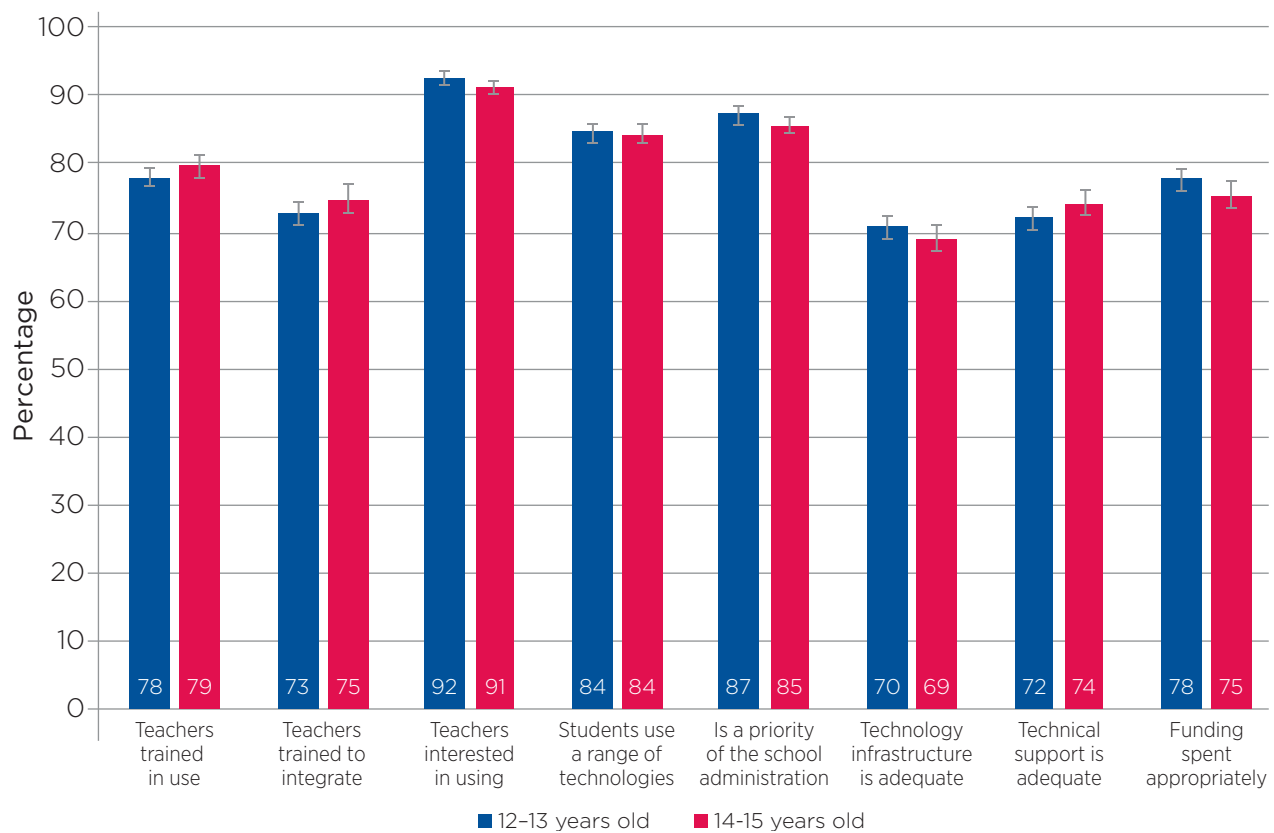
In Waves 5 and 6 of LSAC (2012 and 2014), English teachers of children in the K cohort were asked to indicate their level of agreement with the following statements about the use of technology in the educational program at their school:

- Teachers are sufficiently trained in technology usage.
- Teachers are sufficiently trained to integrate technology into classroom instruction.
- Teachers are interested in using technology in classroom instruction.
- Teachers conduct lessons in which students use a range of educational technologies.
- Technology is a priority of the school administration.
- Technology infrastructure is adequate (e.g. adequate internet speeds).
- Technical support for educational technology is adequate.
- Funding for educational technology is being spent in the most appropriate ways.

Possible responses to these statements were 'Strongly agree', 'Somewhat agree', 'Somewhat disagree' and 'Strongly disagree'. For each statement, the categories 'Strongly agree' and 'Somewhat agree' were combined to create a measure of teachers' general agreement.



Figure 10.5: Percentage of teachers who agreed with statements about school technology use, by students 12–13 years (2012) and 14–15 years (2014)



Note: $n = 3,084$ (Wave 5) and $n = 2,513$ (Wave 6).

Source: LSAC Waves 5–6, K cohort (teacher reports), weighted

Table 10.3: Factors associated with teachers' views on school technology use

Agreement with statements about school technology use (odds ratios)								
Characteristics	Teachers trained in use	Teachers trained to integrate	Teachers interested in using	Students use range of technologies	Is a priority of the school administration	Technology Infrastructure is adequate	Technical support is adequate	Funding is spent appropriately
School sector (ref. = government)								
Catholic	2.09***	1.57***	1.96**	1.59**	1.71**	1.94***	2.24***	2.10***
Independent	1.41*	1.18	1.80*	1.02	0.98	1.73***	1.65**	2.00***
NAPLAN performance (ref. = below average)								
Average	1.17	1.16	0.93	1.41	1.58*	1.12	0.87	0.98
Above average	1.21	1.33	0.73	1.01	1.49	1.35	0.90	0.79
Years of teaching experience (ref. = <5 years)								
5 to <10 years	1.11	1.26	1.20	1.41*	1.43	1.27	0.93	0.91
10 to <20 years	1.28	1.43*	1.92**	1.69***	1.44*	1.12	0.92	0.86
20+ years	1.39*	1.48**	3.70***	2.29***	1.77**	1.50***	0.98	1.31
Region of residence (ref. = major city)								
Inner regional	0.88	0.83	0.73	0.91	0.99	0.93	0.84	0.73*
Outer regional	1.14	1.01	0.54*	0.74	0.75	1.01	0.79	0.80
Remote	0.83	0.58	0.98	0.51	0.70	0.77	0.85	0.95
ICSEA quartile (ref. = 1st)								
2nd	0.95	0.94	1.00	0.96	0.90	0.79	0.90	0.78
3rd	0.98	1.07	0.84	1.16	1.02	1.08	1.26	1.01
4th	0.88	0.86	0.63	1.33	1.02	0.89	1.42	1.11
Total (n)	3,027	3,025	3,023	3,022	3,019	3,020	3,023	2,972

Notes: Logistic regression models, odds ratios reported. * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: LSAC Wave 5, K cohort, weighted

After taking into account other factors, English teachers working in Catholic schools reported significantly more positive views about all aspects of the use of educational technology in their school than their counterparts in government schools. Teachers in independent schools also reported significantly more favourable views than teachers in government schools on many items, including teacher training levels, teachers' interest in technology, the adequacy of technical support and infrastructure and how appropriately funding for educational technology was spent.

On the other hand, there was very little association between school performance and teachers' views about the use of technology at their school. Only one statistically significant difference was found – compared to teachers with below average NAPLAN results, teachers in schools with average NAPLAN scores were more likely to agree that technology was a priority of the school administration, with odds of agreement 1.6 times higher.

Teaching experience was also related to teachers' views of technology use at their school. For example, compared to teachers with less than five years of experience, for teachers with at least 20 years' experience:

- The odds of agreeing that teachers were interested in using technology in classroom instruction were 3.7 times higher.
- The odds of agreeing that students used a range of technologies in the classroom were more than doubled.
- The odds of agreeing that technology was a priority of the school administration were 1.8 times higher.

These findings differ from another study, conducted in Greece, which found that highly experienced primary and secondary school teachers tended to hold more negative views about ICT use in the classroom (Jimoyiannis & Komis, 2007). However, teachers in the Greek study were asked about their personal beliefs about ICT as a teaching and learning tool, while teachers in LSAC were asked about technology use within their schools, so the results are not directly comparable.

School educational advantage, as measured by ICSEA, was not significantly associated with teachers' views on technology use, once other factors were accounted for. This is likely to be at least partly due to the association between the ICSEA measure and other characteristics of the school, particularly school sector.

After accounting for teaching experience and the characteristics of the school, there were very few significant associations between English teachers' views about technology according to whether they were teaching in a major city or a remote area.

Compared to teachers in major cities:

- The odds of teachers in inner regional locations agreeing that funding for school technology use had been spent appropriately were 27 percentage points lower.
- The odds of teachers in outer regional locations agreeing that teachers were interested in using technology in the classroom were almost halved.

These results suggest that while teachers' views about technology use at school do differ depending on whether they are teaching at a government, Catholic or independent school, other characteristics of the school, including whether it is a high performing school in terms of NAPLAN results, and the level of school socio-economic advantage, do not have a strong influence on teachers' views about the adequacy of the technology infrastructure of the school, or teachers' training in the use of technology.



Summary

Australian teachers appear to have embraced the use of educational technology in their classrooms. The LSAC data show that, in primary school classrooms, computers were most commonly used to assist students to develop their skills in specific academic areas; while in secondary school English classrooms, ICT was regularly used to practise basic skills, prepare written text and correspond with others.

The use of educational technology became more frequent as students got older. This increase in technology use is likely to have resulted from a variety of factors, including an increase in the availability of educational technology over the study period, age-related factors such as differing curriculum requirements for ICT use in different year levels, and differing expectations of older and younger students' ICT capabilities.

On the whole, teachers had positive views about the use of educational technology in their schools. The vast majority of teachers reported that their school administration viewed educational technology as a priority, and that teachers were interested in using ICT and integrating it into their teaching. However, inadequate infrastructure and technical support were seen as an issue for a sizeable minority.

Teachers' use of technology varied considerably with student age, teacher experience, the school sector and geographic location. More experienced teachers were more likely to integrate technology into their classroom activities. Among secondary school English teachers, those working in Catholic and independent schools were more likely to use ICT in the classroom than those in government schools. Interestingly, among teachers of 12–13 year olds in 2012, school academic performance (measured by NAPLAN) and school educational advantage (measured by ICSEA) were generally not related to teachers' use of technology in the classroom, once other factors were taken into account.

These findings reflect patterns of teacher's ICT use during a period of rapid change and growth in ICT use in Australian schools. The study data (collected between 2006 and 2014) spans the period just prior to, during and immediately after the implementation of the Digital Education Revolution (DER, 2008 to 2013). The introduction of this government-funded educational reform package is likely to have affected our findings. For instance, while the DER was largely targeted at students in Years 9–12, it has been credited as having beneficial flow-on effects for

students in other year levels, such as improvements to school IT infrastructure (e.g. internet access) and increasing recognition among educators of the merits of incorporating ICT use in teaching (Dandolo Partners, 2013). Therefore, the implementation of the DER is likely to have contributed to the increase in technology use observed at different ages. The collection of the LSAC data also coincides with the early stages of Bring Your Own Device (BYOD) programs, which may, in part, explain some of the increases in rates of educational technology use over time.

While this chapter focused on the frequency of teachers' ICT use in the classroom, it is important to note that it may be not how *often* but how *effectively* ICT is used to support teaching goals that makes its use successful (Kervin, Verenikina, Jones, & Beath, 2013). With this in mind, improving teacher's expertise and confidence in integrating technology into their everyday teaching and providing them with the resources and support to do so may have benefits for students.

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Eating problems in mid-adolescence

Meredith O'Connor, Diana Warren and Galina Daraganova



Being overweight and obese¹ are risk factors for many serious and chronic health conditions and a major public health issue in Australia. Rates of being overweight and obese in Australia have risen over recent decades, with nearly two in three adults and one in four children considered to be overweight or obese in 2014–15 (Australian Bureau of Statistics [ABS], 2015). Estimates by the Australian Institute of Health and Welfare (AIHW; 2017) indicate that being overweight and obese were responsible for 7% of the total health burden in Australia in 2011, and in 2011–12, obesity was estimated to have cost the Australian economy \$8.6 billion.

While rates of being overweight and obese are increasing, thin or even 'ultra-thin' bodies are often idealised in contemporary modern cultures, particularly for women. This ideal is unattainable for most and can generate body dissatisfaction and unhealthy eating behaviours (Thompson & Stice, 2001).

Eating problems cover a broad spectrum of issues ranging from anorexia nervosa and bulimia nervosa, which can be

life threatening, to problematic eating behaviours such as restrictive dieting, which can represent a risk for the later development of eating disorders (Arcelus, Mitchell, Wales, & Nielsen, 2011; Stice, Shaw, & Marti, 2007). Once established, eating disorders are difficult to shift and can be a chronic problem affecting health and quality of life across the life span (Smink, van Hoeken, & Hoek, 2013).

Many eating problems develop in adolescence, with the peak incidence for anorexia nervosa and bulimia nervosa between the ages of 15 and 19 (Micali, Hagberg, Petersen, & Treasure, 2013). Therefore, intervening early, by promoting healthy eating and nutrition, when unhealthy eating behaviours start to arise is crucial for long-term health outcomes (Ciao, Loth, & Neumark-Sztainer, 2014).

The purpose of this chapter is to provide a 'snapshot' of how young people are faring in relation to eating problems at 14–15 years of age, the types of actions they take to control their weight and the association between those actions, particularly dieting, and physical and mental health outcomes.

¹ Addressing overweight and obesity is a national health priority. Obesity campaigns and publications often focus on changing thoughts and behaviours related to eating and weight. In addressing these issues, care must be taken not to cause unintended harm. Young people in larger bodies are at higher risk of disordered eating and eating disorders than the general population. Awareness-raising initiatives focusing on obesity in children and young people, without appropriate information and support for effective lifestyle changes, may be misinterpreted by children, young people and their parents as cues to engage in dieting, such as fad or restrictive dieting. This is unsuitable for growing children and may have detrimental consequences for health and physical growth. For more information about the Key Principles and Assumptions for Weight-Related Public Health Messages, see nedc.com.au/assets/NEDC-Publications/Appendix-Healthy-Weight-Related-Messages.pdf

11.1 Eating disorders

Eating disorders are characterised by abnormal eating behaviours and psychological disturbance related to food and weight. Abnormal eating behaviours include binge eating – consuming large amounts of food in a short period of time with a sense of loss of control – and other behaviours designed to rid oneself of food and/or control shape or weight. These other behaviours include self-induced vomiting, excessive exercise, laxative misuse, diet pills, diuretics and excessive dietary restriction (e.g. fasting, skipping meals and cutting out entire food groups) (The National Eating Disorders Collaboration [NEDC], 2010). Psychological disturbances related to food and weight may include an intense fear of becoming fat, disturbed body image, denial of the seriousness of low weight, and exaggerated emphasis on weight and shape in relation to one's self-worth (NEDC, 2010). The consequences of eating disorders can be severe, including poor quality of life (Jenkins, Hoste, Meyer, & Blissett, 2011), medical complications (Mitchell & Crow, 2006) and even death (Arcelus et al., 2011).

Estimates of the prevalence of eating disorders in Australia vary across studies, and Australian data are sparse. A South Australian population-based survey conducted in 2005 identified the lifetime prevalence of eating disorders as 0.3% for anorexia nervosa (80% female), 0.9% for bulimia nervosa (84% female) and 2.3% for binge eating disorder (67% female) (NEDC, 2010).



Box 11.1: Classification of eating disorders in the Branched Eating Disorders Test

In Wave 6 of LSAC, K cohort children completed a screening tool for eating disorders. The Branched Eating Disorders Test (BEDT) allows partial syndromal eating disorders to be identified. Partial syndromal eating disorders are identified where the young person has at least two of the three diagnostic criteria for anorexia nervosa or bulimia nervosa included in the *Diagnostic and Statistical Manual – III R* (Selzer, Hamill, Bowes, & Patton, 1996).

Respondents meeting two of the following three diagnostic criteria were classified as having partial syndromal bulimia nervosa:

1. reporting their weight as being 'very important' to how they feel about themselves as a person
2. reporting they have lost control of their eating or have eaten much too much at least weekly for at least three months
3. reporting one of the following behaviours, lasting at least three months:
 - a. making themselves vomit as a means to control weight at least once per week
 - b. taking tablets, medicines or drugs to control their weight at least once per week
 - c. going all day without eating to control weight on four or more days per week
 - d. exercising in order to control weight six or seven days a week for two or more hours.

Respondents meeting two of the following diagnostic criteria were classified as having partial syndromal anorexia nervosa:

1. being assessed as having a very low body weight, sourced from their Body Mass Index (BMI)
2. reporting feeling afraid that they will gain weight on two to three days a week or more; reporting being 'very' or 'extremely' concerned about gaining weight; and being assessed as having a lower BMI than normal
3. reporting their weight as being 'very important' to how they feel about themselves as a person; reporting themselves as being 'somewhat overweight' or 'very overweight'; and being assessed as having a lower BMI than normal
4. reporting not having had their period in the last three months and not being pregnant at the time of interview (female respondents who have started menstruating only).

The LSAC data show that only a very small proportion of 14–15 year olds met the diagnostic criteria for partial syndromal anorexia nervosa or bulimia nervosa as measured by the BEDT (Table 11.1).² In particular, anorexia nervosa was extremely uncommon for both boys and girls, with less than half a percent meeting the diagnostic criteria. The proportion meeting the diagnostic criteria for bulimia nervosa was slightly higher, but still low, at 3% for girls and 1% for boys.

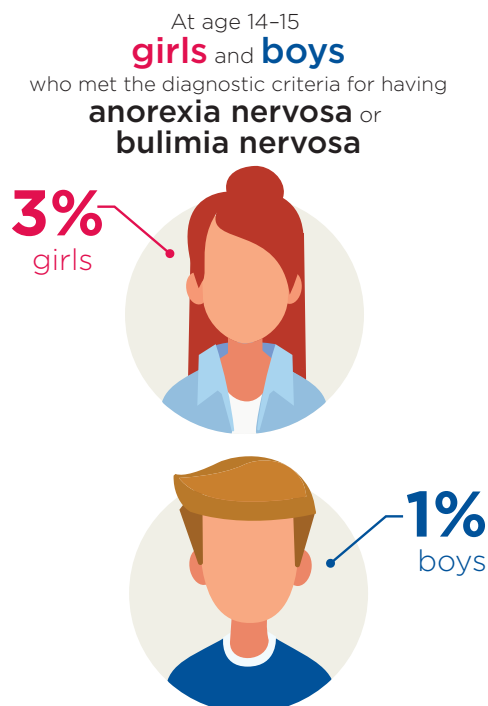
Table 11.1: Partial syndromal eating disorders at 14–15 years, by gender

	Girls % [95% CI] (<i>n</i> = 1,581)	Boys % [95% CI] (<i>n</i> = 1,694)
Partial syndromal bulimia nervosa	3.1 [2.3 – 4.1]	1.2 [0.7 – 1.9]
Partial syndromal anorexia nervosa	0.3 [0.0 – .1] [#]	0.2 [0 – .1] [#]
Any eating disorder (partial syndromal anorexia nervosa or bulimia nervosa)	3.4 [2.6 – 4.4]	1.4 [.9 – 2.1]

Notes: #Estimate not reliable (cell size < 20). *n* refers to complete case across variables.

Source: LSAC Wave 6, K cohort, weighted

Figure 11.1: Adolescents who met the diagnostic criteria for having anorexia nervosa or bulimia nervosa



11.2 Adolescents' feelings about their weight

While very few 14–15 year olds met the diagnostic criteria for an eating disorder, looking at responses to the individual components of the BEDT shows that many adolescents have negative feelings and beliefs about gaining weight. These feelings and actions can be problematic, even when the diagnostic criteria for an eating disorder are not met, and may reflect the early stages of an emerging disorder (Stice, Ng, & Shaw, 2010).

It was much more common for girls, than for boys, to say that they were afraid of gaining weight, or that they felt they had lost control of their eating. For example:

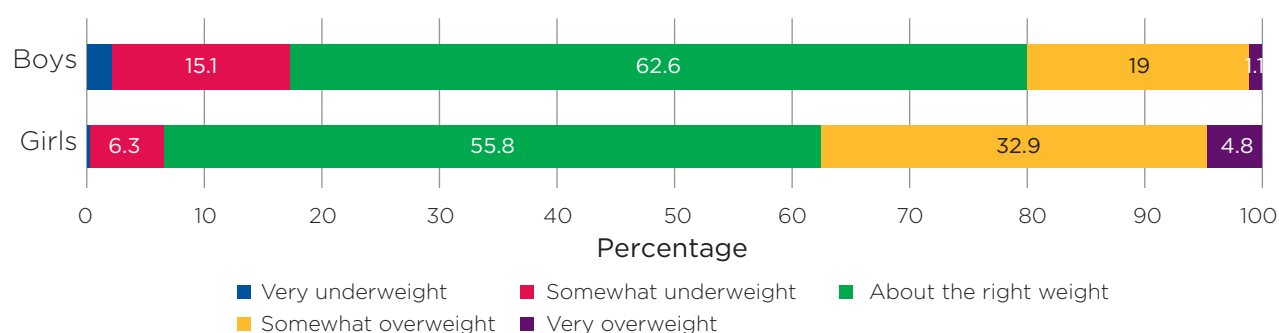
- Fifty-four per cent of girls and 19% of boys said that they had been afraid of gaining weight in the last four weeks.
- Forty-three per cent of girls and 20% of boys said that, in the last four weeks, they had felt that they had lost control of their eating or felt they had eaten too much.

Around 60% of 14–15 year olds (63% of boys and 56% of girls) said that, at the moment, they thought they were about the right weight (Figure 11.2, page 116). However, it was much more common for girls than boys to say that they felt somewhat overweight (33% compared to 19%), while boys more commonly said that they felt they were underweight.

When asked how they would feel if they gained one or two kilograms in weight, girls were much more concerned than boys (Figure 11.3, page 116). While around two thirds of girls said that they would be at least a little concerned and 15% said they would be really upset, more than 50% of boys said that gaining one or two kilograms would not bother them and 16% said that they would be pleased.

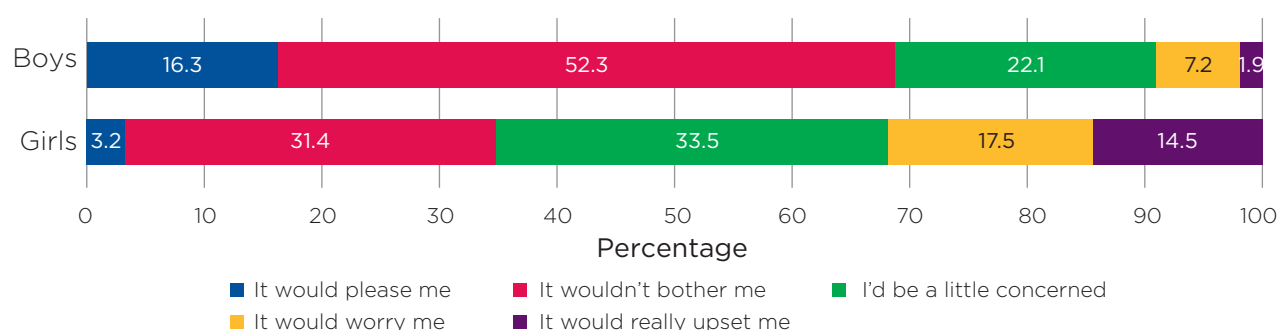
For a considerable proportion of girls, their weight was quite important to how they felt about themselves as a person. Just under 10% of girls said that it was not important, and one quarter said that it was very important (Figure 11.4, page 116). For boys, these figures were reversed, with only 11% saying their weight was very important for how they felt as a person, and 24% saying it was not important.

² Note that not all the eating disorders described in the Diagnostic and Statistical Manual of Mental Disorders (DSM) (2013) (e.g. binge eating disorder (BED), other specified feeding and eating disorders (OSFED) and unspecified feeding and eating disorders (UFED)) can be identified using the BEDT.

Figure 11.2: Feelings about their weight at age 14–15, by gender

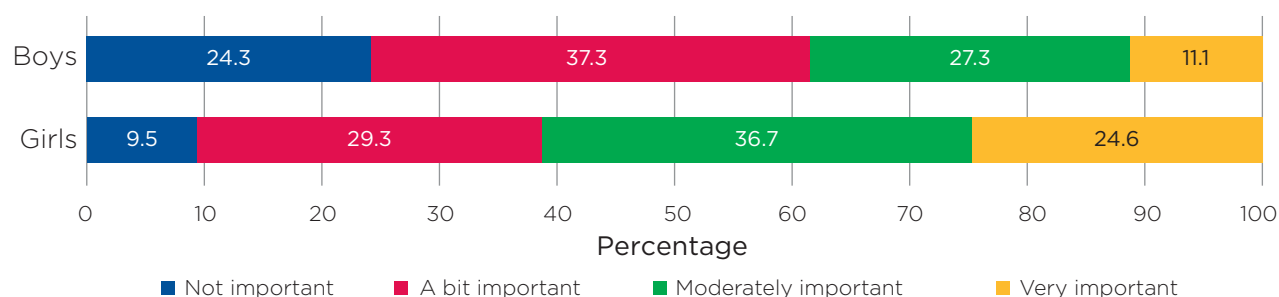
Note: $n = 3,335$.

Source: LSAC Wave 6, K cohort, weighted

Figure 11.3: Feelings about gaining one or two kilograms, age 14–15, by gender

Note: $n = 3,335$.

Source: LSAC Wave 6, K cohort, weighted

Figure 11.4: Importance of weight in how you feel as a person, age 14–15, by gender

Note: $n = 3,335$.

Source: LSAC Wave 6, K cohort, weighted

These gender differences in their feelings and beliefs about gaining weight are likely to be at least partly due to societal expectations (Striegel-Moore & Bulik, 2007). The current beauty ideals in modern society promote a larger, more muscular build for men and, for women, a thin or even ‘ultra-thin’ ideal (Main, 2009). These standards are unachievable for most people, and the pressure to meet them can have many negative health effects (Paxton, 2000).

11.3 Actions taken to control weight

Given that many teens had expressed negative feelings about their weight, it is not surprising that some 14–15 year olds had reported taking some serious actions to control their weight, such as making themselves vomit or taking tablets, drugs or medicines. Among 14–15 year olds, 3% of girls, but less than 1% of boys, said that they had made themselves vomit at least once in the last four weeks in order to control their weight; and around 2% of boys and girls said they had taken some type of medicine.³

Exercise was a more common action taken to control weight; but most 14–15 year olds did not exercise at excessive levels. While 41% of girls and 58% of boys said that they had exercised at least once a week in the last four weeks to try to control their weight, only 3% of boys and 4% of girls were exercising for two or more hours per day, six or seven days per week (the diagnostic criteria for excessive exercise when assessing bulimia nervosa using the BEDT) (Figure 11.5). For most 14–15 year olds, exercising for the purposes of losing weight was not a regular habit, with only 17% of boys and 13% of girls reporting exercising at least four days per week for this purpose. Furthermore, most did not exercise for several hours at a time – around 16% of boys and girls said that, on days when they exercised to control their weight, they did so for two hours or more. It is important to keep in mind here that these figures include only exercise *for the purposes of controlling weight* – presumably some of those who reported not exercising to control their weight did exercise for other reasons, such as enjoyment and keeping fit, or as part of their school sport requirements.

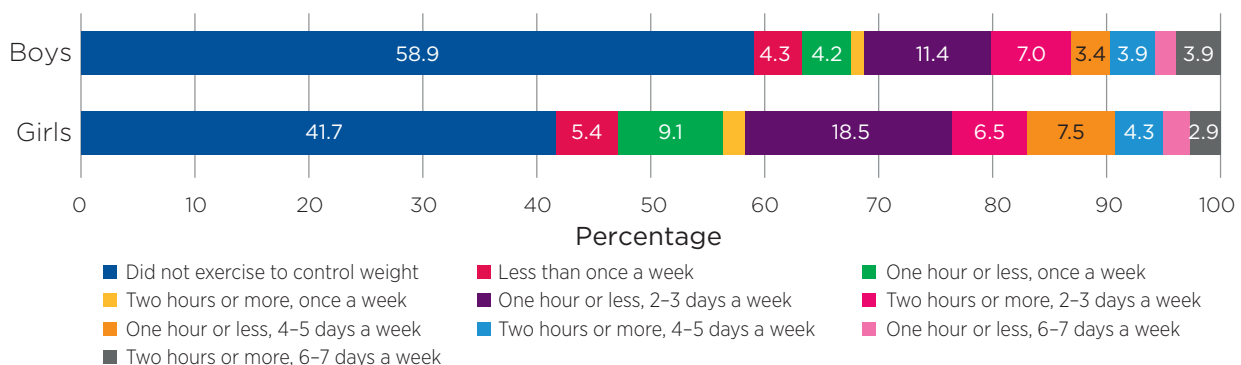
Several large cross-sectional studies have investigated the frequency of specific weight control practices and found that fasting, skipping meals and using crash diets are quite common among teenagers (Canadian Pediatric Society, 2004). The LSAC data show that some 14–15 year olds (10% of girls and 6% of boys) reported having gone all day without eating at least once in the last four weeks. However, most teens did not do this frequently, with 32% of girls and 17% of boys who reported having gone all day without eating (less than 1% of all 14–15 year olds) doing so on two or more days per week.

Box 11.2: Adolescent dieting behaviours

In Wave 6 of LSAC, an adapted form of the Adolescent Dieting Scale⁴ (ADS) (Patton et al., 1997) was used for K cohort children (aged 14–15). Study children were asked how often they engaged in restrictive dieting by choosing ‘Seldom/never’, ‘Sometimes’, ‘Often’, or ‘Almost always/always’, in response to the following questions:

- Do you try to leave food at meal times in order to avoid putting on weight?
- When you have eaten too much, do you eat less than usual on the next day?
- Do you deliberately take small helpings at meals to keep your weight under control?
- Do you skip meals other than breakfast because you are watching your weight?

Figure 11.5: Exercise to control weight, at age 14–15, by gender



Note: $n = 3,335$.

Source: LSAC Wave 6, K cohort, weighted

³ Study children were asked the types of medicines that they had taken to control their weight (e.g. laxatives, diuretics, appetite suppressants or other drugs) and how often they took these medications. However, the number of observations for those who reported taking medicines to control their weight was too small for reliable estimates of the specific types of medicines used.

⁴ Only four of eight original items were asked in LSAC with the wording of the original items being slightly modified.

While few teenagers reported taking extreme measures such as excessive exercise, making themselves vomit or taking tablets or other medicine to control their weight, dieting behaviours involving consciously restricting their food intake are relatively common in adolescence, particularly among girls.

For teenagers whose weight is within the healthy weight range, dieting may be used to maintain a healthy weight or to try to attain the thinner types of body shapes that are idealised in modern society (Patton et al., 1997). For young people who are overweight or obese, dieting might be considered a reasonable strategy to control or reduce their weight; however, focus on food quality, rather than food restriction, and a lifestyle approach to encourage enjoyable physical activity throughout the day is likely to be a better approach to maintaining a healthy weight (Ludwig, 2012).

Around a quarter of girls and 12% of boys reported engaging in some sort of dieting behaviour at age 14–15 (Table 11.2). These results were similar to the Healthy Neighbourhoods Study that, based on the published cut-offs for ADS, found 30% of adolescents aged 10–14 years were ‘moderate/extreme dieters’. For girls and boys, the most common dieting behaviour was compensating for eating too much by eating less than usual the next day. This strategy was reported by 14% of girls and 7% of boys.

It was much more common for girls, than boys, to engage in dieting behaviour such as leaving food at meal times, deliberately taking small helpings, and skipping meals. Around 3% of boys reported doing each of these activities. The percentage of girls who engaged in these behaviours ranged from 9% for skipping meals to 12% deliberately taking small helpings at meal times.

Table 11.2: Dieting behaviours at 14–15 years, by gender

Dieting behaviours at 14–15 years	Often, Almost always, or Always	
	Girls % [95% CI] (n = 1,640)	Boys % [95% CI] (n = 1,703)
Try to leave food at meal times in order to avoid putting on weight	10.0 [8.4 - 11.9]	3.3 [2.4 - 4.4]
When you have eaten too much, eat less than usual the next day	13.8 [12.0 - 15.9]	7.4 [6.0 - 9.0]
Deliberately take small helpings at meal times	12.3 [10.6 - 14.3]	3.7 [2.8 - 4.9]
Skip meals other than breakfast	9.1 [7.6 - 10.9]	3.3 [2.4 - 4.5]
Any of the above	23.1 [20.6 - 25.7]	12.3 [10.5 - 14.3]

Notes: Only percentages indicating the ‘Often’ or ‘Almost always/Always’ response options are shown. Other response options were ‘Seldom/never’ and ‘Sometimes’ and are not shown in the table.

Source: LSAC Wave 6, K cohort, weighted



11.4 Weight loss goals in early adolescence

For some adolescents, dieting at 14–15 years may be a continuation of behaviours that began much earlier. While there is no information about whether LSAC study children were engaging in dieting at age 10–11 or 12–13, previous research using LSAC has shown that even at age 10–11, almost 40% of boys and girls said that they were trying to lose weight (Daraganova, 2014).

Looking at the previous weight loss goals of adolescents who were dieting at age 14–15, it appears that for many teens, the desire to lose weight was an ongoing issue (Table 11.3). Over 40% of girls and boys who were dieting at age 14–15 had been consistently trying to lose weight since age 10–11; and a further 21% of girls and 16% of boys had been trying to lose weight since age 12–13 (Table 11.3).



Box 11.3: Weight change goals

At ages 10–11 and 12–13, LSAC study children were asked to 'pick the answer that shows what you are trying to do about your weight now' from the following options:

- lose weight
- gain weight
- stay the same weight
- I am not trying to do anything about my weight.

Table 11.3: Weight loss goals at 10–11 and 12–13 years and dieting at 14–15 years

Weight loss goal	Dieting at 14–15 years					
	Girls			Boys		
	No % [95% CI] n = 1,222	Yes % [95% CI] n = 340	All % [95% CI] n = 1,562	No % [95% CI] n = 1,426	Yes % [95% CI] n = 172	All % [95% CI] n = 1,598
Not trying to lose weight at either 10–11 or 12–13 years	56.0 [52.5 – 59.4]	26.0 [21.3 – 31.2]	48.9 [45.8 – 52.0]	55.0 [51.9 – 58.0]	27.1 [20.2 – 35.4]	51.8 [48.8 – 54.7]
Trying to lose weight at age 10–11 but not at 12–13	8.4 [6.7 – 10.4]	11.6 [8.4 – 15.9]	9.1 [7.6 – 10.9]	15.1 [12.8 – 17.6]	15.8 [10.7 – 22.9]	15.2 [13.0 – 17.6]
Trying to lose weight at age 12–13 but not at 10–11	12.1 [10.1 – 14.5]	20.7 [16.0 – 26.4]	14.2 [12.2 – 16.4]	10.4 [8.5 – 12.5]	16.0 [10.3 – 23.9]	11.0 [9.2 – 13.1]
Trying to lose weight at both 10–11 and 12–13 years	23.4 [20.5 – 26.6]	41.5 [35.6 – 47.6]	27.7 [24.9 – 30.7]	19.4 [17.0 – 22.1]	40.9 [32.4 – 49.9]	21.9 [19.4 – 24.6]
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0

Note: Dieting behaviours include deliberately taking small helpings at meal times, skipping meals other than breakfast, leaving food at meal times in order to control weight, and eating less than usual in days when they feel they have eaten too much on the day before.

Source: LSAC Waves 4–6, K cohort, weighted

11.5 Dieting and wellbeing

Previous research has shown that most young people who diet are within a normal weight range (Patton et al., 1997). The LSAC data show that among 14–15 year olds who were dieting, around half of boys and 35% of girls were actually overweight, according to their Body Mass Index (Table 11.4). Over 60% of girls and 47% of boys were in the normal weight range; and a small

proportion (less than 3%) were in fact underweight. This suggests that for many teens, and particularly for girls, the aim of their dieting is not to reduce their weight because they are overweight but to either maintain their weight within a healthy weight range or achieve a thinner body shape.

Table 11.4: Weight status of those who were dieting at 14–15 years

Weight status	Girls		Boys	
	Dieting	Not dieting	Dieting	Not dieting
	%	%	%	%
	[95% CI] n = 336	[95% CI] n = 1,232	[95% CI] n = 188	[95% CI] n = 1,487
Underweight	2.6 [1.2 – 5.5]#	7.8 [6.3 – 9.8]	2.5 [0.8 – 7.3]#	7.1 [5.7 – 8.8]
Average	62.5 [56.6 – 68.0]	65.7 [62.8 – 68.4]	47.1 [39.1 – 55.3]	67.0 [64.0 – 69.8]
Overweight	35.0 [29.3 – 41.0]	26.5 [24.0 – 29.2]	50.4 [42.3 – 58.5]	25.9 [23.2 – 28.8]
Total (%)	100.0	100.0	100.0	100.0

Notes: #Estimate not reliable, cell count < 20. Dieting behaviours include deliberately taking small helpings at meal times, skipping meals other than breakfast, leaving food at meal times in order to control weight, and eating less than usual in days when they feel they have eaten too much on the day before.

Source: LSAC Wave 6, K cohort, weighted

Box 11.4: Symptoms of anxiety

The Spence Children's Anxiety Scale (SCAS) is a self-report measure designed to assess the frequency with which children and adolescents experience anxiety symptoms (Spence, 1998; Spence, Barrett, & Turner, 2003). Study children were asked to rate on a four-point scale (with 0 meaning 'Never', 1 'Sometimes', 2 'Often' and 3 'Always') how often each of the following symptoms happen to them:

- I worry about things.
- I feel afraid.
- I feel afraid that I will make a fool of myself in front of people.
- I worry that something bad will happen to me.
- I feel nervous.
- I wake up feeling scared.
- I worry what other people think of me.
- All of a sudden, I feel really scared for no reason at all.

Responses were summed (ranging from 0 to 24), with scores of 11 or higher indicating elevated levels of anxiety.

Box 11.5: Symptoms of depression

The Short Mood and Feelings Questionnaire (SMFQ) is a brief self-report measure of symptoms of depression in children and adolescents (Sharp, Goodyer, & Croudace, 2006). The questionnaire consists of 13 items that require children to rate on a three-point scale ('True', 'Sometimes', and 'Not true') how much they consider a statement to be true of the way they have felt or acted in the past two weeks (e.g. 'I didn't enjoy anything at all.') Responses were summed, with a range from 0 to 26 and those with scores of 8 or higher were considered to have elevated depressive symptoms.



For some young people, eating behaviours and attitudes co-occur with mental health difficulties such as anxiety and depression (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). Studies have shown that there is an overlap between the symptoms of eating problems and mental health difficulties; for example, a lack of appetite, lethargy and poor concentration are characteristics of both eating disorders and depression (Hughes et al., 2013). Eating problems can also lead to depression and anxiety through, for example, the effects of starvation and obsessive-compulsive behaviours related to food (Hughes et al., 2013).

The LSAC data show that, overall, girls who were dieting at age 14–15 had higher levels of emotional problems, compared to those who were not dieting (Table 11.5). Among girls who were dieting at age 14–15, 58% had elevated depressive symptoms and 47% had elevated symptoms of anxiety. For girls, symptoms of anxiety and depression were relatively common, even among those who were not engaging in any dieting behaviour, 27% had depressive symptoms and 19% had symptoms of anxiety.

Overall, symptoms of depression and anxiety were less common for boys than for girls. However, even for boys, there was a significant difference in the percentage with symptoms of anxiety or depression at

age 14–15, depending on whether they were dieting. Among boys who were dieting, 32% had symptoms of depression and 16% had symptoms of anxiety. For boys who were not dieting, the corresponding percentages were lower: 17% with depression symptoms and 6% with symptoms of anxiety.

Eating problems can also have an impact on adolescents' functioning at school, their social lives, and physical health and development. There were relatively small but statistically significant differences in the average levels of emotional, school and social functioning; with lower levels among boys and girls who were dieting at age 14–15, compared to those who were not (Table 11.6, page 122).

In terms of physical health, there was not such a clear difference in functioning depending on whether children were dieting or not. For girls, average physical functioning scores were higher among those who were not dieting compared to those who were (75 compared to 69). However, this difference was not statistically significant. For boys, average physical functioning scores were quite similar (77 and 79 points), regardless of their dieting behaviour. This suggests that for most 14–15 year olds, their dieting habits are not related to their ability to participate in everyday activities.

Table 11.5: Depression and anxiety symptoms, by dieting behaviour at 14–15 years

	Girls		Boys	
	Dieting	Not dieting	Dieting	Not dieting
	% [95% CI] n = 354	% [95% CI] n = 1,286	% [95% CI] n = 191	% [95% CI] n = 1,509
Mental health difficulties				
Depression symptoms	57.5 [51.4 – 63.4]	27.1 [24.5 – 29.9]	31.5 [22.6 – 42.1]	17.2 [15.1 – 19.5]
Anxiety symptoms	46.5 [39.6 – 53.6]	18.6 [16.2 – 21.3]	16.4 [10.8 – 24.1]	6.3 [5.1 – 7.8]

Notes: Dieting behaviours include deliberately taking small helpings at meal times, skipping meals other than breakfast, leaving food at meal times in order to control weight, and eating less than usual in days when they feel they have eaten too much on the day before.

Source: LSAC Wave 6, K cohort, weighted

Table 11.6: Emotional, school, social and physical functioning scores, by dieting behaviour at 14-15 years (means)

	Girls		Boys	
	Dieting Mean [95% CI]	No dieting Mean [95% CI]	Dieting Mean [95% CI]	No dieting Mean [95% CI]
Emotional functioning	65.2 [62.8 – 67.6]	74.2 [73.0 – 75.4]	71.5 [67.2 – 75.7]	77.2 [76.1 – 78.3]
Social functioning	71.6 [69.2 – 74.1]	79.1 [77.9 – 80.4]	74.8 [70.5 – 79.2]	82.1 [80.9 – 83.3]
School functioning	67.0 [64.6 – 69.5]	74.4 [73.1 – 75.7]	65.1 [61.3 – 69.0]	70.1 [69.0 – 71.3]
Total (n)	346	1,258	181	1,480
Physical health	68.8 [75.0 – 78.7]	75.4 [74.5 – 76.2]	76.8 [74.9 – 78.7]	79.1 [78.4 – 76.3]
Total (n)	352	1,284	190	1,506

Notes: Higher scores indicate better functioning in that domain. Emotional, social and school functioning measures were based on the PedsQL Pediatric Quality of Life Scale; and physical health was based on the PedsQL Teen Physical Health Scale. Dieting behaviours include deliberately taking small helpings at meal times, skipping meals other than breakfast, leaving food at meal times in order to control weight, and eating less than usual in days when they feel they have eaten too much on the day before.

Source: LSAC Wave 6, K cohort, weighted

Box 11.6: The Pediatric Quality of Life Inventory (PedsQL)

Adolescents' emotional, school and social functioning and peer relationships were measured using the Pediatric Quality of Life (PedsQL) inventory (Varni, Burwinkle, & Seid, 2006).

Emotional functioning assesses the frequency that the child displays negative emotional states such as sadness and anxiety. Parents were asked how often the study child had the following problems in the past month:

- feeling afraid or scared
- feeling sad or blue
- feeling angry
- trouble sleeping
- worry about what will happen to him/her.

School functioning measures children's school adjustment and performance. Parents were asked how often the study child had the following problems in the past month:

- paying attention in class
- forgetting things
- keeping up with school activities
- missing school because of not feeling well
- missing school to go to doctor or hospital.

Social functioning assesses children's relationship with their peers. Parents were asked to rate how frequently the study child had the following problems in the past month:

- getting along with other children
- other kids not wanting to be his/her friend
- getting teased by other children
- not being able to do things that other children his/her age can do
- keeping up when playing with other children.

The study child's primary caregiver (in most cases their mother) was asked to rate each item on a five-point scale, ranging from 1 (Never) to 5 (Almost always). Items were reverse-scored and transformed to a 0-100 scale (1 = 100, 2 = 75, 3 = 50, 4 = 25, 5 = 0), so that higher scores indicated a higher level of functioning. Average scores were then calculated to create the emotional, school and social functioning subscales.

Box 11.7: The PedsQL Teen Physical Health Scale

Adolescents' levels of physical functioning were measured using the teen physical health scale. Study children were asked how often the following activities have been difficult for them in the last month:

- walk more than 100 metres
- run
- play sport or do exercise
- lift something heavy
- have a bath or shower by myself
- help around the house.

As well as how often they:

- get aches and pains
- have low energy.

LSAC study children were asked to rate each item on a five-point scale, ranging from 0 (Never) to 4 (Almost always). Items were reverse-scored and transformed to a 0–100 scale (0 = 100, 1 = 75, 2 = 50, 3 = 25, 4 = 0), so that higher scores indicated a higher level of functioning. Average scores were then calculated to create the teen physical health scale.

Summary

This chapter provides a description of how young people are faring in relation to eating problems at 14–15 years of age. The LSAC data show that few 14–15 year olds partially fulfil the diagnostic criteria for an eating disorder. However, the prevalence of eating disorders among LSAC study children is likely to increase when they are in their late teens, as peak incidence for anorexia nervosa and bulimia nervosa occurs between the ages of 15 and 19 (Micali et al., 2013).

Eating disorders such as bulimia nervosa and anorexia nervosa can be understood as reflecting the extreme end of a continuum, and many young people experience milder eating problems that do not meet diagnostic criteria (Xiaochen, 2016). Even if these milder eating problems do not progress to an eating disorder, they are still problematic because they can be distressing to the individual and affect their daily lives (Stice, Marti, Shaw, & Jaconis, 2009).

The LSAC data show that, among 14–15 year olds, negative feelings about weight, and taking actions to try to control weight, are much more common than eating disorders; and more common for girls than for boys. For example, 54% of girls and 19% of boys said that they had been afraid of gaining weight in the

last four weeks. In terms of actions taken to control weight, diet and exercise were much more common than drastic actions such as taking diet pills or vomiting after meals.

Almost a quarter of girls and 12% of boys reported consciously restricting their food intake at age 14–15. Among those who did engage in some type of dieting, a high proportion (63% of girls and 47% of boys) were in the average weight range according to their BMI. This suggests that for most teens, the reason for dieting is not to reduce weight because they are overweight, but to either maintain their weight within the healthy weight range or achieve the thinner types of body shapes that are typically idealised in our society.

Overall, girls seemed to be faring worse in relation to eating problems than boys. They had a higher prevalence of both eating disorders and dieting behaviours. The number of boys with eating problems was not negligible, however, so their eating problems should not be ignored (Calzo et al., 2016).

For some adolescents who were dieting at age 14–15, their desire to lose weight traces back to early adolescence. The proportion of those who were dieting at 14–15 years was higher among those who had also been trying to lose weight at 10–11 and 12–13 years than those who had not. This type of information can help us to understand more about who to target for early prevention efforts and what factors to target (Le Grange et al., 2014; Stice et al., 2010). It reinforces that we can begin prevention efforts early on, including in late childhood and early adolescence.

The analysis in this chapter also supports the findings of other studies showing that anxiety and depression often occur in combination with eating problems. Therefore, it is important to address both together (Hughes et al., 2013). Levels of emotional, school and social functioning are also lower among boys and girls who were engaging in dieting at age 14–15, compared to those who were not. However, for 14–15 year olds, it appears that restrictive dieting is related to poorer functioning in some aspects of their lives more so than others. In terms of physical functioning, those who were engaging in restrictive dieting were not faring any worse, on average, than those who were not.

Further research using the LSAC data to identify the characteristics or circumstances of individuals who are most at risk of eating problems, and the factors that are likely to shift outcomes for this high risk group, would be very useful for health practitioners, particularly for informing the development of prevention and intervention approaches.

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Children's use of health care services

Diana Warren



Delivering health care services that meet the needs of the community is one of the fundamental challenges faced by health care systems. In Australia, Medicare provides access to free or subsidised treatment by health professionals such as doctors, specialists and optometrists. For vulnerable groups, such as children in low-income households, the services of dentists and other allied health professionals are also subsidised. Medicare also provides free care as a public patient in a public hospital and lower cost prescription medicine.

In 2013–14, total public expenditure on health in Australia was estimated at \$154.6 billion (\$6,639 per person) (Australian Institute of Health and Welfare [AIHW], 2015). Estimates from the 2011–12 Australian Health Survey indicate that in any two-week period, approximately 606,000 children under the age of 15 (14% of children) will have a consultation with a general practitioner (GP). In a 12-month period, 79% of children under 15 will see a GP, 20% will see a specialist and 45% will go to the dentist (Australian Bureau of Statistics [ABS], 2013). Given the substantial cost of public health care provision, it is of particular policy interest to examine the level and nature of health care service use among Australian children.

This chapter uses data collected between 2004 and 2014 to provide a snapshot of how health care services are used; problems gaining access to health services; and how children's use of health services differs depending on characteristics such as household income, parental education, private health insurance coverage, location and parents' reports of the general health of the child. We also examine parents' reports of problems gaining access to specific health services and the factors associated with difficulties accessing these services.

12.1 Patterns of health care service use among Australian children and adolescents

The percentage of children using specific medical services varied with age. For example, over 80% of 0–1 and 2–3 year olds had been to a GP in the past 12 months, compared to around three-quarters of 4–5 and 6–7 year olds and just over 60% of adolescents aged 12–13 and 14–15 (Table 12.1, page 127).¹

Maternal and child health nurse services are free for all children from birth to school age. While these consultations are not compulsory, parents are encouraged to attend these appointments to discuss any concerns they have about their child's development. Regular visits are scheduled in the first few months of a child's life, with appointments becoming less frequent as children approach school age.



Box 12.1: Use of health care services

Use of health care services for the study child is captured in each wave of LSAC. The study child's main carer is asked whether they had, in the 12 months prior to the interview, used any of a list of services for the study child. Specific services listed vary from wave to wave, depending on whether the service is appropriate to the age of the child. For example, maternal and child health nurse services are only included up to age 4–5, and services such as speech therapy and psychological services are asked about from age 2–3 onwards.

Uptake of maternal and child health services were not as high as might be expected, and fewer children attended these visits as they got older. Around two thirds of 0–1 year olds had been to a maternal and child health nurse in 2004. However, only 32% of 2–3 year olds and 12% of 4–5 year olds had been to an appointment with a maternal and child health nurse in the past 12 months. These low figures may be partly due to the timing of 'key ages and stages' consultations and differences in the number of scheduled maternal and child health nurse visits across states. For some children, their scheduled maternal and child health nurse visit may not have fallen within the 12 month period prior to their LSAC interview.

Other data sources also show a considerable drop off in the use of maternal and child health services between birth and age 4. In Victoria, for example, participation rates in 2015–16 dropped from 99% for the initial home visit to 95% when children were two weeks old, to 79% attending the 12-month visit, and 62.5% attending the scheduled visit for 3.5 year olds (Department of Education, 2017).

Paediatricians specialise in the health and development of infants, children and adolescents. However, referrals to a paediatrician are usually only required if a child has an ongoing or underlying health concern that needs to be monitored and treated by a specialist; and these consultations are often associated with out-of-pocket expenses. While almost 40% of 0–1 year olds had seen a paediatrician in the previous 12 months, less than 10% of children over the age of 4–5 had been to a paediatrician.

The Australian Dental Association recommends that children should see a dentist for the first time when their first tooth becomes visible, and then have dental check-ups every six months (Australian Dental Association, 2016). Given these recommendations, the proportion of children who had seen a dentist in the previous 12 months was lower than would be expected, even in the teenage years. Only 15% of 2–3 year olds had been to a dentist in the previous 12 months, compared to over 30% of 4–5 year olds. From age 8–9 onwards, over 60% had used dental services in the previous 12 months.

¹ There were some significant cohort differences, with higher levels of use of hospital outpatient services among children in the K cohort at ages 4–5 and 6–7; higher levels of use of GP services among B cohort children at ages 4–5, 8–9 and 10–11 but lower levels of GP service use for B cohort children at age 6–7. Use of dental services was significantly higher among K cohort children at ages 6–7 and 10–11. Psychological and behavioural therapy services were more commonly used among B cohort children at ages 6–7, 8–9 and 10–11. At age 8–9, use of phone or internet health services were higher for the B cohort. Paediatricians were more commonly used for children in the K cohort at age 8–9 but more common for the B cohort at age 10–11. In most instances, while cohort differences were statistically significant, the size of the differences ranged from 1 to 4 percentage points.

Table 12.1: Use of health services, by service type and age of study child

	Age 0-1 (%)	Age 2-3 (%)	Age 4-5 (%)	Age 6-7 (%)	Age 8-9 (%)	Age 10-11 (%)	Age 12-13 (%)	Age 14-15 (%)
Maternal and child health centre/ phone	55.8	-	15.7	-	-	-	-	-
Phone/Internet health service	-	-	-	4.0	3.5	2.1	2.3	3.3
Maternal and child health nurse	65.8	31.7	12.0	-	-	-	-	-
Pediatrician	37.2	12.5	8.1 ^b	8.4	8.0	7.6	6.0	6.1
Other specialists	11.9	11.0	10.8 ^b	12.3	11.5	11.8	13.2	14.2
Emergency ward	21.5	29.0	19.3	14.8	15.1	14.8	15.2	16.9
Hospital outpatients	9.7	10.7	6.4	7.0	5.9	6.1	5.9	8.0
GP	80.5	86.0	75.8	74.6	65.8	64.0	61.1	64.1
Other medical/ dental ^a	9.0	5.6	30.2 ^c	4.6	4.4	5.9	5.7	8.8
Speech therapy	-	6.1	12.6	8.9	5.2	3.3	1.7	0.8
Dental services	-	15.2	33.7 ^b	57.4	61.1	63.1	61.6	64.1
Guidance counsellor	-	-	1.6	3.1	4.8	5.4	6.1	9.3
Other psych/ behaviour	-	1.3	2.8	3.7	5.1	5.9	5.2	7.6
Disability services	-	-	-	-	1.2 ^d	1.2 ^d	1.2	1.3
Other services	4.9	4.3	3.1	3.2	3.2	2.4	1.8	2.4
Any of the above ^e	97.2	95.8	92.0	90.0	89.1	90.0	87.0	88.3
Total (n)	4,294	3,491	8,557	7,669	8,379	7,857	3,913	3,454

Notes: Population weighted results. For ages 4-5 to 10-11, data from B and K cohorts are pooled where possible. ^a In Wave 1, dental services were included in 'other medical'. ^b Only available for B cohort, (n = 4,385). ^c Only available for K cohort (n = 4,172). ^d Only available for B cohort (n = 4,048 at age 8-9 and 3,696 at age 10-11). ^e Percentages are not directly comparable across age groups as not all services are included in each wave.

Source: LSAC Waves 1-6, B and K cohorts, weighted

While use of health services depends mainly on the health of the child and their individual needs for services, for some services there are also differences depending on the characteristics of the child and their household. Use of services such as medical attention at a hospital emergency department will depend mainly on whether the child has sustained an injury, or has an illness that requires immediate attention. While pediatrician services are available through the public hospital system, and some children are entitled to free dental services, waiting times for these appointments can be long, and therefore use of services such as dental services, speech therapy and pediatrician services will depend to some extent on the financial resources of the household.

Use of other services, such as maternal and child health services, which are freely available to parents of young children, are likely to depend on parents' awareness of the services that are available to them, as well as ease of access and being able to arrange a suitable appointment time around parents' work and family commitments. The availability of health services in the area where the child resides is also a factor that may influence the use of services, with families living in outer regional or remote areas likely to have more difficulty accessing services than those living in metropolitan areas (AIHW, 2017).

Characteristics related to use of health services in the early years of childhood

In the first year of childhood, parents are encouraged to attend, with their child, regular check-ups with a maternal and child health nurse, with these visits becoming less frequent as children get older. The last check-up is usually before the child starts school. The frequency of visits to other types of medical practitioners, such as GPs and paediatricians, in the early years of childhood will depend mainly on the general health of the child and the need for specific health services. For some services, accessibility may be an issue for families living in regional or remote areas.

Visits to medical practitioners such as paediatricians, dentists and other specialists often involve considerable out-of-pocket expenses. Therefore, it is likely that the frequency of visits will depend, at least to some extent, on household income and whether the family is covered by private health insurance. Knowledge of available services, and how to navigate the, sometimes, complex health system (e.g. getting referrals to medical specialists) may also be a factor influencing the use of health services for some families.

Table 12.2: Characteristics associated with use of health services in the early years of childhood (ages 0–1 to 4–5)

	Odds ratios						
	Maternal & child health nurse	General practitioner	Paediatrician ^a	Hospital emergency	Hospital outpatients	Speech therapy ^b	Dental services ^c
Age group of study child (ref. = age 4–5 years)							
0–1 years	28.7***	1.06***	13.39***	1.13*	1.72***	–	–
2–3 years	4.3***	2.02***	1.71***	1.80***	1.86***	0.26***	0.23***
Male	0.99	1.07	1.34***	1.20***	1.26***	2.86***	0.83*
Indigenous	0.55***	0.81	1.01	0.79	1.52*	0.62	0.57*
Language other than English at home	0.61***	0.52***	0.70***	0.66***	0.98	0.24***	0.67**
Parents' education (ref. = Year 12 or lower) ^d							
Certificate/Diploma	1.27**	1.34***	1.45**	0.97	1.05	1.03	1.10
Degree	1.69***	1.57***	1.52***	0.87*	0.95	0.90	1.55***
Equivalised Household Income Quartile (ref. = 1st) ^e							
2nd	1.22**	1.08	0.87	1.04	0.88	1.10	1.00
3rd	1.14	1.34***	0.86	1.08	1.01	0.97	1.08
4th	0.97	1.34***	1.00	1.04	0.98	0.83	1.06
Private hospital insurance (in 2004) ^f	1.23***	1.65***	3.02***	0.89*	0.71***	1.14	1.91***
Region of residence (ref. = major city)							
Inner regional	1.13	0.78***	0.83*	1.12*	1.00	0.90	0.94
Outer regional/remote	1.23*	0.49***	0.61***	0.95	1.26*	1.06	1.08
Fair/poor health ^g	1.01	2.03***	3.44***	2.06***	2.85***	3.83***	1.26
B cohort	1.03	1.17*	–	0.94	0.56**	1.09	–
Total (n)	15,415	15,415	11,608	15,415	15,415	11,392	7,585

Notes: Random effects logistic regression models, odds ratios reported. * $p < .05$; ** $p < .01$; *** $p < .001$. ^a B cohort only – Paediatrician not provided as an option for K cohort at Wave 1 (Age 4–5); ^b Speech therapy not asked at age 0–1; ^c Dental services included for ages 2–3 and 4–5 only. ^d Parents' highest level of education refers to the highest level of education of either resident parent. ^e Equivalised household income refers to household income adjusted for household size. Household income is divided by an equivalising factor (1 for the first adult + 0.5 for all other adults (aged 15 and over) + 0.3 for all children under the age of 15). ^f Private hospital insurance coverage is measured in 2004. All other variables measured at time of interview. ^g Parents' rating of their child's health at the time of interview, with 1 meaning 'Excellent', 2 'Very Good', 3 'Good', 4 'Fair' and 5 'Poor'. Over 80% of parents in each wave of LSAC rated their child's health as either 'Very Good' or 'Excellent'.

Source: LSAC Waves 1–3, B cohort and Wave 1, K cohort, unweighted



After accounting for other factors, including parents' reports of their child's general health, Table 12.2 (page 128) shows that, for children aged five and under:

- The odds of having seen a paediatrician in the past 12 months were 1.3 times higher for boys than for girls; the odds of having been to hospital emergency or outpatients were around 1.2 and 1.3 times higher, respectively; and the odds of seeing a speech therapist were 2.9 times higher for boys, compared to girls.² However, the odds of having had a dental appointment in the past 12 months were 17 percentage points lower for boys, compared to girls.
- For children with an Indigenous background, the odds of having seen a maternal and child health nurse or a dentist were almost halved, compared to those for non-Indigenous children. On the other hand, the odds of having been to hospital outpatients were 1.5 times higher for Indigenous children.
- With the exception of hospital outpatients, the odds of having an appointment with a medical practitioner were significantly lower for children who spoke a language other than English at home, compared to those who only spoke English. This may be a result of a lack of information about medical services available or other difficulties negotiating the health care system, among parents from non-English speaking backgrounds.
- Compared to children in households in the lowest 25% of equivalised household income:
 - The odds of having seen a GP in the past 12 months were 1.3 times higher among children in households in the upper half of the equivalised income distribution.
 - The odds of having had an appointment with a maternal and child health nurse were 1.2 times higher for children in families in the second quartile of equivalised household income.
- For other medical services, there were no significant differences according to household income.
- There were significant differences in the odds of having used health services depending on whether the child's family had private hospital insurance coverage. Compared to children whose family did not have private hospital coverage, for those with private hospital insurance:
 - The odds of having seen a GP or maternal health nurse were 1.7 and 1.2 times higher, respectively.
 - The odds of having seen a dentist were almost doubled.
 - The odds of having seen a paediatrician were tripled.
 - The odds of having been to hospital emergency or outpatients were reduced by 11 and 29 percentage points respectively.

When thinking about these results, it is important to keep in mind that private hospital insurance coverage is much more common for children in higher income households, with 73% of children in the households in the highest quartile of equivalised household income covered by private hospital insurance, compared to 23% in the lowest quartile. It is also interesting to note that for those with private hospital cover, the odds of using medical services with little or no out-of-pocket expenses, such as GPs and maternal and child health nurses, are also higher. This suggests that among those who choose to purchase private health insurance, there is a higher overall level of use of health services.

² A United States study by Black, Vahratian, and Hoffman (2015) shows that boys aged 3–17 are more likely than girls to have a voice, speech, language or swallowing disorder (9.6% compared to 5.7%).

- Parents' education is also a significant factor associated with the use of health services. Compared to children whose parents did not have a post-school qualification:
 - The odds of having seen a GP, paediatrician, and maternal and child health nurse were higher among those with at least one parent with a post-school qualification.
 - The odds of using dental services were higher among children with at least one parent with a degree qualification.
 - The odds of having been to a hospital emergency ward were significantly lower for children with at least one parent with a degree qualification.
- People living in remote areas of Australia may need to travel long distances to attend health services or receive specialised treatment. Data from the 2014–15 National Health Survey indicate that people living in inner, outer regional or remote areas of Australia were less likely than those in major cities to have visited a GP or a dentist in the last 12 months (ABS, 2017). Estimates using the LSAC data show differences in children's use of health services depending on whether the child lived in a major city or a regional or remote area. Compared to children living in a major city:
 - The odds of having seen a maternal and child health nurse were 1.2 times higher for those who lived in an outer regional or remote area.
 - The odds of having been to hospital outpatients were 1.3 times higher for those who lived in an outer regional or remote area.
 - The odds of having seen a GP were 22 percentage points lower for those who lived in an inner regional area, and were approximately halved for those in outer regional or remote areas.
 - The odds of having seen a paediatrician were 17 percentage points lower for those who lived in an inner regional area, and 39 percentage points lower for those in outer regional or remote areas.

Characteristics related to use of health services in the primary school years

As children start school, their needs for medical services change. Visits to the maternal and child health nurse end when children start school, and

children are likely to engage in more sports and physical activities than they did in the early years of childhood, which can result in injuries that may require medical attention.³

After accounting for other factors, including parents' reports of the study child's general health, Table 12.3 shows that, for primary school-aged children:

- The odds of having seen a paediatrician or a speech therapist were more than doubled for boys, compared to those for girls; and the odds of going to hospital emergency were 1.2 times higher. The odds of using dental services were 17 percentage points lower for boys, compared to those for girls.
- Compared to non-Indigenous children, the odds of going to the hospital emergency ward, or to the dentist, were significantly lower for children from an Indigenous background.
- Compared to children who only speak English at home, the odds of having seen a paediatrician, speech therapist or dentist were significantly lower for children who spoke a language other than English at home; and the odds of having been to hospital emergency or outpatients were also significantly lower.
- The odds of having been to the dentist in the last 12 months were 1.3 times higher for children with a parent with a degree qualification, compared to those whose parents had no post-school qualifications.
- Compared to children in households in the lowest quartile of household income:
 - The odds of having seen a GP in the last 12 months were approximately 1.2 times higher for those in households in the top half of the equivalised income distribution.
 - The odds of having seen a specialist (other than a paediatrician) were 1.2 times higher for those in households in the top 25% of the equivalised income distribution.
 - The odds of having been to the dentist in the last 12 months were 1.1 times higher for those in the second quartile of the equivalised income distribution; 1.4 times higher in the third quartile, and 1.3 times higher for those in the top 25% of the income distribution.
- For children in families with private hospital insurance coverage, the odds of having seen a GP, other specialist, speech therapist or dentist were significantly higher than those of children in households with no private hospital coverage.

³ Refer to Chapter 9 on outside school hours care and extracurricular activities in this report for a description of how participation in sports and other extracurricular activities changes as children get older.

**Table 12.3:** Characteristics associated with use of health services in the primary school years

Odds ratios							
	General practitioner	Paediatrician	Hospital emergency	Hospital outpatients	Speech therapy	Dental services	Other specialist
Age group of study child (ref. = age 6–7 years)							
8–9 years	0.56***	0.96	1.01	0.81**	0.42***	1.27***	0.91
10–11 years	0.49***	0.79	1.02	0.85*	0.20***	1.45***	0.98
Male	1.00	2.19***	1.22***	1.13	2.93***	0.83***	1.10
Indigenous	0.87	1.29	0.72*	1.15	1.30	0.76*	0.93
Language other than English at home	0.95	0.63**	0.76***	0.69**	0.46***	0.71***	0.85
Parents' education (ref. = Year 12 or lower)							
Certificate/Diploma	1.07	1.03	1.02	1.06	0.79	1.12	1.03
Degree	1.04	0.90	0.94	0.90	0.80	1.29***	1.10
Equivalised Household Income Quartile (ref. = 1st)							
2nd	1.08	1.03	1.02	1.04	1.19	1.11*	1.16
3rd	1.22***	0.88	1.01	0.87	0.82	1.40***	1.06
4th	1.16*	1.04	1.03	0.90	0.79	1.31***	1.23*
Private hospital insurance (in 2004)	1.32***	0.98	0.93	0.87	1.35**	1.87***	1.52***
Region of residence (ref. = major city)							
Inner regional	0.68***	1.27*	1.21***	0.95	1.00	0.91	1.00
Outer regional/remote	0.53***	0.75	1.31***	1.21*	0.60**	0.91	0.79**
Fair/poor health	2.93***	8.52***	2.78***	6.27***	4.14***	1.11	3.36***
B cohort	1.07	1.25*	1.06	0.88	1.23*	1.02	1.04
Total (n)	22,551	22,551	22,551	22,551	22,551	22,551	22,551

Notes: Random effects logistic regression models, odds ratios reported. * $p < .05$; ** $p < .01$; *** $p < .001$. Private health insurance coverage is measured in 2004. All other variables measured at time of interview. Parents' highest level of education refers to the highest level of education of either resident parent. Equivalised household income refers to household income adjusted for household size. Household income is divided by an equivalising factor (1 for the first adult + 0.5 for all other adults (aged 15 and over) + 0.3 for all children under the age of 15).

Source: LSAC Waves 4–6, B cohort and Waves 2–4, K cohort, unweighted

- As was the case for young children, accessibility of services in regional and remote areas was a significant factor associated with the use of health services. Compared to children living in a major city:
 - The odds of having seen a GP in the past 12 months were 32 percentage points lower for those living in inner regional areas and almost halved for those in outer regional or remote areas.
 - The odds of having seen a paediatrician were 1.3 times higher for those living in inner regional areas.
 - The odds of having been to a hospital emergency ward were 1.2 and 1.3 times higher, respectively, for those in inner regional and outer regional and remote areas. The use of hospital outpatients was also significantly higher among those in outer regional or remote areas. This may be a result of families in regional areas using hospital services as a substitute for GP visits.⁴ This finding is consistent with estimates of emergency hospital admissions, by remoteness, for the general population, which show that in 2013–14, the rate for emergency hospital admissions involving surgery was highest for people living in very remote areas (22 per 1,000 population) and fell with decreasing remoteness to be lowest among people living in major cities (12 per 1,000).
 - Compared to children living in major cities, the odds of having seen a speech therapist or a specialist other than a paediatrician were significantly lower for those in outer regional and remote areas (40 and 21 percentage points respectively). This suggests that access to some specialist services in regional and remote areas may be a problem for some families.

Characteristics related to adolescents' use of health services

With the onset of puberty, the health service needs of adolescents are different to those of younger children. Sports-related injuries become more common, particularly for boys. Issues related to mental health, particularly anxiety, depression and eating problems are also more common among adolescents than they are for younger children. For some teens, decisions about use of health care services may be made together with their parents (e.g. their own choice of GP), rather than by their parents on their behalf.

In the early teenage years, after controlling for other factors, parents' education is not a significant factor associated with the use of medical services (Table 12.4, page 133). Only for dental services are the odds of having used the service in the last 12 months higher (1.7 times) for those with at least one parent with a degree qualification, compared to those whose parents had no post-school qualification.

While there was no significant difference in the odds of having used a GP, specialist or psychological or behavioural therapy, the odds of having been to the hospital emergency ward or hospital outpatients were almost doubled for boys compared to girls. As was the case when children were younger, the odds of having seen a dentist in the past 12 months were 24 percentage points lower for boys than for girls.

There were also some differences according to household income. Compared to adolescents in households in the lowest quartile of equivalised household income:

- The odds of having been to the hospital emergency ward were 24 percentage points lower among those in the third quartile of equivalised income.
- The odds of having seen a specialist were 1.4 times higher for those in the highest quartile of the equivalised income distribution.
- The odds of having seen a psychologist or behavioural therapist were significantly lower among adolescents in households in the middle 50% of the equivalised income distribution (2nd and 3rd quartiles).
- The odds of having been to the dentist were around 1.5 times higher among children in households in the top 75% of the equivalised income distribution.

⁴ A 2015 study by the National Health Performance Authority (2015) has shown connections between the lack of access to GPs and the number of people visiting emergency departments, particularly in rural areas, where 'there is less distinction drawn between going to see your GP if you had an acute problem and going to the hospital, where you might be seen by a GP anyway.'

Compared to adolescents in households without private hospital insurance coverage, the odds of having been to the dentist were doubled for those with hospital coverage, and the odds of having seen a specialist were 1.6 times higher.

For GP and dental services, there were differences according to region of residence. Compared to adolescents living in major cities:

- The odds of having seen a GP in the past 12 months were 28 percentage points lower for those living in inner regional areas, and 45 percentage points lower for those in outer regional and remote areas.
- The odds of having used dental services in the past 12 months were 27 percentage points lower for those living in inner regional areas, and 20 percentage points lower for those in outer regional and remote areas.

Table 12.4: Characteristics associated with use of health services at ages 12–13 and 14–15

Odds ratios						
	General practitioner	Hospital emergency	Hospital outpatients	Psychological/ Behavioural therapy	Dental services	Other specialists
Age group of study child (ref. = age 12–13 years)						
14–15 years	1.15*	1.11	1.47***	1.44**	1.11	1.17*
Male	1.07	1.69***	1.82***	1.13	0.76***	1.13
Indigenous	1.02	0.84	1.11	0.83	0.76	0.84
Language other than English at home	0.86	0.44***	0.47**	0.33***	1.05	0.63**
Parents' education (ref. = Year 12 or lower)						
Certificate/Diploma	1.10	1.34	1.35	1.35	1.20	1.11
Degree	0.99	1.12	1.26	1.04	1.68***	1.23
Equivalised Household Income Quartile (ref. = 1st)						
2nd	0.91	0.81	1.20	0.54**	1.45***	0.96
3rd	1.08	0.76*	1.02	0.64*	1.47***	1.19
4th	1.05	0.85	0.85	0.71	1.49***	1.38*
Private hospital insurance (in 2004)	1.16	0.90	0.84	1.01	1.97***	1.56***
Region of residence (ref. = major city)						
Inner regional	0.72***	1.19	0.80	0.82	0.73***	0.93
Outer regional/remote	0.55***	1.18	1.19	0.66	0.80*	0.98
Fair/poor health	7.51***	2.63***	3.20***	7.98***	0.70	4.72***
Total (n)	6,646	6,646	6,646	6,646	6,646	6,646

Notes: Random effects logistic regression, odds ratios reported. * $p < .05$; ** $p < .01$; *** $p < .001$. Private health insurance coverage is measured in 2004. All other variables measured at time of interview. Parents' highest level of education refers to the highest level of education of either resident parent. Equivalised household income refers to household income adjusted for household size. Household income is divided by an equivalising factor (1 for the first adult + 0.5 for all other adults (aged 15 and over) + 0.3 for all children under the age of 15).

Source: LSAC Waves 5 and 6, K cohort, unweighted

12.2 Medical attention and hospital stays

The percentage of children who had required medical attention from a doctor or hospital due to an injury varied considerably, depending on their age and gender (Fig. 12.1).

At age 0–1, 7% of study children had needed medical attention due to an injury. At this age, there were no significant gender differences in the percentage of children needing medical attention for injuries.

However, at age 2–3, the percentage of children who had required medical attention for an injury increased substantially, with 22% of boys and 18% of girls receiving medical attention for an injury in the previous 12 months. Presumably, as

children start moving around more and being more adventurous (e.g. on playground equipment), injuries are more likely.

Injuries requiring medical attention were less common at ages 4–5 and 6–7 than they were at age 2–3. At age 6–7, 16% of boys and 13% of girls had received medical attention for an injury at least once in the past 12 months.

From age 6–7, the percentage of children who required medical attention for an injury increased considerably, particularly for boys. By age 14–15, 31% of boys and 21% of girls had required medical attention for an injury in the past 12 months.

Box 12.2: Medical attention due to injury

In each wave of LSAC, the study child's main carer is asked how many times in the previous 12 months the study child needed medical attention from a doctor or hospital because of an injury.

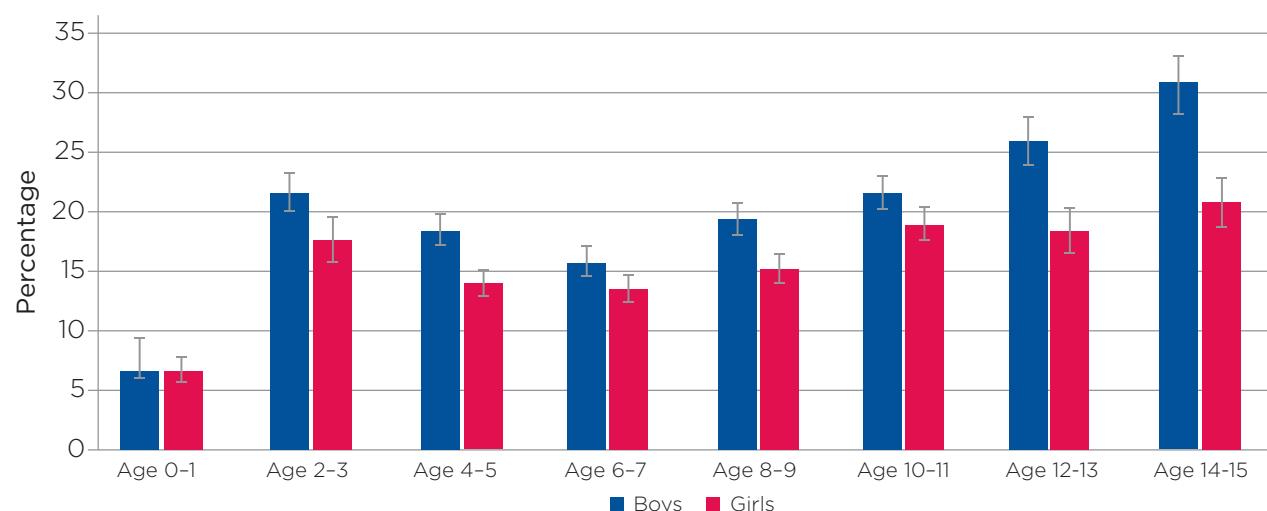
Interviewers were instructed to include hospital casualty/emergency ward or outpatient clinics and, in more remote areas, include care given by a visiting nurse or health centre nurse. They were to exclude medical attention needed because the child was unwell or had an illness (e.g. fever, asthma).

Parents were also asked about the types of injuries that had required medical attention, such as broken or fractured bones, burns or scalds, sprains and strains; insect bites or stings, and accidental poisoning.

In Wave 6 (when B cohort children were aged 10–11 and K cohort children were aged 14–15), parents of children who had sustained at least one injury that required medical attention were asked, 'Thinking about the most serious injury in the last 12 months, where did this occur?' They were also asked whether the most recent injury was the result of an accident, if someone else had deliberately caused the injury, or if the study child had deliberately caused the injury to themselves.



Figure 12.1: Medical attention due to injury, by age and gender



Note: For ages 4–5 to 10–11, data from B and K cohorts are combined. *n* ranges from 5,106 at age 0–1 to 3,454 at age 14–15.

Source: LSAC Waves 1 to 6, B and K cohorts, weighted

Table 12.5: Location of most recent injury, children aged 10–11 and 14–15, in 2014

Location of most recent injury	Age 10–11 in 2014 (%)			Age 14–15 in 2014 (%)		
	Boys	Girls	All	Boys	Girls	All
At home	23.8	22.6	23.3	10.8	15.9	12.8
School or outside-school-hours care	32.4	33.5	32.9	30.5	26.0	28.8
Someone else's place	6.5	7.9	7.2	#4.0	#1.7	3.1
Outside public place	27.8	20.3	24.2	43.7	30.9	38.7
Inside public place	5.5	13.3	9.2	6.9	18.2	11.3
Public road	#2.4	#0.8	#1.6	#1.6	#3.9	2.5
Other	#1.6	#1.6	#1.6	#2.6	#3.5	2.9
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0
Total (n)	430	392	822	549	348	897

Notes: #Estimate not reliable (cell size < 20). Gender differences are statistically significant at the 5% level for both age groups. Percentages may not exactly total 100.0% due to rounding.

Source: LSAC Wave 6, B and K cohorts, weighted

Among children aged 10–11 who had sustained an injury that required medical attention in the 12 months prior to their LSAC interview in 2014, the most commonly reported location for injuries, for boys and girls, was at school or outside-school-hours care, with around one third of 10–11 year olds being injured in those locations (Table 12.5).

The next most common location for injuries for boys was outside in a public place, followed by at home. For girls, more injuries occurred at home than outside in a public place. One possible explanation for this is that levels of participation in team sports are higher for boys than for girls.⁵

At age 14–15, over 40% of boys and 30% of girls who had an injury that required medical attention in the past 12 months were injured outside in a public place – a substantial increase from age 10–11, particularly for boys. While a similar proportion of boys were injured at school or outside-school-hours care at ages 10–11 and 14–15 (just over 30%), for girls, the percentage who were injured at school or outside-school-hours care was considerably lower at age 14–15 than at age 10–11 (26% at age 14–15 compared to just over one third at age 10–11). At age 10–11, almost one-quarter of injuries happened at home for boys and girls, while at age 14–15, only 11% of boys and 16% of girls sustained their most recent injury at home.

Among boys and girls aged 14–15 who reported having medical attention due to an injury at least once in the past 12 months, almost all injuries (94%) were

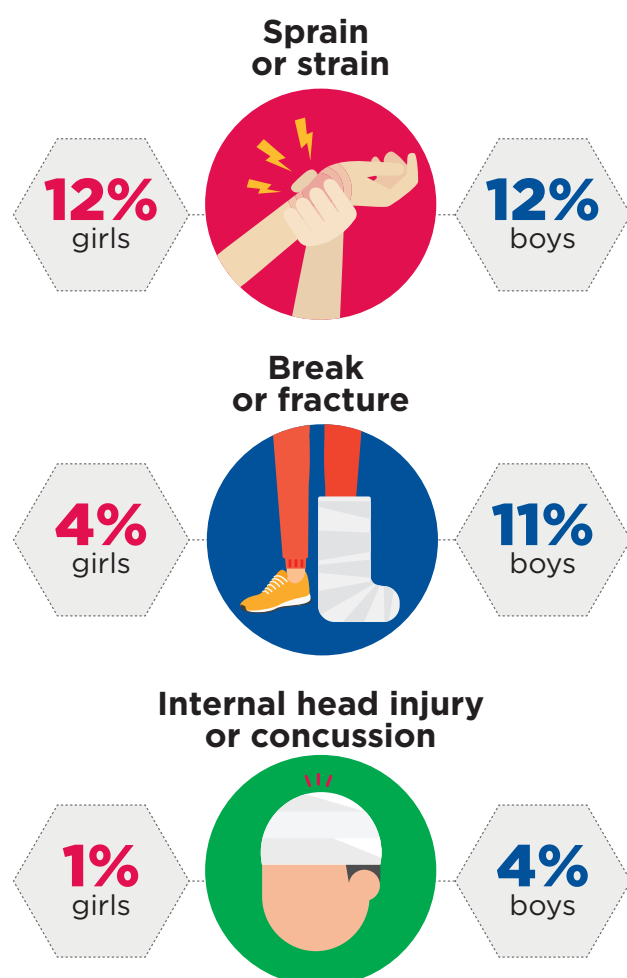
reported to be the result of an accident, and around 4% were a result of someone else deliberately causing the injury. However, there was some evidence of self-harm among girls, with 4% of injuries for 14–15 year old girls (but only 1% for boys) reported by parents as something that the study child had done to themselves deliberately. This finding is consistent with those of Daraganova (2017), who used LSAC to investigate self-harm among 14–15 year olds, and found that 4% of boys and 15% of girls had self-harmed in the previous 12 months.

The types of injuries requiring medical attention also varied with the age and gender of the child. Overall, the most common types of injuries requiring medical attention were cuts and scrapes. At ages 2–3 and 4–5, around 10% of boys and 6% of girls had required medical attention for this type of injury. Medical attention for cuts and scrapes became less common as children got older. At age 14–15, only 5% of boys and 3% of girls had needed medical attention for a cut or scrape.

On the other hand, medical attention for broken bones and sprains and strains became more common as children got older. From ages 0–1 to 4–5, the percentage of children who required medical attention for a broken or fractured bone was 3% or lower. At age 14–15, 11% of boys, but only 4% of girls, had required medical attention for a broken or fractured bone in the past 12 months (see Figure 12.2, page 136).

⁵ For further details about participation in team sports and other activities, refer to chapter 9 on outside-school-hours care and extracurricular activities in this report.

Figure 12.2: Medical attention for boys and girls at age 14–15



A recent study of the use of GP services by over 65,000 Australian children and adolescents between 2006 and 2011, found that in the years around puberty, rapid changes in bones and muscle are a key reason the injury rate jumps at this time, with teens at increased risk of injuries when they play sport (Henschke et al., 2014). They suggest that a reason for the higher injury rate among teenage boys is that the growth in weight and muscle bulk makes contact and collision sports more likely to result in injury – especially when there is a mismatch in the size and weight of opposing players.

While more boys than girls required medical attention for broken or fractured bones, there was no significant gender difference in the percentage of boys and girls

who had required medical attention for sprains and strains. Relatively few children required medical attention for sprains and strains in the early years of childhood, but at age 12–13, around 9% of boys and girls required medical attention for a sprain or strain, and at age 14–15, this figure was 12% for boys and girls.

For girls, the percentage who had required medical attention for a concussion or internal head injury was 1% at age 14–15, and less than 1% at younger ages. For boys, these figures were higher, presumably as a result of injuries sustained during contact sports. At age 12–13, 2% of boys had required medical attention for this type of injury in the previous 12 months, and at age 14–15, 4% had required medical attention for concussion. These may seem like small figures, but this represents around 5,000 15-year-old boys across Australia who had required medical attention as a result of concussion over a 12-month period.⁶

There were also some differences depending on region of residence, with children living in a major city less commonly receiving medical attention for injuries than children who live in regional or remote areas. For example, at age 4–5, 18% of children who lived in a major city had received medical attention for an injury, compared to 21% of children in inner regional areas and 24% in outer regional or remote areas.

One possible explanation for this difference is that children in regional or remote areas are likely to spend more time engaging in active play outside the home, and are therefore more susceptible to injuries. Previous research using LSAC data shows that, at age 8–9, boys and girls living in outer regional and remote areas spent more time outside than those living in major cities but the difference is no more than half an hour per day (Baxter, Hayes, & Gray, 2011). Another possible reason for the higher percentage of injuries in regional and remote areas is that, compared to children living in metropolitan areas, those living in rural areas can be exposed to a variety of additional hazards. Key problem areas identified by the Australian Centre for Agricultural Health and Safety (2009) are increased risk of drowning, injuries associated with (two- and four-wheel) motorcycles and other farm vehicles, horse-related injuries and injuries associated with farm machinery.

⁶ At Wave 6 of LSAC, study children were aged 14 or 15. However, the sample is not representative of 'all 14 and 15 year olds in 2014'. Study children in the K cohort were born between March 1999 and May 2000, and the majority were aged 15 at the time of interview.

Hospital stays as a result of injury

Relatively few children had an overnight hospital stay as a result of an injury in the 12 months prior to their LSAC interview. In the early years of childhood, around 2% of boys and 1% of girls stayed in hospital overnight due to an injury.

While the percentage of adolescents who had stayed overnight in hospital due to an injury was still quite low, the gender difference was statistically significant. At ages 12–13 and 14–15, 3% of boys and 1% of girls had stayed in hospital overnight due to an injury in the previous 12 months.

Box 12.3: Hospital stays due to injury

In each wave of LSAC, primary carers who reported that their child had sustained an injury that required medical attention in the last 12 months were asked: 'In the last 12 months, did (the study child) stay in hospital for at least one night because of this injury/these injuries?'

Those who reported that the child had stayed in hospital due to an injury were asked how many times in the last 12 months the child had been to hospital for an injury.

Hospital stays for reasons other than injuries

The percentage of children who had stayed in hospital overnight for reasons other than injuries declined with age – from 10% of 0–1 year olds to 3% of 14–15 year olds.⁷ At age 0–1, there were no significant gender differences in the percentage of children who had non-injury related hospital admissions. However, from ages 2–3 to 8–9, the percentage of boys who had stayed in hospital overnight for reasons other than injury was significantly higher than that for girls (Figure 12.3).

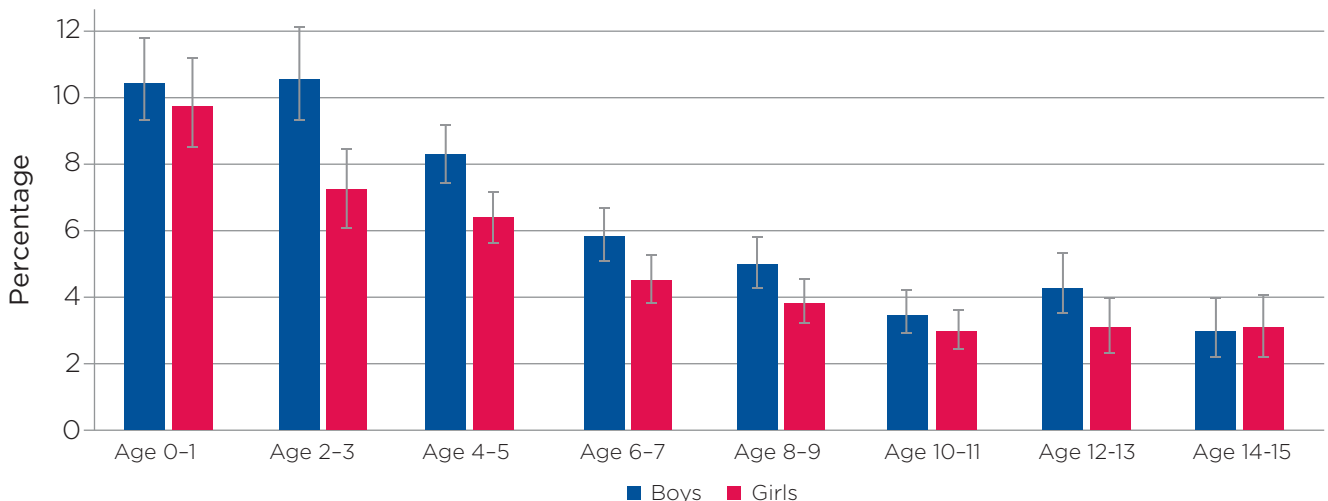
From ages 10–11 to 14–15, only 3–4% of children had stayed in hospital for reasons other than injuries; and there was no significant gender difference in the percentage of children who had non-injury related hospital stays.

Box 12.4: Hospital stays for reasons other than injuries

In each wave of LSAC, the study child's main carer was asked about any hospital stays for reasons other than injuries. The question asked: 'Not including injuries, in the last 12 months, did the study child stay in hospital for at least one night for any (other) reason?'

Interviewers were instructed to clarify that this did not include hospital outpatient or emergency departments.

Figure 12.3: Hospital stays for reasons other than injuries, by age and gender



Notes: For ages 4–5 to 10–11, data from B and K cohorts are combined. *n* ranges from 5,106 at age 0–1 to 3,454 at age 14–15.

Source: LSAC Waves 1–6, B and K cohorts, weighted

⁷ Parents were asked the specific reason for the most recent (non-injury related) hospital stay. Options included fevers, viral illnesses, asthma, gastroenteritis, grommets, tonsillectomy. However, the number of observations for specific health conditions were too small for reliable estimates.

12.4 Use of prescription medicine



Box 12.5: Use of prescription medicine

At each LSAC interview, the study child's main carer was asked, 'Does the study child currently need or use medicines prescribed by a doctor, other than vitamins?'

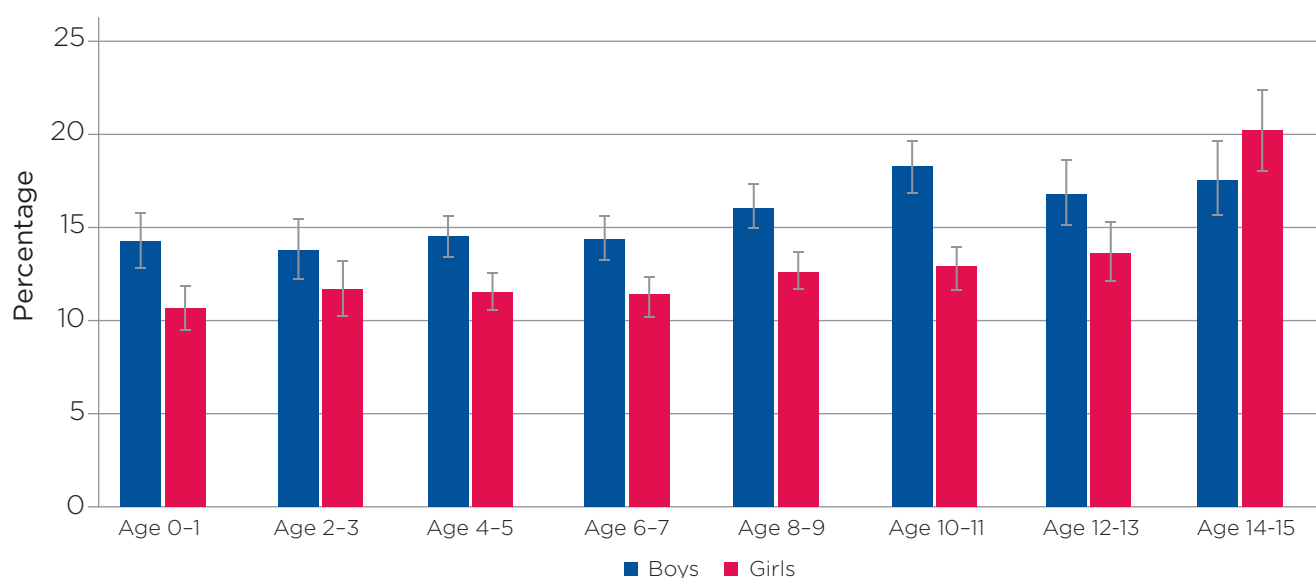
Those who said that their child was currently using prescription medicine were asked if the child was using that medicine because of any medical, behavioural or other health condition, and if that condition had lasted, or was expected to last, for at least 12 months.

As children got older, the proportion who needed medicine prescribed by a doctor increased with age – from around 13% of children under the age of 8–9 to 19% of 14–15 year olds in 2014.

For the majority of children who were using prescription medicine (over 70% from age 2–3 onwards), the condition that was being treated was an ongoing one that had lasted for at least 12 months.

From age 0–1 to age 12–13, the percentage of study children who were using prescription medicine was higher for boys than for girls. This gender difference was statistically significant across all age groups except for ages 2–3 and 12–13 (Figure 12.4). However, at age 14–15, the percentage of girls who were using prescription medicine was higher for girls than for boys. Although this difference was not statistically significant, it suggests that, for girls, health care needs and reasons for using prescription medicine change substantially in the teenage years.

Figure 12.4: Use of prescription medicine, by age and gender



Notes: For ages 4–5 to 10–11, data from B and K cohorts are combined. *n* ranges from 5,106 at age 0–1 to 3,453 at age 14–15.

Source: LSAC Waves 1–6, B and K cohorts, weighted

12.5 Access to health care services

Difficulties accessing services are likely to be related to a variety of factors, including the cost of services, location and availability of services (particularly in regional and remote areas), as well as knowledge of services and how to navigate complicated systems and referral processes. For some, concerns about confidentiality and poor previous experiences with health practitioners may be a barrier to accessing health services (Cummings & Kang, 2012). Using the LSAC data, we are able to examine parents' reports of difficulties gaining access to health services; and the factors associated with those difficulties.

Box 12.6: Difficulties accessing health services

In addition to questions about the use of health services, primary carers are asked about difficulties gaining access to health services.

In Wave 2 of LSAC, primary carers were asked only if they had difficulties accessing services. In all other waves, they were asked about difficulties accessing the specific services that they were asked about using. That is, for each of the services listed in Table 12.1, parents were asked, 'In the last 12 months, have there been any of the services listed that the study child has needed but could not get?' It is therefore important to note that the percentages of parents reporting difficulties accessing health care services are not directly comparable across waves or cohorts.

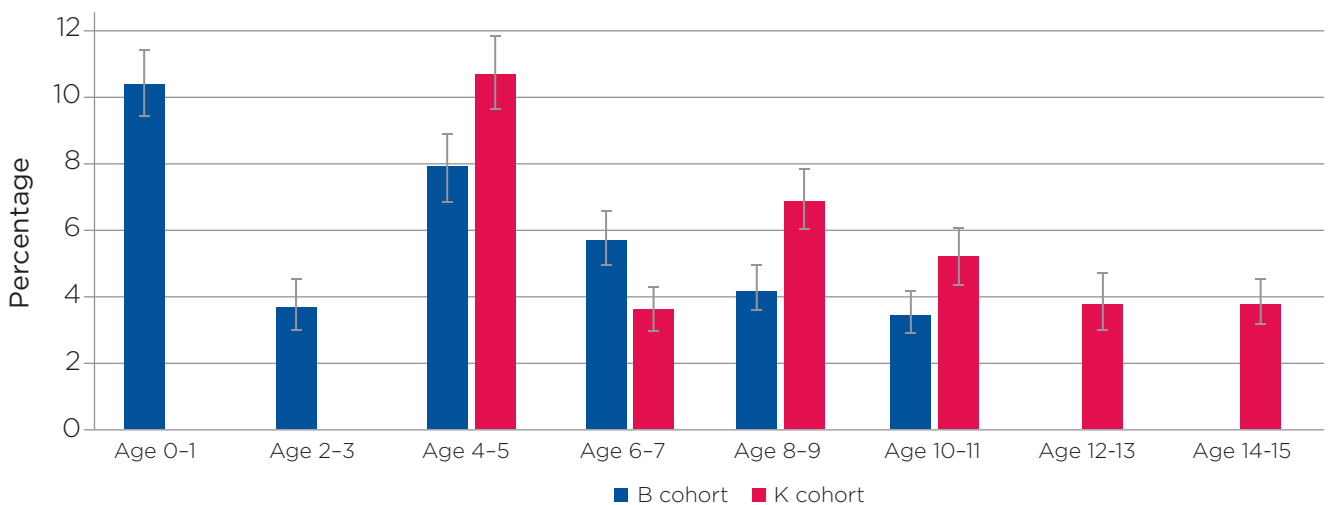
Relatively few parents reported having problems accessing health services (Figure 12.5). At age 0–1, just over 10% of parents reported difficulties accessing health services, and the most common difficulty was access to GPs, with 2.8% of parents reporting this difficulty.

The percentage of parents of 4–5 year olds who reported problems with access to services was higher for the K cohort in 2004 (11%) than for those in the B cohort in 2008 (8%). The most common services that parents reported experiencing difficulties with when their children were aged 4–5 were GPs and speech therapists.

For parents of 6–7 year old children (in the K cohort in 2006), difficulties with access to speech therapists and dental services were the most commonly reported issues; and for the K cohort children from age 8–9 onwards, problems with access to dental services was the most commonly reported issue. However, it is important to keep in mind that less than 2% of parents in each wave reported difficulties accessing dental services.

While difficulties accessing services were relatively uncommon, there were some characteristics associated with the likelihood of reporting these difficulties (Table 12.6, page 140). For example:

Figure 12.5: Difficulties accessing health services by age of the study child



Notes: For ages 4–5 to 10–11, data from B and K cohorts are combined. *n* ranges from 5,106 at age 0–1 to 3,453 at age 14–15. As specific health services asked about differed by wave of LSAC (and were not asked at all in Wave 2), these percentages are not directly comparable across waves or cohorts.

Source: LSAC Waves 1–6, B and K cohorts, weighted

- Across all ages, the odds of reporting difficulties accessing health services were higher for parents of boys than for girls. This is presumably due to a higher level of demand for some services. For example, in the early years of childhood and also in the primary school years, use of speech therapy services was significantly higher for boys than for girls.
- In the early years of childhood, but not for school-age children or adolescents, the odds of reporting difficulties accessing health services were significantly (1.3 times) higher among those who spoke a language other than English at home, compared to those who only spoke English.
- Compared to families in the lowest quartile of equivalised household income, the odds of having difficulties accessing health services were significantly lower for those in the top half of the income distribution. This difference was especially evident for adolescents, with the odds of reporting difficulties with access 56 percentage points lower

for those in the top half of the income distribution, compared to those in the lowest income quartile.

- Across all age groups, the odds of access difficulties were around 25 percentage points lower for those who had private hospital insurance coverage (in 2002), compared to those who did not.
- For primary-school-aged children and also adolescents (but not for children in the early years of childhood) there were significant differences in the odds of reporting difficulties accessing health services, according to region of residence. Compared to families living in a major city, the odds of reporting access difficulties were significantly higher for those in inner regional areas; and higher again for those living in outer regional or remote areas. This finding is consistent with research from the AIHW (2017), which shows that people living in remote and very remote areas generally have poorer access to, and use of, health services than people in regional areas and major cities.

Table 12.6: Characteristics associated with difficulties accessing health services

	Odds ratio			
	Early years	Primary school	Adolescence	All
Male	1.21**	1.32***	1.21*	1.25***
Indigenous	1.17	1.20	0.89	1.12
Language other than English at home	1.34*	0.95	1.10	1.14
Parents' education (ref. = Year 12 or lower)				
Certificate/Diploma	1.17	1.10	1.07	1.14
Degree	1.11	1.01	0.81	1.04
Equivalised Household Income Quartile (ref. = 1st)				
2nd	0.81*	0.72**	0.65*	0.77***
3rd	0.85	0.57***	0.44***	0.71***
4th	0.74**	0.58***	0.44**	0.66***
Private hospital insurance (in 2004)	0.77***	0.73***	0.76*	0.73***
Region of residence (ref. = major city)				
Inner regional	1.10	1.26*	1.54*	1.20**
Outer regional/remote	1.17	1.51***	1.72*	1.35***
Fair/poor health	2.41***	3.52***	4.80***	2.74***
B cohort	0.63***	0.82*	–	0.75***
Total (n)	15,145	22,521	6,646	44,312

Notes: Random effects logistic regression, odds ratios reported. Private health insurance coverage is measured in 2004. All other variables measured at time of interview. Parents' highest level of education refers to the highest level of education of either resident parent. Equivalised household income refers to household income adjusted for household size. Household income is divided by an equivalising factor (1 for the first adult + 0.5 for all other adults (aged 15 and over) + 0.3 for all children under the age of 15).

Source: LSAC Waves 1–6, B and K cohorts (for early years, B cohort Waves 1–3 and K cohort Wave 1; for primary school, B cohort Waves 3–6 and K cohort Waves 2–4; for adolescence, K cohort Waves 5 and 6), unweighted

Summary

This chapter has provided a picture of Australian children's health service usage from ages 0–1 and 4–5, in 2004, to ages 10–11 and 14–15, in 2014. The LSAC data show that the levels of use of health care services change as children get older and health service needs change. Use of some services, such as dental services, which can incur significant out-of-pocket expenses, are related to household income and private health insurance coverage. For other services, usage levels are higher for boys than for girls, simply because boys more commonly experience some specific health issues, such as speech and hearing difficulties.

In the early years of childhood, and also when children are in primary school, parents' education is a significant factor related to children's use of health services, as is whether a language other than English is spoken at home. This suggests that for some parents, access to health services may be limited by a lack of information about the types of services available and a lack of knowledge of how to access specific health services. Differences in health service usage among children who live in regional or remote areas, compared to those living in major cities, suggests that for some services, particularly specialists, families in regional and remote areas can face difficulties with access.

The percentage of children who had required medical attention due to an injury (and also the types of

injuries sustained) varied considerably depending on the age and gender of the study child. In the early years of childhood, the most common injuries were cuts and scrapes but as children got older, medical attention for broken bones and sprains and strains became more common. For teenage boys, concussions were also an issue of concern, with 4% of 14–15 year old boys requiring medical attention for concussion or internal head injury in the past 12 months. While most injuries were the result of an accident, or unintentional, around 4% of 14–15 year old boys and girls were injured by another person; and, for girls, 4% of injuries requiring hospitalisation were the result of self-harm.

In terms of access to health services, the LSAC data show that while most parents report no difficulties with access, some parents do have difficulties. As might be expected, difficulties accessing health services were more common among families in regional and remote areas than for those living in metropolitan areas. There is also some evidence of difficulties as a result of the cost of health services, with families in the lowest quartile of equivalised income more likely to report trouble with accessing services. Finally, knowledge about how to access services also appears to be a factor. Among families with young children, those who spoke a language other than English were more likely to have reported difficulties accessing health services.



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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)
 - 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)
 - 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)
- 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:

- face-to-face interviews:
 - on paper
 - by computer-assisted interview (CAI)
- self-complete questionnaires:
 - during interview (paper forms, computer-assisted self-interviews (CASI) and audio computer-assisted self-interviews (ACASI)
 - leave-behind paper forms
 - mail-out paper forms
 - internet-based forms
- physical measurement of the child, including height, weight, girth, body fat and blood pressure

- direct assessment of the child's vocabulary and cognition
- time use diaries
- computer-assisted telephone interviews (CATI)
- linkage to administrative or outcome data (e.g. Medicare, MySchool).

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.

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 (10% of B cohort families and 12% of K cohort families) could not be contacted (e.g. because the address was out-of-date or only a post office box address was provided).

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

Table A.1: Response rates, main waves, 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						
Response rate of Wave 1	100.0%	90.2%	85.9%	83.0%	80.0%	73.7%
Response rate of available sample ^a	–	91.3%	88.2%	86.1%	83.5%	83.9%
Total (n)	5,107	4,606	4,386	4,242	4,077 ^b	3,764
K cohort						
Response rate of Wave 1	100%	89.6%	86.9%	83.6%	79.4%	71.0%
Response rate of available sample ^a	–	90.8%	89.7%	87.2%	83.5%	80.5%
Total (n)	4,983	4,464	4,332 ^c	4,164	3,952 ^c	3,537
Total (B and K cohorts)						
Response rate of Wave 1	100%	89.9%	86.4%	83.3%	79.7%	72.3%
Response rate of available sample ^a	–	91.1%	89.0%	86.6%	83.5%	82.2%
Total (n)	10,090	9,070	8,718	8,406	8,029	7,301

Notes: This table refers to the numbers of parents who responded at each wave. ^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).

Sample weights

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; Norton and Monahan, 2015; Siphthorp & Misson, 2009; Soloff, Lawrence, & Johnstone, 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.

Overview of statistical methods and terms used in the report

Balanced panel

A balanced panel restricts the sample to individuals who have responded to the survey in all waves of the period under study. For example, a balanced panel for Waves 1–6 of the LSAC data consists of individuals who have responded in all six waves.

Confidence interval

A confidence interval (CI) is a range of values, above and below a finding, in which the actual value is likely to fall. The CI represents the accuracy of an estimate, and it can take any number of probabilities, with the most common being 95% or 99%. The analysis in this report uses a 95% confidence level. This means that the confidence interval covers the true value for 95 out of 100 of the outcomes.

Deciles, quartiles and quintiles

A decile is any of the nine values that divide data that have been sorted from lowest to highest into 10 equal parts, so that each part represents one-tenth of the sample or population. For example, the first decile of the income distribution cuts off the lowest 10% of incomes, and people in the first (or bottom) decile have the lowest 10% of incomes.

A quintile is any of the four values that divide data that have been sorted from lowest to highest into five equal parts. For example, people in the first (or lowest) income quintile have the lowest 20% of incomes.

A quartile is any of the three values that divide data that have been sorted from lowest to highest into four equal parts. For example, people in the first (or lowest) income quartile have the lowest 25% of incomes.

Mean

'Mean' is the statistical term used for what is more commonly known as the average – the sum of the values of a data series divided by the number of data points.

Odds ratios

An odds ratio (OR) is a measure of association between an exposure and an outcome. The odds ratio represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure.

ORs are used to compare the relative odds of the occurrence of the outcome of interest (e.g. disease or disorder), given exposure to the variable of interest (e.g. health characteristic, aspect of medical history). The OR can also be used to determine whether a particular exposure is a risk factor for a particular outcome, and to compare the magnitude of various risk factors for that outcome.

- OR = 1 Exposure does not affect odds of outcome
- OR > 1 Exposure associated with higher odds of outcome
- OR < 1 Exposure associated with lower odds of outcome.

Regression models

In statistical analysis, a regression model is used to identify associations between a 'dependent' variable (such as earnings) and one or more 'independent' or 'explanatory' variables (such as measures of educational attainment and work experience). In particular, it shows how the typical value of the dependent variable changes when any one of the independent variables is varied and all other independent variables are held fixed. Most commonly, regression models estimate how the mean value of the dependent variable depends on the explanatory variables – for example, mean (or 'expected') earnings given a particular level of education and work experience. Different types of regression models are used depending on factors such as the nature of the variables and data, and the 'purpose' of the regression model. The following types of models are estimated in this report:

Ordinary Least Squares models

Ordinary Least Squares models estimate linear associations between a dependent (or outcome) variable (such as earnings) and one or more independent (or explanatory) variables (such as age and educational attainment). The method finds the linear combination of the explanatory variables that minimises the sum of the squared distances between the observed values of the dependent variable and the values predicted by the regression model.

Logistic regression models

Logistic regression models are used to estimate the effects of factors, such as age and educational attainment, on a 'qualitative' or categorical dependent variable, such as labour force status, which is qualitative because it is not naturally 'quantitative' (or numerical), as is the case with income. The standard models examine 'binary' dependent variables, which are variables with only two distinct values, and estimates obtained from these models are interpreted as the effects on the probability the variable takes one of those values. For example, a model might be estimated on the probability an individual is employed (as opposed to not employed).

Statistical significance

In the context of statistical analysis of survey data, a finding is statistically significant if it is unlikely that the relationship between two or more variables is caused by something other than chance. That is, a relationship can be considered to be statistically significant if we can reject the 'null hypothesis' that hypothesizes that there is no relationship between measured variables. A common standard is to regard a difference between two estimates as statistically significant if the probability that they are different is at least 95%. However, 90% and 99% standards are also commonly used. The 95% standard is adopted for results presented in this report. Note that a statistically significant difference does not mean the difference is necessarily large, it simply means that you can be fairly confident that there is a difference.

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