



Introduction

Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC) is Australia's first nationally representative longitudinal study of child development. The purpose of the study is to provide data that enable a comprehensive understanding of children's development within Australia's current social, economic and cultural environment (Department of Families, Housing, Community Services and Indigenous Affairs [FaHCSIA], 2009). 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. The study thereby gives policy-makers and researchers access to quality data about children's development in the current Australian environment.

The study was initiated and is funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs, 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.

This is the second volume in the LSAC Annual Statistical Report series. The purpose of these reports is to provide an overview of the data from the study and thereby describe aspects of Australian children's lives and development. The reports also make use of the longitudinal nature of LSAC data to describe the dynamics of change as children develop, and how their families and lives change as they grow older.

This report is structured around five themes (covering the two broad domains of *children's environments* and *children's development*), with chapters as follows:

1. Introduction

Families

2. Parental mental health
3. Fathers' involvement in children's personal care activities
4. Families with a child with disability: Joblessness, financial hardship and social support
5. Turned on, tuned in or dropped out? Young children's use of television and transmission of social advantage

Education

6. Access to preschool education in the year before full-time school

Housing, neighbourhood and community

7. Housing characteristics and changes across waves

Cognitive development and learning

8. Children's numeracy skills

Physical development and health

9. Children's body mass index: Cohort, age and socio-economic influences

Each chapter in the report concludes with a list of “further reading” for those interested in other work that has used LSAC data to explore particular topics.

The first section of this introductory chapter provides a brief overview of LSAC, the second describes the analytical approaches used throughout the main chapters of the report, and the third section introduces subgroups that are used in some of the main chapters.

1.1 About the study

Study design

The LSAC study has an accelerated cross-sequential design, with two cohorts of children:

- the B (“baby”) cohort, who were aged 0–1 years at the beginning of the study (born between March 2003 and February 2004); and
- the K (“kindergarten”) cohort, who were aged 4–5 years at the beginning of the study (born from March 1999 to February 2000).

The first wave of data collection was in 2004, with subsequent main waves every two years. In 2005, 2007 and 2009 respondents were also sent a between-waves mail survey. Table 1.1 summarises the ages and sample sizes for the two cohorts across the first three waves of the study.

	Wave 1 (2004)	Wave 1.5 (2005)	Wave 2 (2006)	Wave 2.5 (2007)	Wave 3 (2008)	Wave 3.5 (2009)
B cohort	0–1 years 5,107	1–2 years 3,573	2–3 years 4,606	3–4 years 3,246	4–5 years 4,386	5–6 years 3,012
K cohort	4–5 years 4,983	5–6 years 3,594	6–7 years 4,464	7–8 years 3,252	8–9 years 4,332	9–10 years 2,972

This design means that from the third wave of the study, the children’s ages overlap; that is, children were aged 4–5 years in the first wave for the K cohort and in the third wave for the B cohort. Thus, by covering the first three waves of the study, this report includes data on children between the ages of 0 and 10 years.

Respondents and collection methods

One feature of LSAC is its use of multiple respondents. This provides a rich picture of children’s lives and development, as responses can be compared between different respondents (e.g., parents and teachers) to provide an insight into children’s behaviour in different contexts. The use of multiple respondents also helps to reduce the effects of respondent bias. In the first three waves of the study, data were collected from:

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

1 For separated families with shared care, the interviewer worked with the family to identify who the child’s primary parent was for the purposes of data collection.

In the first three waves of the study, the primary respondent was the child's primary parent. In the majority of cases, this was the child's biological mother, but may also have been someone else who knew the most about the child.

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

- face-to-face interviews;
 - on paper; and
 - by computer-assisted interview (CAI);
- self-complete questionnaires:
 - during interview;
 - leave-behind; and
 - mail-out;
- physical measurements of the child, including height, weight, girth, body fat and blood pressure;
- direct assessments of the child's vocabulary and cognition;
- time use diaries;
- computer-assisted telephone interviews (CATI); and
- linked administrative data (e.g., Medicare).

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

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).²

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 refused to participate (33% of B cohort families and 38% of K cohort families), and 11% of families could not be contacted (e.g., because the address was out-of-date, or only a post office box address was provided) (10% of B cohort families and 12% of K cohort families).

This resulted in a nationally representative sample of 5,107 0–1 year olds and 4,983 4–5 year olds who were Australian citizens or permanent residents. Table 1.2 (on page 4) presents the response rates for each of the three main waves, and each of the three between-wave surveys.³

1.2 Analyses presented in this report

This report includes data from the first three waves and between-waves surveys of the study. Analyses for the two cohorts (B and K) are presented separately throughout this report.

² See Soloff, Lawrence, and Johnstone (2005) for more information about the study design.

³ The sample sizes reported in analyses using more than one wave may be lower than those shown in Table 1.2 because they would include only those responding to all waves. (Note that some of the families responding in Wave 3 did not respond in Wave 2.)

Table 1.2 Response rates, B and K cohorts, Waves 1–3.5						
	Wave 1	Wave 1.5	Wave 2	Wave 2.5	Wave 3	Wave 3.5
B cohort						
Number of responses	5,107	3,573	4,606	3,246	4,386	3,012
Response rate of Wave 1	100.0%	70.0%	90.2%	63.6%	85.9%	59.0%
Response rate of available sample ^a	–	70.6%	91.2%	66.8%	88.2%	63.1%
K cohort						
Number of responses	4,983	3,594	4,464	3,252	4,332	2,972
Response rate of Wave 1	100.0%	72.1%	89.6%	65.3%	86.9%	59.6%
Response rate of available sample ^a	–	72.8%	90.9%	69.0%	89.7%	64.0%
Total						
Number of responses	10,090	7,167	9,070	6,498	8,718	5,984
Response rate of Wave 1	100.0%	71.0%	89.9%	64.4%	86.4%	59.3%
Response rate of available sample ^a	–	71.7%	91.1%	67.9%	89.0%	63.6%

Note: ^a The available sample excludes those families who opted out of the study between waves. For the between-waves surveys, the available sample is the number of between-waves surveys that were mailed out.

Given the breadth and depth of topics included in the study, chapters in this report do not necessarily use data from all three waves and/or cohorts. For example, under the Education theme in the *Annual Statistical Report 2010*, we focused on the first two waves of the study, looking at family child care arrangements, while in the current (2011) report, the chapter in the same theme uses data from Wave 1 of the K cohort and Wave 3 of the B cohort to explore which children attended a preschool program in the year before full-time school (Chapter 6).

Three general approaches are taken to the analyses in this report:

- *comparisons between certain subpopulation groups* (summarised in Table 1.3 on page 5) on the various aspects of children’s environments and development—for example, comparison of television-watching behaviours for children from different socio-economic backgrounds;
- *examination of trends across waves* (as children get older)—for example, examination of how the prevalence of overweight/obesity varies for children of different ages, and the persistence of overweight/obesity across waves; and
- *comparisons between the B and K cohorts at the same age* (where appropriate)—for example, investigation of differences in prevalence of overweight/obesity between the two cohorts at age 4–5 years.⁴

Weighting and survey analysis

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 (Misson & Siphthorp, 2007; Siphthorp & Misson, 2009; Soloff et al., 2005; Soloff, Lawrence, Misson, & Johnstone, 2006). This gives greater weight 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 are used in analyses presented throughout this report. Cross-sectional or longitudinal weights are used when examining data from more than one wave. Analyses were 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.

⁴ In making comparisons between the two cohorts at the same age, it is important to consider the differences between them, particularly because the B cohort has the potential to be affected by more non-random attrition between waves. See the *LSAC Data User Guide* (AIFS, 2011).

1.3 Subpopulation groups

In some chapters in this report, comparisons are made between different subpopulation groups on the various aspects of children's environments and development that are explored using the data from LSAC. For example, Chapter 6 investigates differences in access to preschool education in the year before full-time school for children from different subgroups. The subpopulations used in the comparisons are those identified as priority groups for policy interventions or those that are expected (based on previous research) to differ in terms of their experiences or outcomes. These subgroups were introduced in detail in the *Annual Statistical Report 2010*, and are summarised in Table 1.3.

Table 1.3 Subpopulation groups used in comparisons throughout the report, B and K cohorts, Waves 1–3						
Categories	B cohort			K cohort		
	0–1 years	2–3 years	4–5 years	4–5 years	6–7 years	8–9 years
	%			%		
Child gender						
Boys	51.2	51.1	51.0	51.2	51.3	51.3
Girls	48.8	48.9	49.1	48.8	48.7	48.7
No. of observations	5,107	4,606	4,386	4,983	4,464	4,331
Main language spoken at home by child						
English	87.2	87.9	87.0	86.0	85.2	86.1
Not English	12.8	12.1	13.0	14.0	14.8	13.9
No. of observations	5,104	4,603	4,384	4,983	4,464	4,331
Family type ^a						
Two-parent family	89.5	87.0	86.0	85.6	83.9	84.0
Lone-mother family	10.5	13.0	14.0	14.4	16.1	16.0
No. of observations	5,104	4,593	4,375	4,946	4,426	4,288
Number of siblings in the household ^b						
None	39.1	19.9	11.4	11.5	9.6	8.6
One	36.4	47.3	46.3	47.5	43.9	42.5
Two	16.4	22.5	28.7	26.8	30.2	30.7
Three or more	8.1	10.3	13.6	14.2	16.3	18.2
No. of observations	5,107	4,606	4,386	4,983	4,464	4,331
Family socio-economic position (SEP) ^c						
Lowest 25%	28.6	31.2	31.5	28.6	30.3	31.5
Middle 50%	48.9	47.9	47.8	50.0	48.8	48.8
Highest 25%	22.5	20.9	20.7	21.4	20.9	19.7
No. of observations	5,092	4,602	4,382	4,965	4,458	4,327

Notes: ^a Two-parent families are those in which the child lives with two parents in their primary household. This includes children living with biological and/or non-biological parents, children living with same-sex couple parents, and children living in other two-parent family types (e.g., with their mother and their grandmother). Lone-mother families are those in which the child lives with one female parent only (who is not necessarily the child's biological mother). Where children had shared parenting arrangements, the family type was defined according to the child's primary household, as identified by the study family. There were very few lone-father families (less than 1% for each cohort), so these were excluded from analyses comparing different family types.

^b Siblings include biological, adopted, foster, step- and half-siblings. Children may also have siblings who do not live in their household, but these siblings are not included here.

^c The measure of SEP, developed by Blakemore, Strazdins, and Gibbings (2009), uses information about combined annual family income, educational attainment of parents and parents' occupational status to summarise the social and economic resources available to families. The standardised SEP scores have been divided into groups as shown in the table.

Percentages may not total exactly 100.0% due to rounding.

1.4 Key points to be noted

Most of the information was collected from the children's primary and secondary parents (Parent 1 and Parent 2 respectively). The majority of primary parents were mothers (i.e., at all waves, more than 96% of the Parent 1 group were women) and the majority of secondary parents were fathers. In some chapters, data collected from the Parent 1 group are reported for mothers only, and data from the Parent 2 group are reported for fathers only.

Some chapters compare responses to particular questions across waves. In some cases, these questions were collected using different methods in different waves (e.g., by interview in one wave and by self-complete questionnaire in another).

Unless specifically noted, all references to the child's "household" or "family" are to those of their primary parent (Parent 1), and do not include any other household or family they may have with a parent living elsewhere. Similarly, unless specified in the chapter, any reference to "parents" is to Parent 1 and Parent 2, not to parents living elsewhere.

1.5 Further reading

Australian Institute of Family Studies. (2011). *Longitudinal Study of Australian Children: Data user guide*. Melbourne: AIFS.

Gray, M., & Smart, D. (2008). Growing Up in Australia: The Longitudinal Study of Australian Children is now walking and talking. *Family Matters*, 79, 5–13.

Gray, M., & Smart, D. (2009). Growing Up in Australia: The Longitudinal Study of Australian Children: A valuable new data source for economists. *Australian Economic Review*, 42(3), 367–376.

Sanson, A. (2003). Growing Up in Australia: The first 12 months of a landmark study. *Family Matters*, 64, 40–47.

Sanson, A., Nicholson, J., Ungerer, J., Zubrick, S. R., & Wilson, K. (2002). *Introducing the Longitudinal Study of Australian Children* (Discussion Paper No. 1). Melbourne: Australian Institute of Family Studies.

Soloff, C., Sanson, A., Millward, C., & Consortium Advisory Group. (2003). *Proposed study design and Wave 1 data collection* (Discussion Paper No. 2). Melbourne: Australian Institute of Family Studies.

1.6 References

Australian Institute of Family Studies. (2011). *Longitudinal Study of Australian Children: Data user guide*. Melbourne: AIFS.

Blakemore, T., Strazdins, L., & Gibbings, J. (2009). Measuring family socioeconomic position. *Australian Social Policy*, 8, 121–168.

Misson, S., & Siphthorp, M. (2007). *Wave 2 weighting and non-response* (Technical Paper No. 5). Melbourne: Australian Institute of Family Studies.

Siphthorp, M., & Misson, S. (2009). *Wave 3 weighting and non-response* (Technical Paper No. 6). Melbourne: Australian Institute of Family Studies.

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

Soloff, C., Lawrence, D., Misson, S., & Johnstone, R. (2006). *Wave 1 weighting and non-response*. Melbourne: Australian Institute of Family Studies.