

## GLOSSARY

### ABORIGINAL STATUS

To be included in the survey, carers had to identify one or more of their children in their household as being of Aboriginal or Torres Strait Islander origin. Only Aboriginal or Torres Strait Islander children (under the age of 18 years) were included in the survey, even in those cases where there were both Aboriginal and non-Aboriginal children living in the same household. Note that the carers did not have to be Aboriginal for the family to be included in the survey.

Carers were also asked whether they were of Aboriginal or Torres Strait Islander descent. Approximately 17 per cent of primary carers and 21 per cent of secondary carers of Aboriginal and Torres Strait Islander children and young people were not of Aboriginal or Torres Strait Islander descent.

### APPARENT RETENTION RATE

The apparent retention rate is defined as the percentage of full-time students of a given cohort group (i.e. all students who commence secondary school in the same year) who continue from the first year of secondary schooling to a specified year at school. The apparent retention rate can exceed 100 per cent, as it does not account for the transfer of students between jurisdictions, migration, or students repeating a year.

### CARER EDUCATION

The level of educational attainment achieved by carers was determined from two survey questions: 'What was the highest grade you finished at school?', and 'What qualifications have you received since leaving school?'. Qualifications were classified as:

- ◆ Trade/apprenticeship
- ◆ Certificate from college
- ◆ Diploma (beyond Year 12)
- ◆ Bachelor degree
- ◆ Post-graduate diploma/higher degree
- ◆ Other.

Carers who had completed a diploma, bachelor degree, post-graduate diploma or higher degree were classified as having 13 or more years of education. Otherwise educational attainment was classified by highest grade finished at school. The following categories have been used in this publication:

- ◆ Did not attend school
- ◆ 1–9 years education
- ◆ 10 years education
- ◆ 11–12 years education
- ◆ 13 or more years education.

Note that educational attainment refers to highest level achieved, not the number of years taken to achieve the qualification.



## DWELLINGS

In household surveys a distinction is often made between dwellings, households and families as per the *Census of Population and Housing*, with allowance made for the possibility of more than one household living in a single dwelling, and for a household to comprise more than one family. In the census, a dwelling is a habitable structure, a household is a group of related or unrelated people who make common provision for food, while a family is a group of people related by blood, marriage, adoption, step or fostering who usually reside within a single family. Note that in a block of flats, for example, each flat is considered to be a separate dwelling.<sup>1</sup>

In practice, the distinction between dwellings, households and families was found to have little importance in the WAACHS. Aboriginal families living together often contain extended family relationships. However, there were hardly any cases where two or more unrelated families were found to be living in the same household, and no cases were found where multiple households were residing in the same dwelling. In this volume, the terms household and family are used interchangeably, while the term dwelling is used to describe the physical structure in which a household or family is living.

## FAMILY FUNCTIONING

Family disharmony is known to be associated with poorer child development outcomes. The survey used a 9-item scale to measure the extent to which families have established a climate of trust and cooperation, emotional support and good communication. Primary carers were asked to rate each of nine statements on a scale of 1–5 as to how accurately each statement described their family circumstances. The nine statements included items about communications and decision making in the family, emotional support, time spent together, and family cooperation. These ratings were summed to produce an overall score. Families were then split into quartiles based on this score, with approximately 25 per cent of children in each category. These categories have been labelled poor, fair, good and very good family functioning in this publication. For details of the nine items and how they were combined to form the family functioning score, see *Appendix C* of Volume Two — *Measures derived from multiple responses and scales*.

## HOUSEHOLD OCCUPANCY LEVEL

A two-level index of household occupancy was created based on the number of bedrooms and the number of people usually sleeping in the home. A household was considered to have a high level of household occupancy if it had the following attributes in terms of the number of bedrooms and the number of people sleeping in the home.

| <i>Number of bedrooms</i> | <i>Number of people sleeping there</i> |
|---------------------------|--|
| 1                         | 5 or more                              |
| 2                         | 6 or more                              |
| 3                         | 7 or more                              |
| 4                         | 8 or more                              |
| 5 or more                 | 9 or more                              |



Note that the definition of household occupancy level published on page 129 of Volume Two was incorrect. The above definition has been used consistently throughout all analysis of the survey data.

### LEVEL OF RELATIVE ISOLATION (LORI)

A new classification of remoteness and isolation has been designed for this survey — the Level of Relative Isolation (LORI). The LORI is based on a product from the National Key Centre for Social Application of Geographic Information Systems at Adelaide University (GISCA) called ARIA++. The ARIA++ is an extension of ARIA (the Accessibility/Remoteness Index of Australia), which was first published in 1997 and has been widely adopted as the standard classification of remoteness in Australia. Because ARIA is based on describing the entire population of Australia, it has not been specifically designed to describe the circumstances of Aboriginal people living in remote areas. The ARIA++ gives much greater discrimination among more remote areas by including more service centres, of smaller sizes, in calculating its remoteness scores.

Based on the ARIA++ scores, five categories of isolation have been defined specifically for the survey that reflect differences in access to services for Aboriginal children. To avoid confusion with the original ARIA, the five categories are referred to as Levels of Relative Isolation (LORI) and range from None (the Perth metropolitan area) to Low (e.g. Albany), Moderate (e.g. Broome), High (e.g. Kalumburu) and Extreme (e.g. Yiyili).

See *Level of Relative Isolation* in Chapter 1, and *Appendix C — Determination of Levels of Relative Isolation from ARIA++* of Volume One<sup>2</sup> for more details.

### LOGISTIC REGRESSION

See **MULTIVARIATE LOGISTIC REGRESSION MODELLING**

### MAIN LANGUAGE SPOKEN

Teachers of surveyed school students were asked the main language spoken by the child in the classroom, playground and at home. Students' main language spoken was classified into five categories:

- ◆ English
- ◆ Aboriginal English
- ◆ Kriol/Creole
- ◆ Aboriginal language
- ◆ Other (specify).

Malcolm defines Aboriginal English as 'a range of varieties of English spoken by many Aboriginal and Torres Strait Islander people and some others in close contact with them which differ in systematic ways from Standard Australian English at all levels of linguistic structure and which are used for distinctive speech acts, speech events and genres.'<sup>3</sup>

In communities which brought together Aboriginal people from a number of mutually unintelligible languages, complex new languages known as creoles developed to allow children who grew up speaking pidgin as a first language to communicate. In northern areas of Australia, many Aboriginal people speak a creole language such as Kriol as well as other languages.<sup>3</sup>



## MULTIVARIATE LOGISTIC REGRESSION MODELLING

Logistic regression is a modelling technique that is used to investigate the relationship between the probability of a certain outcome (for example, a child having a particular health condition) and a set of explanatory variables. Logistic regression is discussed in several statistical publications — see, for example, Hosmer and Lemeshow (2000).<sup>4</sup> In this publication, logistic regression models have been fitted using a weighted version of multi-level modelling which allows for community level, family level and individual level factors to be included as explanatory variables in the models (see Pfeiffermann *et al*, 1998).<sup>5</sup> This technique takes into account the survey weights and the hierarchical structure of the data with selection of children within families and communities.

Logistic regression modelling has been used in situations where multiple factors may all have an impact on an outcome of interest. If the factors themselves are inter-related, bivariate tables may not tell the full story. For each variable included in a logistic regression model, the model determines its effect on the outcome independent of the effect of all other variables included in the model.

## ODDS RATIO

The odds of a given event is the ratio of the probability of its occurrence to the probability of its non-occurrence. For instance the odds of obtaining heads in a coin toss are one to one, the odds of any given face in the roll of a die are one to five. The odds ratios used in this publication are a measure of relative risk, derived from a formula which examines the association between, in most of the survey cases, a risk factor (exposure), and an adverse health outcome. In this publication, odds ratios have been estimated using logistic regression, which estimates the effect of each risk factor included in a model after adjusting for the independent effects of all other factors included in the model.

The statistical significance of an odds ratio can be judged by whether the confidence interval includes the reference value of one.

## PRIMARY CARER

For each child in the survey, the family was asked to identify the primary carer of that child. This was the person who was considered to spend the most time with the child or who had primary responsibility for the upbringing of the child. In many cases, the primary carer was the child's mother. The primary carer was then asked to provide information about each of the children in their care for the survey.

## QUALITY OF PARENTING

The nature of the relationship between a child and his or her primary carer, and the style and quality of the carer's parenting are important influences on the development and wellbeing of children. The survey asked a series of questions of carers about their relationship with each of their children. An index of quality of parenting has been derived from three of these items: how often carers praise their children, how often they hit or smack their children and how often they laugh together with their children. These three items, which measure the concepts of parenting warmth and harshness, were rated by carers on a five-point frequency scale from 'Never' through to 'Almost always'. An overall score was produced by summing these three items. Children were



then ranked by score, and split into quartiles based on this score, with approximately 25 per cent of children in each category. These categories have been labelled poor, fair, good and very good quality of parenting in this publication.

For further details on the quality of parenting items, and how they were combined to form the quality of parenting score, see *Appendix C* of Volume Two — *Measures derived from multiple responses and scales*.

## RECORD LINKAGE

Carers were asked for consent to access their hospital and medical records, as well as the birth, hospital and medical records of their children. Carers who consented were given the opportunity to opt out at any stage should they change their mind. The vast majority of carers consented to these records being accessed. Of primary carers, 96.7 per cent consented to allow access to their hospital records, while 92.8 per cent of secondary carers gave similar consent. Overall, 96.3 per cent of carers gave consent for their children's birth, hospital and medical records to be accessed.

The Western Australian Record Linkage System is unique in Australia, and one of only a handful of similar data collections in the world. It links together birth and death registrations with administrative hospital data from several sources to give a comprehensive record of health services contacts for the population of Western Australia. As there are no unique identifying numbers, probabilistic record linkage has been used to link the files together. This operates on matching names, dates of birth, hospital names and addresses. The procedure allows for possible changes in the matching fields by calculating the probabilities of records being correct matches. Records that are potential links are clerically reviewed, and the overall error rate has been estimated to be less than one per cent.

Key components of the record linkage system used in the survey are the birth records, the Hospital Morbidity Data System and the Mental Health Information System.

## SECONDARY CARER

Each family was asked to identify the primary and secondary carer of each surveyed child. The secondary carer was often the father of the child, but may also have been a grandparent or other relative of the child, or other person involved in the upbringing of the child.

## SOCIOECONOMIC INDEX FOR SCHOOLS

The Socioeconomic Index for schools (SEI) is an index of socioeconomic disadvantage which is constructed mainly from data collected by the ABS at the latest census. The SEI has five dimensions: Education, Occupation, Aboriginality, Single Parent Family, and Family Income, with the first three being double weighted, the last two single weighted. The Education, Occupation, and Single Parent Family dimensions are based on ABS Census data, the Aboriginality dimension is based on the proportion of Aboriginal students in the school, and the Family Income dimension is based on ABS Census data on the income of families with school-aged children adjusted according to the Regional Price Index. The effect of the Regional Price Index adjustment is to reduce the dimension values in districts where prices are higher, especially in the Kimberley and Pilbara.



The dimension scores are constructed for each census collection district (CD) first, by a series of principal component analyses of the CD level census data. These are then standardised with a mean of 100 and standard deviation of 10, and then school scores are constructed from them. The proportion of Aboriginal students in each school is converted into a similar form.

The addresses of students are collected from schools. These addresses are then mapped to the collection districts, and the proportion of students in each CD is calculated for each school. This enables the school SEI to be calculated from the standardised CD dimension scores, as follows:

- ◆ Education (x 2)
- ◆ Occupation, including unemployment (x 2)
- ◆ Aboriginality (x 2)
- ◆ Single Parent Family
- ◆ Family Income, adjusted by the Regional Price Index for the district

The SEI is a variation of the type of index developed by Kenneth Ross and Stephen Farish, and the analysis is still performed by Professor Stephen Farish who is now at the University of Melbourne.

## STRENGTHS AND DIFFICULTIES QUESTIONNAIRE

In this survey, the Strengths and Difficulties Questionnaire (SDQ) was used to measure emotional or behavioural difficulties in Aboriginal children. The SDQ comprises twenty-five questions looking into five areas of emotional and behavioural difficulties: emotional symptoms, conduct problems, hyperactivity, peer problems and prosocial behaviour. The responses from the twenty questions related to the first four of these areas are combined to produce the Strengths and Difficulties Total Score. This score can range from zero to a maximum score of 40.

Information about the emotional and behavioural difficulties of Aboriginal children was collected from three sources: their primary carer, school teacher, and young people aged 12–17 years themselves. In this publication, most of the analysis of Aboriginal children's emotional and behavioural difficulties are based on teacher reported SDQ.

The Strengths and Difficulties Total Score can be grouped into three ranges — the *normal* range (0–11), *borderline* range (12–15) and *abnormal* range (16–40). These categories and their ranges are described by Goodman.<sup>6</sup>

Classification of the SDQ Total Score into normal, borderline and abnormal ranges is typically used within a clinical setting by mental health professionals to help identify and diagnose specific emotional or behavioural difficulties among children. In clinical settings, the SDQ may be used in conjunction with other techniques to assess an individual child in accordance with recognised diagnostic standards.



In household-based population surveys such as the WAACHS, where it is not possible to conduct comprehensive clinical assessments of individual children, the SDQ is more appropriately used to assess **risk status** for *clinically significant emotional or behavioural difficulties*. Thus, groups of children with SDQ scores in the range:

- ◆ 0–11 are identified as having *low* risk of clinically significant emotional or behavioural difficulties
- ◆ 12–15 are identified as having *moderate* risk
- ◆ 16–40 are identified as having *high* risk.

As described in Goodman,<sup>7</sup> the cut-offs used to assess risk of clinically significant emotional or behavioural difficulties are slightly different when carers of the child complete the SDQ. Volume Two of the WAACHS contains an extensive analysis of carer reported emotional and behavioural difficulties.

## ENDNOTES

1. Australian Bureau of Statistics. *2001 Census dictionary*. Canberra: Australian Bureau of Statistics (Catalogue 2901.0); 2001.
2. Zubrick SR, Lawrence DM, Silburn SR, Blair E, Milroy H, Wilkes E, Eades S, D'Antoine H, Read A, Ishiguchi P, Doyle S. *The Western Australian Aboriginal Child Health Survey: The health of Aboriginal children and young people*. Perth: Telethon Institute for Child Health Research; 2004.
3. Malcolm IG. *Language and communication enhancement for two-way education*. Perth: Edith Cowan University; 1995.
4. Hosmer D, Lemeshow S. *Applied logistic regression 2nd edition*. New York: Wiley; 2000.
5. Pfeiffermann D, Skinner CJ, Holmes DJ, Goldstein H, Rasbash J. Weighting for unequal selection probabilities in multi-level models. *Journal of the Royal Statistical Society, Series B* 1998;60:23–40.
6. Goodman R, Ford T, Simmons H, Gatward R, Meltzer H. Using the Strengths and Difficulties Questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. *British Journal of Psychiatry* 2000;177:534–9
7. Goodman R. *SDQ: Scoring the SDQ*. [Online] [cited 2005 Oct 28]; Available from: URL: <http://www.sdqinfo.com/ba3.html>



