



Growing up in the Territory

# Social-emotional Wellbeing and Learning Outcomes

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#### **DISCLAIMER**

This report contains information about children who are a subset of those surveyed by telephone in the *Northern Territory Child Health and Wellbeing Survey*. Indigenous families in remote communities of the Northern Territory have limited access to household telephones and the sample of Indigenous children who are included in this report are therefore not a random sample of all Northern Territory Indigenous children. The data provided in this report should not be presented as either representing all Northern Territory children, nor should the sample of Indigenous children be presented as representative of all Northern Territory Indigenous children.

Department of Health and Community Services



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There were two types of questionnaires used within this report. The first type was the parent and carer telephone questionnaire and the second was the school questionnaires. The questionnaires were all based on previous developments by Stephen Zubrick and Sven Silburn from the Telethon Institute of Child Health Research, with the cooperation of Alison Daly in the Department of Health in Western Australia. The project team thanks Stephen, Sven and Alison for their advice and for their approval to use the survey questionnaires. The interview staff at the Survey Research Centre (SRC), University of Western Australia, undertook the telephone interviews for the project. The project team thanks the SRC staff for their diligence and cooperation.

Finally and most importantly the project team acknowledge and thank the parents, carers, teachers and school principals of Territory children, who participated in the project by giving their time and sharing their knowledge when completing the questionnaires. The team also specifically thanks the parents and carers for their agreement to the collection of information from their child's school. This agreement has allowed the connection of children's information from both home and school that is central to this report.

The project proposal was approved by the Human Research Ethics Committee of the Northern Territory Department of Health and Community Services and Menzies School of Health Research.



# Summary

Children are important to the Northern Territory, and there is a wide range of both general and specialised services to support their wellbeing and development. To be most effective, service providers require knowledge of the needs of children and of the major influences on their development. In August 2004, the Northern Territory began an initiative to assess the health, development, learning and wellbeing of children using *The Northern Territory Child Health and Wellbeing Survey*. This project had three components: a Parent Survey, completed by a parent or carer on behalf of a child; a Schools Survey, completed by a child's classroom teacher and school principal; and linkage of these surveys to administrative datasets maintained by the health and education departments. This is the second report from the project and focuses on the measurement of social-emotional wellbeing and learning outcomes by connecting information from teachers about individual school children with information from parents collected during a detailed telephone survey. This report will inform practice and policy development in health, community and education services for children.

Within the Schools Survey, classroom teachers assessed the social-emotional wellbeing and prosocial behaviour of individual school children using the internationally validated questionnaire, Strengths and Difficulties Questionnaire. Following this, school principals completed further questions on academic achievement, ranking the cognitive development, literacy and numeracy skills of each child.

During the Parent Survey, parents provided responses on 1996 children. Of this total, there were 1312 children aged from 4 to 12 years who attended school. From this group

there were 1038 children whose parents consented to participation in the Schools Survey and additionally teachers completed the questionnaire. Of the 1038 children there were 923 non-Indigenous and 115 Indigenous children. Telephone interviews are not suitable for a survey of Indigenous households in the Northern Territory and therefore this report provides only limited analysis of the small and non-representative sample of Indigenous children.

## Social-emotional wellbeing of non-Indigenous children

School teachers completed a standardised assessment for children's behaviour

μ# most children were assessed as either at low risk (82.3%) or moderate risk (7.4%) of behavioural and emotional difficulties, while 10.3% were at high risk

μ# in all age groups, boys were more likely to be at higher risk of emotional and behavioural difficulties than girls

μ# there was an inconsistency between teacher and parent assessments of emotional problems. Although both reported about 10% of children to be at high risk, each identified a substantially different group of children

μ# there was a greater proportion of boys (14.7%) than girls (5.5%) who were identified at high risk of behavioural and emotional difficulties

μ# having a special friend was associated with a lower risk of emotional and behavioural difficulty.



### Learning outcomes of non-Indigenous children

μ# school principals reported most children's learning outcomes were either at their age level (51.9%) or above (28.9%), with 19.2% ranked below age level

μ# more girls (84.2%) than boys (77.8%) had an academic performance at their age level or above

μ# there was an inconsistency between the school principals' and parents' assessment of academic performance. Parents generally overrated their child's academic performance compared to the school principal's assessment

μ# over half the children were at their age level for literacy (51.3%) and numeracy (54.3%)

μ# more girls (30.0%) than boys (28.9%) performed above their age level for literacy, while more boys (31.5%) than girls (24.7%) performed above their age level for numeracy.

### Indigenous children

There were a small number of Indigenous school children in the sample and their results should be considered as indicative but not statistically accurate. These children are unlikely to be representative of all Northern Territory Indigenous children, but are arguably a group of relatively advantaged Indigenous children because of the proxy financial measure of a household telephone. Key results for this sample of children follow:

μ# slightly more Indigenous children (13.2%) were assessed at high risk of emotional and behavioural difficulties than non-Indigenous children of the same age (10.3%)

μ# Indigenous girls followed the same pattern of out-performing boys on the prosocial behaviour scale, with fewer girls (5.9%) than boys (13.5%) at high risk of emotional and behavioural difficulties

μ# similar trends of the gender difference for learning outcomes were present in the Indigenous children, with girls out-performing boys

μ# for learning outcomes, most children (48.8% boys, 65.8% girls) performed at their age level with 6.8% of boys and 10.7% of girls above age level

μ# there were few Indigenous children in the 'far above age' category for academic performance, a trend that differs from the non-Indigenous children

μ# more Indigenous children were ranked 'below age level' (44.4 % boys, and 23.5% for girls) than non-Indigenous children

μ# more boys did poorly in literacy with 38.2% ranked 'below age level', compared with 24.8% of girls.

### Factors associated with social-emotional wellbeing and learning for non-Indigenous children

The assessment of children provided by teachers and school principals was linked to the information provided by parents to provide a valuable insight into the factors associated with behaviour and learning outcomes. The analysis does not indicate a causal relationship between these factors and the outcomes, but the identified association assists the recognition of the group of children who are most vulnerable. It also measures the proportion of children who may be in need of special services.



µ# a household income of less than \$20,000 per annum resulted in a risk of almost four times the likelihood of having a child with behavioural or emotional difficulties than those whose income was greater than \$80,000 per annum. There was no significant difference between other income groups.

µ# a child whose family had moved house three or more times since birth, was three times more likely to be at risk of behavioural and emotional problems

µ# children from a step / blended family or a one-parent family were twice as likely to be at risk of behavioural and emotional difficulties than a child from an 'intact family'

µ# children who had bullied other children were more likely to have emotional and behavioural difficulties than those who had not bullied others (22.1% compared with 7.7%)

µ# those who had been bullied were also at higher risk of emotional and behavioural difficulties.

## Conclusions

In our society, parents have the principal responsibility and greatest influence on the development of their children. Children who live in stable, supportive homes with nurturing adults have a better chance of coping with outside stresses (Garmezy & Rutter, 1983 cited by Wallach).<sup>1</sup> It is therefore of primary importance

that strategies to assist the social development and academic performance of children involve communication and support for families. These strategies should include targeted programs for those children who are identified as at greatest risk of poor outcomes.

Much of a child's life is spent at school, which also has an important influence on a child's development. In this report we found friendship lowered the risk of emotional and behavioural difficulty, while being bullied increased risk. Schools that provide an environment that fosters friendships, while deterring bullying, can assist the social-emotional wellness of their students. This report also highlights the differing learning outcomes for boys and girls. Styles of teaching, curriculum development, and behaviour management strategies may all be presently geared towards a female-favoured approach. Strategies are needed to enhance male classroom learning, which in turn will assist building self-esteem, psychological resilience, and positive relationships with peers and adults.<sup>2</sup>

This report contributes to our knowledge of the development of Territory children. It provides the evidence about those who are developing well and assists in identifying those children at risk of falling behind their peers. Importantly, the report also provides a benchmark of where children were in 2004, a benchmark that can be used to test the impact of both interventions and broader societal changes on the social-emotional development and learning outcomes for our children.







# Introduction

## Background

Investing in children's early years is important for many reasons. The physical, mental and social health in childhood lays the foundations for adult health and wellbeing. Additionally, positive childhood experiences lead to the development of a society with an educated and competent population. It is now accepted that the years from conception to age six are the most influential on the development of the brain, subsequent learning, behaviour and health. What is more, the effects of the first three years on brain 'hard wiring' last a lifetime.<sup>3</sup> At a societal level, through supported and functional families, schools and communities can foster the development of productive, outward-looking community members. Recognising this, a national taskforce was developed in September 2001. Central to the taskforce's agenda is the capacity to monitor child wellbeing over time and compare the wellbeing of selected groups, such as Indigenous and rural children, with that of all Australian children.<sup>4, 5</sup>

In August 2004, the Department of Health and Community Services, Northern Territory (NT) began monitoring the health, development, learning and wellbeing of children through a project titled the *Northern Territory Child Health and Wellbeing Survey*. This project included three components:

1. Parent Survey, completed by a parent or carer on behalf of a child
2. Schools Survey, completed by school teachers and principals for consented children (from the Parent Survey)
3. Linking the information from the Parent Survey and Schools Survey to health and education department information relating to those participating children, including birth, immunisation, hospital admissions,

health centre attendance, school attendance and academic performance

The first report from the project, *Growing up in the Territory: Parent Survey*, covered aspects of the physical and mental health of Northern Territory children, their families, friends, schools and related services.<sup>6</sup> The Schools Survey collected education and wellbeing information from teachers and principals on children whose parent/carer took part in a telephone interview. This information will be included in a separate upcoming publication *Growing up in the Territory: Schools Survey*. Although learning and social-emotional wellbeing were addressed briefly in each report, they were each analysed separately, and not linked to data from the other survey. In this report, relevant information from each of the surveys has been extracted and linked for each child. When connected, these data paint a picture of the early learning and social development of children in schools, placed within the context of their family and social-emotional environment. This cross-sectional study provides a baseline set of data against which to compare future data and describe trends. This report will provide early learning and social-emotional trends to guide policy development in child health, education and family support.

## Survey design

The Parent Survey involved a 20-minute telephone interview and collected health and wellbeing information from parents of children aged 0 to 12 years. Using a single questionnaire, parents answered questions on the demographic characteristics of the household, child and parental health, presence of specific health conditions, developmental factors, risk and protective behaviours, social wellbeing, attitudes to school and academic performance, use of health and other services,



as well as information on family structure and family functioning. Full details are provided in the published report.<sup>6</sup>

The second component, the Schools Survey collected education and wellbeing information from teachers and principals. With parental permission, paper questionnaires were sent to schools across the NT, and principals and teachers were asked to complete one questionnaire for each study child. Social-emotional wellbeing was assessed using the Strengths and Difficulties Questionnaire (SDQ)(Appendix A).<sup>7</sup> Developed by Goodman in 1997, this questionnaire has been validated as a reliable instrument for measuring emotional and behavioural difficulties in a variety of settings.<sup>8-10</sup>

For each consented child, their class teacher completed the SDQ while the school principal answered additional questions about cognitive development and academic achievement. The SDQ uses a 25-item questionnaire describing the psychological attributes of the child. It calculates a series of number scores for each child; five scales each having five items.

The first four scales investigate emotional symptoms, conduct problems, hyperactivity and peer problems, while the fifth scale gives a score for prosocial behaviour. The first four scales combine to give an aggregate score of emotional and behavioural difficulties called the Total Difficulties Score (TDS), which ranges from 0 to 40. A score from 0 to 11 placed the child at low risk of clinically significant emotional and behavioural difficulties, from 12 to 15 at moderate risk and from 16 to 40 at high risk.<sup>11</sup>

The fifth scale in the SDQ has inverse scoring to the TDS, ie. the higher the score, the lower the risk. Children scoring a high score on the Prosocial Behaviour Scale (5-10) are well socialised, while those scoring low scores on the Prosocial Behaviour Scale (0-4) are thought to be at higher risk of emotional and behavioural

difficulties. Each child's class teacher also answered a supplementary questionnaire that explored how each child's strengths and difficulties impacted on their self esteem, their peer relations and their classroom learning.

The school questionnaires were designed to describe the following areas: the child's physical health and development, mental health and wellbeing of children, social development and behaviour at school, academic attainment, school attendance and the use of support services. Questionnaires were completed in late 2004 and early 2005. Based on classroom assessment, school principals completed the questions on academic achievement for all students. They were asked to rank the cognitive development, literacy and numeracy skills of each child as 'far below age level', 'below age level', 'at age level' or 'above age level' or 'far above age level'. In addition, principals were asked to complete a further questionnaire on resources available to the school and social or community problems that may affect the school environment.

In summary, this project collected information using four questionnaires, and through linking them data from health with education can be combined:

1. parent questionnaire
2. paper-based teacher questionnaire on the study child
3. paper-based principal questionnaire on the study child
4. paper-based principal questionnaire on the school environment.

Copies of all questionnaires are available online attached to the respective parent and school reports.



## Survey sample

Full details on telephone number selection, participation and responses have been published in the Parent Survey and Schools Survey reports.<sup>6,12</sup> The participation rates for parents and teachers/principals can be seen in Table 1. Of the 1996 children whose parents or carers participated in the Parent Survey, 1312 attended school. Of these 1312 school children, 1166 parents and carers (88.8%) consented to information being provided by the child's teacher and principal. Of the 1166 consented children,

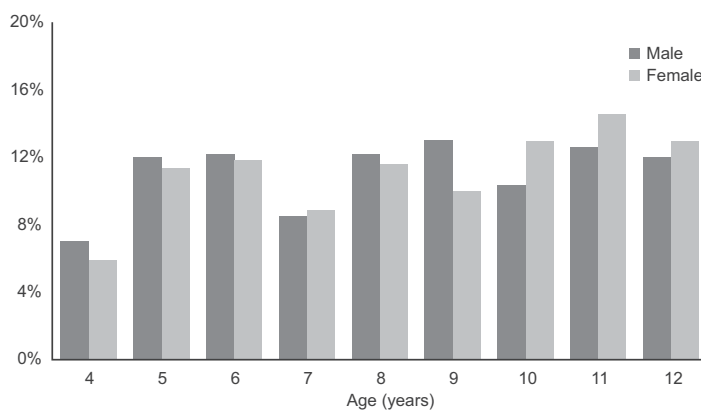
teachers and principals provided information on a total of 1038 children (89.0%).

Within the available total of 1038, there were 923 non-Indigenous and 115 Indigenous school-attending children aged 4 to 12 years (Figure 1 and Table 2). The SDQ was completed accurately for 905 non-Indigenous children, which reduces the number available for the related analysis. As reported elsewhere, the Indigenous children are not a representative sample of all NT Indigenous children. This limitation required that the information was

**Table 1 ► Response and participation rates, principal and teacher questionnaires**

	Number	Per cent
Completed parent interviews for school aged child	1312	100.0
Parent consented to school component	1166	88.8
Principal and teacher questionnaires completed	1038	89.0

**Figure 1 ► Age and sex distribution of sample, non-Indigenous children**



**Table 2 ► Sex of children by Indigenous status (unweighted data), Schools Survey**

	Male		Female		Total	
	Number	Per cent	Number	Per cent	Number	Per cent
Indigenous	58	50.4	57	49.6	115	11.1
Non-Indigenous	483	52.3	440	47.7	923	89.9
Total	541	52.1	497	47.9	1038	100.0



reported separately within this report. In addition, the small number within the Indigenous sample limited the scope of the items in this report to the outcomes for social-emotional wellbeing and learning, without any analysis of associated factors.

## Data analysis

Data analysis was conducted using STATA 8 statistical software (StataCorp, Intercooled STATA version 8.0, Texas USA). Data for non-Indigenous and Indigenous children were weighted separately to account for differences between the sample and the population. The weighting was calculated using information on the number of children in the household, age and sex of the child, area of residence and the number of separate telephone lines in the household, all of which affected the probability of a participating child being selected. In addition to the general weighting, an adjustment was applied for the 4 to 5 year olds since only 85% to 95% of the children at this age have started school in the Northern Territory (DEET 2003-2005, unpublished data). Population estimates for Northern Territory children aged from 4 to 12 years were derived from the 2001 Census conducted by the Australian Bureau of Statistics.

The report utilises the following statistical methods:

μ# descriptive analysis, using proportion, mean, 95% confidence intervals

μ# univariate analysis, using chi square and kappa (test of agreement) to give p values, with logistic regression for testing the risk factors of emotional and behavioural difficulty and 'below age level' academic performance at school, giving odds ratios (called 'relative risks')

μ# multivariate models, performed using stepwise forward logistic regression. Two models were fitted, each using all significant variables (on univariate analysis) plus variables controlled for. The first was for association with risk of 'behavioural and emotional difficulties', the second for risk of academic performance 'below age level'. Multivariate models have additional benefits over univariate analysis in controlling for confounding and interactions between variables, while holding other variables constant.

This study was not designed to identify a causal relationship between risk factors, such as 'household income' and outcomes (emotional and behavioural difficulty and academic performance at school), but does identify the 'association' between potential risk factors and outcomes.



## Data limitations

The use of low-cost computer assisted telephone interviewing for this first survey of child health and wellbeing yielded a sample that was representative of Northern Territory non-Indigenous children. However, Indigenous children, who comprise 39% of Territory children aged from 0 to 12 years, were significantly under-represented.<sup>13</sup> Only 1.5% of Indigenous Territorians in remote areas have a fixed telephone service, which compares with 96.8% of all households in Australia.<sup>14</sup> Those Indigenous families who did respond to the survey, as they have a telephone, are arguably wealthier than the majority of Indigenous Territorians. For this reason the data of Indigenous and non-Indigenous children have not been combined. The responses for Indigenous children are reported in a separate chapter. When using this report its primary relevance to non-Indigenous Northern Territory children (61%) should be kept in mind.<sup>15</sup>

Information about the health and wellbeing of Northern Territory Indigenous children from 0 to 15 years will emerge from the Australian Bureau of Statistics *National Aboriginal and Torres Strait Islander Health Survey 2004-05*. This survey includes approximately 1500 people from the Northern Territory, half of whom are children. In addition, the Australian Government's departments of Family and Community Services and Indigenous Affairs are conducting the *Longitudinal Study of Indigenous Children*, which will generate further information on Northern Territory Indigenous children.

As the data in this survey was reported in an interview situation, some issues of a sensitive nature may have been subject to reporting bias. Direct comparisons between this survey and the Indigenous household survey should be undertaken with caution because of the different methodologies used in the two surveys.



# Social-emotional wellbeing of non-Indigenous children

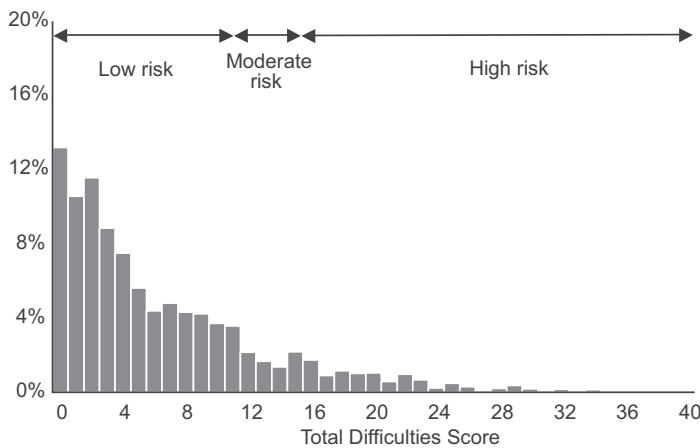
This chapter explores the social and emotional wellbeing of a sample of non-Indigenous school children as assessed by their school teachers.

## Emotional and behavioural difficulties

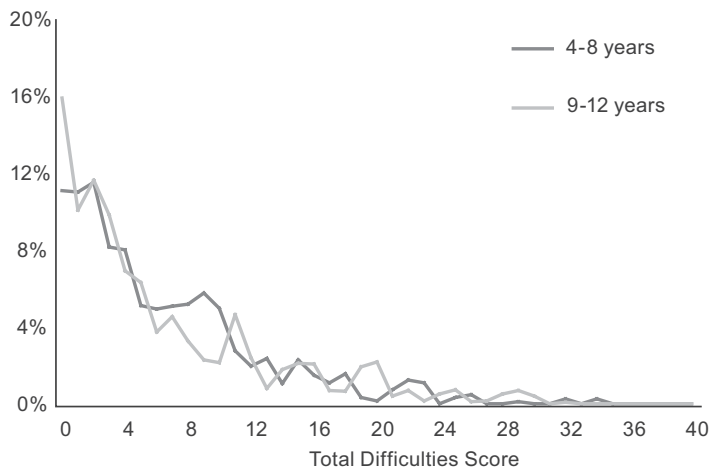
The school teachers of 905 children, a subset of those who had participated in the Parent

Survey, completed the Strengths and Difficulties Questionnaire, giving a total difficulties score (0-40) for each child. Of the children included, most were either at low risk (82.3%) or moderate risk (7.4%) of behavioural and emotional difficulties, while 10.3% were at high risk (Figure 2). Risk increased with age, with more 9 to 12 year old children at high risk (11.9%) than 4 to 8 year olds (9.0%) (Figure 3).

**Figure 2** ▶ Distribution of Total Difficulties Score, children aged 4-12 years



**Figure 3** ▶ Distribution of Total Difficulties Score by age group



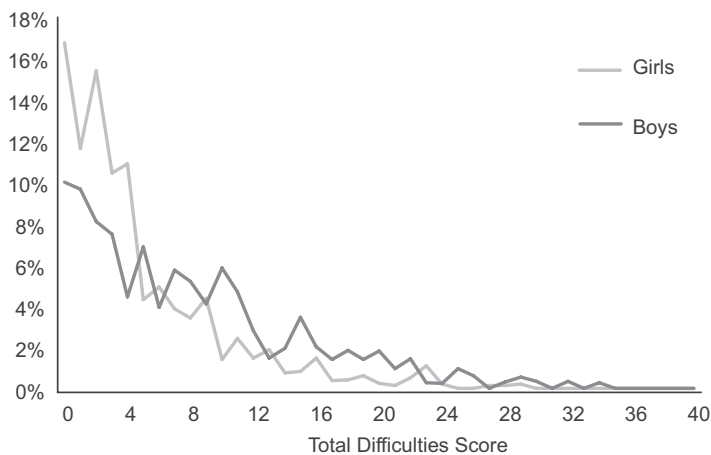


Overall boys were more likely to be at higher risk of emotional and behavioural difficulties than girls. In the high-risk category (scores of 16 to 40), more boys than girls were represented at almost every score (Figure 4), with a total of almost three times as many boys (14.7%) as girls (5.5%) at high risk. When a mean Total Difficulties Score was calculated, boys scored higher than girls at every age (Figure 5).

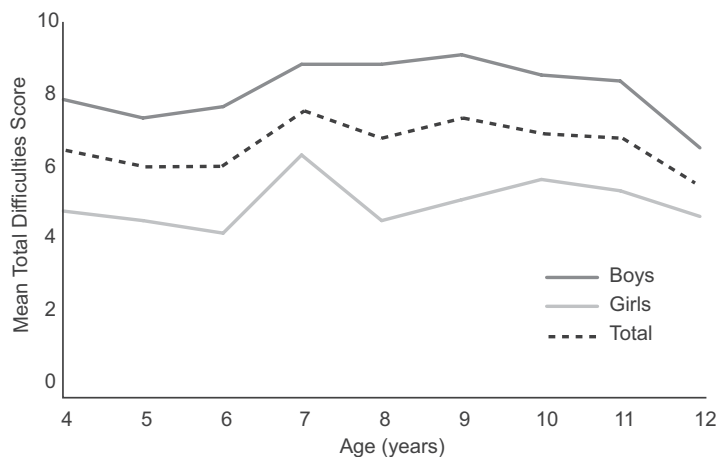
### Parent and teacher perceptions of children's emotional health

Results from the Strengths and Difficulties Questionnaire (Appendix A) completed by teachers were compared to parent's ratings of children's emotional health obtained from the Parent Survey. Overall, teachers ranked 10.3% of children at 'high risk', and parents ranked 10.6% at 'high risk'. While these proportions

**Figure 4 ► Distribution of Total Difficulties Score by sex, children aged 4-12 years**



**Figure 5 ► Mean Total Difficulties Score by sex, children aged 4-12 years**





are similar, there was a substantial difference between parents and teachers about which children were likely to have emotional problems. Some who were thought to have no problems by their parent (6.5%) were classified as 'high risk' by their teacher, and some considered 'high risk' by their parents (6.9%), were classified 'low risk' by their teachers (Table 3).

### Prosocial behaviour

The Strengths and Difficulties Questionnaire (Appendix A) also contained five questions about the prosocial behaviour of the child. This behaviour is a strength demonstrated by a child's ability to consider the needs of others,

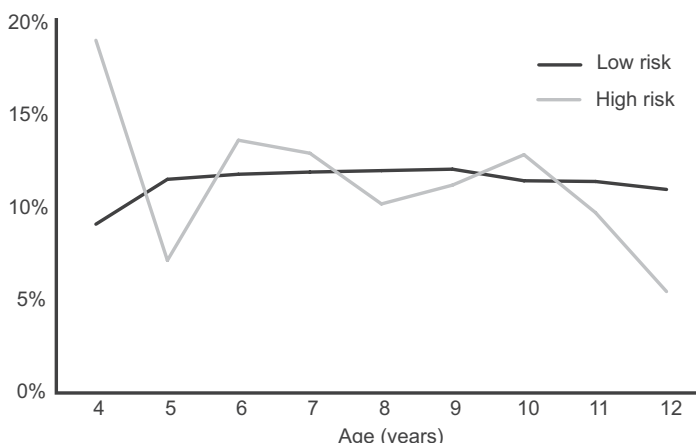
share goods, share time and to care for people beyond their own immediate friends. Prosocial behaviour contributes to the social wellbeing of the child, their family and their community. Children scoring a high score on the Prosocial Behaviour Scale (5-10) are well socialised, while those scoring low scores on the Prosocial Behaviour Scale (0-4) are at higher risk of emotional and behavioural difficulties. When assessed on this scale, boys made up 80.0% of those at high risk. There were more 4 year olds at higher risk of poor social skills than any other age, particularly boys. This may be due to later maturation of boys. Prosocial behaviour scores level off until age 10 and then decline, suggesting improved social skills (Figure 6).

**Table 3 ► Parent and teacher assessment of risk for emotional and behavioural difficulties in children aged 4-12 years**

Emotional and behavioural difficulty (teacher assessed)	Emotional and behavioural difficulty (parent assessed)	
	High risk	Low risk
High risk	35	70
Low risk	52	747

$\chi^2, p < 0.001$

**Figure 6 ► Distribution of prosocial behaviour by age, children aged 4-12 years**



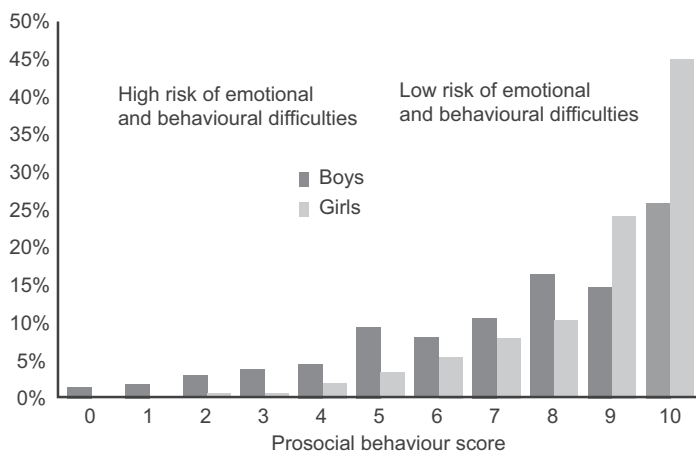




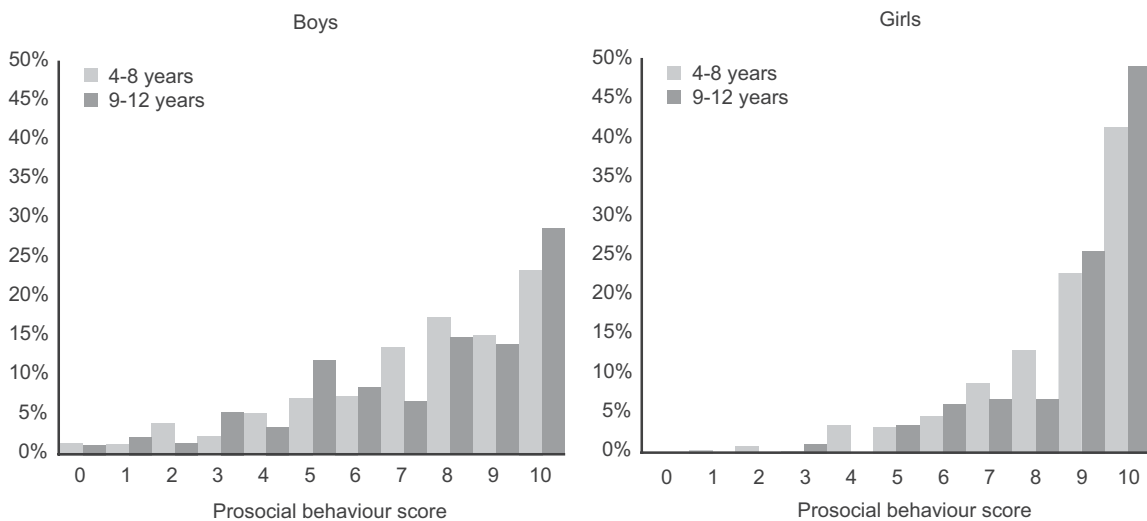
Girls scored significantly higher on the Prosocial Behaviour Scale than boys, placing them at lower risk of emotional and behavioural difficulties (Figure 7). When divided into ages 4 to 8 and 9 to 12, then graphed separately by sex, no difference was seen in either sex for

the two age groups (Figure 8). The 4 year olds, who appear to drive the initial peak in Figure 6, when combined with the 5 to 8 year olds, do not appear to be at higher risk of emotional or behavioural problems.

**Figure 7 ► Distribution of prosocial behaviour by sex, children aged 4-12 years**



**Figure 8 ► Distribution of prosocial behaviour by age group, boys compared with girls**





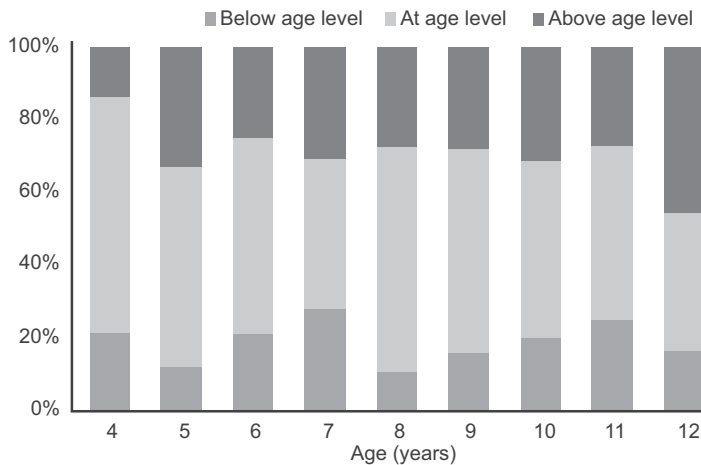
# Learning outcomes of non-Indigenous children

## Academic performance

The second topic explored in this report was academic performance. To measure this, school principals were asked to rank each child's academic performance in relation to performance expectations for that age level. Students were categorised as being 'far below age', 'somewhat below age', 'at age level', 'somewhat above age' or 'far above age'. These categories were also employed for describing each child's achievements in literacy and numeracy.

There was no trend for academic performance by age (Figure 9). Most children (51.9%) performed at their age level with 28.9% above and 19.2% below age level. There was a tendency for more girls (84.2%) than boys (77.8%) to have an academic performance at their age level or somewhat above, while the extremes of academic performance were likely to be dominated by boys; 4.2% of boys were in the highest category 'far above age level' compared to 3.0% of girls, and 22.2% of boys were in the lowest two categories compared with 15.8% of girls (Figure 10).

**Figure 9** ► Academic performance by age, children aged 4-12 years

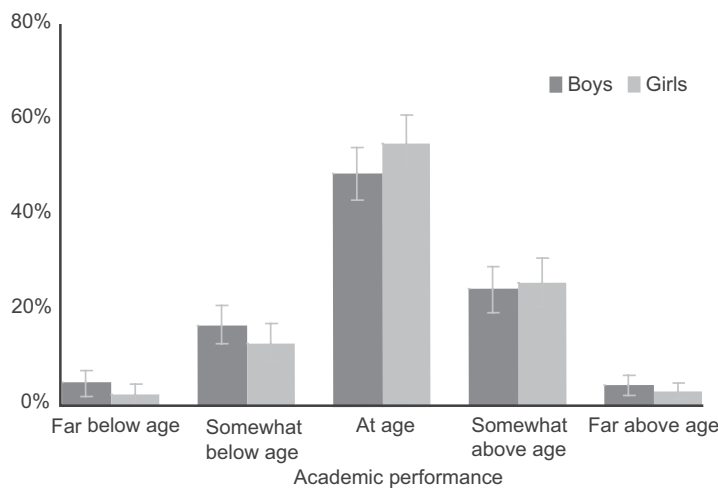




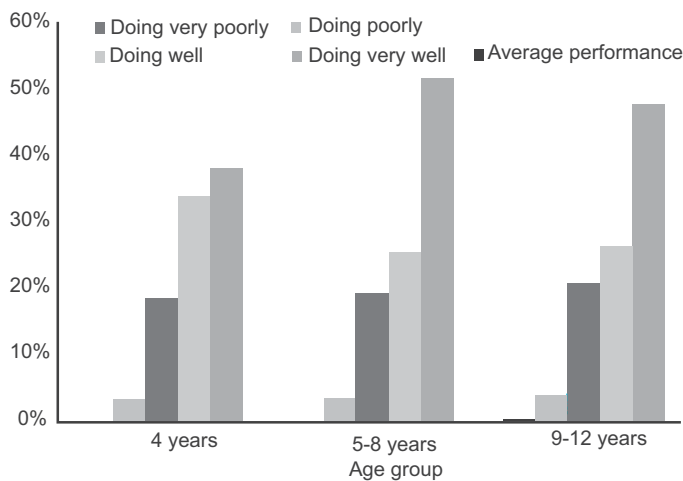
This report previously highlighted the inconsistency between the teachers and parents' assessment of emotional and behavioural difficulties (Table 3). We have found further inconsistency between the school principals' ranked scores and parents' ranking of their child's academic performance. Parents almost always overrated their child's academic performance compared to school principals (Figure 10 and Figure 11). On average 29.0% of students were ranked by teachers as 'above

age', however parents ranked 28.5% of children as 'doing well' and 45.8% as 'doing very well'. Similarly at the lower end of the spectrum, parents ranked only 3.9% of children as doing 'poorly', or 'very poorly', while principals ranked five times as many in this category (19.2%). When statistically tested, using the kappa test of agreement, a substantial difference was found between school principals and parents,  $p < 0.001$  (Table 4).

**Figure 10 ► School principal ranking of academic performances by sex, children aged 4-12 years**



**Figure 11 ► Parents' perception of academic performance by age group, children aged 4-12 years**





## Achievement in literacy and numeracy

Over half the children were reported to be at their age level for literacy (51.3%) and numeracy (54.3%). A slightly higher percentage of girls (30%) than boys (28.9%) performed above their age level for literacy, while more boys (31.5%)

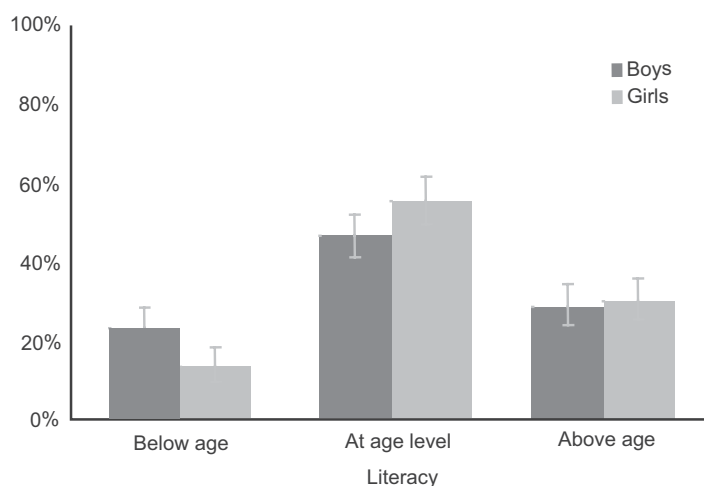
than girls (24.7%) performed above their age level for numeracy. However, boys more consistently under performed for both literacy (24.3% boys, 14.4% girls, statistically significant,  $p < 0.001$ ), and numeracy (18.7% boys, 16.5% girls, not statistically significant) (Figure 12 and Figure 13).

**Table 4 ► Parent and school principal assessment of academic performance in children aged 4-12 years**

Academic performance (principal assessed)	Academic performance (parent assessed)		
	Performed well	Performed poorly	Total
Performed well	707	12	719
Performed poorly	135	24	159
<b>Total</b>	<b>842</b>	<b>36</b>	<b>878</b>

K=0.19, P<0.001

**Figure 12 ► Achievement in literacy by sex, children aged 4-12 years**



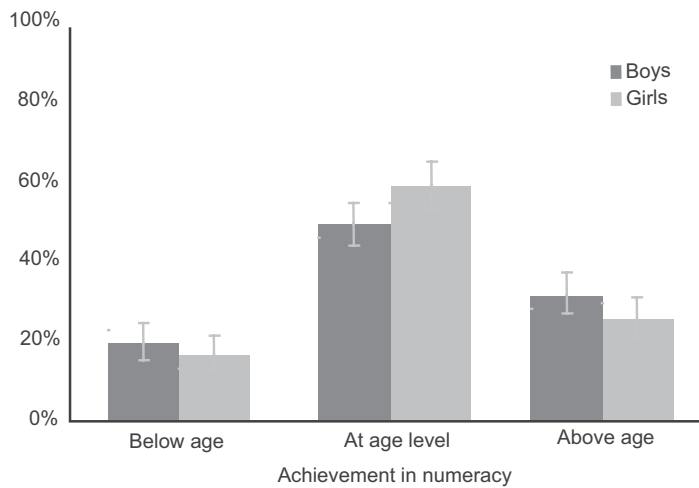


## Association of emotional and behavioural difficulties with academic performance

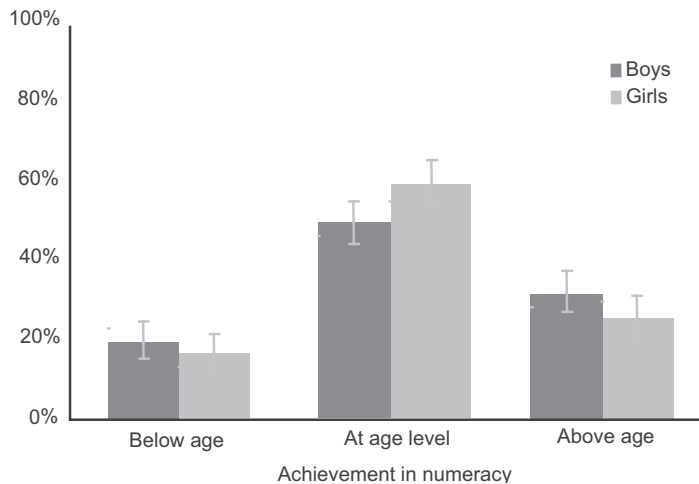
Children with high risk of emotional and behavioural difficulties can be identified from the Total Difficulties Score and the Prosocial Behaviour Score. To compare risk of emotional and behavioural difficulties with academic performance, results from the Total Difficulties Scores and Prosocial Behaviour Scores were used. 'Low risk' was a Total Difficulties Score

of 0-15 or a Prosocial Behaviour Score of 5-10, and 'high risk' was a Total Difficulties Score of 16-40 or a Prosocial Behaviour Score of 0-4 (Note: 'high risk' numbers were small n=85, low risk n=820). Using either method children at 'high risk' were more likely to academically perform 'below their age level'. Using the Total Difficulties Score, 53.0% were ranked as academically 'below age level'. Using the Prosocial Behaviour Score 44.4% were ranked 'below age level'. (Figure 14 and Figure 15).

**Figure 13 ► Achievement in numeracy by sex, children aged 4-12 years**

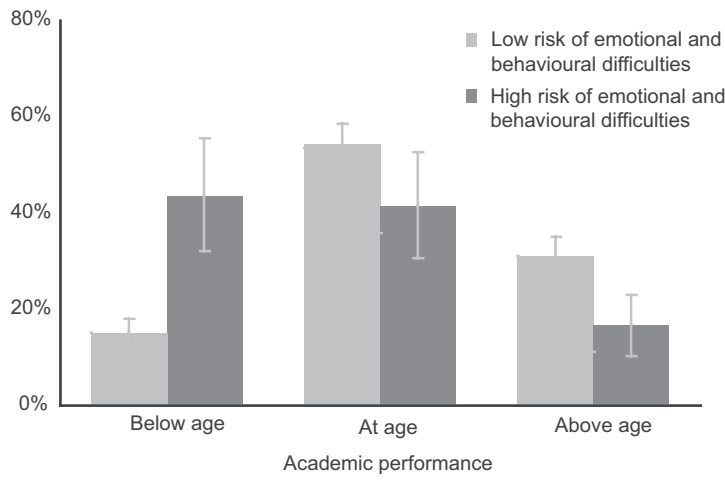


**Figure 14 ► Academic performance and risk of emotional and behavioural difficulties for children aged 4-12 years (using Total Difficulties Score)**





**Figure 15 ► Academic performance and risk of emotional and behavioural difficulties for children aged 4-12 years (using Prosocial Behaviour Score)**





# Indigenous children

## Social-emotional wellbeing

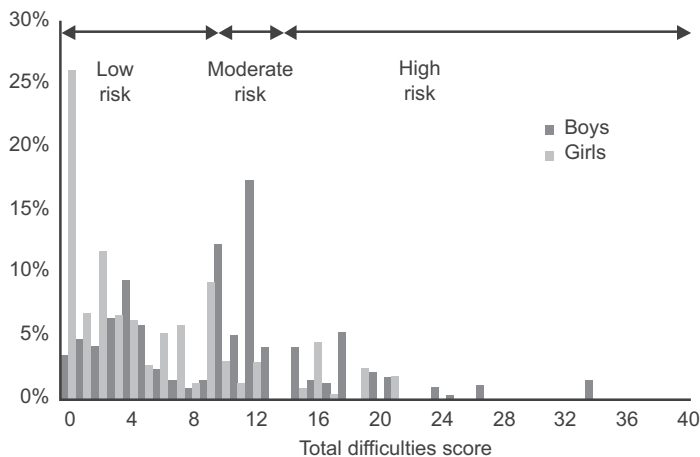
Northern Territory Indigenous people have faced enormous change in the last 100 years.<sup>11</sup> Today most Indigenous people live in permanent houses within small communities, townships or cities. Many have faced the loss of traditional lifestyle and culture. Given the amount of change, compromises in the social-emotional wellbeing and learning outcomes of Indigenous children are not unexpected. This chapter describes the emotional and behavioural difficulties and the learning outcomes of Northern Territory Indigenous children aged 4 to 12. The results are compared with the non-Indigenous sample of children.

School teachers of the 115 Indigenous children, completed the Strengths and Difficulties Questionnaire, giving a total difficulties score (0-40) for each child. Of the children included, most were at low risk (58.3% boys, 86.8% girls) or moderate risk (25.7% boys, 3.8% girls) of behavioural and emotional difficulties, while 16.9% of boys and 9.4% of girls were at high

risk. Slightly fewer Indigenous children were at low or moderate risk, 72.6% compared with 82.3% non-Indigenous, and slightly more Indigenous children (13.2%) were at high risk of emotional and behavioural difficulties than non-Indigenous children of the same age (10.3%) (Figure 16) and (Figure 2). Indigenous and non-Indigenous children followed the same trend of boys having more emotional and behavioural difficulties than girls.

The Strengths and Difficulties Questionnaire also contained five questions about the prosocial behaviour of the child (Appendix A). This behaviour is a strength demonstrated by a child's ability to consider the needs of others, share goods, share time and to care for people beyond their own immediate friends. It contributes to the social wellbeing of the child, their family and their community. Children scoring a high score on the Prosocial Behaviour Scale (5-10) are well socialised, while those scoring low scores on the Prosocial Behaviour Scale (0-4) are thought to be at higher risk of emotional and behavioural difficulties.

**Figure 16** ▶ Total difficulties scores, Indigenous children





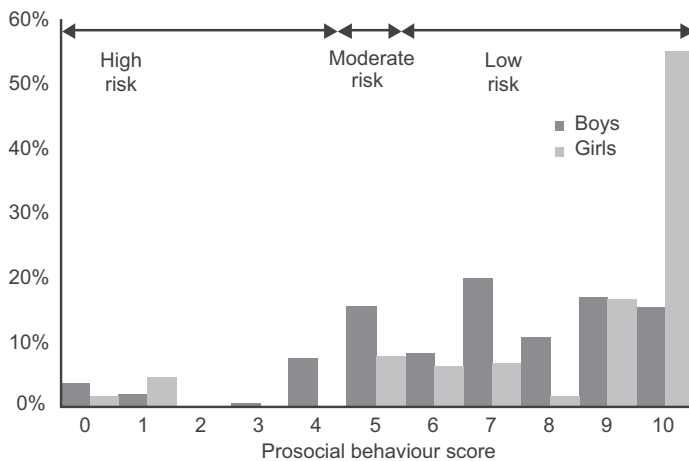
Following the pattern of the non-Indigenous children, substantially more girls scored higher on the Prosocial Behaviour Scale than boys, placing them at lower risk of emotional and behavioural difficulties. Conversely, more boys scored lower on the Prosocial Behaviour Scale behaviour, placing them at higher risk of emotional and behavioural difficulties. The Indigenous group measured similarly to the non-Indigenous sample on the prosocial score with 94.1% of girls and 86.5% of boys at low risk, (this compares with 96.4% girls and 85.3% boys in non-Indigenous). There were 5.9% of girls and 13.5% of boys at high risk of emotional and behavioural difficulties, (this compares with 3.6% of girls and 14.7% boys) (Figure 17).

## Learning outcomes

Academic performance was measured in the same way for Indigenous, as non-Indigenous children. School principals ranked each child's academic performance in relation to performance expectations for that age level. Students were categorised as being 'far below age', 'somewhat below age', 'at age level', 'somewhat above age' or 'far above age'. These same categories were used for describing each child's achievements in literacy and numeracy.

Most children (48.8% boys, 65.8% girls) performed at their age level with 6.8% of boys and 10.7% girls above their age level, however a larger number were in the below age level group than the non-Indigenous (44.4 % boys,

**Figure 17 ► Prosocial scores by sex for Indigenous children**



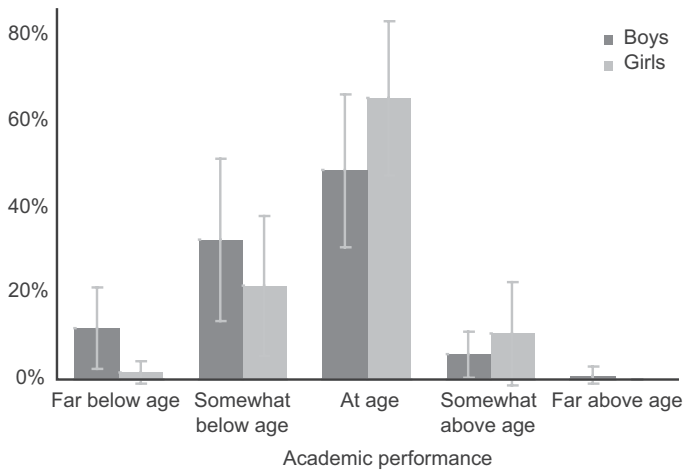




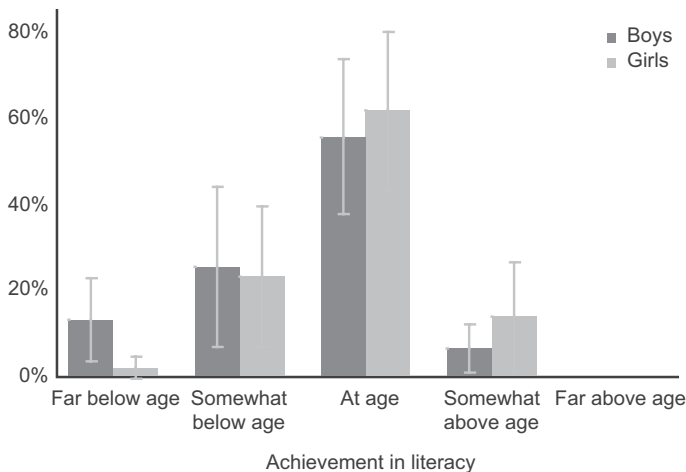
and 23.5% for girls, compared with 22.2% of boys and 15.8% of girls in non-Indigenous children). Similar trends were seen for the Indigenous as for the non-Indigenous with girls out-performing boys. Of significance is that there were few Indigenous children in the 'far above age' category for academic performance, this trend differs from the non-Indigenous children (Figure 18).

While most Indigenous children were ranked at their age level or over for literacy and numeracy, there were no Indigenous children in the 'far above age' category for literacy or numeracy. Indigenous girls did slightly better than boys in numeracy (73.7% girls versus 72.9% boys), and much better in literacy (85.2% girls versus 61.3% boys). More boys did poorly in literacy with 38.2% ranked below age, while 24.8% of

**Figure 18 ► Academic performance by sex in Indigenous children**



**Figure 19 ► Academic achievement in literacy by sex in Indigenous children**

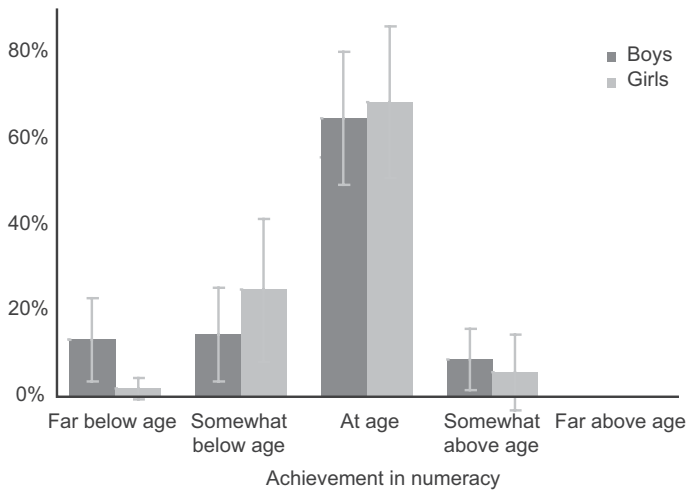




girls were (Figure 19). This compares to the non-Indigenous group with 24.3% of boys and 14.4% of girls ranked below their age level. Similar numbers of boys and girls were ranked below their age in numeracy with 27.1% of

boys and 26.2% of girls (Figure 20). These figures were higher than the corresponding non-Indigenous group at 18.7% and 16.5% respectively.

**Figure 20 ► Academic achievement in numeracy by sex in Indigenous children**





# Influences associated with social-emotional wellbeing and learning outcomes for non-Indigenous children

The quality and strength of bonds with other people, family and friendships within the wider community are ingredients of social cohesion. While the family unit takes on the largest part of guidance on social values, the whole community plays a part. Humans as social beings need contact with others; to flourish we need positive engagements, as well as companionship. If friendships or cooperative social relationships are absent, personal wellbeing can be detrimentally affected.<sup>16</sup> Using information available from the Parent Survey,<sup>6</sup> measures of social cohesion were examined for their relationship with emotional and/or learning difficulties assessed by the child's Total Difficulties Score.

## Families

Families provide care for children and are the core social unit of the community. They provide the foundations of social learning for children, enabling them to become capable and socially functioning adults. Over the last 50 years, Australian families have been gradually changed in both structure and function, with social consequences. Families have become smaller, with a tendency to have older parents, they now have an increased likelihood of divorce or relationship breakdown and they move home more frequently.<sup>16</sup>

### Family structure

An 'intact family' was used as the reference for comparing the risk of behavioural and emotional difficulties in different family structures. Step/blended and one-parent families both had children with twice the risk of having behavioural and emotional difficulties than children who live with both biological parents (Table 5).

**Table 5 ► Family structure and risk of behavioural and emotional difficulties**

Family structure	Risk of behavioural and emotional difficulties		
	Relative risk	p value	95% CI
Intact family	1.0		
Step/Blended family	2.1	0.047	1.0-4.5
One parent family	2.0	0.037	1.0-3.9
Other	1.0	0.995	0.2-4.1



### Household income

To compare the risk of social-emotional difficulties children, those ranked as 'high risk' were divided into household income brackets, as were those ranked 'low risk'. The reference was set as the highest income bracket, \$80,000 per annum or more. A household income lower than \$20,000 per annum had the strongest association with social-emotional difficulties, 3.7 times the risk compared with the highest household income of \$80,000 per annum and over. Although not statistically significant, children from households earning \$60,000 to \$80,000 per annum had a relative risk of 0.9,

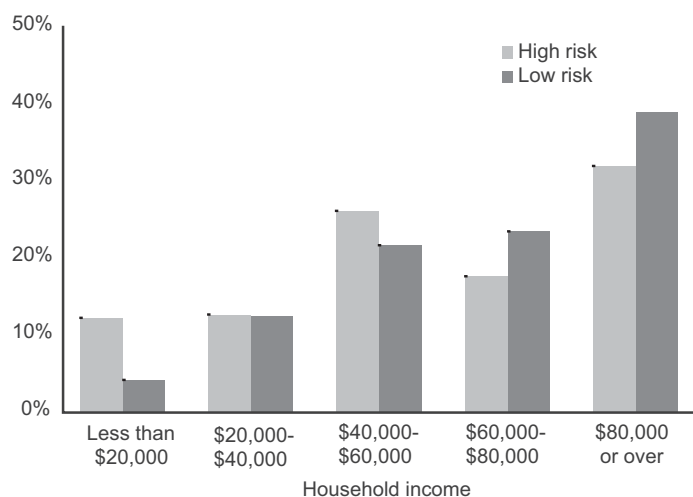
indicating lower risk, or protective of social-emotional difficulties than those children from highest incomes (Table 6 and Figure 21).

Academic performance can be similarly described with income, again the children from households earning less than \$20,000 per annum fared worse, this time more dramatically. Poorer children were just over six times more likely to have a below age level academic performance than those from the wealthiest income bracket. Children from the wealthiest income bracket, \$80,000 per annum and over, were less likely to be ranked in the below age level group for academic performance (Table 7).

**Table 6 ► Household income and risk of emotional and behavioural difficulties**

Household Income	Risk of emotional and behavioural difficulties		
	Relative risk	p value	95% CI
<\$20,000	3.7	0.005	1.5-9.0
\$20,000-\$40,000	1.2	0.618	0.6-2.7
\$40,000-\$60,000	1.5	0.260	0.8-2.9
\$60,000-\$80,000	0.9	0.801	0.4-1.9
\$80,000 and over	1.0		

**Figure 21 ► Household incomes and the percentage of children aged 4-12 years at high risk and low risk of emotional and behavioural difficulties**





### Parent's education

The risk of performing below age level was greater for children if at least one parent had not gone to university, this risk varied with the level of education achieved and peaked at 4.1 times for those whose parents had not been educated beyond primary school level (Table 8).

### Parental employment

Only a few parents of children surveyed did not have at least one parent with some employment (3.6%). These children had three times greater risk of emotional and behavioural difficulties than those with a parent in the workforce (Table 9).

**Table 7 ► Household income and risk of below age level academic performance**

Household income (per annum)	Risk of academic performance below age level		
	Relative risk	p value	95% CI
<\$20,000	6.2	0.000	2.8-13.5
\$20,000-\$40,000	1.6	0.179	0.8-3.2
\$40,000-\$60,000	1.4	0.254	0.8-2.6
\$60,000-\$80,000	1.6	0.131	0.9-2.8
\$80,000 and over	1.0		

**Table 8 ► Parent's education and risk of below age level academic performance**

Parent's education	Risk of below age level academic performance		
	Relative risk	p value	95% CI
University degree	1.0		
TAFE qualification	2.2	0.014	1.2-4.1
Completed Year 12	1.9	0.055	1.0-3.8
Completed Year 10	1.9	0.055	1.0-3.6
Primary school or less	4.1	0.022	1.2-13.8
Other	3.0	0.059	1.0-9.6

**Table 9 ► Parental employment and risk of emotional and behavioural difficulties**

Time	Risk of emotional and behavioural difficulties		
	Relative risk	p value	95% CI
Employment			
One or both parents in paid employment	1.0		
No parent employed	3.0	0.024	1.2-7.8



Having neither parent employed was also associated with twice the risk of performing below age level academically. However there were only a small number of children in this category and the difference in risk was not statistically significant (Table 10).

### Parental sense of lack of control

Parental control of their own lives is associated with parental psychological or mental health and wellbeing. Children of parents who felt they 'always' were not in control of their lives, had five times the risk of having a behavioural and emotional difficulty. The risk increased with the ranking of 'lack of control', though only significant in the two highest categories. Similarly, parents having a lack of control of finances also had children more likely to have behavioural and emotional difficulties. When parents felt they were 'often' not in control of their financial situation, their children had 3.3 times the risk of having a behavioural and emotional difficulty (Table 11).

**Table 10 ► Parental employment and risk of below age level academic performance**

Time	Risk of academic performance below age level		
	Relative risk	p value	95% CI
Employment			
One or both parents in paid employment	1.0		
No parent employed	2.1	0.109	0.9-5.0

**Table 11 ► Parent's lack of control of life 'in general' and 'financial situation' and their child's risk of behavioural and emotional difficulties**

	Risk of behavioural and emotional difficulties		
	Relative risk	p value	95% CI
Parent's lack of control of life in general			
Never	1.0		
Rarely	1.1	0.749	0.6-2.1
Sometimes	1.8	0.081	0.9-3.6
Often	2.4	0.044	1.0-5.7
Always	4.8	0.020	1.3-18.1
Parent's lack of control of financial situation			
Never	1.0		
Rarely	1.3	0.482	0.6-2.6
Sometimes	1.8	0.058	1.0-3.4
Often	3.3	0.008	1.4-8.1
Always	2.1	0.248	0.6-6.9



Where parents always felt a lack of control of life 'in general', there was a 5.4 fold likelihood of having a child with a below their age group academic level (Table 12 and Figure 22).

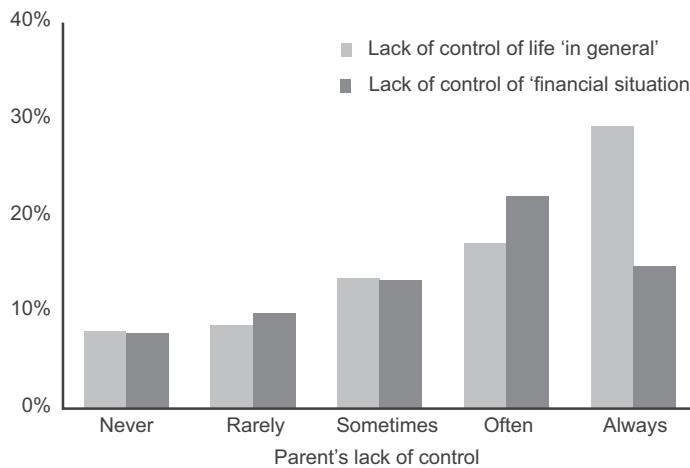
### Parental health

Comparing parental physical health with behavioural and emotional difficulties we found a trend for higher risk in those who had parents with poor general health, 3.2 times the risk compared to those with excellent health (Table 13). Similarly, when parental general

**Table 12 ► Parent's lack of control of life 'in general' and 'financial situation' and their child's risk of below age level academic performance**

	Risk of below age level academic performance		
	Relative risk	p value	95% CI
<b>Parent's lack of control of life in general</b>			
Never	1.0		
Rarely	1.0	0.993	0.6-1.7
Sometimes	1.4	0.223	0.8-2.4
Often	1.6	0.298	0.7-3.9
Always	5.4	0.004	1.7-17.5
<b>Parent's lack of control of financial situation</b>			
Never	1.0		
Rarely	1.2	0.456	0.7-2.2
Sometimes	1.4	0.189	0.8-2.4
Often	1.8	0.159	0.8-4.1
Always	1.8	0.299	0.6-5.3

**Figure 22 ► Parent's lack of control of life 'in general' and their 'financial situation', by the percentage of non-Indigenous children at high risk of emotional and behavioural difficulties**





health was investigated in conjunction with below age level academic performance, the risk is once again increasing with decreasing health. Children with parents whose health was poor had 3.9 times the risk of performing below their age level academically (Table 14).

### Child health

Unlike parental health, the health of the child did not have a consistent or linear relationship with an increase in risk of behavioural and emotional difficulties; the only significant increased risk was for those children whose health was ranked as 'good' rather than 'excellent' (Table 15).

**Table 13 ► Parental health and risk of behavioural and emotional difficulties**

Parents general health	Risk of behavioural and emotional difficulties		
	Relative risk	p value	95% CI
Excellent	1.0		
Very good	1.1	0.750	0.6-2.1
Good	0.9	0.880	0.5-1.9
Fair	1.9	0.114	0.9-4.2
Poor	3.2	0.862	1.0-9.9

**Table 14 ► Parental general health and risk of below age level academic performance**

Parents general health	Risk of below age level academic performance		
	Relative risk	p value	95% CI
Excellent			
Very good	1.7	0.062	1.0-2.8
Good	1.9	0.029	1.1-3.4
Fair	2.1	0.044	1.0-4.5
Poor	3.9	0.013	1.3-11.5

**Table 15 ► Child health and risk of behavioural and emotional difficulties**

Child's general health	Risk of behavioural and emotional difficulties		
	Relative risk	p value	95% CI
Excellent	1.0		
Very good	1.2	0.472	0.7-2.2
Good	2.8	0.003	1.4-5.5
Fair	0.2	0.155	0.0-1.8
Poor	2.7	0.339	0.4-20.1
<b>Disability</b>			
No	1.0		
Yes	3.1	0.001	1.6-5.9





### Disability

Those with a disability had a much higher risk of behavioural and emotional difficulties, with three times the risk of those children without disability (Table 15).

### Mobility

Families who moved three times or more since the child was born were approximately three times more likely to have behavioural and emotional difficulties in that child, than those who had not moved (Table 16). By contrast frequency of moving was not associated with academic performance (Table 17).

**Table 16 ► Family mobility and risk of behavioural and emotional difficulties**

Number of times the family has moved house	Risk of behavioural and emotional difficulties		
	Relative risk	p value	95% CI
No move	1.0		
1-2 moves	1.4	0.347	0.7-2.8
3-4 moves	2.8	0.006	1.3-5.8
5 or more moves	3.1	0.005	1.4-6.7

**Table 17 ► Family mobility and risk of below age level academic performance**

Number of times the family has moved house	Risk of below age level academic performance		
	Relative risk	p value	95% CI
No move	1.0		
1-2 moves	1.1	0.611	0.7-1.9
3-4 moves	1.3	0.377	0.7-2.4
5 or more moves	1.2	0.688	0.6-2.4



## Community

Most of the children surveyed regularly attend school. This social networking forms bonds, which in turn act as a reservoir for support when in need. However, children socialise on a spectrum, some enjoying time with peers, others to a lesser extent. Some who appear different from the group find it hard to form strong friendships and are constant victims of bullying. Here we look at bullying and friendship and the impact on behaviour and emotional difficulties. The impact of electronic media is also reviewed.

### Bullying and friendship

Those who have been bullied are at higher risk of emotional and behavioural difficulties than those who have not. Similarly, those who have bullied others are also at higher risk of emotional and behavioural difficulties than those who do not bully others (Table 18).

Having a special friend lowered the risk of having an emotional and behavioural difficulty; of those with special friends 9.4% had an emotional and behavioural difficulty, compared with 13.5% for those children with difficulties who did not identify a special friend. The effect

was even stronger when relating to a group of friends. Those with a group of friends had emotional and behavioural difficulty in 9.8% of children, compared with 21.0% of those who did not have a group of friends.

### Electronic media

Data from this survey suggest children are less likely to be ranked below age level for academic performance when exposed to greater than 2 hours a day of electronic media as long as this does not exceed 3.5 hours (25 hours a week). Although potentially adversely affecting physical health and fitness, 14-25 hours a week of electronic media appears to be associated with improved cognitive development.

## Combined analysis of important influences

The single-factor analysis results in the previous section indicate that a wide range of factors within the family, school and community are associated with children's emotional wellbeing. Many of these factors overlap and to identify the joint associations we have performed multiple factor or 'multivariate' analysis. All significant

**Table 18 ► Bullying and being bullied, risk of emotional and behavioural difficulties**

	Risk of emotional and behavioural difficulties		
	High risk	Low risk	p value
<b>Been bullied</b>			
Yes	69	388	<0.001
No	33	399	
<b>Bullied other children</b>			
Yes	41	122	<0.001
No	60	643	



variables from the single-factor analyses were included in the two multivariate logistic regression models to identify potential risk of emotional and behavioural difficulties (Table 19), and poor academic performance (Table 20). All the non-significant variables were excluded in the multivariate logistic regression model. Although our data was inconclusive on disability, there are many reports indicating that a child's general health is related to their mental health. Thus, it was considered important to control for 'disability' in the multivariate model.<sup>17</sup>

The following factors were all strongly significant on single-factor analysis, and when controlling for age, sex, and disability they are all significant in the multivariate model. On multivariate analysis it was found that emotional

and behavioural difficulties are more likely to be present in boys, possibly due to a delay in maturity. Children with parents who often or always feel a 'lack of control of their life' are more at risk of emotional and behavioural problems. This highlights the relationship between parental mental health and child health, as poor parental emotional wellbeing directly influences their child's emotional wellbeing. Additionally, there is a significant risk of emotional and behavioural difficulties when the family have moved house three or more times in a year, creating an unstable home and community environment for the family as a whole. Additionally, as emotional and behavioural difficulties are more likely to be present if the child has a disability, this has been controlled for as well as age and sex.

**Table 19 ► Multivariate model: variables associated with risk of behavioural and emotional difficulties**

Variable	Relative risk	p value	95% CI
<b>Age</b>			
0-4 years	1.0		
5-8 years	1.2	0.80	0.3-5.0
9-12 years	1.4	0.66	0.3-5.4
<b>Sex</b>			
Female	1.0		
Male	2.9	<0.01	1.5-5.5
<b>Lack of control in general</b>			
Never	1.0		
Rarely	1.1	0.71	0.6-2.2
Sometimes	1.6	0.22	0.7-3.6
Often	2.3	0.07	0.9-5.5
Always	4.7	0.01	1.4-15.8
<b>Family mobility</b>			
No moves	1.0		
1-2 moves	1.3	0.50	0.6-2.8
3-4 moves	2.8	0.01	1.3-5.9
5 or more moves	3.0	0.01	1.3-6.6
<b>Disability of child</b>			
No	1.0		
Yes	2.7	0.01	1.3-5.5



The second multivariate model again supported the single-factor findings in this study and the following factors were all strong predictors of low academic performance when controlling for age, sex and disability. The strongest predictor for 'below age level' academic ranking was poverty, with a household income of less than \$20,000 per annum. Educational attainment and labour force status are themselves measures of socio-economic status or poverty,<sup>18,19</sup> so a strong

correlation between economic disadvantage and academic performance was expected. Together with a parent who has health concerns, describing their health as 'fair' or 'poor', reiterates the importance of parental mental and physical health on the wellbeing of their child. Lastly, having a family structure that was neither 'intact', 'blended', nor 'one parent' in structure had over four times the risk associated with poor academic performance.

**Table 20 ► Multivariate model: variables associated with below age level academic performance**

Variable	Relative risk	p value	95% CI
<b>Age</b>			
0-4 years	1.0		
5-8 years	0.9	0.9	0.4-2.1
9-12 years	0.9	0.9	0.4-2.1
<b>Sex</b>			
Female	1.0		
Male	1.5	0.1	1-2.3
<b>Income (per annum)</b>			
\$80,000 and over	1.0		
\$60,000-\$80,000	1.4	0.3	0.8-2.5
\$40,000-\$60,000	1.3	0.5	0.7-2.4
\$20,000-\$40,000	1.4	0.3	0.7-3.0
<\$20,000	6.7	<0.001	2.5-17.8
<b>Parent's health</b>			
Excellent	1.0		
Very good	1.5	0.1	0.9-2.6
Good	1.8	0.1	0.9-3.5
Fair	2.2	0.05	1.0-4.6
Poor	3.0	0.04	1.1-8.2
<b>Disability of child</b>			
No	1.0		
Yes	3.7	<0.01	2.1-6.8
<b>Family structure</b>			
Intact family	1.0		
Step/Blended family	1.3	0.5	0.6-2.9
One parent family	0.9	0.7	0.4-1.8
Other	4.2	0.02	1.3-14.2



## Discussion

This paper reports on the social-emotional wellbeing and the learning outcomes of a sample of 923 non-Indigenous and 115 Indigenous children who participated in the Schools Survey, a subset of those who participated in the Parent Survey. When linked, the subset of data describes the early learning and social development of school children, in the context of their family and social-emotional environment. The patterns found to be associated with behavioural and emotional difficulties, and learning outcomes are discussed below.

### Social-emotional wellbeing of non-Indigenous children

Firstly, we found recognition of behavioural and emotional difficulties varied between parents and teachers, and although parents recognised a similar proportion of children with difficulties, the individual children were different to those identified by teachers. It is possible that children exhibit different behaviours at home compared to school, and possible that parents and teachers have different expectations of their children in regards to emotional and behavioural difficulties. Improvements in communication channels between teachers and parents could improve this divergence. Both teachers and parents reported 10% of children (teachers 10.3%, parents 10.6%) to be at 'high risk' of behavioural and emotional difficulties, which is analogous to findings from the UK and USA, where 9.6% of 5 to 15 year old children from Britain and 9.5% of 8-10 year old children from the USA were at high risk of behavioural and emotional difficulties.<sup>20,21</sup> Moreover, the higher prevalence of behavioural and emotional difficulties was mostly found in boys; over twice as many boys (14.7%) as girls (5.5%) were at high risk, which is also consistent with international findings. Twice as

many boys as girls had difficulties in the USA children's surveys on emotional and behavioural difficulties.<sup>22</sup> Some reasons speculated upon include males being slower to mature than girls,<sup>23</sup> and more disruptive and inattentive in the classroom, which in turn impedes their learning, furthering educational disadvantage.<sup>24</sup> Males are more active and aggressive than females,<sup>25</sup> while their development of language is slower.<sup>26</sup> Much of the behavioural problems are reported to be due to rising levels of testosterone, which in boys begin to climb at about age 9 peaking at 14. The effects of the surge in testosterone shorten the attention span in boys, making concentration harder, while increasing the need to exercise. The mind starts to work faster but judgement becomes more impulsive.<sup>27</sup> Universally, teachers report higher levels of behavioural and emotional problems in boys.<sup>27, 28</sup> Again, this reiterates the importance of early behaviour management, especially for boys.

Writers have speculated that another reason for teachers to report higher levels of difficulties with males is the different expectations teachers have of boys compared with girls. Girls are more articulate from an earlier age, while at the same time less active and demanding. Female testosterone levels peak at only 30% of their male counterparts, which impacts their social and academic learning to a lesser degree than males.<sup>27</sup> Some writers suggest that difficulties with males only became evident after the introduction of co-education; prior to that time boys were taught by one set of teachers and girls another, boys were left to be boys and teachers were less aware of any differences.<sup>23</sup>

Socio-economic markers were also significantly associated with a higher risk of behavioural and emotional difficulties. As an established risk factor for poor mental health, household income gives a fairly robust measure of socio-economic



status.<sup>17</sup> In this study, a household income of less than \$20,000 per annum resulted in a risk of almost four times the likelihood of having a child with behavioural or emotional difficulties than those whose income was greater than \$80,000 per annum. Poverty was significantly related to children's difficulties in those who participated in the USA children's surveys, children in poor families were eight times more likely to have difficulties than children whose families were not poor.<sup>22</sup>

It was found children from a step/blended family or a one-parent family were twice as likely as children from an 'intact' family to be at risk of behavioural and emotional difficulties. Previous associations have been found between family structure and child mental health. Parental conflict, divorce and family break-up are all risk factors for poor childhood mental health,<sup>17, 29, 30</sup> though these effects are partly the result of socioeconomic disadvantage in one-parent families.<sup>31</sup> Similarly, the USA children's survey found children living in single-mother families are almost twice as likely to have emotional and behavioural difficulties compared with those in two parent families (7% and 4% respectively).<sup>22</sup>

One measure of social connectedness is friendship. Having a special friend lowered the risk of having an emotional and behavioural difficulty; 9.4% of those with special friends had an emotional and behavioural difficulty, while 13.5% of those who did not identify a special friend had difficulties. This association was even stronger when relating to a group of friends. Those with a group of friends had emotional and behavioural difficulty in 9.8% of children, compared with 21% of those who did not have a group of friends. Conversely, social isolation can result when children are bullied. In this study there were significantly more emotional and behavioural difficulties in those who had been bullied. Additionally, children who bullied other children were more likely to have emotional and

behavioural difficulties than those who were not, 22.1% compared with 7.7%. Another measure of social connectedness is mobility; moving house many times can erode established social systems placing additional strain on families. A child in this study whose family had moved house three or more times since birth, was three times more likely to be at risk of behavioural and emotional problems. This association continued when controlling for age, sex and disability, as seen in multivariate model (Table 19).

Most children in this study had at least one parent in paid employment. For the 3.6% of children who had neither parent employed, the risk of behavioural and emotional difficulties was three times higher. Although statistically significant, numbers were low in this group. These results were similar to those reported in the *Child and Adolescent Component of the National Survey of Mental Health and Well-Being*, where the prevalence of mental health problems was higher for children without parents in paid employment.<sup>30</sup> Parental employment enables social interaction with other adults in society, while reducing financial stress and usually results in a happier, better functioning family. Maternal employment has been linked to higher self-esteem and a perception that their family was more cohesive and organised, moreover it has been linked with higher academic outcomes in children without difference in behaviour.<sup>32</sup> Unemployment is isolating. In 2002, 8% of unemployed people had had no contact with family or friends outside the household in the previous week.<sup>16</sup>

Some quality children's television programs, videos and computer games can contribute to children's social-emotional development. Using media selectively with reinforcement of key messages, parents can complement the acquisition of social skills such as cooperation, sharing, empathy and negotiation. The American Academy of Pediatrics (AAP) recommends no more than two hours a day of quality screen



time and offers strategies to maximise benefits; sitting with your child while they use the media, choosing TV programs where adults talk to children and invite them to participate and avoiding violent media, especially glamourised violence where there is no real-life consequence.<sup>33</sup> The risk of childhood obesity or being overweight is of increasing concern. Results from *Growing up in the Territory: Parent survey* indicated that 21.8% of 5 to 8 year olds, and 19.1% of 9 to 12 year olds were overweight or obese.

## Learning outcomes of non-Indigenous children

School principals ranked the academic performance of the 916 non-Indigenous children in the Schools Survey. Most children were at their age level or above, although one-fifth were performing below their age level.

Of concern was the inconsistency between the principals' ranking of children compared with parents. Parents generally over-estimated their child's academic achievements in all ages. The identification of this may facilitate further communication between schools and home.

Learning outcomes as ranked by school principals indicated that 28.9% of children were above age level, 51.9% at age level and 19.2% below age level. There was no trend associated with age, however by gender, more boys (22.2%) ranked below age level than girls (15.8%). These findings are similar to international findings where boys under-perform compared with girls.<sup>24</sup> Only 42.8% of boys compared with 53.4% of girls getting a 'C' or above at GCSE (British leaving certificate).<sup>23</sup> Results from a cohort of 1000 New Zealand high school students indicate that males continued to achieve less well than females, and at no point did females perform less well than males.<sup>24</sup> The educational differences could not be explained by gender alone, as both had similar IQ tests (independent tests). The only explanation

speculated for the consistent under-achievement in males was their classroom behaviour. Males were more prone to disruptive and inattentive classroom behaviours which in turn impeded their learning.<sup>24</sup> Some studies suggest that boys are immature, but they later catch up with girls academically.<sup>23</sup> However, if males are disadvantaged academically by their behaviour, at some stage their academic standard may be irretrievable. This again reiterates the importance of early behaviour management to secure an optimal future for the next generation of males. In this study significantly more boys than girls were below age level for literacy and this trend was repeated for numeracy, although the effect was not statistically significant. Our study showed more girls than boys had a ranking above age level for literacy. This is not unexpected as girls are known to have better literacy skills and be more aware of and more explicit about their feelings.<sup>23</sup> Conversely, boys are known to have poorer expression and poorer literacy skills than girls.<sup>26</sup> Girls score significantly higher than boys in early verbal and non-verbal cognitive development from as early as two years of age.<sup>26</sup> A lot of this disparity is due to early onset of fluent articulated speech in young girls. As adults, women do better at verbal memory and verbal fluency, but men dominate vocabulary or verbal reasoning.<sup>34</sup> At the other end of the spectrum, more boys than girls were ranked above age level for numeracy. Again, this trend has long been recognised. Boys tend to have superior skills in mathematics and spatial, navigational skills.<sup>23</sup> Our findings are therefore generally consistent with the previously observed relationship between sex, literacy and numeracy.

Results from this study indicate that children whose household income was less than \$20,000 per annum were 3.7 times more likely to be ranked below their age level for academic achievement. This trend worsened to over six times when controlling for age, sex and disability in the multivariate model. Furthermore,



lower parental educational attainment also increased the risk of a child being ranked lower than age academically. The Montreal Longitudinal-Experimental study examined the impact of poverty on academic placement and self-reported delinquency in boys at age 16. It found that when maternal education and early childhood behaviour were controlled for, poverty had an effect on both academic failure and extreme delinquency.<sup>28</sup> The cycle of poverty entrenches people. They start with a lower education achievement, which leads to unemployment or lower paid employment, and their children are further disadvantaged in their educational achievement: "...each additional year of secondary school education attained reduces the probability of public welfare dependency in adulthood by 35%...".<sup>35</sup> Education is one of the keys to raising people's incomes and life chances. It can move people and their children out of poverty. In one study, those who did not complete high school had an unemployment rate of 11.3% compared with 3% of those with a Bachelor's degree.<sup>36</sup>

Unemployment is also a marker of poverty. The risk of being ranked below age was twice as high for the children in this study, though numbers were small and this was not statistically significant. Maternal employment has been found to have strong links with child cognitive outcomes, even in low-income families. One USA study found that children whose mothers worked during the first three years of their life had higher maths, reading and receptive vocabulary scores in their second grade.<sup>32</sup>

Having one parent who 'always felt a lack of control of life in general' carried an additional risk of 5.4 times being ranked below their age level than those who's parents never felt a lack of control. Higher education is associated with better parenting skills (particularly mothers) and better academic and mental health outcomes.<sup>11</sup> Additionally, this study showed that when parental physical health deteriorated there was an almost four-fold increase in the risk of their

child being ranked below age level academically. This persisted when controlling for age, sex and disability in the multivariate model.

While national guidelines do not recommend viewing or use of electronic media exceeding 14 hours a week, our study showed an improved academic outcome if viewed for more than 14 hours a week but no more than 25. The Royal Australian College of Physicians acknowledges that excessive television viewing and obesity can go hand in hand; at the same time they advocate the gains associated with watching quality media, especially educational programs such as *Sesame Street*.<sup>37</sup> Their health policy area offers guidance for television viewing. They give examples of healthy gains from watching television, such as improved understanding and reasoning skills. They also list some risks, such as unsupervised viewing leading to children watching inappropriate programs and the risk of becoming overweight or obese.<sup>37</sup> Internationally, researchers have investigated electronic media and childhood education and also found positive results. Those exposed to electronic media were more likely to do well academically, due to increases in concentration and problem solving ability.<sup>38, 39</sup> Though our study found that risk of being ranked 'lower than age' was lessened when electronic media was viewed between 14 and 25 hours a week, this could be an example of socio-economic confounding in which improved family income is associated with improved access to television viewing. Large amounts of television viewing are not a recommendation, especially if a child is at risk of becoming overweight or obese.

## Indigenous children

With a sample of only 115 children it is difficult to make many broad conclusions about Indigenous children. The Indigenous group had slightly higher risks of emotional and behavioural difficulties than the non-Indigenous sample, though on the prosocial scale, most children, Indigenous and non-Indigenous alike,





were categorised as low risk, indicating a well socialised child with the ability to consider the needs of others, share goods, share time and to care for people beyond their own immediate friends. We also found the Indigenous group had similar trends for girls to out-perform boys, socially and academically.

The biggest difference between the Indigenous and the non-Indigenous children was in academic performance. There were more Indigenous children ranked 'below age level', and far fewer ranked 'far above age level' than non-Indigenous children. These discrepancies exist when both groups of children receive their education in the same government-funded school environments. The Indigenous children are likely to be disadvantaged from academic learning for socio-economic reasons, being poor, having ill health and having parents who have had fewer educational opportunities, together with a history of cultural change since colonisation. These influences make higher educational attainment for Indigenous Territorians a difficult task.

In *Growing up in the Territory: Parent survey* it was found that 48.4% of Indigenous families earned less than \$40,000 per annum, yet this group is arguably better off Indigenous families, by virtue of having a household telephone. National evidence indicates that if an Aboriginal person completes year 10 or 11 they increase their chance of employment by 40%. If they complete year 12, this increases by a further 3% to 43%. Moreover, the number of years of schooling is a stronger predictor of health than occupation or income.<sup>40</sup> Strategies need to address social determinants as well as learning outcomes in order to assist Indigenous children reach their potential.

## Final words

In our society the main role of bringing up children rests with parents. Children who live in stable, supportive homes with nurturing adults have a better chance of coping with outside stresses (Garmezy & Rutter, 1983 cited by Wallach).<sup>1</sup> Of course, children are also more resilient if they are born with easy temperaments and are in good mental health.<sup>1</sup> But for those born with difficult temperaments, quality of parenting is said to determine whether they become distressed, which later leads to behaviour problems. Insecure parent-child relationships and / or parenting styles that are harsh, inconsistent and coercive are related to poor outcomes in children.<sup>41</sup> One initiative to improve the mental health status of children and their parents is the Triple P<sup>®</sup> Positive Parenting Program. As a family based initiative, Triple P<sup>®</sup> is an example of a population level strategy.<sup>42</sup> In a trial by Zubrick et al, a group of parents of preschoolers completed a Triple P<sup>®</sup> program (behavioural family intervention) and then were followed longitudinally for two years. The researchers found a significant reduction in parent reported levels of child behaviour problems and parent reported dysfunctional parenting.<sup>43</sup> Such programs may address some of the issues found in this study that relate to boys. The concern is that Northern Territory boys, while displaying similar patterns to boys in other countries of the world, are disadvantaged in their social and academic learning by their own behaviours.

Teachers also play an influential role in the lives of young people. Fostering resilience is enhanced where teachers are looked up to as role models and mentors. However, it has been suggested that troublesome boys are being created and exacerbated by unsuitable teachers.<sup>27</sup> Fletcher, a former teacher who runs the Men and Boys centre at the University of



Newcastle advocates for change in the way the system looks at boys.<sup>27</sup> Styles of teaching, curriculum development and behaviour management may all be presently geared towards a female-favoured approach, which does not enhance male learning or behaviours. Strategies could be trialled that are aimed at maximising male classroom learning without necessarily identifying individual students for 'special learning', which further ostracises and isolates them. Adjunct to any curriculum initiatives are non-curriculum programs run at schools such as the FRIENDS<sup>®</sup> program from New South Wales, which targets social development and boosting resilience in children. This initiative aims to assist children to cope with and manage anxiety and depression, both now and in later life. It promotes self esteem, problem solving, psychological resilience, self expression and building positive relationships with peers and adults.<sup>2</sup>

The investigation of social and family functioning was undertaken to acknowledge the influences of family, in their wider economic and social context, on the mental health and learning of children. Positive emotional, social, cognitive and physical wellbeing are established in the early years. During this time it is important to minimise disadvantage and prevent children from forming behavioural patterns based on negative experiences. The focus on children from birth to age 12 is aimed at giving them the best start, promoting healthy development in safe supportive environments and supporting the nurturing role of families.<sup>44</sup> Early intervention with positive experiences in key transitions, moving into childcare, beginning kindergarten / preschool and starting school, can maximise the social-emotional wellbeing of children and this may be the key to preventing problems in adulthood.<sup>44</sup> If we want our children to be resilient, then they must be socially competent, have good communication skills, assertiveness, appropriate language and negotiation techniques. In turn this will promote positive alliances with others. Resilience in a young person can lead to academic and social success.<sup>45</sup>



# Glossary

## **CATI**

Computer assisted telephone interviewing

## **Family structure**

### **blended family**

A couple family containing two or more children, of whom at least one is the natural child of both members of the couple and at least one is the stepchild of either member of the couple.

### **intact family**

A couple family containing at least one child who is the natural or foster child of both members of the couple and no child who is the stepchild of either member of the couple.

### **one-parent family**

A family consisting of a lone parent with at least one dependent or non-dependent child (regardless of age) who is usually resident at the household. The family may also include any number of other dependent children, non-dependent children and other related individuals.

### **step family**

A couple family containing one or more children, at least one of whom is the stepchild of either member of the couple and none of whom is the natural or foster child of both members of the couple.

## **Indigenous**

An Indigenous person is one who:

- is a descendant of an Indigenous inhabitant of Australia,
- identifies as Indigenous, and

- is recognised as Indigenous by members of the community in which she or he lives.

## **Mental health problem**

A mental health problem interferes with a person's cognitive, emotional or social abilities, but to a lesser extent than a mental disorder. Mental health problems are more common mental complaints and include the mental ill-health temporarily experienced as a reaction to life stressors. Mental health problems are less severe and of shorter duration than mental disorders, but may develop into mental disorders. The distinction between mental health problems and mental disorders is not well defined and is made on the basis of the severity and duration of the symptoms.

## **Parent Survey**

A survey made up of responses from parents or carers on behalf of a Northern Territory child aged from 0 to 12 years.

## **Prosocial behaviour**

Prosocial behaviour is a strength demonstrated by a child's ability to consider the needs of others, share goods, time and to care in an area beyond their own immediate friends. It includes social responsibility, empathy, comforting, making reparations, reciprocity, altruistic behaviour

## **Resilience**

Resilience describes the ability to adjust individually and socially despite adverse life circumstances.

## **Schools Survey**

A survey made up of responses from teachers or principals relating to a subset of school-aged children from the **Parent Survey**.



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# Appendix A

## Describing Strengths and Difficulties

Strengths and Difficulties	Items used to measure this (yes, no or sometimes)
<b>Emotional symptoms</b>	
Emotional symptoms become problematic when children are worried, unhappy, anxious or frightened much more of the time than might be expected. Sometimes these anxieties express themselves in physical symptoms for which no cause can be found.	
	Often complains of headaches, stomach-aches or sickness
	Many worries or often seems worried
	Often unhappy, depressed or tearful
	Nervous or clingy in new situations, easily loses confidence
	Many fears, easily scared
Emotional symptoms score: low risk (0-4), moderate risk (5), high risk (6-10)	

Conduct problems	
Conduct problems are often readily observable and arise when the behaviour of a child is inappropriate, impinges on the rights of others, is marked by dishonesty or results in the destruction of property.	
	Often loses temper
	Generally well behaved, usually does what adults request*
	Often fights with other children or bullies them
	Often lies or cheats
	Steals from home, school or elsewhere
Conduct problems score: low risk (0-2), moderate risk (3), high risk (4-10)	

Hyperactivity	
Hyperactivity is marked by constant physical activity, and may be accompanied by inattention and impulsive behaviours.	
	Restless, overactive, cannot stay still for long
	Constantly fidgeting or squirming
	Easily distracted, concentration wanders
	Thinks things out before acting*
	Good attention span, sees tasks through to the end*
Hyperactivity score: low risk (0-5), moderate risk (6), high risk (7-10)	

Peer problems	
Children with peer problems often have difficulty making friends, and may be victimised by their peers.	
	Rather solitary, prefers to play alone
	Has at least one good friend*
	Generally liked by other children*
	Picked on or bullied by other children
	Gets along better with adults than with other children
Peer problems score: low risk (0-3), moderate risk (4), high risk (5-10)	



Strengths and Difficulties	Items used to measure this (yes, no or sometimes)
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<b>Prosocial behaviour</b>	
Prosocial behaviour is a strength demonstrated by a child's ability to consider the needs of others, share goods and time and to care in an area beyond their own immediate friends.	
	Considerate of other people's feelings
	Shares readily with other children, for example toys, treats, pencils
	Helpful if someone is hurt, upset or feeling ill
	Kind to younger children
	Often volunteers to help others (parents, teachers, other children)
Prosocial behaviour score: low risk (6-10), moderate risk (5), high risk (0-4)	

<b>Total Difficulties Score</b>	
Total Difficulties Score = Emotional symptoms + Conduct problems + Hyperactivity + Peer problems	
Total Difficulties Score: low risk (0-11), moderate risk (12-15), high risk (16-40)	

\* Some questions were asked in the opposite manner to the trait they were investigating, and were scored accordingly.