Child and Adolescent Mental Health and Educational Outcomes

An analysis of educational outcomes from *Young Minds Matter*: the second Australian Child and Adolescent Survey of Mental Health and Wellbeing

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Additional information

This report and additional information and results from *Young Minds Matter* can be downloaded from

www.youngmindsmatter.org.au

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Introduction

Young Minds Matter: The second Australian Child and Adolescent Survey of Mental Health and Wellbeing was part of the National Survey of Mental Health and Wellbeing initiative, an Australian Government Department of Health funded initiative. It was conducted in 2013-14 and surveyed 6,310 families with children and adolescents aged 4-17 years. Survey participants were screened for several disorders including: major depressive disorder, anxiety disorders (generalised anxiety, social phobia, separation anxiety, and obsessive-compulsive disorder), and behavioural disorders (Attention-Deficit/Hyperactivity Disorder (ADHD), conduct disorder, and oppositional problem behaviours). Of the families surveyed, 5,051 gave consent to access their NAPLAN results for an analysis of children's mental disorders in relation to educational outcomes. Funded by the Australian Government Department of Education, this analysis used NAPLAN data, including scaled scores, bands and categories (below, at, or above the National Minimum Standard), as provided by each of the state and territory testing authorities. Key questions that were prioritised by the analysis were:

- How many students with low connectedness or engagement at school have mental disorders?
- Is a current mental disorder associated with poorer academic outcomes? How does this vary by type of mental disorder?
- How much of the association between mental disorders and academic outcomes can be attributed to differences in attendance, and to socio-economic factors that are associated with mental disorders?
- Does onset of mental disorder alter trajectories of academic achievement?
- Do students receiving services for mental disorders either within schools or within the health sector have different trajectories of academic achievement?

Key findings

Mental disorders are common in Australian school students

While the original *Young Minds Matter* report focused on all children and adolescents, this analysis focused on students only. Mental disorders affected 1 in 7 school students, with slightly higher prevalence in males than females. ADHD is the most common emotional or behavioural disorder in Australian school students, and is more common in males than females. ADHD affected 1 in 10 males, while affecting less than 1 in 20 females. After ADHD, the most prevalent disorders affecting students were anxiety disorders, and oppositional problem behaviours. Major depressive disorder was uncommon in children aged 4-11 years, but was more common in adolescents 12-17 years, affecting almost 1 in 20 adolescents, and was also the most common disorder in older adolescent girls.

Students with mental disorders have poorer NAPLAN results

NAPLAN occurs in Years 3, 5, 7 and 9, over five different domains: grammar, reading, spelling, writing and numeracy. NAPLAN scores are converted into band values, and these band values are then used to assess whether students are above, at, or below the national minimum standard. Students with mental disorders scored lower than students with no mental disorder in all test domains and Year levels. The proportion of students who were above the national minimum standard was also lower. Students with an anxiety disorder, and major depressive disorder scored on average lower than students with no mental disorder, but better than students with ADHD, oppositional problem behaviours, or conduct disorder. Students with ADHD or conduct disorder were the lowest scoring students, with the proportion of students above the national minimum standard less than 50% for some test domains and Year levels.

Gaps in achievement increase from Year 3 to Year 9

Students with mental disorders scored lower than students with no mental disorder in every Year level. The difference between test scores for those with and without mental disorders remained consistent from year to year. For all students, the fastest period of test score growth was in earlier years, moving from Year 3 to Year 5, after this, test score growth slowed. Variation existed for certain students, depending on the specific type of mental disorder they had. For example the test score of students with ADHD and conduct disorder fell further behind students with no mental disorder, year on year.

NAPLAN scores can also be converted into an equivalent year level. This is an alternative measure that can be used to give an indication of the average number of years of schooling typically required for students to make a certain level of progress. Students with no mental disorder consistently perform ahead of students with mental disorders at each Year level. The average number of years that a student with a mental disorder is behind a student with no mental disorder increases from Year 3 to Year 9. Students with a mental disorder in Year 3 were 7 to 11 months behind students with no mental disorder, but by Year 9 students with a mental disorder were on average 1.5 - 2.8 years behind students with no mental disorder. Worst outcomes were seen in students with ADHD or conduct disorder, where they could be up to 5 years behind for certain tests by Year 9.

Students accessing services for mental disorders benefit but the gaps do not fully close

Students with more severe mental disorders were more likely to access support services for their mental disorder. As such, students who used a service were often achieving lower test scores compared to those who did not use a service at a given point in time. Over time students who did not access support services fell further behind when compared to students receiving support services. On average, students who used services improved over time compared to students with a mental disorder who did not receive support services, but did not fully overcome the differences in academic performance due to their mental disorder compared to students who did not have a mental disorder.

Students with mental disorders have more absences from school

Students with mental disorders were absent from school for significantly more days per year than students without a mental disorder. This was particularly so in the secondary school years. In Years 1-6 students with a mental disorder missed an average 11.8 days per year compared with 8.2 days per year for students without a mental disorder. In Years 7-12 students with a mental disorder missed an average 23.8 days per year compared with 11.0 days per year for students without mental disorder. All mental disorders were associated with higher rates of absence from school. Students with ADHD missed an average 10.5 days in Years 1-6 and 22.0 days in Years 7-12. Students with anxiety disorders, major depressive disorder and conduct disorder had similar rates of absence — 27.2 days, 26.3 days and 27.8 days respectively in Years 7-12.

Students with mental disorders have lower levels of connectedness to school and engagement with schoolwork

Connectedness and engagement were assessed using scales administered to adolescents aged 11-17 years. Most students aged 11-17 years had good connectedness (how much students liked the people at school and the school environment) and engagement (how much students liked the learning environment, quality of teaching, and learning content) with school. Poor connectedness and poor engagement were more common in students with mental disorders, as well as in students who have self-harmed or who have suicidal thoughts or behaviours.

The combination of mental disorder and socio-economic disadvantage compounds the impact on academic achievement

Mental disorders are more common in students living in families experiencing various forms of socio-economic disadvantage including low household income, parental unemployment and family breakup. In general, students from lower socio-economic status backgrounds had lower test scores, for both students with and without mental disorders. Similarly, students with a mental disorder generally had lower test scores than students without a mental disorder, irrespective of their socio-economic status. The impact of both socio-economic factors and mental disorders compound, meaning that in general, students with no mental disorder in better socio-economic situations scored the highest, and students with mental disorders and in lower socio-economic situations scored the lowest.

Recommendations

Young Minds Matter has found that mental disorders are among the most common and burdensome health conditions in Australian students, and they have significant adverse impacts on academic outcomes. The findings highlight the extent to which good student mental health is an essential prerequisite for the successful achievement of educational goals. Improving the mental health and wellbeing of students at the population level is likely to be one of the most important prerequisites to improving the academic performance of Australian students.

These findings have a number of policy implications. If we can implement better strategies for preventing and treating mental disorders in students, then there is the potential to improve academic performance, attendance, and attitudes towards school. Important aspects to

consider include the type and timing of strategies that need to be implemented, and how stakeholders can go about implementing them.

Findings from our analysis suggest a number of specific measures be implemented to better support the academic performance of students with mental disorders. First, there is a need to improve early childhood interventions as a way to close initial gaps in academic performance between students with and without a mental disorder. Many mental disorders, including ADHD, conduct disorder, and anxiety disorders, often start early in life and persist for many years. Many students with mental disorders are already below their peers in academic achievement in Year 3 and then fall further behind as they progress through school.

Second, there is a need to improve the effectiveness of interventions aimed at reducing the prevalence of mental disorders in children experiencing socio-economic disadvantage. Mental disorders are more common in children whose families experience socio-economic disadvantage. Furthermore, mental disorders and socio-economic disadvantage interact with each other to compound the harm associated with each in school attendance and academic performance.

Third, there is a need to improve the effectiveness of programs designed to help students, and the extent to which students engage with such programs. Students using health or educational support services for mental health problems show improved performance compared with students not accessing services. There are still substantial gaps in the numbers of students accessing services when they need them.

Fourth, regular evaluation and continual improvement of mental health support programs should be implemented. Schools and education systems currently offer a large number of programs and resources targeted at helping students with mental disorders. However, there is a lack of consistency of implementation across schools. It is not clear that the schools and the students with the greatest need are participating in these programs. Few programs have been rigorously evaluated and there is little evidence of iterative improvement in the effectiveness of programs based on a strategy of 'plan, do, check, adjust' cycles of continual improvement. It is important to regularly monitor the delivery and uptake of programs and services, and their impact, both to identify ways to improve the reach of programs and services and to improve their effectiveness.

Finally, consideration should be given to a larger role for "school counsellors". Teachers are not mental health professionals and should not be expected to diagnose and treat mental disorders. Schools will not be able to achieve their educational goals unless their students

are healthy, both physically and mentally. Specialist mental health services such as Child and Adolescent Mental Health Services (CAMHS) clinics, psychologists and psychiatrists have an important role to play, particularly with children with severe disorders. However, there is insufficient capacity available within specialist services to support all students with mental disorders. Thus primary supports such as General Practitioners and school counsellors will continue to play key roles in supporting students and their families, and to direct referral pathways. The role of school-based counsellors in Australian schools should be supported to become a critical component of prevention and early intervention services for children and adolescents with a mental disorder.

The results of this study suggest that if more effective interventions are developed to reduce the prevalence of student mental disorders there is a strong likelihood that there will be significant improvements in school attendance, positive attitudes to schooling and academic performance in Australia.

1 Introduction

1.1 *Young Minds Matter*

Young Minds Matter (YMM) was the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. The survey was conducted by the Telethon Kids Institute at The University of Western Australia in partnership with Roy Morgan Research, with funding from the Australian Government Department of Health.

The survey fieldwork was conducted in 2013-14 and first results were published in 2015 in "The Mental Health of Children and Adolescents: Report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing" released by the Australian Government Department of Health.

The principal objectives of YMM were to provide data on the prevalence of mental disorders in Australian children and adolescents, the burden associated with these disorders, and the services used in their management. Some 6,310 families with children and adolescents aged 4-17 participated in the survey, which included a face-to-face diagnostic interview with the parents or carers. In addition, where the selected survey child was aged 11 years or older, they were also asked to complete a questionnaire in private on a tablet computer, and 2,967 young people aged 11-17 years did so.

The main aims of the survey were to determine:

- How many children and adolescents had which mental disorders.
- The nature and impact of these.
- How many children and adolescents had used services for mental disorders.
- The role of the education sector in providing these services.

1.2 Key findings of *Young Minds Matter*

The survey results were released by the Minister for Health in August 2015. The survey publication and additional results are available on the survey web site:

www.youngmindsmatter.org.au

Key findings from the survey include:

- Mental disorders are still common in children and young people – 1 in 7 or 560,000 children in Australia were assessed as having one or more mental disorders in the previous 12 months.
- The number of children and adolescents with Attention-Deficit/Hyperactivity Disorder (ADHD) and conduct disorder has decreased since 1998.
- There has been an increase in the number of adolescents with major depressive disorder. Based on self-reported information, 1 in 13 11-17 year-olds had major depressive disorder in the previous 12 months. The rate was highest in girls aged 16-17 years, with 1 in 5 having had major depressive disorder.
- Major depressive disorder had the greatest impact of any disorder, with 43% of sufferers experiencing a severe impact on their lives.
- Adolescents were more likely than younger children to suffer from mental disorders with a severe impact.
- 1 in 12 adolescents aged 12-17 years had self-harmed in the previous 12 months
- Girls aged 16-17 years experienced very high rates of distress, major depressive disorder, self-harming and suicidal behaviour. Around 1 in 20 had attempted suicide in the previous 12 months.
- Mental disorders were more common in families already facing other challenges such as unemployment or family breakup.
- The number of children and adolescents with mental disorders who have used services in the health and education sectors has increased substantially from 1998 to 2013-14.
- Just over half (56%) of children with mental disorders had used services in the previous 12 months.
- Of families who reported that their child was adversely impacted by their mental disorder, 1 in 5 felt that their child did not need formal help.
- Schools are front line for identifying mental disorders, providing services, and referring children to services.
- Although many families had their service needs met (nearly three quarters), there remained substantial numbers whose needs for help went unmet, either partially or fully.

1.3 Assessing mental disorders

Mental disorders were assessed using the Diagnostic Interview Schedule for Children Version IV (DISC-IV). The DISC-IV implements the criteria for mental disorders set out on the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, produced by the American

Psychiatric Association. These criteria are based on clinically significant sets of symptoms that are associated with impaired functioning by children and adolescents with disorders.

The DISC-IV is able to assess more than 30 mental disorders that can occur in children and adolescents. Because of the time taken to administer the complete DISC-IV questionnaire, only selected disorders were included in the survey. Disorders were chosen for inclusion in the survey based on their prevalence and the level of impairment associated with them, so the survey assessed the most commonly occurring burdensome conditions in children and adolescents. These included both emotional disorders (such as anxiety and depression) and behavioural disorders (such as ADHD and conduct disorder).

The following disorders were assessed using the DISC-IV in the survey:

- Anxiety disorders
    - Social phobia
    - Separation anxiety disorder
    - Generalised anxiety disorder
    - Obsessive-compulsive disorder
- Major depressive disorder
- Attention-Deficit/Hyperactivity Disorder (ADHD)
- Oppositional problem behaviours
- Conduct disorder

The term *mental disorder* can be defined differently in different contexts. In this report, the term *mental disorder* is used to refer to one or more of the disorders listed above that were assessed using the DISC-IV in the survey.

1.4   Access to NAPLAN data

As part of the survey, the primary carers and the adolescents themselves were asked for their consent to access their Medicare and Pharmaceutical Benefits Scheme records and their NAPLAN results. Consent was sought to access NAPLAN results, where available, from 2008 through to 2016, spanning both before and after the date of survey data collection.

Of the 6,310 participants in YMM, 5,051 gave consent to accessing NAPLAN results. These data were subsequently obtained on request from each of the State and Territory testing authorities. These data were de-identified and added to the YMM survey data files.

State and territory testing authorities provided the scaled scores, bands and categories (below, at, or above the National Minimum Standard) for each of the five testing domains. Additionally where students did not sit NAPLAN, they provided an indicator of whether the student was absent on the day of the test, whether they were exempt from sitting that test or whether they had been withdrawn from the test.

These NAPLAN results were not available at the time that the main survey publication was released. This report is primarily based on an analysis of these additional data to examine the relationship between child and adolescent mental disorders and educational outcomes.

1.5   Additional education-related data available in *Young Minds Matter*

The survey questionnaires included specific questions about attendance at school and use of services within the educational sector. Questions in the survey included:

Parent/carer questionnaire:

- Number of schools attended
- Whether ever suspended from school
- Attendance at school
- Parent/carer rated performance in maths, English, art or drawing, sports or physical education, and science
- Use of services at school (such as counselling and educational support services) for mental disorders.

Youth questionnaire:

- School connectedness (6 item scale about sense of belonging to school)
- School engagement (5 item scale about engagement in class work and learning activities)
- Self-rated performance in maths, English, art or drawing, sports or physical education, and science
- Use of services at school (such as counselling and educational support services) for mental disorders.

1.6   Aims

Using the data collected in *Young Minds Matter* and the linked NAPLAN results, this analysis set out to address the following key questions:

- How many students with low connectedness or engagement at school have mental disorders?
- Is a current mental disorder associated with poorer academic outcomes?
- How does this vary by type of mental disorder?
- How much of the association between mental disorders and academic outcomes can be attributed to differences in attendance, and to socio-economic factors that are associated with mental disorders?
- Does onset of mental disorder alter trajectories of academic achievement?
- Do students receiving services for mental disorders either within schools or within the health sector have different trajectories of academic achievement?

1.7   School enrolment in the *Young Minds Matter* sample

The *Young Minds Matter* survey sample comprised 6,310 families with children aged 4-17 years. Most of these children were attending some form of schooling. There were 299 children who were not currently attending school. This included 208 4-5 year-olds who had not yet commenced school (including kindergarten or pre-school), 81 16-17 year-olds who were no longer attending school, and 10 other children who were not currently attending school, for a variety of reasons.

For the purposes of the survey, attendance at school included attending kindergarten, pre-school, prep, pre-primary or reception on either a full-time or part-time basis. Among children aged 4-5 years, the survey estimated that 63% of 4 year-olds were attending school (95% CI 58%-68%), and 90% of 5 year-olds were attending school (95% CI: 87%-93%). Among 4 year-olds, 57% were attending school part-time and 6% were attending school full-time. Among 5 year-olds 40% were attending part-time, 47% were attending a full-time pre-school or pre-primary program, and 3% were in Year 1. Among 6 year-olds, 55% were in Year 1 or Year 2, and 44% were attending a prep, pre-primary, reception or equivalent year.

Among 16-17 year-olds, 97% of 16 year-olds and 91% of 17 year-olds were attending school. An estimated 3.5% of 17 year-olds were attending some form of post-school education, and 3.5% of 17 year-olds were employed.

For this report, children and adolescents have been included in the analysis if they were attending kindergarten, pre-primary or Years 1-12. Children and adolescents have been excluded if they were not attending school, or were attending post-school education.

1.8   Age, Year level and stage of schooling

When reporting measures of mental disorders it is useful to report prevalence estimates by indicators of growth. This report uses indicators based on age and on Year level or stage of schooling. Indicators based on age typically refer to those aged 4-11 years (commonly referred to as children) and those aged 12-17 years (commonly referred to as adolescents). Indicators based on Year level are sometimes reported for specific Year levels and sometimes as groups of Year levels (typically Years 1 through 6 and Years 7 through 12 but sometimes as Years 1 through 6, Years 7 through 10 and Years 11 through 12). The report also refers to students in primary school (as Years 1 through 6 (even though in South Australia Year 7 is in primary school) and students in secondary school (as Years 7 through 12).

1.9   Presentation of data and scope of this report

Data from the survey have been weighted to represent the population of children and adolescents aged 4-17 years in Australia based on Estimated Resident Population figures provided by the Australian Bureau of Statistics. Detailed analysis of response patterns has been undertaken, and there was little evidence of any systematic bias. The survey results are considered to be representative of Australian children and adolescents aged 4-17 years.

Standard statistical and reporting protocols have been observed throughout this report. Data have been processed, analysed and presented as follows:

- Survey weights have been employed in all analyses to represent the population of children and adolescents aged 4-17 years in Australia.
- 95% confidence intervals have been examined for all data and only those differences that are statistically significant (i.e. not likely to be due to chance) with this level of confidence have been highlighted in the text.
- Where table cells were based on less than five individuals, the data have been suppressed.

Young Minds Matter collected a range of demographic and socio-economic indicators about children and their families, including information on family type, household income, level of education and labour force status of parents or carers, area of residence, and level of family functioning.

For family type, families were classified into two parents or carers, and one parent or carer families. The former were further categorised into original, step, blended or other families corresponding to the ABS family blending classification variable introduced in the 2006 Census.

Household income included the combined income for the previous financial year of everyone living in the family before tax and other deductions are taken out. They were classified into three categories: those earning less than $52,000 per year (approximately the bottom 25% of the household income distribution), those earning $52,000-$130,000 per week (approximately 50% of households), and those who earned more than $130,000 per year (approximately the upper 25% of households). Around 4% of families either did not know or refused to provide their household income. These families were excluded from household income analysis.

Parent or carer education was classified into four distinct categories, based on the highest level of education achieved by either parent or carer (or the sole parent or carer): Year 10 or below, Year 11 or 12, diploma or certificate III/IV, and bachelor degree or higher.

Current labour force status of parents or carers was classified as employed when working full-time, part-time or away from work, or as not in employment when unemployed or not in the labour force. Employed includes casual, temporary or part-time work if it was for one hour or more.

Area of residence was categorised as either Greater capital cities or Rest of state based on the ABS Greater Capital City Statistical Area (GCCSA) classification. This classification represents the functional extent of the eight state and territory capital cities in Australia. The ARIA+ was also used for certain analyses to provide insight into differences based on the level of remoteness, and is widely used by many Australian organisations and agencies.

Family functioning was assessed using a shortened version of the General Functioning Subscale of the McMaster Family Assessment Device. This covers issues such as communication and planning within the family, dealing with conflict, and levels of emotional and practical support. Families were classified into four levels of functioning. This ranged from very good through to poor, with poor indicating unhealthy family functioning likely to require clinical intervention. Of all families in the survey 3.7% had a poor level of family functioning.

Refer to **Appendix 1 – Glossary** for more detail on these socio-economic factors.

2   Prevalence of mental disorders and risk-taking behaviours in schools

Information on the prevalence of mental disorders and risk-taking behaviours in Australian children and adolescents aged 4-17 years has already been published in *The Mental Health of Children and Adolescents: Report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing* (2015). This chapter reports prevalence of mental disorders and risk-taking behaviours in children and young people attending school in Australia. Additionally the prevalence of disorders and risk-taking behaviours are presented by Year in school as well as age.

Young Minds Matter survey participants who attended school at the time of the survey were assessed using the Diagnostic Interview Schedule for Children Version IV (DISC-IV) to determine prevalence of the following mental disorders in the previous 12 months: anxiety disorders including social phobia, separation anxiety, generalised anxiety and obsessive-compulsive disorder, major depressive disorder, Attention-Deficit/Hyperactivity Disorder (ADHD), conduct disorder, and oppositional problem behaviours.

2.1   Prevalence of mental disorders in students who go to school

As seen in Table 2-1-1, approximately 1 in 7 (13.9%) of all students in the survey had some kind of mental disorder. The most common of these was ADHD (7.4%), followed by anxiety disorders (6.9%), and oppositional problem behaviours (5.1%). Out of all the anxiety disorders, the most common was separation anxiety (4.3%). This was the same for males, with ADHD (10.4%), anxiety disorders (7%), and oppositional problems (5.6%), being the most prevalent disorders, and separation anxiety being the most prevalent anxiety disorder amongst males (4.4%). For females, the most prevalent disorders were anxiety disorders (6.8%), oppositional problems (4.5%), and ADHD (4.3%), with separation anxiety again the most prevalent anxiety disorder (4.1%). Students with more than one disorder were considered in all disorder groups that they belonged to, e.g. a student with ADHD and major depressive disorder would be in both disorder groups.

Notable differences between females and males included the overall prevalence of mental disorders: approximately 1 in 6 (16.3%) males had a mental disorder, compared to approximately 1 in 9 females (11.5%). This difference was primarily due to the disparity between the prevalence of ADHD (10.4% for males, 4.3% for females). Oppositional problem behaviours followed as having the next largest disparity (5.6% in males compared to 4.5% in females).

Table 2-1-1: 12-month prevalence of mental disorders among 4-17 year-olds who attended school by sex

Disorder	Males (%)	Females (%)	Persons (%)
Social phobia	2.4	2.2	2.3
Separation anxiety	4.4	4.1	4.3
Generalised anxiety	2.0	2.3	2.2
Obsessive-compulsive	1.1	0.5	0.8
Any anxiety disorder	7.0	6.8	6.9
Major depressive disorder	2.5	3.1	2.8
ADHD	10.4	4.3	7.4
Conduct disorder	2.5	1.6	2.1
Oppositional problems	5.6	4.5	5.1
Any mental disorder	**16.3**	**11.5**	**13.9**

As seen in Table 2-1-2, the most common mental disorders in children (aged 4-11 years) attending school were ADHD (8.6%), oppositional problem behaviours (5.3%), and anxiety disorders (7.0%); separation anxiety disorder accounting for the largest percentage of the latter (4.9%). Among adolescents (12-17 years), prevalence of major depressive disorder was higher, while occurrence of ADHD and anxiety disorders was lower than for children. Within anxiety disorders, the overall decrease from children to adolescents was primarily due to the decrease in separation anxiety, as all other anxiety disorders tended to increase. The most prevalent disorders in adolescence continued to be anxiety disorders (6.6%), ADHD (6.3%), and oppositional problem behaviours (4.9%). However, despite a decrease in these three disorders into adolescence, an increase in other disorders resulted in the overall prevalence of mental disorders largely unchanged (falling by just 0.2%) for all students at school. The most dramatic difference between children and adolescents was the almost four-fold increase (1.2% to 4.6%) in the prevalence of major depressive disorder.

Comparing males and females, male children aged 4-11 years were the most susceptible to having a mental disorder (17.0%), followed by male adolescents (15.7%). This was followed

by female adolescents (12.1%), and females children aged 4-11 years (11.0%). The higher proportion in males can be attributed primarily to the prevalence of ADHD, which was twice as common in males than females at ages 4-11 years (11.3% vs. 5.7%), and four times as common in males compared to females at ages 12-17 years (9.9% vs. 2.5%).

Table 2-1-2: Prevalence of mental disorders among 4-17 year-olds who attended school by sex and age

Disorder	Males 4-11 years (%)	Males 12-17 years (%)	Females 4-11 years (%)	Females 12-17 years (%)	Persons 4-11 years (%)	Persons 12-17 years (%)
Social phobia	2.0	3.2	1.3	3.2	1.6	3.2
Separation anxiety	5.0	3.7	4.8	2.8	4.9	3.2
Generalised anxiety	1.9	2.1	1.6	3.0	1.8	2.6
Obsessive-compulsive	1.2	1.0	0.3	0.7	0.8	0.9
Any anxiety disorder	7.8	6.2	6.2	7.1	7.0	6.6
Major depressive disorder	1.2	4.1	1.3	5.0	1.2	4.6
ADHD	11.3	9.9	5.7	2.5	8.6	6.3
Conduct disorder	2.5	2.6	1.7	1.6	2.1	2.1
Oppositional problems	5.9	5.5	4.7	4.2	5.3	4.9
Any mental disorder	**17.0**	**15.7**	**11.0**	**12.1**	**14.1**	**13.9**

2.2   Prevalence of mental disorders by Year in school

Amongst primary school students, an estimated 18.2% of boys and 12.4% of girls had a mental disorder in the previous 12 months. ADHD is the most common disorder among boys, followed by anxiety disorders (7.9% in boys, and 7.1% in girls). Amongst secondary school students 15.4% of boys and 12.3% of girls had a mental disorder in the previous 12 months. The prevalence of ADHD is lower in secondary students compared with primary school students, while the prevalence of major depressive disorder is higher, with 4.1% of boys and 5.6% of girls having major depressive disorder.

Amongst the anxiety disorders, separation anxiety is the most common condition among Kindergarten and Pre-primary students, as well as students in Years 1-6. Social phobia and generalised anxiety disorder are more common in the secondary school years. Anxiety and major depressive disorder have highest prevalence in upper secondary school particularly

among females. In Years 11-12, 5.8% of girls had generalised anxiety disorder, 4.2% had social phobia, and 9.6% had major depressive disorder in the previous 12 months.

Figure 2-2-1: Prevalence of mental disorders in students in Years 1-6, by disorder and sex
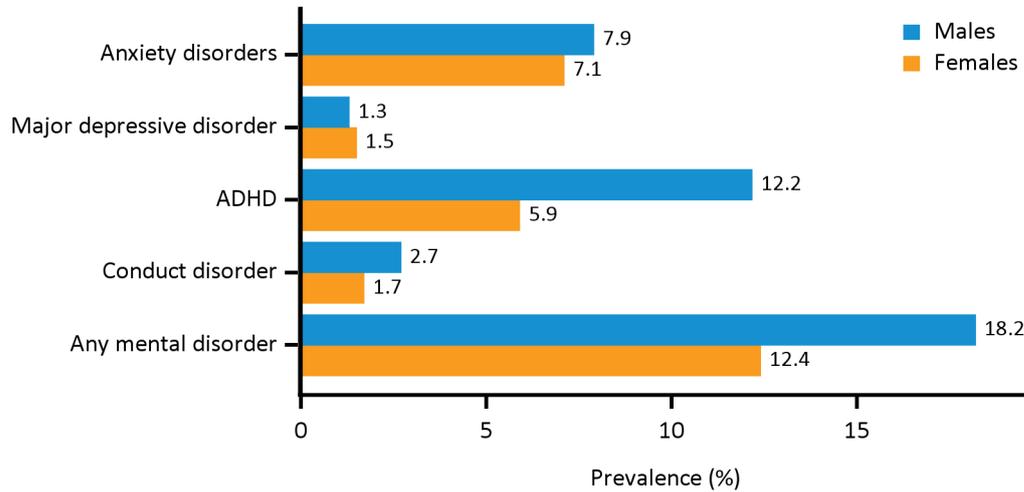
Figure 2-2-2: Prevalence of mental disorders in students in Years 7–12, by disorder and sex
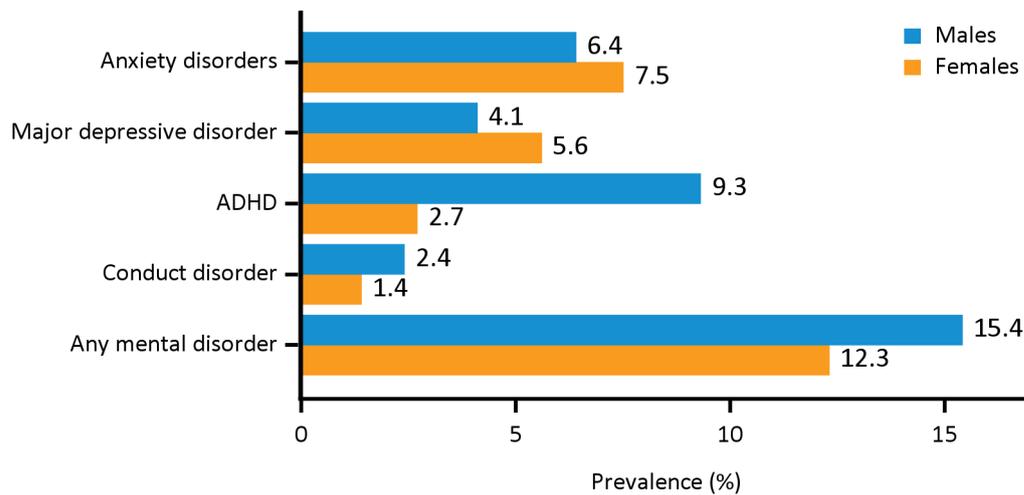
Table 2-2-1: Prevalence of mental disorders in students in Kindergarten or Pre-primary, by disorder and sex

Disorder	Males (%)	Females (%)
Social phobia	0.9	np
Separation anxiety	5.7	2.4
Generalised anxiety	1.3	np
Obsessive-compulsive	1.4	np
Any anxiety disorder	6.9	3.1
Major depressive disorder	np	np
ADHD	8.5	5.1
Conduct disorder	2.6	1.9
Oppositional problems	4.8	3.2
Any mental disorder	**13.6**	**7.1**

np   Not available for publication because of small cell size, but included in totals where applicable

Table 2-2-2: Prevalence of mental disorders in students in Years 1-6, by disorder and sex

Disorder	Males (%)	Females (%)
Social phobia	2.2	1.6
Separation anxiety	4.6	5.4
Generalised anxiety	2.1	1.8
Obsessive-compulsive	1.4	np
Any anxiety disorder	7.9	7.1
Major depressive disorder	1.3	1.5
ADHD	12.7	5.9
Conduct disorder	2.7	1.7
Oppositional problems	6.1	4.9
Any mental disorder	**18.3**	**12.4**

np   Not available for publication because of small cell size, but included in totals where applicable

Table 2-2-3: Prevalence of mental disorders in students in Years 7-10, by disorder and sex

Disorder	Males (%)	Females (%)
Social phobia	3.6	2.9
Separation anxiety	4.9	2.9
Generalised anxiety	2.6	2.6
Obsessive-compulsive	1.0	np
Any anxiety disorder	7.0	6.8
Major depressive disorder	3.9	3.9
ADHD	11.3	2.9
Conduct disorder	2.5	1.6
Oppositional problems	6.4	3.8
Any mental disorder	**16.8**	**11.5**

np   Not available for publication because of small cell size, but included in totals where applicable

Table 2-2-4: Prevalence of mental disorders in students in Years 11-12, by disorder and sex

Disorder	Males (%)	Females (%)
Social phobia	3.1	4.2
Separation anxiety	1.1	3.4
Generalised anxiety	1.8	5.8
Obsessive-compulsive	np	1.0
Any anxiety disorder	4.8	9.3
Major depressive disorder	4.5	9.6
ADHD	4.4	2.1
Conduct disorder	2.1	1.1
Oppositional problems	4.0	6.3
Any mental disorder	**12.1**	**14.1**

np   Not available for publication because of small cell size, but included in totals where applicable

2.3 Prevalence of mental disorders in students in the NAPLAN sample

Survey results for students who sat NAPLAN showed that the prevalence of mental disorders in students changes between Year 3 and Year 9. For example, as seen in Table 2-3-1, the prevalence of ADHD (8.9%) made it the most common mental disorder in Year 3, but by Year 9 (6.0%) it had fallen below anxiety disorders (6.4%). Overall, the prevalence of anxiety disorders did not vary by much (from 6.8% in Year 3 up to 7.2% in Year 5, and to 6.4% in Year 9), but within anxiety disorders the prevalence of separation anxiety had decreased (4.5% to 2.9%), while social phobia and generalised anxiety increased, and obsessive-compulsive disorder reduced (by 0.1% from Year 3 to Year 9). Major depressive disorder more than doubled through to Year 9 (1.9% to 4.7%), while oppositional problem behaviours slightly reduced (from 5.7% to 5.2%), and conduct disorder was also largely unchanged, with a slight decrease (2.2% to 1.7%) from Year 3 to Year 9.

Table 2-3-1: Prevalence of mental disorders among students who attended school, by NAPLAN Year

Disorder	Year 3 (%)	Year 5 (%)	Year 7 (%)	Year 9 (%)
Social phobia	1.9	2.5	2.8	3.0
Separation anxiety	4.5	4.3	3.6	2.9
Generalised anxiety	2.0	2.2	2.5	2.6
Obsessive-compulsive	0.8	0.8	0.7	0.7
Any anxiety disorder	6.8	7.2	6.9	6.4
Major depressive disorder	1.9	2.8	3.7	4.7
ADHD	8.9	8.0	6.7	6.0
Conduct disorder	2.2	2.2	1.6	1.7
Oppositional problems	5.7	5.5	5.6	5.2
Any mental disorder	**14.6**	**14.9**	**13.8**	**13.5**

Major depressive disorder was more prevalent in older students. By Year 9, 1 in 20 students (4.7%) in the NAPLAN sample had major depressive disorder, compared with 1 in 50 (1.9%) for Year 3. In the primary school years, major depressive disorder is uncommon. The prevalence increases significantly in adolescence, and by Year 9, 3.8% of males and 5.8% of females had major depressive disorder in the previous 12 months.

Referring to anxiety disorders in Table 2-3-1, in Years 3 and 5, separation anxiety was the most common anxiety disorder. By Year 7, social phobia was equally as prevalent as separation anxiety, and by Year 9 social phobia was more common than separation anxiety. During this same time period generalised anxiety increased overall (2.0% to 2.6%).

The decrease in prevalence of separation anxiety was observed across genders through to Year 9 (see Tables 2-3-2 and 2-3-3). The increase in social phobia and generalised anxiety was evident in female students, but not in male students, where these disorders stayed approximately consistent across Year levels. Obsessive-compulsive disorder was the least prevalent of all the measured mental disorders, affecting less than 1% of the NAPLAN sample across all years. Moving from Year 3 to Year 9, it decreased slightly for males (1.3% to 0.8%), but increased slightly for females (0.3% to 0.5%).

ADHD was the most common mental disorder for males in all years, affecting 12.5% of students in Year 3, and 9.4% by Year 9 (Table 2-3-2). For females it was one of the most prevalent disorders for early years, affecting 5.2% of females in Year 3, but by Year 9 it had fallen to 2.5%, which was only more prevalent than conduct disorder (1.1%), and obsessive-compulsive disorder (0.5%) in Year 9 (Table 2-3-3).

Conduct disorder affected 2.2% of Year 3 students, which fell slightly to 1.7% students by Year 9 (Table 2-3-1). Oppositional problem behaviours were more common, being ranked as one of the most prevalent mental disorders in all years. They affected 6.9% of Year 3 males, and 6.1% of Year 9 males (Table 2-3-2). Despite being less prevalent amongst female students, it was still one of the most prevalent disorders, affecting 4.6% females in Year 3, and 4.3% in Year 9 (Table 2-3-3).

Table 2-3-2: Prevalence of mental disorders among male students who attended school, by NAPLAN Year

Disorder	Year 3 (%)	Year 5 (%)	Year 7 (%)	Year 9 (%)
Social phobia	2.3	2.6	2.5	2.6
Separation anxiety	4.2	4.4	3.6	3.0
Generalised anxiety	2.2	2.2	2.1	2.0
Obsessive-compulsive	1.3	1.3	0.8	0.8
Any anxiety disorder	6.9	7.2	6.2	5.5
Major depressive disorder	1.8	2.5	3.0	3.8
ADHD	12.5	12.0	10.2	9.4
Conduct disorder	2.4	2.7	2.0	2.3
Oppositional problems	6.9	6.5	6.8	6.1
Any mental disorder	**17.5**	**17.5**	**15.6**	**14.8**

Table 2-3-3: Prevalence of mental disorders among female students who attended school, by NAPLAN Year

Disorder	Year 3 (%)	Year 5 (%)	Year 7 (%)	Year 9 (%)
Social phobia	1.6	2.4	3.0	3.3
Separation anxiety	4.8	4.2	3.6	2.8
Generalised anxiety	1.7	2.2	2.9	3.2
Obsessive-compulsive	0.3	0.3	0.5	0.5
Any anxiety disorder	6.6	7.2	7.6	7.3
Major depressive disorder	2.0	3.0	4.3	5.8
ADHD	5.2	3.9	3.1	2.5
Conduct disorder	1.9	1.6	1.2	1.1
Oppositional problems	4.6	4.5	4.3	4.3
Any mental disorder	**11.7**	**12.3**	**12.0**	**12.2**

2.4   Prevalence of mental disorders by socio-economic factors

Young Minds Matter found substantial differences in the prevalence of mental disorders by a range of socio-economic factors and measures of disadvantage (refer to **Appendix 1 – Glossary** for descriptions). Mental disorders were more common in children living in families already facing other challenges such as unemployment or family breakup. Attendance, engagement and performance at school have also been linked in previous research to measures of socio-economic status and disadvantage.

2.4.1 Family type

Referring to Table 2-4-1, mental disorders amongst children who attend school were less prevalent in two parent families (11.7%), compared to single parent families (22.2%). Original two parent families had the lowest prevalence of mental disorders of all family types (10.3%). Families with two parents of other categories (e.g. step, blended, or other types of family) had greater prevalence of mental disorders than original families, but less than one parent families. These findings were consistent with those for each gender, with the primary difference between genders being the larger prevalence of mental disorders in males.

Table 2-4-1: 12-month prevalence of mental disorders among 4-17 year-old students by family type and sex

Family type	Males (%)	Females (%)	Persons (%)
Families with two parents or carers—	13.9	9.4	11.7
Original family	12.3	8.3	10.3
Step family	21.0	13.6	17.1
Blended family	24.5	16.7	20.6
Other family	18.6	15.6	17.1
Families with one parent or carer	25.1	18.9	22.2

2.4.2 Household income

Lower income households had the highest rate of mental disorders amongst children who attended school (Table 2-4-2). Approximately 1 in 5 (20.5%) students in households that earned less than $52,000 a year had mental disorders. This compared to 1 in 10 (10.6%) for those in households that earned more than $130,000 a year. For mid-range income ($52,000 - $129,999 a year) households, 1 in 8 (12.5%) had a mental disorder.

The prevalence of mental disorders in lower income households was almost double that of higher income households (20.5% vs. 10.6%). This was the same for both males (24.6% to 12.5%) and females (15.9% to 8.7%).

Table 2-4-2: 12-month prevalence of mental disorders among 4-17 year-old students by household income and sex

Household income	Males (%)	Females (%)	Persons (%)
Less than $52,000 per year	24.6	15.9	20.5
$52,000-$129,999 per year	13.9	10.9	12.5
$130,000 or more per year	12.5	8.7	10.6

2.4.3 Parent and carer education

In general, children of parents or carers with a higher level of education had a lower prevalence rate of mental disorders.

This was very clear for male students, where 12.4% of male students had a mental disorder if they were in families where the highest level of parent or carer education was a Bachelor

Degree or higher (Table 2-4-3). The prevalence of mental disorders increased as the level of parental or carer education decreased (17.3%, 20.1%, and 27.1%, respectively).

The distinction for female students was not as clear. Female students who had one or more parents or carers with a Bachelor Degree or higher had the lowest prevalence of mental disorders (8.8%), which increased for those with a Diploma or Certificate III/IV (to 14.3%), but then unexpectedly decreased (to 10.7%), followed by an increase in prevalence for Year 10 or below (12.6%) that was still less than the value for those with a Diploma or Certificate III/IV.

Table 2-4-3: 12-month prevalence of mental disorders among 4-17 year-old students by parent and carer education and sex

Parent or carer education	Males (%)	Females (%)	Persons (%)
Bachelor degree or higher	12.4	8.8	10.6
Diploma or certificate III/IV	17.3	14.3	15.8
Year 11 or 12	20.1	10.7	15.7
Year 10 or below	27.1	12.6	20.2

2.4.4 Parent and carer labour force status

Children with a sole parent or carer who was not employed had the highest rate of mental disorders (30.8%, Table 2-4-4). The next highest rate was 21.3% for two parents or carers who were not employed. For families with a sole parent or carer who was employed the prevalence rate was 16.3%. The lowest rate of mental disorders was 10.8% for families with two parents or carers who were both employed. These findings were consistent with those for each gender, with the primary difference between genders being the larger prevalence of mental disorders in males.

Table 2-4-4: 12-month prevalence of mental disorders among 4-17 year-old students by parent and carer labour force status and sex

Parent or carer labour force status	Males (%)	Females (%)	Persons (%)
Both parents or carers employed	12.5	9.0	10.8
One parent or carer employed, one parent or carer not in employment	16.2	10.1	13.2
Both parents or carers not employed	24.0	18.3	21.3
Sole parent or carer employed	16.2	16.3	16.3
Sole parent or carer not employed	37.7	22.6	30.8

2.4.5 Area of residence

Table 2-4-5 shows the prevalence of mental disorders among students using the ABS GCCSA and ARIA+ classifications. By the GCCSA classification, 16.3% of children living outside of capital cities had a mental disorder. This compared to 12.6% of those who lived within the boundaries of a greater capital city. The difference between students who lived in greater capital cities and rest of state were larger for males (14.2% to 20.1%) than females (11.0% to 12.2%).

Table 2-4-5: 12-month prevalence of mental disorders among 4-17 year-old students by area of residence and sex

Area of residence	Males (%)	Females (%)	Persons (%)
Greater Capital City Statistical Area—			
Greater capital cities	14.2	11.0	12.6
Rest of state	20.1	12.2	16.3
Remoteness (ARIA+)—			
Major Cities of Australia	14.8	11.0	12.9
Inner Regional Australia	18.1	11.3	14.9
Outer Regional Australia	22.9	15.7	19.4
Remote or Very Remote Australia	18.3	9.9	13.8

By the ARIA+ classification, approximately 12.9% of children living in major cities had mental disorders, while 14.9% of children living in inner regional Australia had mental disorders, and 19.4% of children living in outer regional Australia had mental disorders. Due to the small sample sizes for those living in remote Australia, this data should be treated with caution. There was a lower prevalence of mental disorders in females than males in all classifications of the ARIA+, with greater disparity for more remote areas (e.g. 22.9% prevalence for males and 15.7% for females for outer regional Australia).

2.4.6 Family functioning

A shortened verion of the general functioning subscale of the McMaster Family Assessment Device was used to assess the level of family functioning. This covers issues such as communication and planning within the family, dealing with conflict, and levels of emotional and practical support. Approximately 4% of families in the survey were assessed as having poor family functioning likely to require clinical intervention.

Higher levels of family functioning were associated with lower prevalence rates of mental disorders (e.g. 11.0% for very good family functioning, Table 2-4-6). This compares to more than three times the rate for families with poor functioning (35.8%).

Table 2-4-6: 12-month prevalence of mental disorders among 4-17 year-old students by level of family functioning and sex

Family functioning	Males (%)	Females (%)	Persons (%)
Very good	12.9	9.0	11.0
Good	16.9	13.7	15.4
Fair	25.3	13.7	19.8
Poor	36.3	35.0	35.8

2.4.7 Index of Community Socio-Educational Advantage (ICSEA)

The Index of Community Socio-Educational Advantage (ICSEA) is a "scale of socio-educational advantage that is computed for each school" (ACARA 2013). ICSEA values are calculated on a scale with a median of 1000 and a standard deviation of 100. Those with a score less than 1000 have less socio-educational advantage, and those with a score higher than 1000 have higher socio-educational advantage, compared to an average school. Schools were grouped together in three bands: those in the bottom 25% (low advantage, those in the middle 50% (moderate advantage) and those in the top 25% (high advantage).

Students who attended schools with higher ICSEA ratings had lower prevalence of mental disorders, compared to higher prevalence for those who attended schools with lower ICSEA ratings (10.9% and 18.1%, respectively, Table 2-4-7).

Table 2-4-7: 12-month prevalence of mental disorders among 4-17 year-old students by school ICSEA band and sex

ICSEA band	Males (%)	Females (%)	Persons (%)
Low advantage (< 970)	19.9	16.1	18.1
Moderate advantage (970-1069)	16.4	10.2	13.3
High advantage (> 1069)	10.2	11.6	10.9

2.5 Prevalence of risk-taking behaviours among students

As well as an interview with parents of children aged 4-17 years, the survey included a self-report questionnaire completed on tablet computers by young people aged 11-17 years. Adolescents were asked about a range of risk-taking behaviours, including substance use and self-harm. Substance use was asked for young people aged 13-17 years, and self-harm and suicidal behaviours were asked of young people aged 12-17 years. Substance use included alcohol, smoking (nicotine), cannabis, and other drugs.

As seen in Table 2-5-1, the most common substance used by students was alcohol. The likelihood of an adolescent having ever drunk alcohol was 1 in 3 (34.6%), and the chance of an adolescent having drunk alcohol in the last 30 days was approximately 1 in 8 (15.8%), while those who had more than 4 drinks in a row in the last 30 days were 1 in 10 (10.5%). Approximately 1 in 10 (9.6%) students had ever used cannabis, but only 1 in 30 (3.3%) had used cannabis in the last 30 days. This compares to smoking, which 1 in 18 (5.5%) of students reported they had smoked in the last 30 days and 1 in 13 (7.5%) who had ever smoked at least once a week.

Table 2-5-1: Substance use among 13-17 year-old students by sex

Substance	Males (%)	Females (%)	Persons (%)
Ever smoked at least once a week	6.6	8.5	7.5
Smoked in last 30 days	4.5	6.5	5.5
Ever drunk alcohol	34.1	35.2	34.6
Drunk alcohol in last 30 days	15.7	16.0	15.8
More than 4 drinks in a row in last 30 days	10.7	10.3	10.5
Ever used cannabis	10.4	8.8	9.6
Used cannabis in last 30 days	3.3	3.3	3.3
Ever used other drugs	3.7	4.3	4.0
Used other drugs in last 30 days	1.0	1.9	1.4

In terms of gender differences, a higher proportion of females than males had smoked (by approximately 2.0 percentage points), or had ever drunk alcohol (0.9 percentage points) or drunk alcohol in the last 30 days (0.3 percentage points). However slightly more males had drunk 4 or more drinks in a row in the last 30 days (0.4 percentage points).

2.6 Self-harm and suicidal behaviours

Students aged 12-17 years were asked about self-harm and suicidal behaviours. Self-harm is the deliberate cause of physical injury to yourself without trying to end your life. Approximately 1 in 10 (11.1%) students reported having self-harmed at some point in their life, and approximately 1 in 12 (8.4%) had self-harmed in the previous 12 months. In addition, young people had the option of answering "prefer not to say" to the first question on self-harm and were not asked subsequent questions on self-harm. As such, the proportion of young people who have ever self-harmed may be higher than indicated in these estimates. Self-harm was more common in females (15.6%) than males (6.7%) and more common in older adolescents than younger adolescents (Figure 2-6-1).

Figure 2-6-1: Self-harm in the previous 12 months for 12-17 year-olds attending school by age group and sex
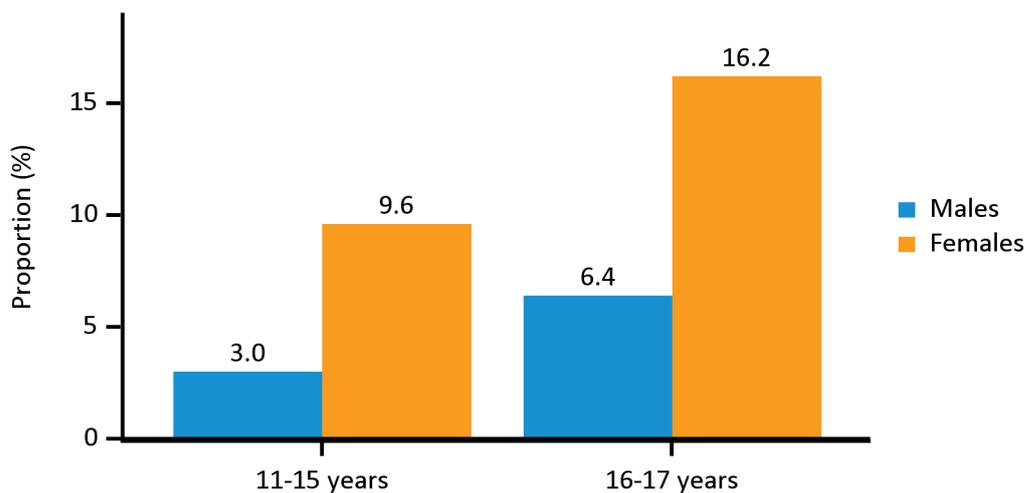
During the previous 12 months, 1 in 13 students aged 12-17 years had seriously considered suicide, and one-third of those had actually attempted suicide (Table 2-6-1). Similar to patterns of self-harm, suicidal behaviours were more common among females than males and more common in older adolescents than younger adolescents (Figure 2-6-2).

Table 2-6-1: Self-harm and suicidal behaviours among 12-17 year-old students by sex

Risk behaviour	Males (%)	Females (%)	Persons (%)
Self-harm ever	6.7	15.6	11.1
Self-harm 4 or more times ever	3.0	9.9	6.4
Self-harm in previous 12 months	4.3	12.8	8.4
Suicide ideation in previous 12 months	4.2	11.1	7.6
Suicide plan in previous 12 months	2.9	8.4	5.6
Suicide attempt ever	1.6	5.0	3.3

Figure 2-6-2: Suicidal behaviours in the previous 12 months among 12-17 year-old students attending school by age group and sex
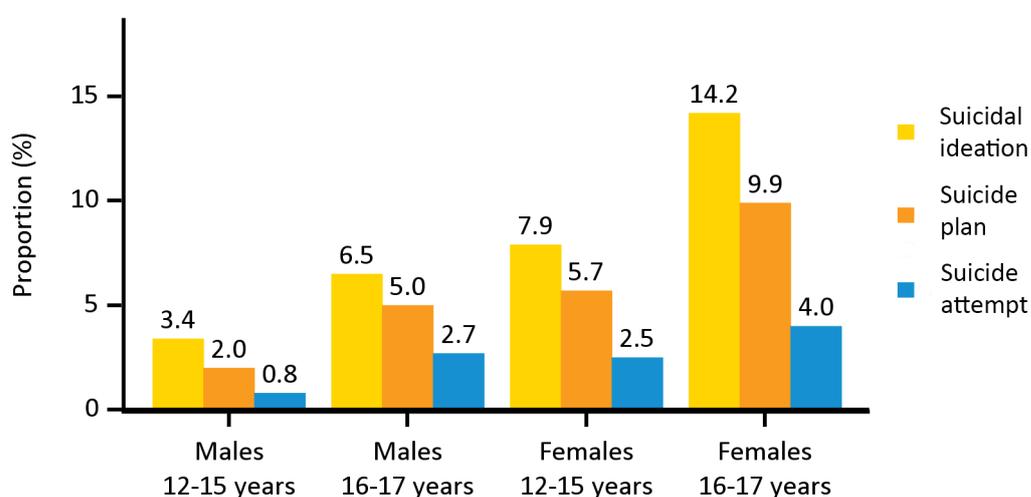
2.7 Summary

Mental disorders affect 1 in 7 students, with somewhat higher prevalence in males than females, mainly due to the higher prevalence of ADHD in males. After ADHD, the most prevalent mental disorders affecting students include anxiety disorders and oppositional problem behaviours. ADHD, oppositional problem behaviours, conduct disorder, and separation anxiety were more common at younger ages, while social phobia, generalised anxiety disorder, and major depressive disorder were more common in adolescence. The prevalence of mental disorders was higher in students living in lower socio-economic conditions, and substance use, self-harm and suicide was more common in students with a mental disorder than those without.

3 Academic outcomes by mental disorder

Survey participants and their primary carers were asked for consent to access their NAPLAN scores across their entire schooling years, from 2008 when NAPLAN was first administered Australia-wide, through to 2016. Approximately 75% of students allowed their test scores to be used for analysis. NAPLAN occurs in Years 3, 5, 7 and 9, and covers four different areas: reading, writing, language conventions (spelling and grammar), and numeracy.

NAPLAN scores are designed and scaled to allow comparability across Year levels and over time, with a mean of 500 and a standard deviation of 100. Scores are grouped into bands, with 10 bands used across the four testing years, although only 6 bands are used within each Year level. Bands are further classified as being below the national minimum standard, at the national minimum standard or above the national minimum standard. For example, a test score of 450 in Year 9 equates to band 5, which is below the national minimum standard for Year 9. A score of 500 in Year 9 equates to band 6, which is at the national minimum standard, while a score of 600 equates to band 8 in Year 9, which is above the national minimum standard.

Students are considered above the national minimum standard in Year 3 if they are in band 3 to band 6, in Year 5 if they are in band 5 to 8, in Year 7 if they are in band 6 to 9, and in Year 9 if they are in band 7 to 10. They are considered at the national minimum standard in band 2 for Year 3, in band 4 for Year 5, in band 5 for Year 7, and in band 6 for Year 9. They are considered below the national minimum standard at or below band 1 for Year 3, band 3 for Year 5, band 4 for Year 7, and band 5 for Year 9.

This chapter reports average NAPLAN values for students with and without mental disorders. Because of the large number of combinations of mental disorders, testing years and NAPLAN domains, a summary of results, and results for selected Years, domains and mental disorders are included in this chapter. Full tables are available in the supplemental materials.

3.1 Any mental disorder

3.1.1 Test scores

Average test scores were lower for students with mental disorders, compared to those with no mental disorder. This is the case for all NAPLAN domains (Grammar, Reading, Spelling, Writing, and Numeracy), and for all year groups (Years 3, 5, 7, and 9, see Table S3-1-1 to S3-1-3). Table 3-1-1 provides an example of score data for Year 9 students. The average values were not only different, but also significantly different for every year and testing domain combination, at a 95% confidence level.

Table 3-1-1: Average test scores for Year 9 students with and without a mental disorder, by test domain

Domain	Any mental disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	548.8	(541 - 557)	584.0	(581 - 587)
Reading	563.1	(555 - 571)	588.0	(585 - 591)
Spelling	553.8	(545 - 562)	587.2	(584 - 590)
Writing	519.7	(507 - 532)	565.0	(561 - 569)
Numeracy	558.2	(551 - 566)	594.3	(591 - 597)

3.1.2 Band values and national minimum standard

The distribution of scores, inferred from distribution of bands in Figure 3-1-1, for students with a mental disorder was skewed to the lower end, compared to students who have no mental disorder, for all Years and all domains. In Year 3, the distribution of scores for those with no mental disorder was skewed to the right, with a majority of students in the upper three bands, 4 - 6 (Figure S3-1-1). Students with a mental disorder were either evenly distributed or distributed around the middle two bands, 3 and 4. In Year 5, students with no mental disorder were found mostly in the upper four bands, 5 - 8, while students with a mental disorder were found in the lower four bands 3 - 6 (Figure S3-1-2). Year 7 students typically fell into bands 6 - 8 if they did not have a mental disorder, but if they did, they fell into bands 5 -7 (Figure S3-1-3).

The proportions of students who perform at or above the national minimum standard were lower for those with a mental disorder than for those without a mental disorder (Figure 3-1-2 and Figure S3-1-4 to S3-1-6). Proportions across domains vary less in students with no mental

disorder (e.g. 96.1% for grammar to 98.0% for writing, for Year 3, Table S3-1-7) compared to students with a mental disorder (e.g. from 86.9% for grammar to 92.8% for numeracy, for Year 3). These values do not appear to change much from Year 3 to Year 9, with slight increases in variation across domains (Table S3-1-8 and S3-1-9). The exception to this is in the writing domain. Even students with no mental disorder scored progressively lower in the writing test, going from 98% in Year 3 to 84.9% in Year 9. However, for students with a mental disorder this disparity was more pronounced, going from 92.1% in Year 3 to 64.8% in Year 9.

Figure 3-1-1: Band distribution for Year 9 students with and without a mental disorder, by test domain
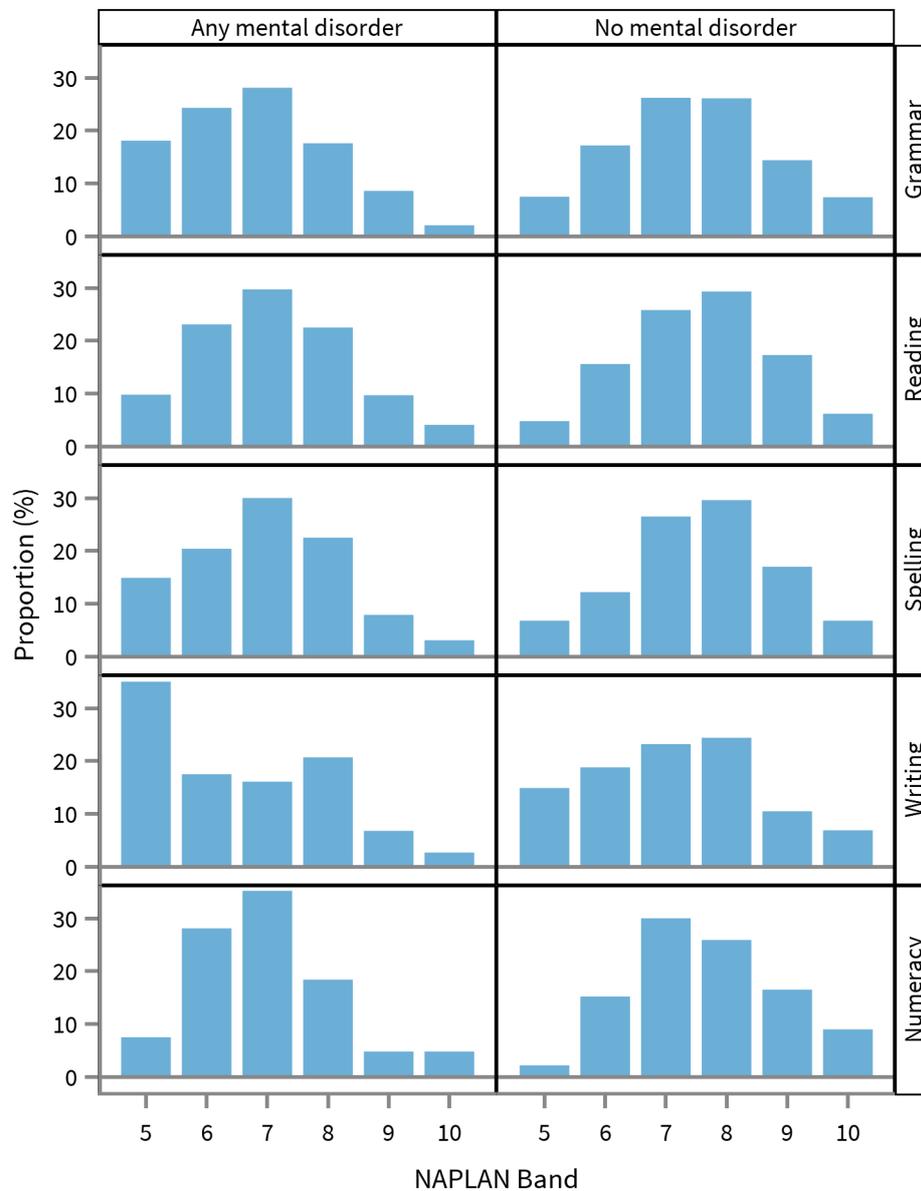
Table 3-1-2: Percentage of Year 9 students who met or exceeded the national minimum standard by mental disorder status and test domain

Domain	Any mental disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	81.7	(76.2 - 87.1)	92.3	(90.9 - 93.7)
Reading	90.0	(85.7 - 94.4)	95.0	(93.9 - 96.1)
Spelling	84.9	(80.4 - 89.5)	93.0	(91.6 - 94.4)
Writing	64.8	(58.6 - 71.0)	84.9	(83.2 - 86.7)
Numeracy	92.3	(88.7 - 95.9)	97.6	(96.8 - 98.3)

Figure 3-1-2: Percentage of Year 9 students who were below, at, or above the national minimum standard by mental disorder status and test domain
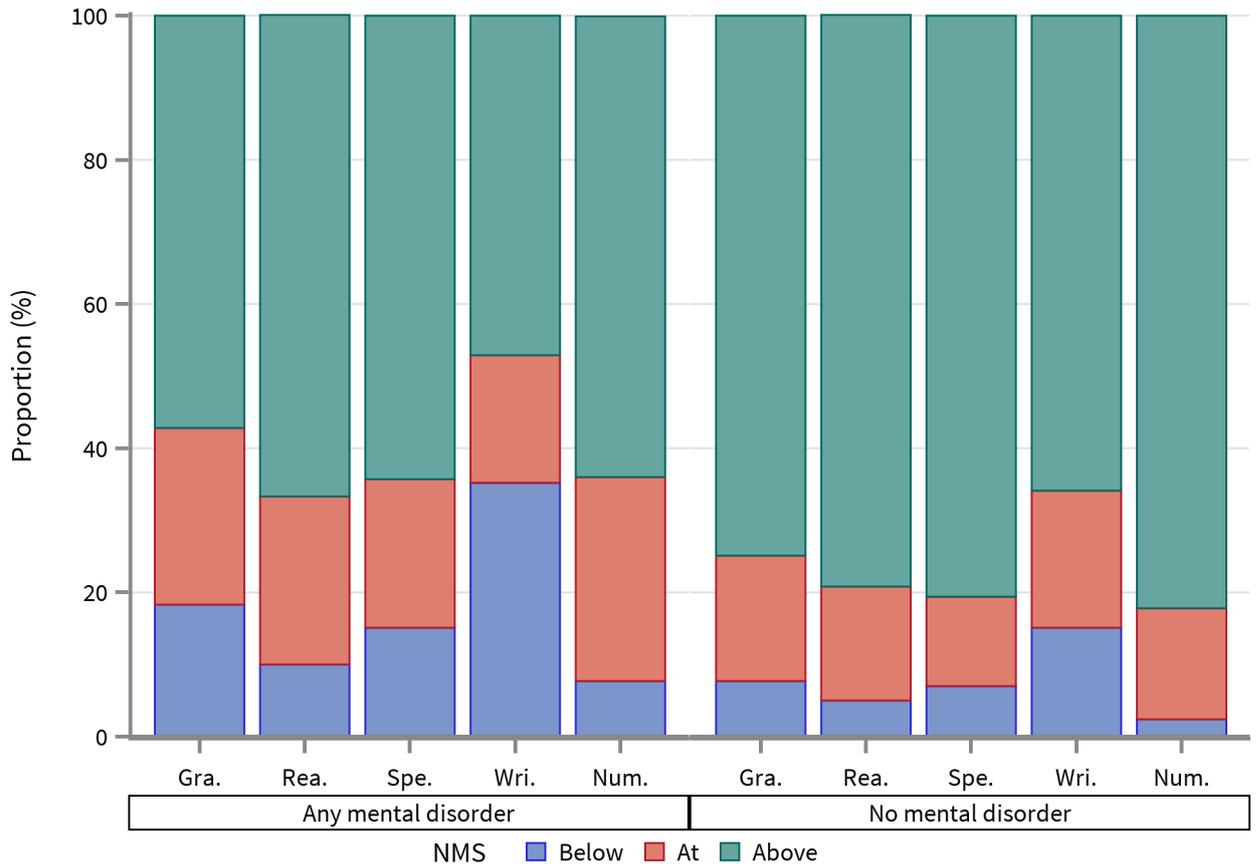
3.2 Major depressive disorder

3.2.1 Test scores

Average test scores were lower for all children with major depressive disorder (Table 3-2-1 and Table S3-2-1 to S3-2-3). Significant differences were found for Year 3 (all except grammar), Year 5 (all except grammar and writing), Year 7 (all except reading and writing), and Year 9 (all except reading and writing). This indicates that even though on average, a student with major depressive disorder will have a lower test score, it does not necessarily preclude them from performing as well as some of their peers who do not have a mental disorder.

It is worth noting that the prevalence of major depressive disorder is very low in primary school students, with the prevalence increasing substantially in the adolescent years, particularly for females.

Table 3-2-1: Average test scores for Year 9 students with major depressive disorder and those with no mental disorder, by test domain

Domain	Major depressive disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	565.8	(552 - 580)	584.0	(581 - 587)
Reading	581.1	(568 - 594)	588.0	(585 - 591)
Spelling	567.8	(555 - 580)	587.2	(584 - 590)
Writing	543.6	(523 - 564)	565.0	(561 - 569)
Numeracy	569.9	(559 - 581)	594.3	(591 - 597)

3.2.2 Band values and national minimum standard

Due to low prevalence of major depressive disorder in Year 3 and 5, producing an analysis by NAPLAN band was not feasible. Results for older students were more reliable. For example, students with major depressive disorder in Year 9 had a band distribution that was lower, i.e. skewed to the left, when compared to students with no mental disorder (Figure 3-2-1).

Overall there was a lower percentage of students who met the national minimum standards for those students who have major depressive disorder compared to those who have no mental disorder (Table S3-2-7 to S3-2-9). The greatest difference between those with major depressive disorder and no mental disorder was 10.1%, for reading test scores in Year 5. In rare

circumstances the test scores for those with major depressive disorder were in fact higher than those with no mental disorder, e.g. reading in Year 3, or spelling in Year 5.

Figure 3-2-1: Band distribution for Year 9 students with major depressive disorder and those without a mental disorder, by test domain
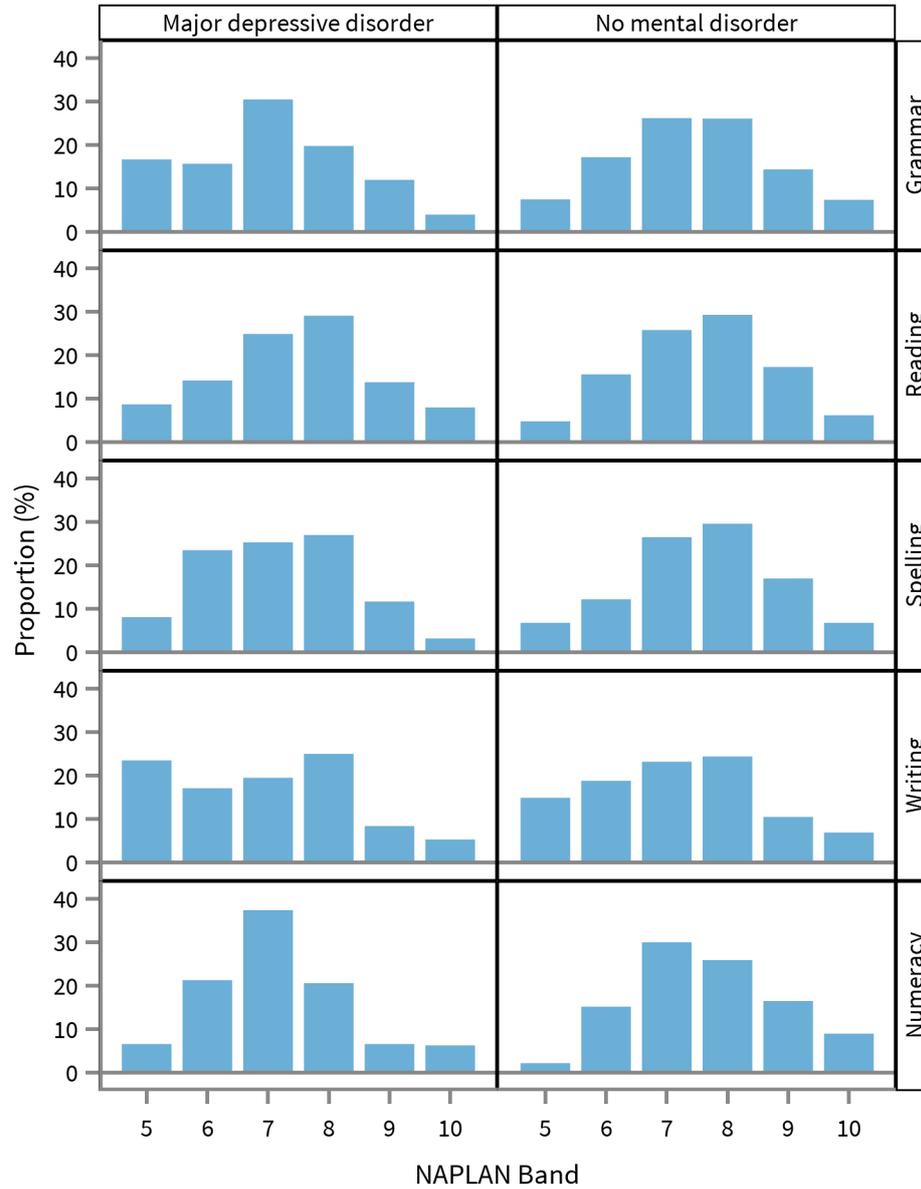
Table 3-2-2: Percentage of Year 9 students who met or exceeded the national minimum standard for those with major depressive disorder and those without a mental disorder, by test domain

Domain	Major depressive disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	83.1	(74.0 - 92.1)	92.3	(90.9 - 93.7)
Reading	91.1	(84.9 - 97.4)	95.0	(93.9 - 96.1)
Spelling	91.7	(86.0 - 97.4)	93.0	(91.6 - 94.4)
Writing	76.3	(66.0 - 86.5)	84.9	(83.2 - 86.7)
Numeracy	93.2	(87.2 - 99.3)	97.6	(96.8 - 98.3)

Figure 3-2-2: Percentage of Year 9 students who were below, at, or above the national minimum standard for those with major depressive disorder and those without a mental disorder, by test domain
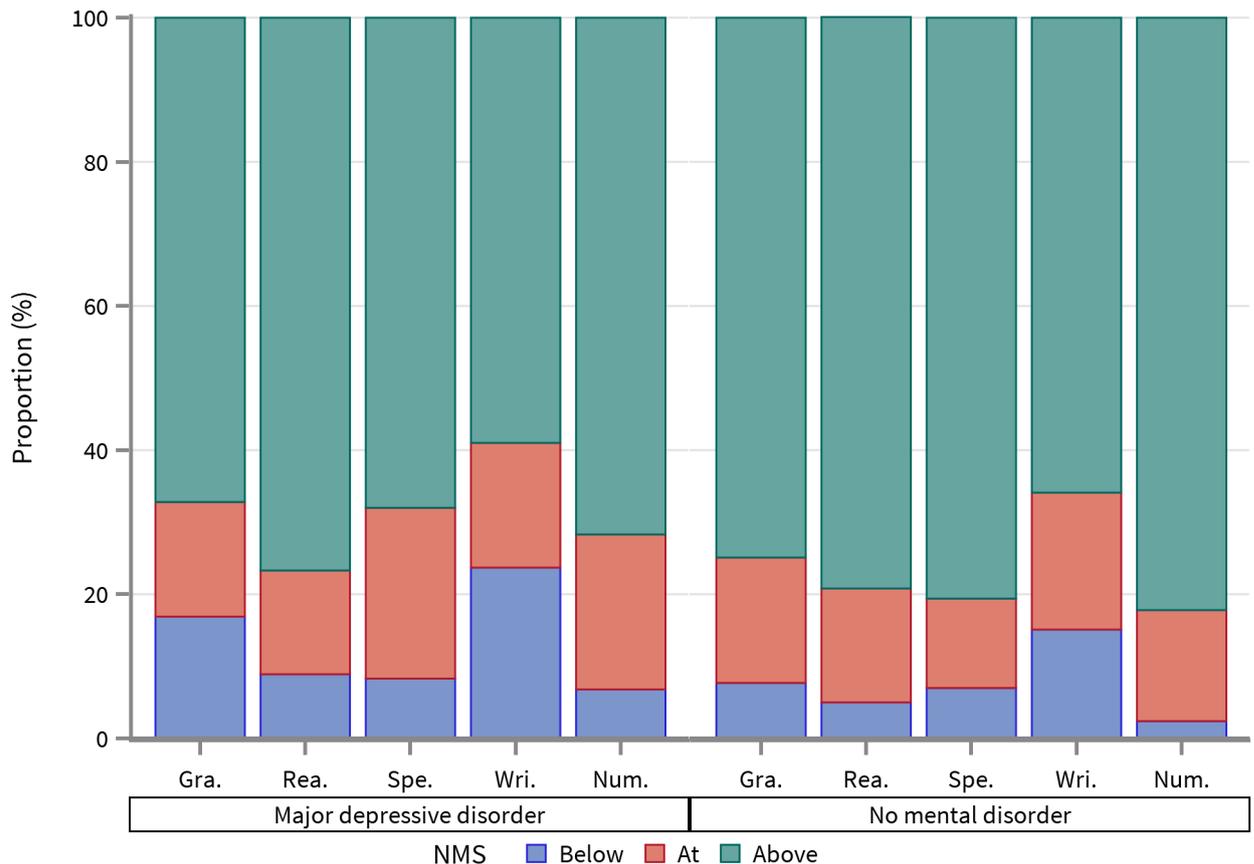
3.3 Anxiety disorders

3.3.1 Test scores

Children with any anxiety disorder had lower average test scores compared to those who had no mental disorder (Table 3-3-1 and Table S3-3-1 to S3-3-3). These differences were significant for all Years and all domains.

Table 3-3-1: Average test scores for Year 9 students with any anxiety disorder and for those without a mental disorder, by test domain

Domain	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	555.5	(544 - 567)	584.0	(581 - 587)
Reading	568.0	(557 - 579)	588.0	(585 - 591)
Spelling	560.1	(549 - 571)	587.2	(584 - 590)
Writing	523.9	(504 - 544)	565.0	(561 - 569)
Numeracy	559.6	(550 - 570)	594.3	(591 - 597)

For children with social phobia, average test scores were lower (Table S3-3A-1 to S3-3A-4), and significantly so for Years 3, 5, and 9 (all domains), and Year 7 (all domains except reading and writing). For children with separation anxiety, average test scores were lower (Table S3-3B-1 to S3-3B-4), and significantly so for Years 3 and 7 (all domains), Year 5 (all domains except reading), and Year 9 (all domains except reading and spelling). For children with generalised anxiety disorder, average test scores were lower (Table S3-3C-1 to S3-3C-4), and significantly so for Year 3 (all domains except grammar and reading), Year 5 (all domains), Year 7 (all domains except reading), Year 9 (all domains except reading and writing). For children with obsessive-compulsive disorder, average scores were significantly lower for Year 3 (all domains), and Year 5 (all domains except grammar and numeracy). The differences in scores for Year 7 and 9 were not significant for any tests (Table S3-3D-1 to S3-3D-4).

3.3.2 Band values and national minimum standard

In general, the distribution of bands was lower in students with an anxiety disorder compared to those with no mental disorder (Figure 3-3-1). For example, this is notably obvious for the reading and spelling domains where the largest proportion of students fall into band 7 for those with the disorder, but for those with no disorder it falls into band 8. This is also the

case for other Year levels (Figure S3-3-1 to S3-3-3). Because of relatively lower prevalence of specific anxiety disorders, it was not possible to produce a comprehensive analysis by band distribution for all anxiety disorders for all Year levels and domains.

Figure 3-3-1: Band distribution for Year 9 students with any anxiety disorder and those with no mental disorder, by test domain
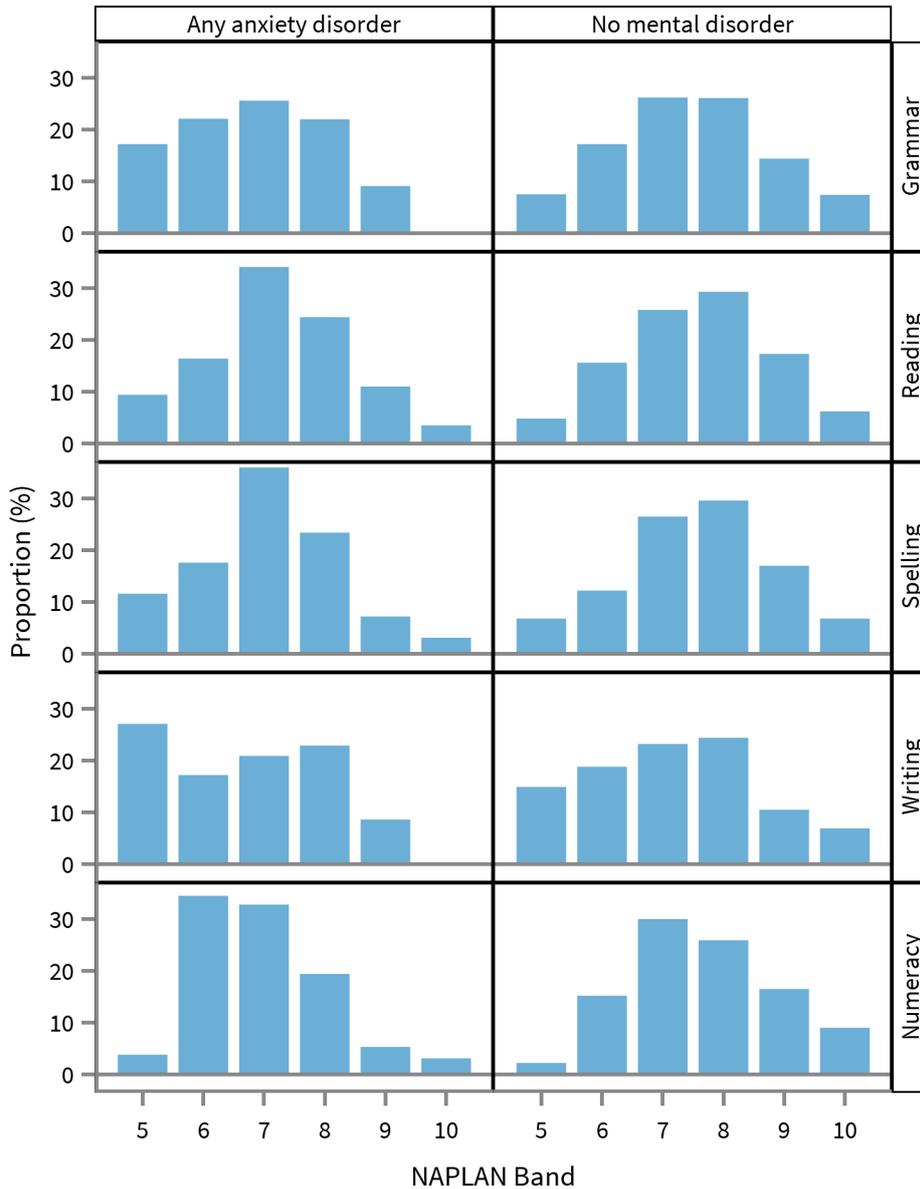
The proportion of students who performed at or above the national minimum standard was lower for those with an anxiety disorder than for those without a mental disorder (Table 3-3-2 and Figure 3-3-2). The proportions fluctuated from Year level to Year level (Table S3-1-7 to S3-1-9), but those with an anxiety disorder tended to score progressively lower with increasing Year level (Figure 3-3-2 and Figure S3-3-4 to S3-3-6). Due to the relatively lower prevalence of

specific anxiety disorders it was not possible to produce a comprehensive analysis by NAPLAN national standard for all anxiety disorders.

Table 3-3-2: Percentage of Year 9 students who met or exceeded the national minimum standard for those with any anxiety disorder and those with no mental disorder, by test domain

Domain	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	82.6	(75.4 - 89.8)	92.3	(90.9 - 93.7)
Reading	90.4	(84.5 - 96.3)	95.0	(93.9 - 96.1)
Spelling	88.2	(82.3 - 94.1)	93.0	(91.6 - 94.4)
Writing	72.7	(64.2 - 81.1)	84.9	(83.2 - 86.7)
Numeracy	96.0	(92.4 - 99.7)	97.6	(96.8 - 98.3)

Figure 3-3-2: Percentage of Year 9 students who were below, at, or above the national minimum standard for those with any anxiety disorder and those with no mental disorder, by test domain
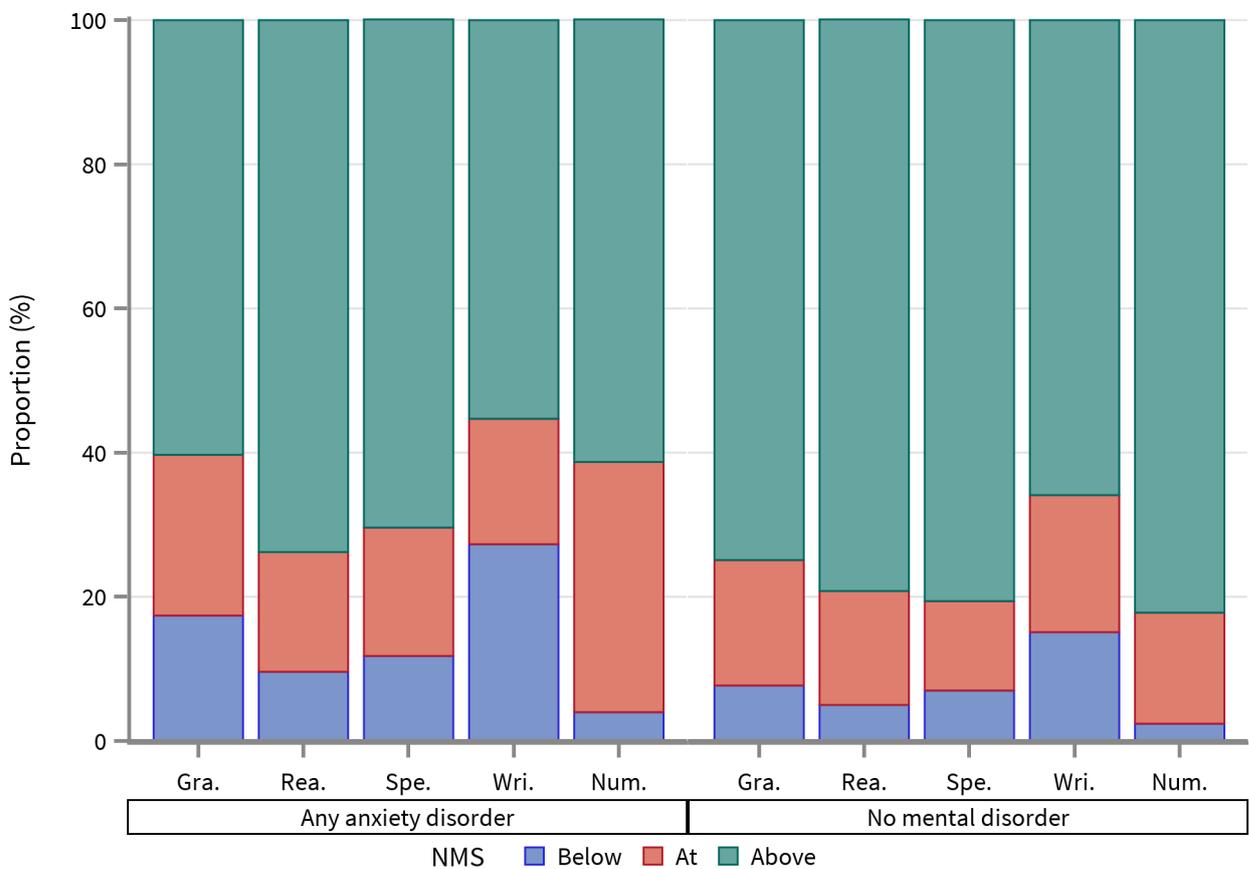
3.4 ADHD

3.4.1 Test scores

Children with ADHD achieved lower test scores than their peers with no mental disorder (Table 3-4-1 and Table S3-4-1 to S3-4-3). Significant differences occurred for all Years and all domains.

Table 3-4-1: Average test scores for Year 9 students with ADHD and those with no mental disorder, by test domain

Domain	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	523.6	(512 - 535)	584.0	(581 - 587)
Reading	543.9	(532 - 556)	588.0	(585 - 591)
Spelling	525.0	(511 - 539)	587.2	(584 - 590)
Writing	479.5	(459 - 500)	565.0	(561 - 569)
Numeracy	543.1	(530 - 556)	594.3	(591 - 597)

3.4.2 Band values and national minimum standard

The distribution of student test scores was noticeably different between those who had ADHD and those who had no mental disorder, as shown by band graphs for all Year levels (Figure 3-4-1 and Figure S3-4-1 to S3-4-3).

The proportion of students above the national minimum standard for those who had ADHD was noticeably different from those students who had no mental disorder, as shown by national standard data for all Year levels (Table 3-4-2 and Table S3-4-7 to S3-4-9).

Students who suffer from ADHD scored lower than their peers with no mental disorder or other mental disorders (compare Table 3-4-2 and Table 3-1-2). Although certain Year levels performed on par with other mental disorders for some domains (e.g. 92.6% for Year 3 in the numeracy test), the differences become more pronounced as children with ADHD progress through school, with only 47.6% of Year 9 students meeting or exceeding the national minimum standard for the writing test, an almost 40% difference compared to those with no mental disorder, and an almost 20% difference compared to those with any mental disorder (Table 3-1-2 and Table 3-4-2, Figure 3-1-2 and Figure 3-4-2).

Figure 3-4-1: Band distribution for Year 9 students with ADHD and those without a mental disorder, by test domain
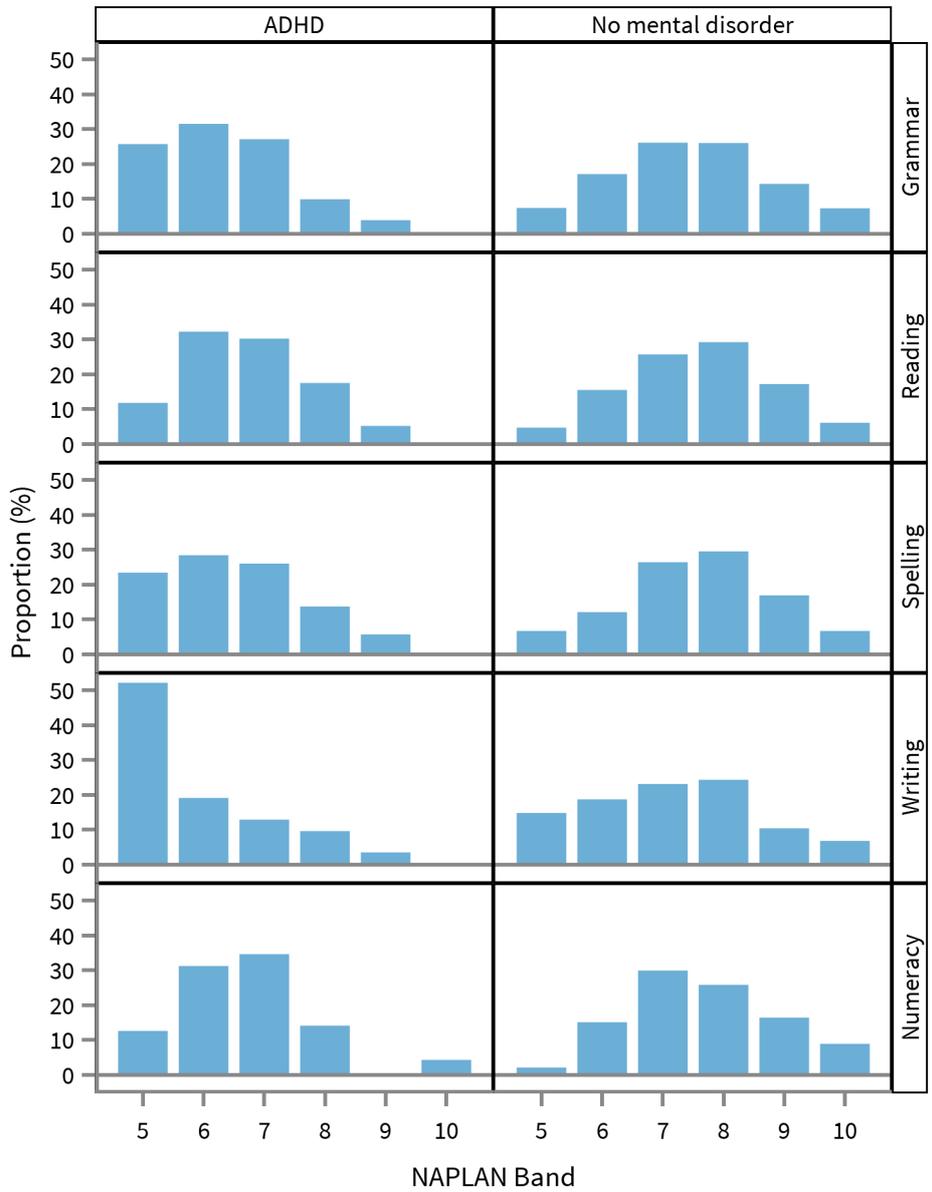
Table 3-4-2: Percentage of Year 9 students who met or exceeded the national minimum standard for those with ADHD and those without a mental disorder, by test domain

Domain	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	74.0	(64.9 - 83.1)	92.3	(90.9 - 93.7)
Reading	87.9	(80.9 - 94.9)	95.0	(93.9 - 96.1)
Spelling	76.3	(67.9 - 84.7)	93.0	(91.6 - 94.4)
Writing	47.6	(37.8 - 57.5)	84.9	(83.2 - 86.7)
Numeracy	87.1	(80.5 - 93.8)	97.6	(96.8 - 98.3)

Figure 3-4-2: Percentage of Year 9 students who were below, at, or above the national minimum standard for those with ADHD and those without a mental disorder, by test domain
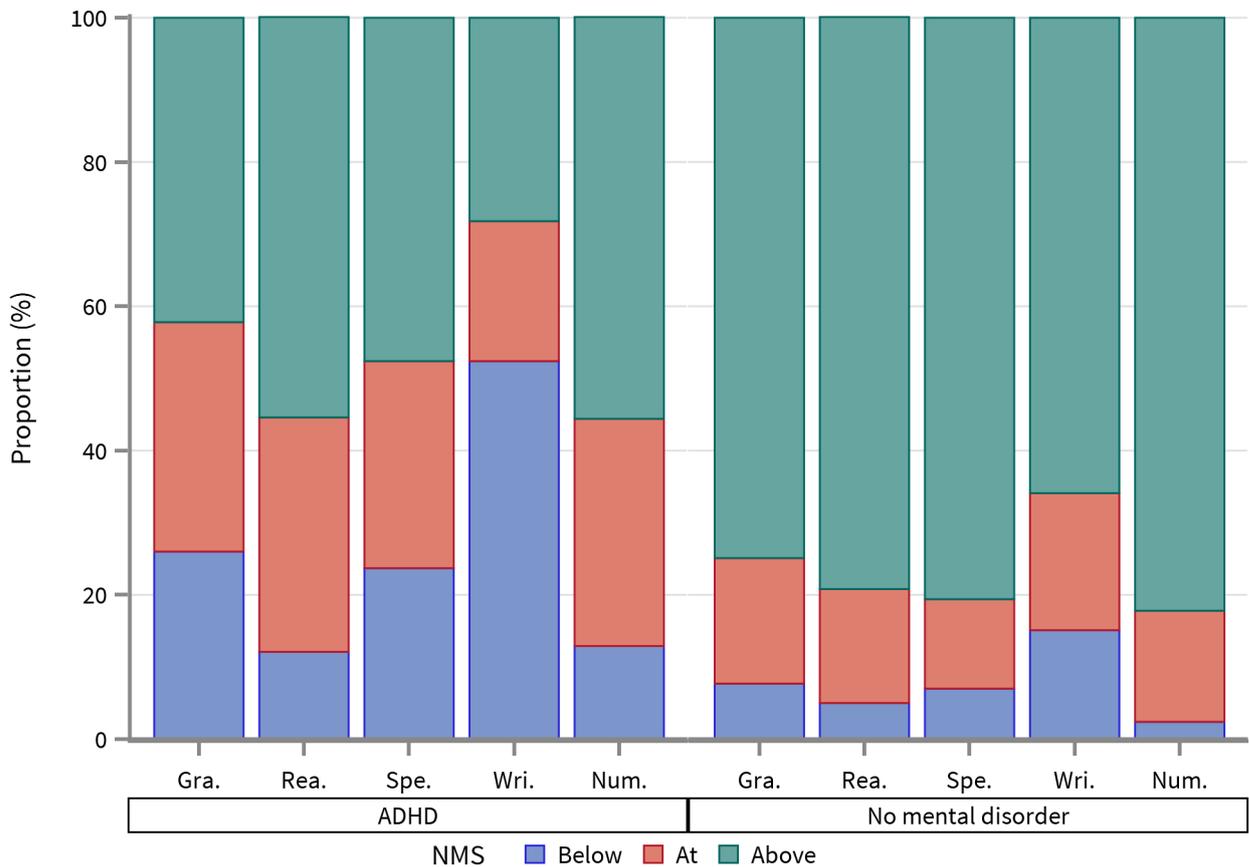
3.5 Oppositional problem behaviours and conduct disorder

3.5.1 Test scores

Average scores were lower for students with oppositional problem behaviours (Table 3-5-1 and Table S3-5-1 to S3-5-3). Significant differences occurred for all domains and Years when compared to students with no mental disorder.

Table 3-5-1: Average test scores for Year 9 students with oppositional problem behaviours and for those with no mental disorder, by test domain

Domain	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	555.8	(542 - 570)	584.0	(581 - 587)
Reading	562.8	(550 - 575)	588.0	(585 - 591)
Spelling	561.3	(549 - 574)	587.2	(584 - 590)
Writing	527.9	(508 - 548)	565.0	(561 - 569)
Numeracy	561.9	(550 - 574)	594.3	(591 - 597)

3.5.2 Band values and national minimum standard

For oppositional problem behaviours, band distributions were skewed towards lower bands compared to those with no mental disorder. This became more pronounced for higher Year levels (Figure S3-5-1 to S3-5-3). It was not possible to analyse this distribution for conduct disorder due to the relatively lower prevalence of this disorder in school populations.

The lowest percentage of students who met the national minimum standard for a testing domain, for a person who suffers from oppositional problem behaviours, was 72.5% for writing in Year 9 (Table 3-5-2). The highest was 94.9% in Year 7 (Table S3-5-9). Variation in proportions were observed across the Year levels (also Table S3-5-7 and S3-5-8) with an overall lower score for students with oppositional problem behaviours (Figure 3-5-2, Figure S3-5-4 to S3-5-6).

For those with conduct disorder, the disadvantage was also apparent, with Year 3 students scoring lower in all tests, the lowest being for grammar with 79.0% meeting the national minimum standard, compared to 96.1% for those with no mental disorder (Table S3-5A-9). Proportions varied in subsequent years (Table S3-5A-10 and S3-5A-11), but very low

performance was observed in Year 9 (Table S3-5A-12). For example, for grammar 60.2% of students met the national minimum standard, and for writing 37.9% of students metithe national minimum standard. This is 32.1% and 47.0% less than students with no mental disorder for the same tests.

**Figure 3-5-1: Band distribution for Year 9 students with oppositional problem behaviours and those without a mental disorder, by test domain**
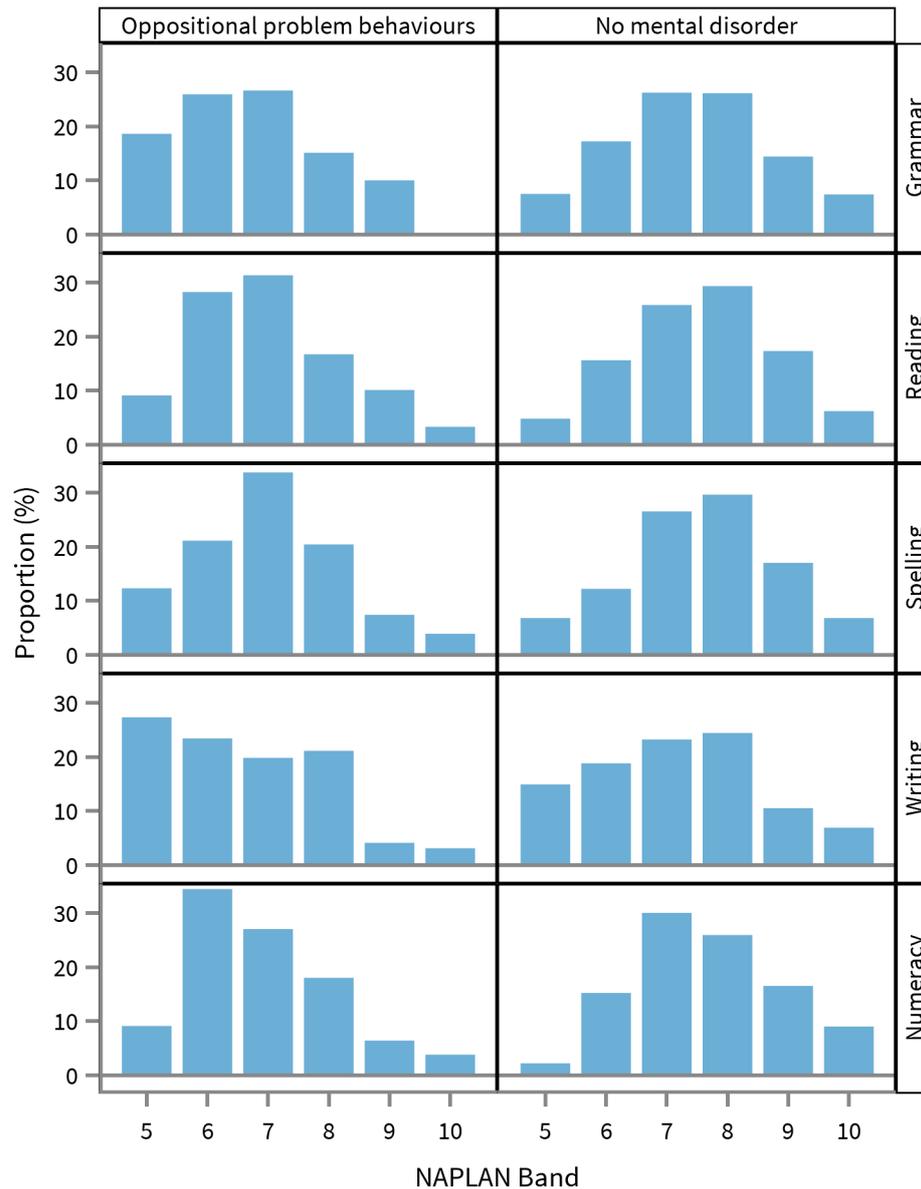
Table 3-5-2: Percentage of Year 9 students who met or exceeded the national minimum standard for those with oppositional problem behaviours and those without a mental disorder, by test domain

Domain	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Grammar	81.2	(72.3 - 90.1)	92.3	(90.9 - 93.7)
Reading	90.7	(85.1 - 96.3)	95.0	(93.9 - 96.1)
Spelling	87.5	(80.3 - 94.7)	93.0	(91.6 - 94.4)
Writing	72.5	(63.5 - 81.5)	84.9	(83.2 - 86.7)
Numeracy	90.7	(84.6 - 96.7)	97.6	(96.8 - 98.3)

Figure 3-5-2: Percentage of Year 9 students who were below, at, or above the national minimum standard for those with oppositional problem behaviours and those without a mental disorder, by test domain
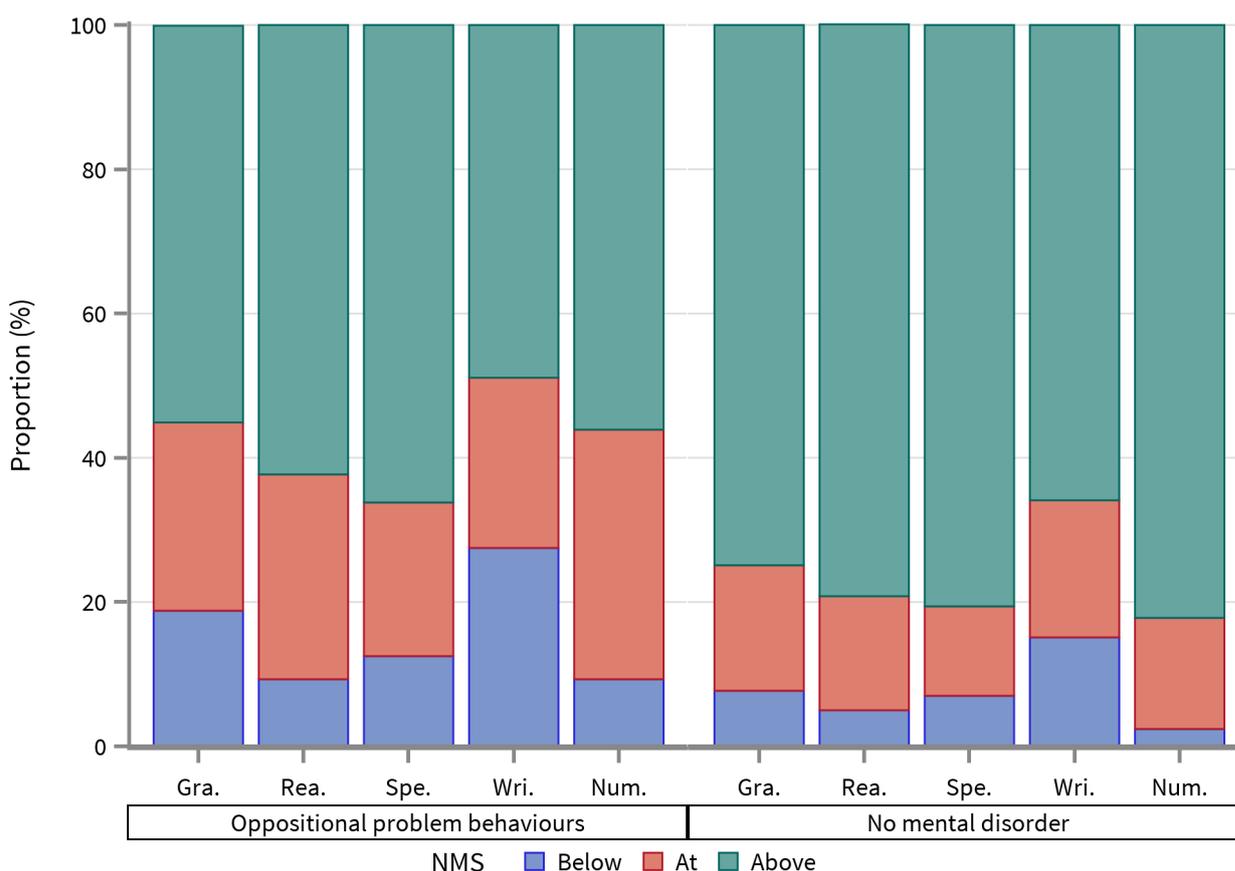
3.6 Summary

Students with mental disorders performed at a lower level compared to students with no mental disorder, in all domains and Year levels, by all NAPLAN metrics. The poorest performers were students with ADHD, conduct disorder, and oppositional problem behaviours. For example, for students with ADHD, the proportion of those students above the national minimum standard was as low as 47.6%, for writing in Year 9, compared to the value for students with no mental disorder that were 84.9%. Students with anxiety disorder or major depressive disorder did not perform as poorly, but still did not perform as well as students with no mental disorder.

4 Academic trajectories and mental disorders

Analysing trends in academic performance in relation to mental disorders was a key goal of this study. The academic performance of the average student was found to increase logarithmically over time as measured on the NAPLAN scale; meaning that the rate at which students were able to increase their NAPLAN score became increasingly slower as they progressed through school. This is also evident in the design of the bands and national minimum standards. The national minimum standard increases by two bands between Years 3 and 5, but only by one band between Years 5 and 7 and between Years 7 and 9. These data suggest that on average students take progressively longer to achieve the same numeric increase in NAPLAN scores as they progress through school. Similarly, a gap of 50 points on the NAPLAN score scale between two groups of students in Year 3 may represent the average amount of progress a Year 3 student would be expected to make in one year, while in Year 7 the same gap of 50 points might represent the average amount of progress a Year 7 student would be expected to make in two years.

This chapter examines academic trajectories across Year levels for students with and without mental disorders. The gaps in average achievement between students with and without mental disorders have been examined both in terms of scores on the NAPLAN scale, and also in terms of the equivalent number of years of learning.

We have developed a similar methodology to that outlined in the Grattan Institute's NAPLAN testing report, *Widening Gaps: What NAPLAN tells us about student progress*. We have adapted the methodology by calculating the equivalent year level for each NAPLAN score using data for all Australian students over the period 2008-2016 who participated in *Young Minds Matter*. The concept represents an alternative metric to traditional NAPLAN values. The results presented in this chapter show that by this metric, students with a mental disorder are increasingly falling behind their peers.

4.1 Any mental disorder

Students with a mental disorder had lower scores than students with no mental disorder at every NAPLAN Year level (Figure 4-1-1). The difference between students with and without a mental disorder was, on average, 40.2 points for Year 3, and decreased to 34.6 points by Year 9 (Table 4-1-1). For females, the number of points between students with and without a mental disorder was 41.8 points in Year 3, and decreased to 22.4 points by Year 9. For males, the number of points between students with and without a mental disorder was 39.4 in Year 3, and this increased to 44.5 points by Year 9.

Table 4-1-1: Average number of NAPLAN scale points between students with any mental disorder and those with no mental disorder, by sex and Year level

	Average points different			
	Year 3	Year 5	Year 7	Year 9
Females	41.8	34.4	28.0	22.4
Males	39.4	41.3	43.0	44.5
All students	40.2	39.3	36.8	34.6

The logarithmic nature of NAPLAN score trajectories mean that test score points represent larger amounts of progress at higher Year levels. For example, an increase of 10 points in Year 9 represents more academic progress than an increase of 10 points in Year 3. So, despite the overall decreasing gap in test scores between those with and without a mental disorder (Table 4-1-1), the ability of students to overcome these margins grew increasingly difficult (Table 4-1-2). The smallest performance gap for Year 3 students with a mental disorder compared to their peers without a mental disorder was 0.6 years for numeracy. This gap had increased to 2.0 years by Year 9. The largest performance gap for Year 3 students with a mental disorder was 0.9 years for grammar and spelling. These gaps had increased to 2.7 and 1.9 years respectively, by Year 9. By Year 9, the smallest performance gap was 1.5 years, in reading. The largest gap by Year 9 was 2.8 years for writing.

Table 4-1-2: The average number of equivalent years behind that students with a mental disorder are compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.9	1.7	2.2	2.7
Reading	0.8	1.2	1.3	1.5
Spelling	0.9	1.1	1.6	1.9
Writing	0.8	1.4	1.8	2.8
Numeracy	0.6	1.2	1.8	2.0

Figure 4-1-1: Average NAPLAN score trajectory of students across all Years from 3 to 9, for numeracy test scores, for those with and without a mental disorder
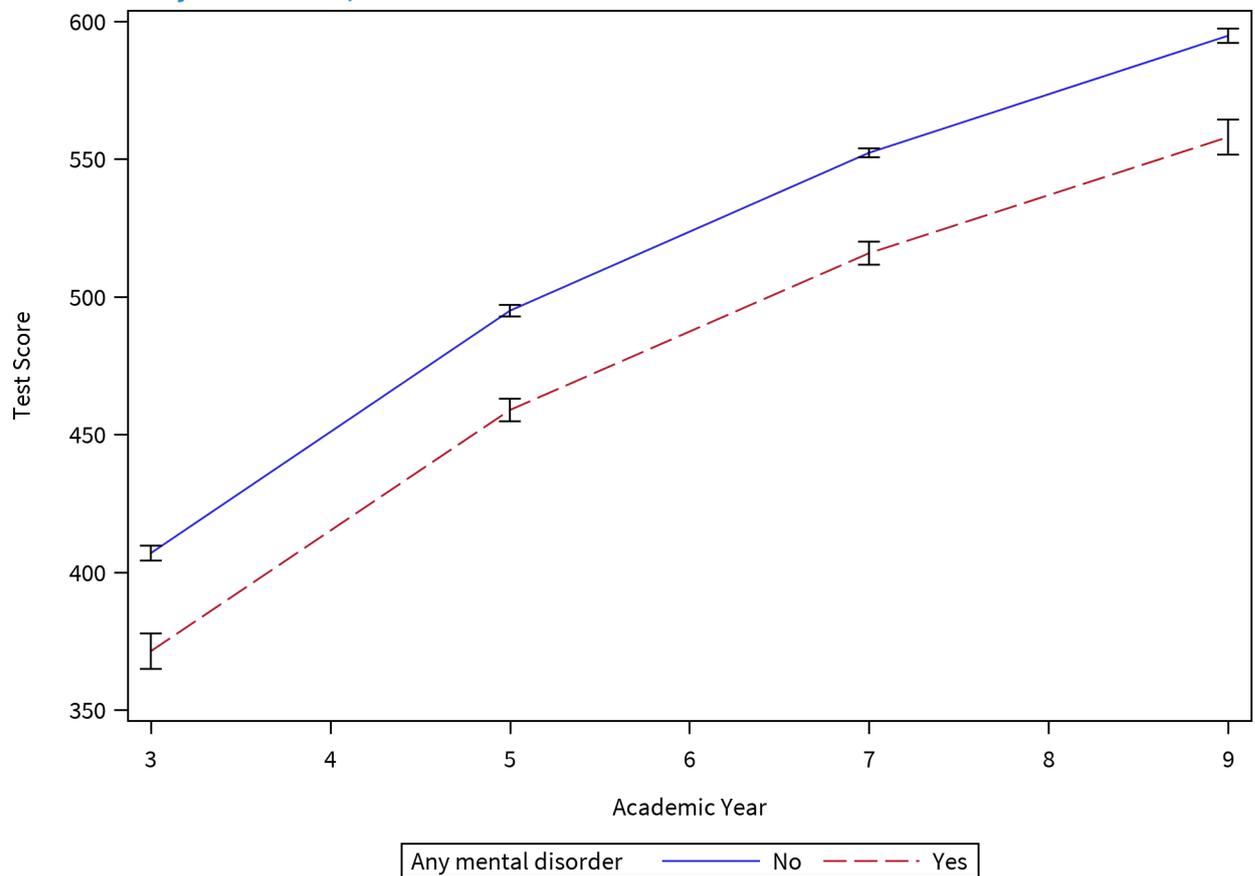
4.2 Major depressive disorder

Students with major depressive disorder had lower scores than students with no mental disorder at every NAPLAN Year level (Figure 4-2-1). The difference in NAPLAN scores between students with major depressive disorder and without mental disorder was, on average, 30.3 scale points in Year 3, which fell to 14.4 points in Year 9. For males, the numbers of points between students with major depressive disorder and without a mental disorder was 7.2 points in Year 3, which increased to 23.4 points by Year 9. For females, the number of points between students with major depressive disorder and without a mental disorder was 51.2 in Year 3, which decreased to 10.3 points by Year 9 (Table 4-2-1).

Table 4-2-1: Average number of NAPLAN scale points between students with major depressive disorder and those with no mental disorder, by sex and Year level

	Average points different			
	Year 3	Year 5	Year 7	Year 9
Females	51.2	35.6	22.0	10.3
Males	7.2	13.4	18.7	23.4
All persons	30.3	24.2	19.0	14.4

The increasing difficulty of students with major depressive disorder to achieve at the same level as students with no mental disorder is shown in Table 4-2-2. The smallest performance gap for Year 3 students with major depressive disorder compared to their peers without a mental disorder was 0.6 years for numeracy. This gap had increased to 1.5 years by Year 9. The largest performance gap for Year 3 students with major depressive disorder was 0.9 years for grammar. This gap had increased to 1.4 years by Year 9. By Year 9, the smallest performance gap was 0.4 years, in reading. The largest gap by Year 9 was for numeracy.

Table 4-2-2: The average number of equivalent years behind that students with major depressive disorder compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.9	1.0	1.1	1.4
Reading	0.8	0.9	0.3	0.4
Spelling	0.7	0.8	0.9	1.2
Writing	0.8	0.5	0.1	1.2
Numeracy	0.6	1.0	1.2	1.5

Figure 4-2-1: Average NAPLAN score trajectory of students across all Years from 3 to 9, for numeracy test scores, for students with major depressive disorder and for those with no mental disorder
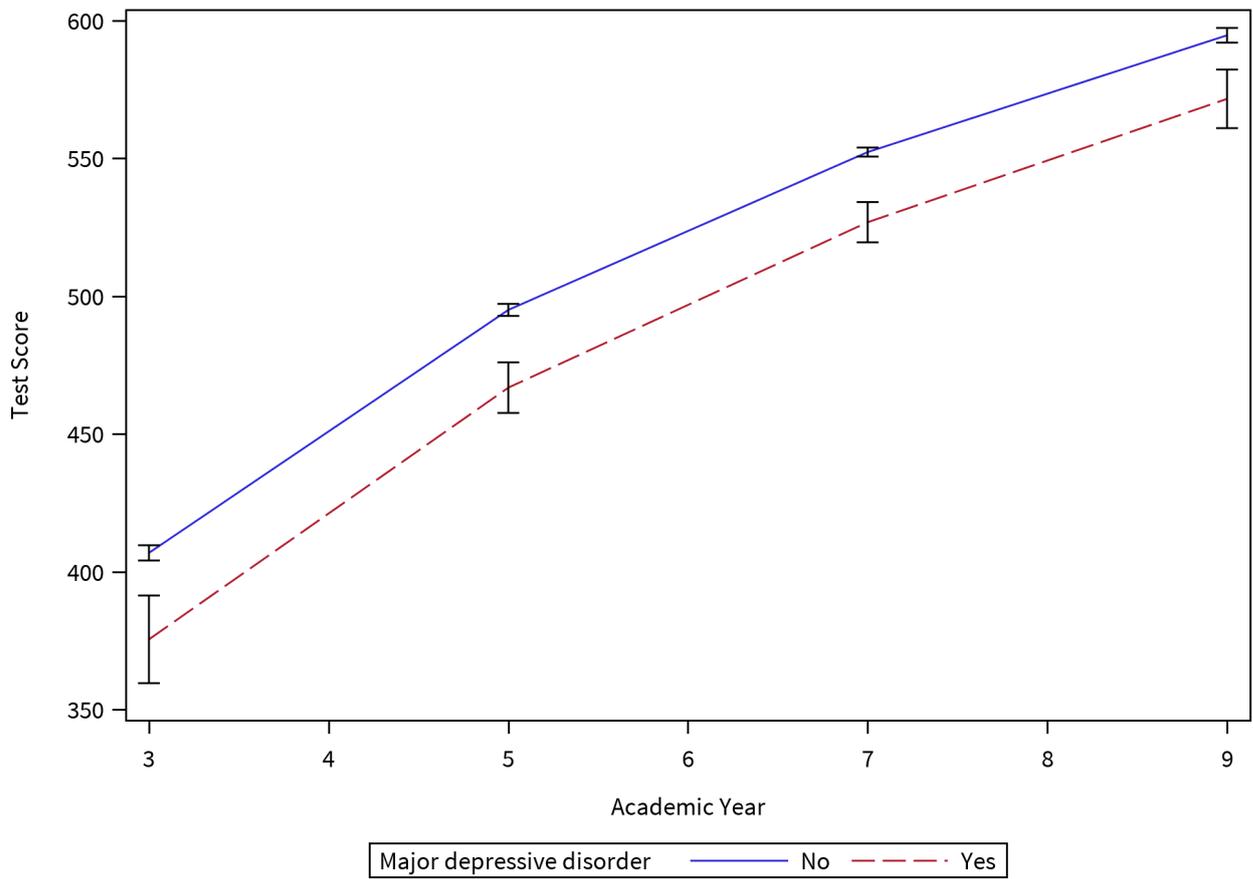
4.3 Any anxiety disorder

Students with an anxiety disorder had lower scores than students with no mental disorder at every NAPLAN Year level (Figure 4-3-1). The difference in academic performance of students with an anxiety disorder and those without a mental disorder was, on average, 32.4 points for Year 3, which fell to 26.4 points by Year 9 (Table 4-3-1). For females, the disparity in scores was 35.0 points in Year 3, which also decreased by Year 9, to 19.2 points. For males, the difference in test scores was 28.6 in Year 3, and by Year 9 increased to 40.4 points.

Table 4-3-1: Average number of points between students with any anxiety disorder and those with no mental disorder, by sex and Year level

	Average points different			
	Year 3	Year 5	Year 7	Year 9
Females	35.0	28.9	23.7	19.2
Males	28.6	33.1	37.0	40.4
All persons	32.4	30.1	28.2	26.4

The smallest performance gap for Year 3 students with an anxiety disorder, compared to their peers without a mental disorder was 0.5 years for reading. This gap had increased to 1.3 years by Year 9. The largest performance gap for Year 3 students with an anxiety disorder was 0.6 years, for all other tests than reading. By Year 9 the largest performance gap was 2.3 years, for grammar and writing, and the smallest gap was 1.3 years for reading.

Table 4-3-2: The average number of equivalent years behind for students with anxiety disorder compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.6	1.5	1.7	2.3
Reading	0.5	0.8	0.9	1.3
Spelling	0.6	0.8	1.3	1.7
Writing	0.6	1.1	1.0	2.3
Numeracy	0.6	1.1	1.7	2.0

The smallest performance gap for Year 3 students with social phobia, compared to their peers without a mental disorder was 0.3 years for grammar. This gap had increased to 2.9 years by Year 9. The largest performance gap for Year 3 students with social phobia was 0.8 years for

numeracy. This gap had increased to 2.0 years by Year 9. The largest performance gap for Year 9 students was 3.0 years in writing, and the smallest was 1.4 years in reading.

The smallest performance gap for Year 3 students with separation anxiety, compared to their peers without a mental disorder was 0.5 years for reading and numeracy. These gaps had increased to 1.4 and 2.2 years, respectively, by Year 9. The largest performance gaps for Year 3 students was 0.8 years for grammar. By Year 9 this gap had increased to 2.3 years. The largest performance gap in Year 9 for these students was 2.8 years in writing, and the smallest was 1.4 years for reading and spelling.

The smallest performance gap for Year 3 students with generalised anxiety, compared to their peers without a mental disorder was -0.1 years for grammar, meaning that these students performed 0.1 years ahead of their peers. By Year 9 this gap had changed to 2.1 years behind their peers. The largest performance gap for Year 3 students was 0.7 years for numeracy. By Year 9 this gap had grown to 2.5 years. The largest performance gap for Year 9 students was in numeracy. The smallest gap was 0.8 years in reading.

The smallest performance gap for Year 3 students with obsessive-compulsive disorder, compared to their peers without a mental disorder was 0.8 years for numeracy. By Year 9 this gap had grown to 1.3 years. The largest performance gap for Year 3 students was 1.5 years for grammar. By Year 9 this had grown to 2.4 years. The largest performance gap for Year 9 students was 3.0 year for writing. The smallest performance gap was 0.5 years for reading.

Figure 4-3-1: Average NAPLAN score trajectory of students across all Years from 3 to 9, for numeracy test scores, for students with anxiety disorder and those with no mental disorder
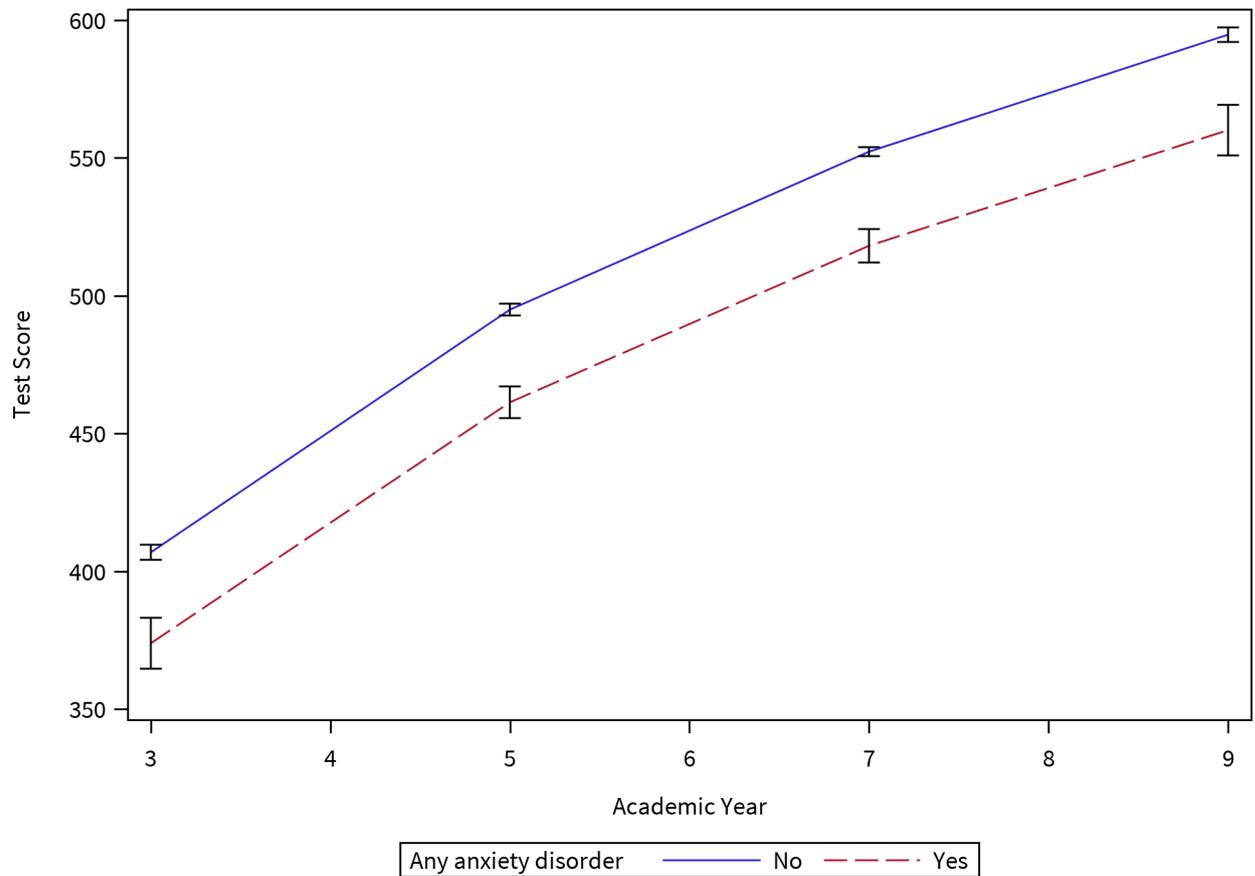
4.4 ADHD

Students with ADHD had lower scores than students with no mental disorder at every NAPLAN Year level (Figure 4-4-1). Students with ADHD had some of the lowest average test scores of all mental disorders, as seen by having a relatively large number of points different (Table 4-4-1). The difference between students with ADHD and those with no mental disorder was 56.1 points in Year 3, which rose slightly to 59.5 points in Year 9. For females, this changed from 57.0 in Year 3 to 59.9 in Year 9, and for males this went from 53.1 in Year 3 to 58.5 in Year 9. The difference in academic performance did not vary much from year to year.

Table 4-4-1: Average number of points between those with ADHD and those with no mental disorder, by sex and Year level

	Average points different			
	Year 3	**Year 5**	**Year 7**	**Year 9**
Females	57.0	58.1	59.1	59.9
Males	53.1	55.2	57.0	58.5
All persons	56.1	57.2	58.5	59.5

The smallest performance gap for Year 3 students with ADHD, compared to their peers without a mental disorder was 0.8 years for numeracy, and by Year 9 this gap had grown to 2.7 years. The largest performance gap for Year 3 students with ADHD was 1.2 years for grammar and writing. By Year 9 these gaps had grown to 4.4 and 5.0 years, respectively. By Year 9 the largest performance gap was for writing, and the smallest gap was for reading was 2.6 years (Table 4-4-2).

Table 4-4-2: Average number of equivalent years behind for students with ADHD compared to those with no mental disorder, by test domain and Year level

Domain	**Number of years behind**			
	Year 3	**Year 5**	**Year 7**	**Year 9**
Grammar	1.2	2.5	3.4	4.4
Reading	1.0	1.8	2.2	2.6
Spelling	1.1	1.7	2.7	3.2
Writing	1.2	2.3	3.8	5.0
Numeracy	0.8	1.4	2.3	2.7

Figure 4-4-1: Average NAPLAN score trajectory of students across all Years from 3 to 9, for numeracy test scores, for students with ADHD and those with no mental disorder
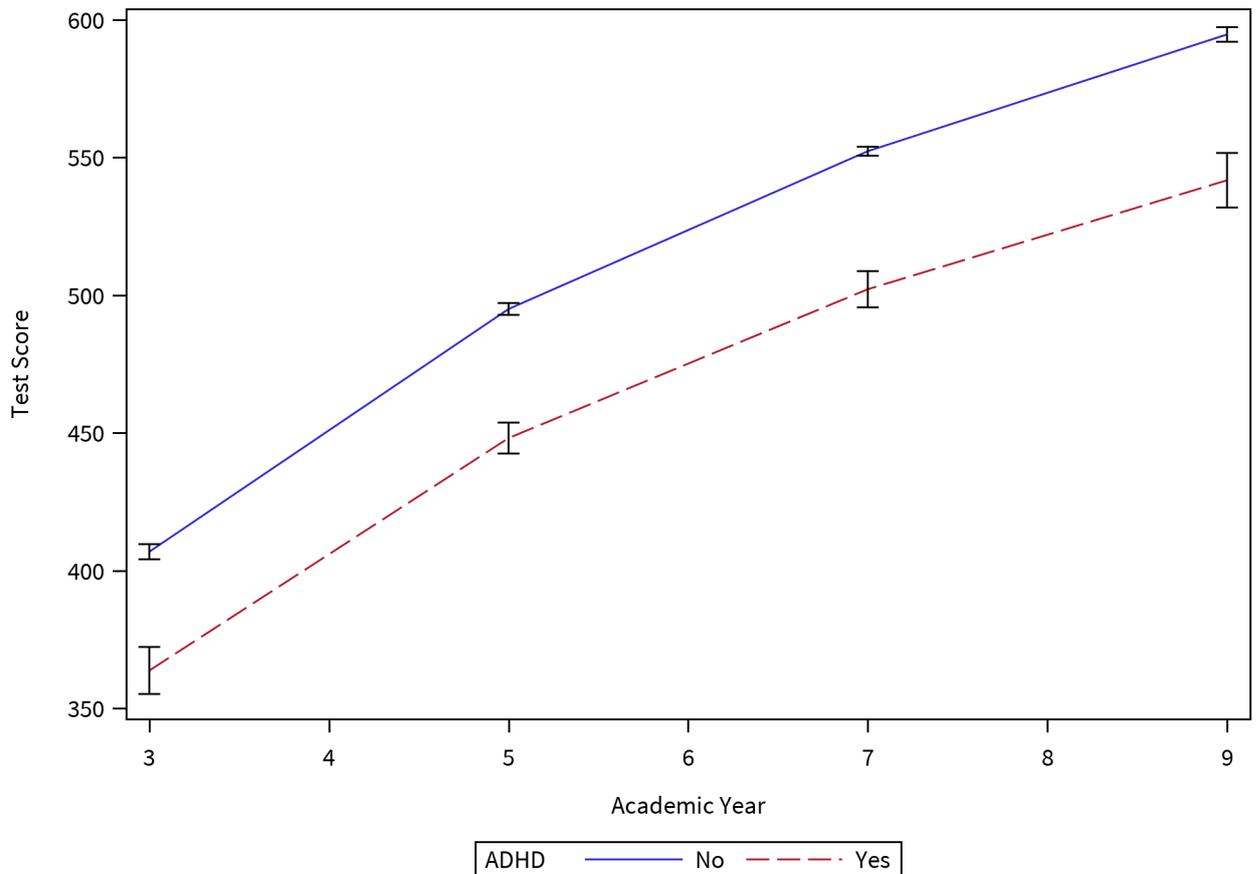
4.5   Oppositional problem behaviours and conduct disorder

Students with oppositional problem behaviours had lower scores than students with no mental disorder at every NAPLAN Year level (Figure 4-5-1). The difference in academic performance between students with oppositional problem behaviours and those with no mental disorder was on average 26.1 in Year 3, and by Year 9 writing grew slightly to 29.1 (Table 4-5-1). For males, the difference started as 19.7 in Year 3, but grew to 36.6 in Year 9. For females, the number of points different started higher at 31.0 in Year 3, but fell to 17.6 by Year 9.

Table 4-5-1: Average number of points between those with oppositional problem behaviours and those with no mental disorder, by sex and Year level

	Average points different			
	Year 3	Year 5	Year 7	Year 9
Females	31.0	25.9	21.5	17.6
Males	19.7	26.2	31.8	36.6
All persons	26.1	27.3	28.2	29.1

The smallest performance gap for Year 3 students with oppositional problem behaviours, compared to their peers without a mental disorder was 0.3 years for grammar and numeracy, which grew to 2.2 and 1.8 years, respectively, by Year 9. The largest performance gap for Year 3 students with oppositional problem behaviours was 0.6 years for writing, which grew to 2.4 years by Year 9. By Year 9 the largest performance gap was for writing, and the smallest gap was for reading and spelling was 1.5 years (Table 4-5-2).

Table 4-5-2: Average number of equivalent years behind for students with oppositional problem behaviours compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.3	1.4	1.2	2.2
Reading	0.5	0.9	0.8	1.5
Spelling	0.5	0.9	1.3	1.5
Writing	0.6	1.0	0.8	2.4
Numeracy	0.3	0.9	1.4	1.8

The smallest performance gap for Year 3 students with conduct disorder, compared to their peers without a mental disorder, was 0.8 years for numeracy. By Year 9 this gap had grown to 2.9 years. The largest performance gap for Year 3 students with conduct disorder was 1.6 years for grammar, which had grown to 4.4 years by Year 9. The largest performance gap for Year 9 students with conduct disorder was 5.5 years for writing. The smallest was 2.8 years for spelling.

Figure 4-5-1: Average NAPLAN score trajectory of students across all Years from 3 to 9, for numeracy test scores, for students with oppositional problem behaviours and those with no mental disorder
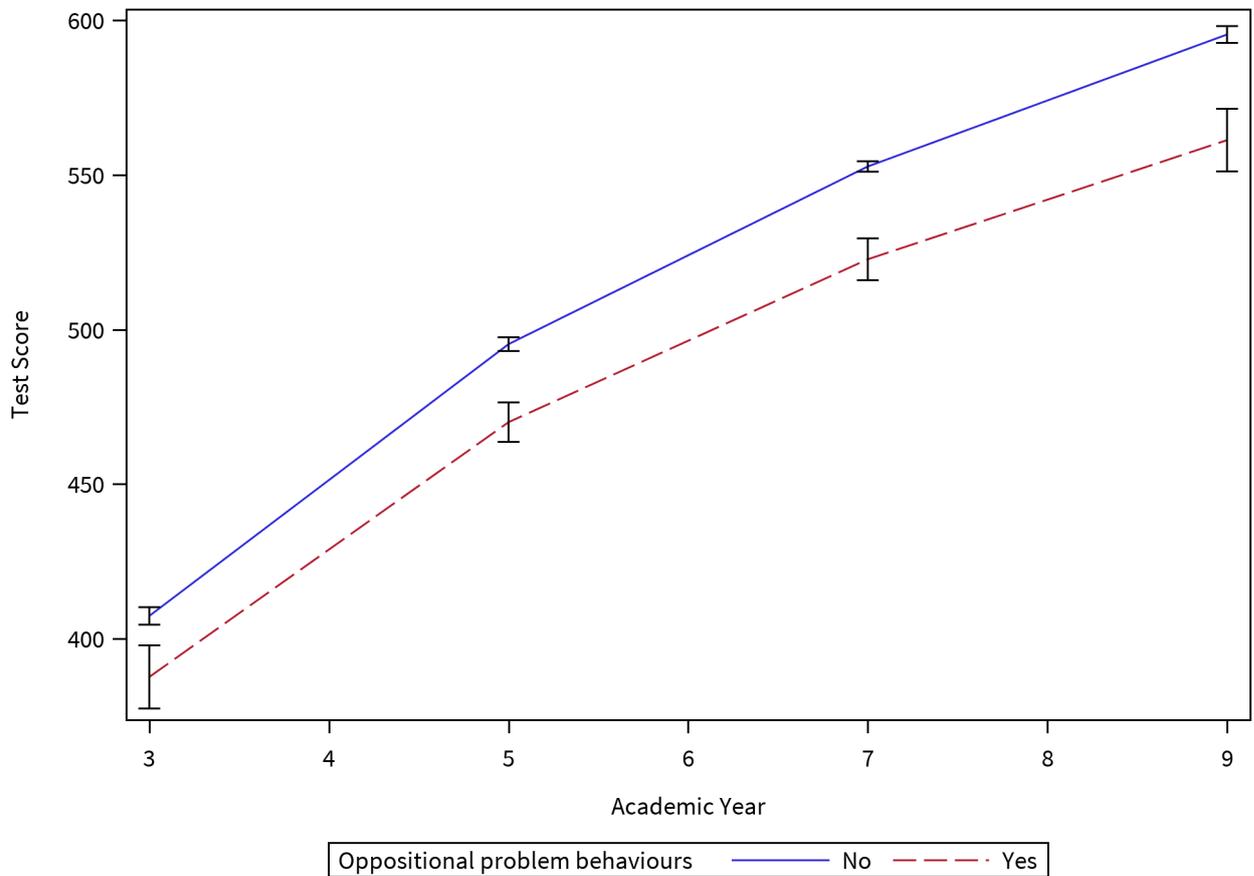
4.6 Summary

Results show that the trajectory of NAPLAN scores from Year 3 to 5 is where the fastest period of score growth occurs. This means that achieving higher scores at higher Year levels represents more effort. To compensate for this we converted NAPLAN scores into an equivalent year level. This is an alternative measure that can be used to give an indication of the average Year level at which a student is performing.

Students with a mental disorder in Year 3 were 0.6 - 0.9 years behind students with no mental disorder, but by Year 9 this value was 1.5 - 2.8 years behind. The students furthest behind were those with ADHD and conduct disorder. Students with ADHD were 0.8 - 1.2 years behind in Year 3, and 2.6 - 5.0 years behind in Year 9. Students with conduct disorder, this was 0.8 - 1.6 in Year 3, and 2.8 - 5.5 in Year 9.

5 Academic trajectories, mental disorders and service use

The survey found that over half of children and adolescents with a mental disorder had received some type of help or support in either the health or education sectors in the 12 months prior to the survey. While this was a substantial increase on the figures found in the first Australian Child and Adolescent Survey of Mental Health and Wellbeing conducted in 1998 when only 1 in 4 children with a mental disorder received any type of help, there are still significant gaps. This chapter seeks to examine academic trajectories of students with mental disorders comparing those who have and those who have not used services for their mental disorder.

Parents and carers were asked if services had been used for the treatment of their children's emotional and/or behavioural problems, and mental disorders. Services were divided into three main categories: health services, school services, and other services (for example telephone counselling or online support). The proportion of students who used telephone or online support services, combined, was less than 1%. For this reason, this chapter focuses on health and school services. Over half (53%) of children and adolescents with a mental disorder had accessed health services in the 12 months prior to the survey, and 40% had accessed education services, including individual or group counselling, a special class or school, or seen a school nurse. It is important to note that students who seek service support may have more severe mental disorders than those who do not use services. Almost 90% of children and adolescents with a severe disorder had used services, 73% of those with moderate disorders had accessed services and 41% of those with mild disorders had accessed services. For this reason, these data cannot be used as a direct measure of the impact of service use.

While the survey collected information about services used in the year prior to the survey, it is not known for how long before that period students may have been in receipt of support services.

Results showed that there were some positive trends evident. Despite the increased severity of mental disorders in those using services, there was evidence of improvements over time in academic trajectories with gaps between users of services and students without a mental disorder growing less quickly than for students with mental disorder who had not used services compared with students without a mental disorder.

5.1   Any mental disorder

When comparing students who had accessed health services with students who had accessed school services, we observed that students who had used school-based support services were achieving lower test scores, compared to those who had used health services (Table 5-1-1). For those who used health services, the average difference between those with and without a mental disorder was 34.0 in Year 3 and 19.3 in Year 9, a relative improvement of 14.7 between Year 3 and Year 9. The equivalent gap for students who used school services compared with students without a mental disorder, was 52.2 in Year 3, and 30.8 in Year 9, a relative improvement of 21.4. Students who used health services made smaller gains but were better off initially, and ended up with higher test scores. Those who used school services started off with lower test scores, but made larger gains (Figure 5-1-1).

When comparing students with mental disorders who had not used any services with students without a mental disorder, we found that the difference in academic performance was largely unchanged, from 44.0 in Year 3, to 42.6 in Year 9, a change of less than 2 points. For those who used a service, relative academic performance improved, going from 43.4 in Year 3, to 26.7 in Year 9, an improvement of 16.7 NAPLAN scale points.

Table 5-1-1: Average number of NAPLAN scale points between those with any mental disorder (by service use) and those with no mental disorder, as an average of scores for all test domains

	Average points different			
	Year 3	Year 5	Year 7	Year 9
Health service	34.0	28.3	23.5	19.3
School service	52.2	44.0	37.0	30.8
With service use	43.4	37.6	31.8	26.7
Without service use	44.0	43.2	42.4	42.6

Table 5-1-2 shows an analysis of the equivalent number of years that those with a mental disorder who used a school service were behind those without a mental disorder. The smallest performance gap for Year 3 students was 0.8 years for numeracy. By Year 9 this had grown to 2.1 years. The largest performance gap for Year 3 students was 1.2 years for grammar. By Year 9 this had grown to 2.5 years. The largest performance gap for Year 9 students was 2.6 years for writing. The smallest gap was 1.5 years for reading.

Table 5-1-2: Average number of equivalent years behind for students with a mental disorder and use a school service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	1.2	1.9	1.8	2.5
Reading	0.9	1.2	1.0	1.5
Spelling	1.0	1.4	1.6	2.0
Writing	1.0	1.6	1.6	2.6
Numeracy	0.8	1.3	1.7	2.1

Tables 5-1-3 shows an analysis of the equivalent number of years that students with a mental disorder who used a health service were behind those without a mental disorder. The smallest performance gap for Year 3 students was 0.7 years for numeracy. By Year 9 this had grown to 1.8 years. The largest performance gap for Year 3 students was 1.0 years for grammar and spelling, which had grown to 2.3 and 1.7 years, respectively, by Year 9. The largest performance gap for Year 9 students was 2.4 years for writing, and the smallest gap was 0.9 years for reading.

Table 5-1-3: Average number of equivalent years behind for students with a mental disorder and use a health service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	1.0	1.6	1.6	2.3
Reading	0.9	1.1	0.8	0.9
Spelling	1.0	1.3	1.5	1.7
Writing	0.9	1.4	1.4	2.4
Numeracy	0.7	1.1	1.5	1.8

Figure 5-1-1: Average NAPLAN numeracy test score trajectory of students across all Years from 3 to 9, for those with a mental disorder by service use, and for those with no mental disorder
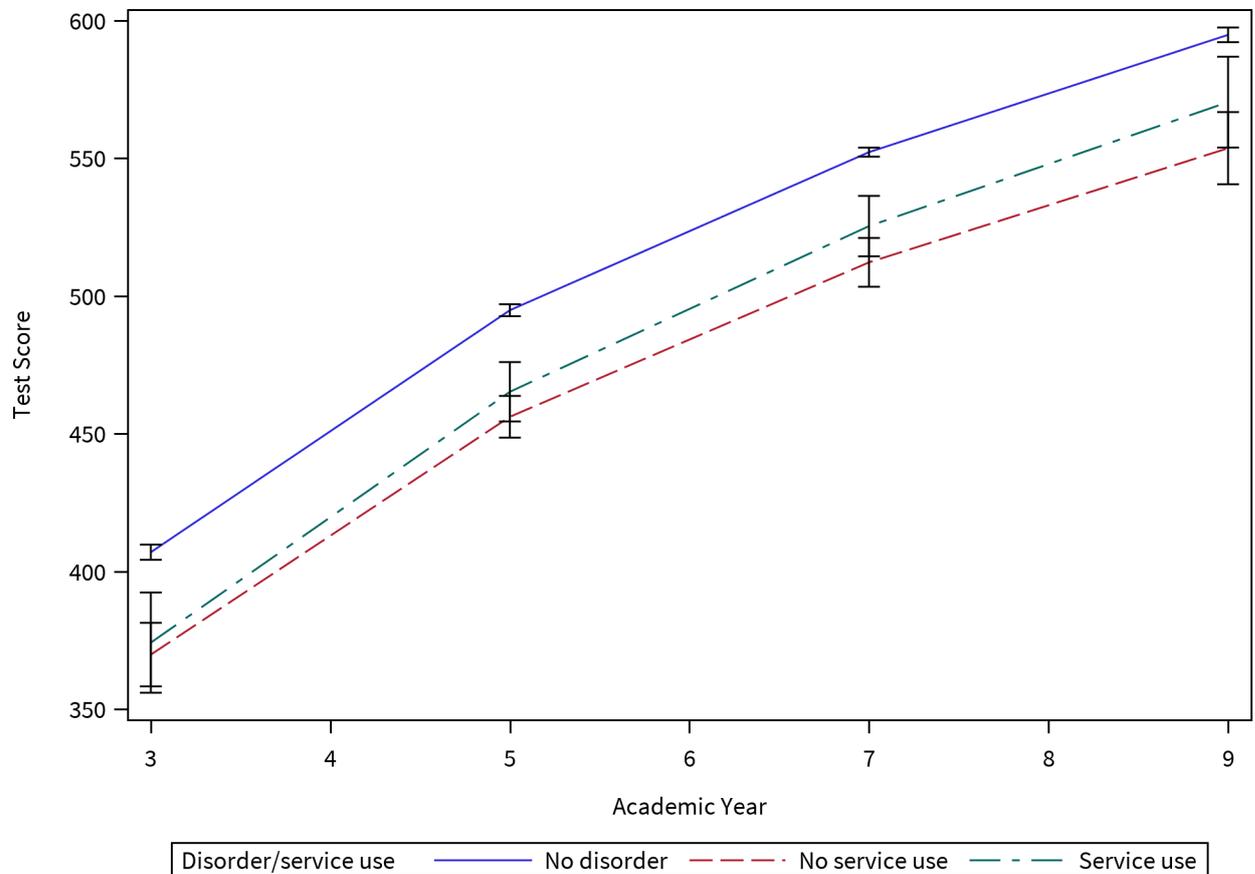
5.2 Major depressive disorder

In the case of students who had major depressive disorder, those who had used health services rather than school services initially had lower test scores (Table 5-2-1). Students who had major depressive disorder who used health services improved their academic performance from 43.0 points behind in Year 3, to 12.3 points behind in Year 9, compared to students who utilised school services, who improved from being 30.9 points behind in Year 3, to 14.8 points behind in Year 9.

Students who used services started off with lower test scores and despite making greater gains, they were not able to catch up to those who did not use services (Table 5-2-1, Figure 5-2-1).

Table 5-2-1: Average number of NAPLAN scale points between those with major depressive disorder (by service use) and those with no mental disorder, as an average of scores for all test domains

	Average points different			
	Year 3	Year 5	Year 7	Year 9
Health service	43.0	30.5	19.7	12.3
School service	30.9	24.8	19.4	14.8
With service use	33.1	24.9	19.8	14.6
Without service use	17.7	15.0	12.7	10.6

Table 5-2-2 shows an analysis of the equivalent number of years that those with major depressive disorder who used a school service were behind those without a mental disorder. The smallest performance gap for Year 3 students was 0.5 years for spelling and numeracy. These gaps had grown to 1.2 and 1.8 years, respectively by Year 9. The largest performance gap for Year 3 students was 1.0 years for grammar, which had grown to 1.8 years by Year 9. The largest performance gap for Year 9 students was 1.8 years for numeracy and grammar, and the smallest gap was 0.1 years for reading.

Table 5-2-2: Average number of equivalent years behind for students with major depressive disorder and use a school service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	1.0	0.8	0.9	1.8
Reading	0.9	0.8	0.0	0.1
Spelling	0.5	0.9	0.8	1.2
Writing	0.9	0.5	0.2	0.9
Numeracy	0.5	1.0	1.4	1.8

Tables 5-2-3 shows an analysis of the equivalent number of years that those with major depressive disorder who used a health service were behind those without a mental disorder. The smallest performance gap for Year 3 students was 0.5 years for spelling, which grew to 1.3 years by Year 9. The largest performance gap for Year 3 students was 0.9 years for grammar and writing, which grew to 1.8 and 1.3 years, respectively, by Year 9. The largest performance gap for Year 9 students was for grammar. The smallest gap was 0 years for reading.

Table 5-2-3: Average number of equivalent years behind for students with major depressive disorder and use a health service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.9	1.1	0.8	1.8
Reading	0.8	0.9	-0.3	0.0
Spelling	0.5	0.9	0.7	1.3
Writing	0.9	0.8	0.0	1.3
Numeracy	0.6	0.9	1.2	1.7

Figure 5-2-1: Average NAPLAN numeracy test score trajectory of students across all Years from 3 to 9, for those with major depressive disorder by service use, and for those with no mental disorder
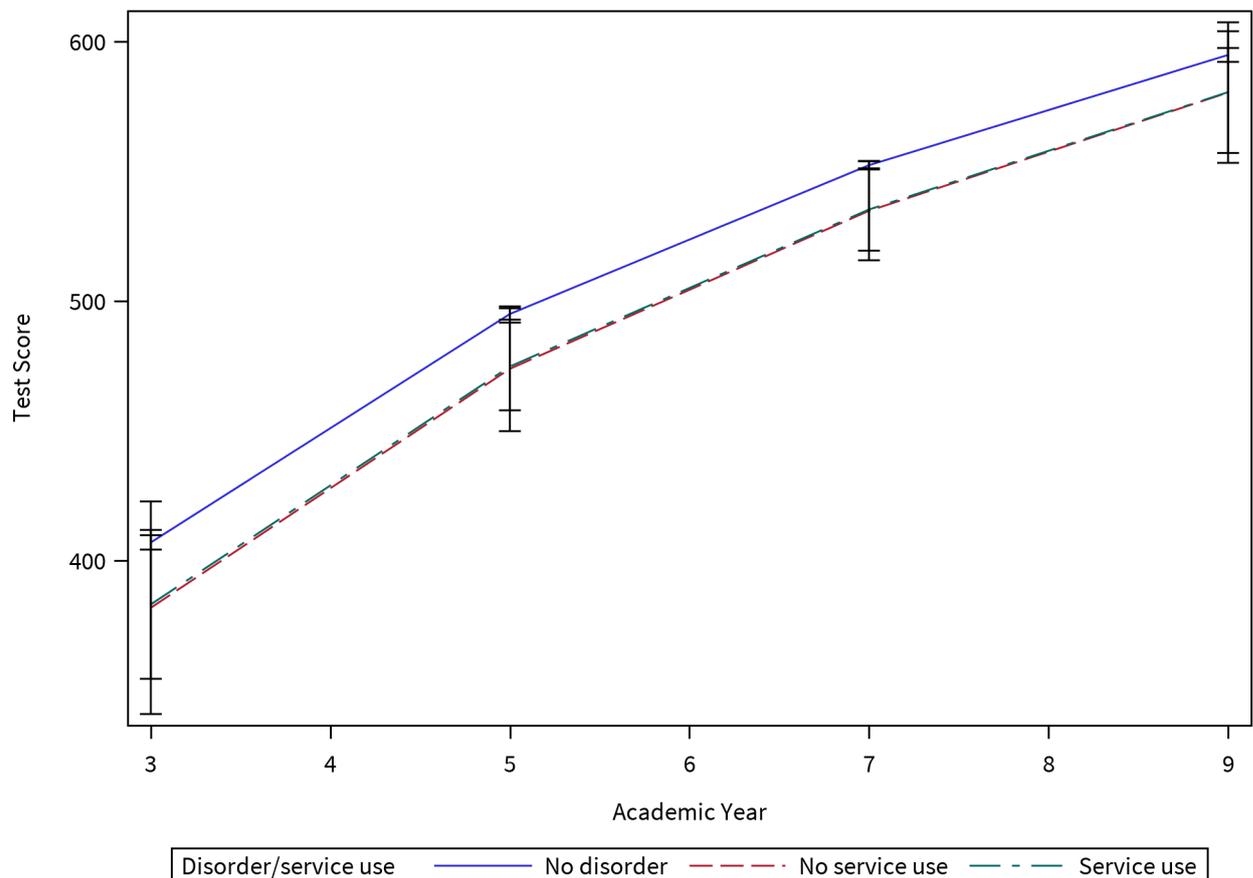
5.3 Any anxiety disorder

Those who have an anxiety disorder and seek out health services were, on average, 29.9 points behind their peers with no mental disorder in Year 3 (Table 5-3-1). This difference is smaller in Year 9 at 23.8 points. For school service users, Year 3 students were 42.0 points behind, and Year 9 students were 26.6 points behind. Between those who use and do not use services, there was very little disparity in whether either group was further behind students with no mental disorder (Table 5-3-1).

Table 5-3-1: Average number of NAPLAN scale points between those with an anxiety disorder (by service use) and those with no mental disorder, as an average of scores for all test domains

	Average points different			
	Year 3	Year 5	Year 7	Year 9
Health service	29.9	27.6	25.6	23.8
School service	42.0	36.1	31.0	26.6
With service use	34.7	31.7	29.1	26.8
Without service use	35.1	31.8	29.0	26.6

The smallest performance gap for Year 3 students was 0.7 years for grammar. This gap grew to 2.6 years by Year 9. The largest performance gap for Year 3 students was 0.8 years for all other tests. The largest performance gap for Year 9 students was for grammar, and the smallest gap was 1.4 years for reading (Table 5-3-2).

Table 5-3-2: Average number of equivalent years behind for students with an anxiety disorder who used a school service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.7	1.6	1.4	2.6
Reading	0.8	1.0	0.7	1.4
Spelling	0.8	1.2	1.3	2.1
Writing	0.8	1.3	0.9	2.5
Numeracy	0.8	1.5	1.7	2.5

The smallest performance gap for Year 3 students was 0.7 years for grammar, reading and numeracy. The largest gap was 0.8 years for spelling and writing. The smallest performance gap for Year 9 students was 1.2 years for reading, and the largest gap was 2.6 years for grammar and writing (Table 5-3-3).

Table 5-3-3: Average number of equivalent years behind for students with an anxiety disorder who used a health service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.7	1.6	1.5	2.6
Reading	0.7	1.0	0.5	1.2
Spelling	0.8	1.2	1.3	1.8
Writing	0.8	1.3	0.9	2.6
Numeracy	0.7	1.3	1.8	2.5

The smallest performance gap for Year 3 students with social phobia who had used a school service, compared to their peers without a mental disorder was 0.7 years for reading, spelling, and writing. The largest gap was 1.0 years for grammar. The smallest performance gap for Year 9 students was 1.2 years for reading, and the largest gap was 3.6 years for writing (Table S5-3A-1). The smallest performance gap for Year 3 students who had used a health service was 0.7 years for spelling. The largest gap was 1.0 years for grammar. The smallest performance gap for Year 9 students was 1.1 years for reading. The largest gap was 3.2 years for grammar and writing (Table S5-3A-2).

The smallest performance gap for Year 3 students with separation anxiety who had used a school service, compared to their peers without a mental disorder was 0.8 years for grammar and numeracy. The largest gap was 1.0 years for writing. The smallest performance gap for Year 9 students was 1.2 years for reading, and the largest gap was 2.9 years for writing (Table S5-3B-1). The smallest performance gap for Year 3 students who had used a health service was 0.7 years for grammar, reading, and numeracy. The largest gap was 0.9 years for spelling. The smallest performance gap for Year 9 students was 1.3 years for reading, and 3.1 years for writing (Table S5-3B-2).

The smallest performance gap for Year 3 students with generalised anxiety who had used a school service, compared to their peers without a mental disorder was 0.1 years for grammar, and the largest gap was 1.0 years for writing. For Year 9 students the smallest gap was 1.0 years

for reading, and the largest was 2.5 years for numeracy (Table S5-3C-1). For Year 3 students who used a health service the smallest performance gap was 0.1 years for grammar, and the largest gap was 0.8 years for writing. For Year 9 students the smallest gap was 0.9 years for reading, and the largest gap was 2.5 years for numeracy (Table S5-3C-2).

The smallest performance gap for Year 3 students with obsessive-compulsive disorder who had used a school service, compared to their peers without a mental disorder was 0.9 years for numeracy, and the largest performance gap was 1.7 years for grammar. By Year 9 the smallest gap was 0.1 years for reading, and the largest was 3.5 years for grammar (Table S5-3D-1). The smallest performance gap for Year 3 students who had used a health service was 0.7 years for numeracy. The largest performance gap was 1.5 years for grammar. By Year 9 the smallest gap was -0.1 years for reading (meaning those students performed 0.1 years ahead of their peers), and the largest gap was 3.3 years for grammar and writing (Table S5-3D-2).

Figure 5-3-1: Average NAPLAN numeracy test score trajectory of students across all Years from 3 to 9, for those with an anxiety disorder by service use, and for those with no mental disorder
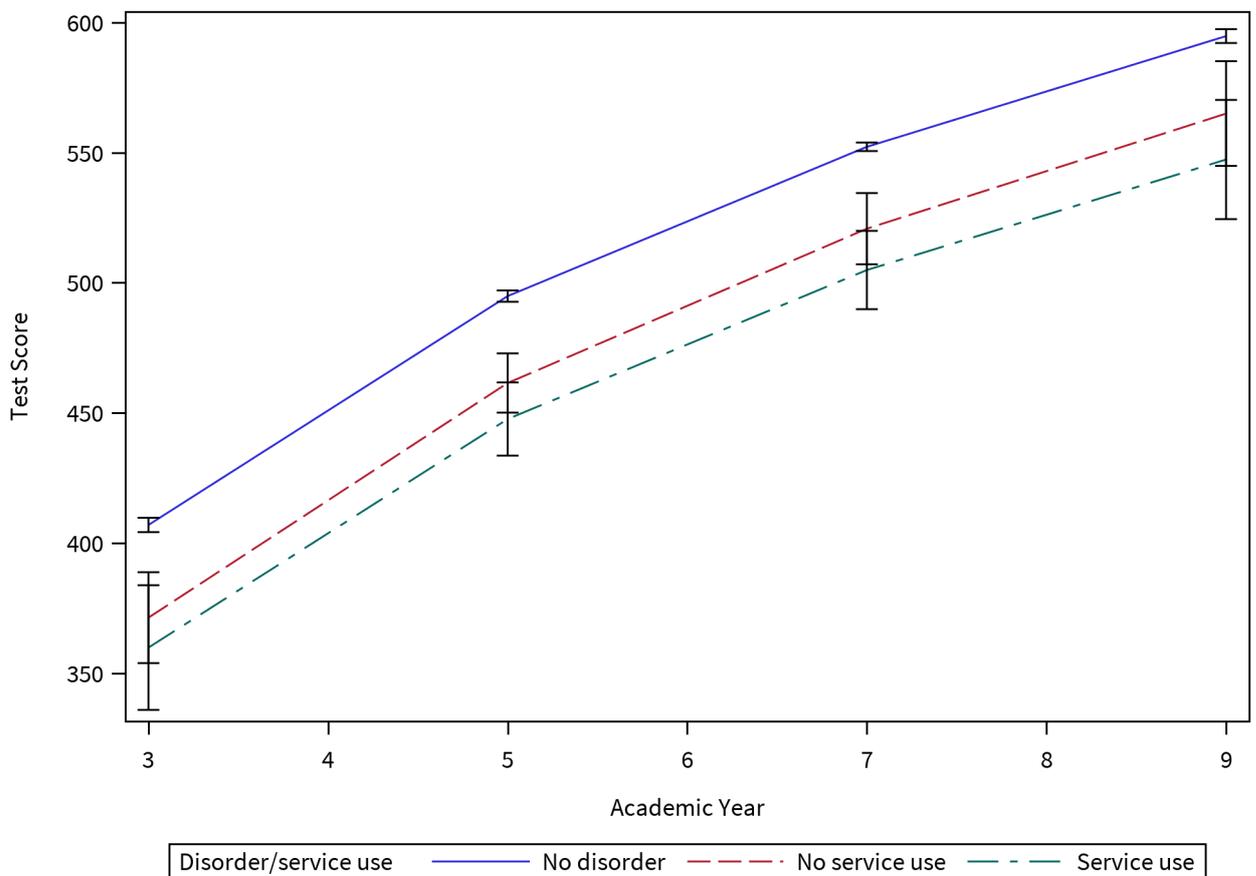
5.4 ADHD

In the case of students who had ADHD, those who received school services were scoring below those who had used health services (Table 5-4-1). The relative performance of those who used school services did not change from Year 3 to Year 9, i.e. from 68.9 to 69.0 points behind across this time span. Those who used health services went from being 45.4 points behind those with no mental disorder in Year 3, to 22.6 points behind in Year 9. When comparing by whether or not a student with a mental disorder used a service or not, those who used a service were scoring lower in Year 3, but overtook those who did not use a service by Year 9 (Table 5-4-1).

Table 5-4-1: Average number of NAPLAN scale points between those with ADHD (by service use) and those with no mental disorder, as an average of scores for all test domains

|	Average points different			
	Year 3	Year 5	Year 7	Year 9
Health service	45.4	36.7	29.2	22.6
School service	68.9	69.0	69.0	69.0
With service use	61.6	59.6	57.9	56.4
Without service use	53.6	56.8	65.2	69.9

The smallest performance gap for Year 3 students with ADHD who had used a school service, compared to their peers without a mental disorder, was 0.9 years for numeracy, which grew to 2.4 years by Year 9. The largest performance gap for Year 3 students was 1.5 years for grammar, which grew to 4.3 years by Year 9. The smallest performance gap for Year 9 students was for numeracy. The largest performance gap for Year 9 students was 5.5 years for writing (Table 5-4-2).

The smallest performance gap for Year 3 students who had used a health service was 0.8 years for numeracy, which grew to 2.2 years by Year 9. The largest performance gap for Year 3 students was 1.3 years for grammar, which grew to 3.8 years by Year 9. The smallest performance gap for Year 9 students was 1.6 years for reading. The largest performance gap for Year 9 students was 4.8 years for writing (Table 5-4-3).

Figure 5-4-1: Average NAPLAN numeracy test score trajectory of students across all Years from 3 to 9, for those with ADHD by service use, and for those with no mental disorder
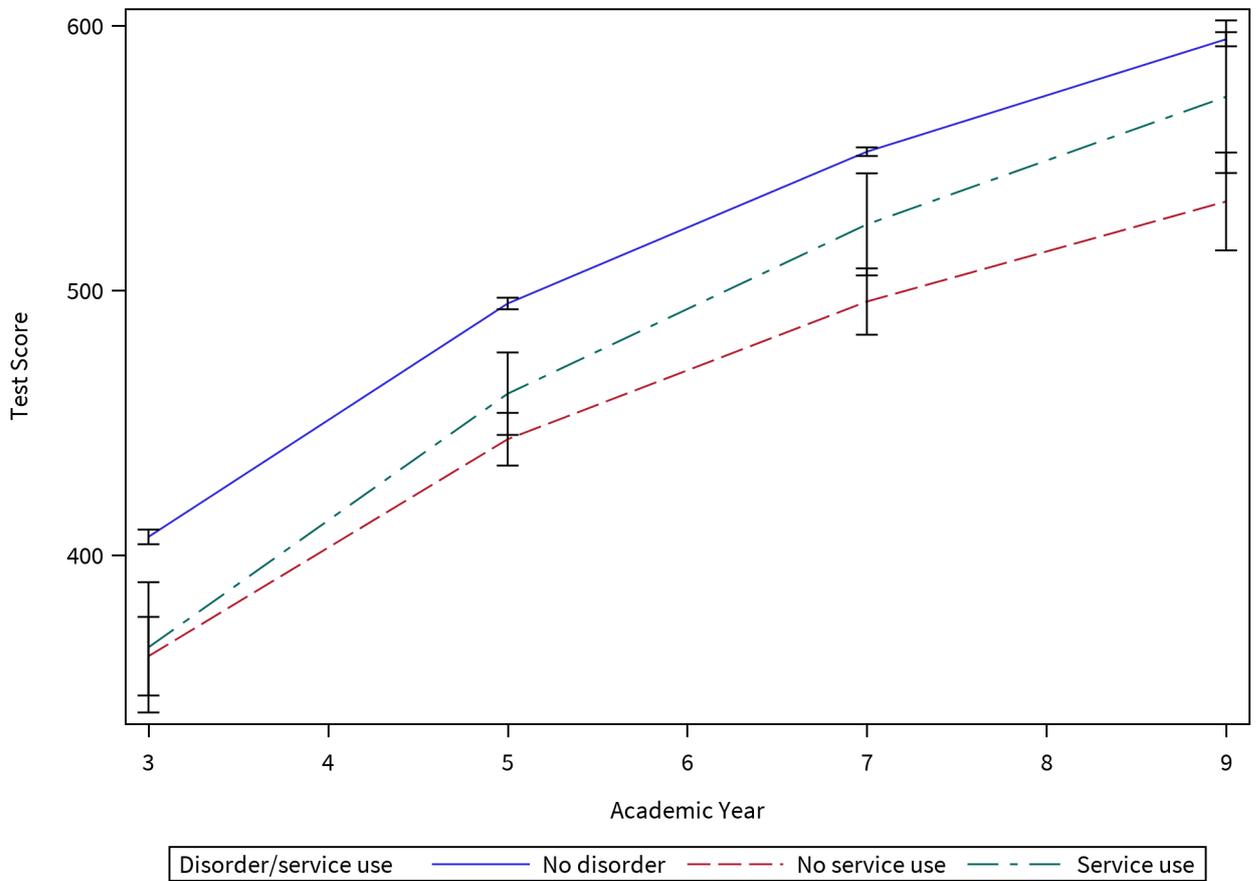
Table 5-4-2: Average number of equivalent years behind for students with ADHD who used a school service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	1.5	2.9	3.5	4.3
Reading	1.1	1.9	2.3	2.9
Spelling	1.2	2.0	3.0	3.4
Writing	1.4	2.9	4.2	5.5
Numeracy	0.9	1.6	2.4	2.4

Table 5-4-3: Average number of equivalent years behind for students with ADHD who used a health service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	1.3	2.2	2.8	3.8
Reading	1.1	1.6	1.8	1.6
Spelling	1.2	1.7	2.7	2.7
Writing	1.3	2.5	3.8	4.8
Numeracy	0.8	1.2	1.9	2.2

5.5 Oppositional problem behaviours and conduct disorder

The difference in academic performance between students with oppositional problem behaviours and those with no mental disorder was initially higher for those who had used school services compared to those who used health services (Table 5-5-1). Those who used health services went from 11.9 points behind in Year 3, to 22.8 points behind in Year 9. Those who use school services went from 44.0 points behind in Year 3 to 34.1 points behind in Year 9.

Those who used services made relative gains over time (from 31.1 points in Year 3 to 27.4 points in Year 9), while among those who did not use services the gap got wider over time (from 20.2 points in Year 3 to 36.2 points in Year 9).

Table 5-5-1: Average number of NAPLAN scale points between those with oppositional problem behaviours (by service use) and those with no mental disorder, as an average of scores for all test domains

	Average points different			
	Year 3	Year 5	Year 7	Year 9
Health service	11.9	16.0	19.6	22.8
School service	44.0	40.2	37.0	34.1
With service use	31.1	29.8	27.6	27.4
Without service use	20.2	26.3	31.6	36.2

The smallest performance gap for Year 3 students with oppositional problem behaviours who had used a school service, compared to their peers without a mental disorder, was 0.5 years for numeracy, which grew to 2.0 years by Year 9. The largest performance gap for Year 3 students was 1.0 years for writing, which grew to 3.3 years by Year 9. The smallest performance gap for Year 9 students was 1.4 years for reading, and the largest was for writing. (Table 5-5-2).

Table 5-5-2: Average number of equivalent years behind for students with oppositional problem behaviours who used a school service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.6	1.7	1.7	1.7
Reading	0.8	1.0	1.0	1.4
Spelling	0.8	1.5	1.8	1.6
Writing	1.0	1.7	1.9	3.3
Numeracy	0.5	1.6	2.2	2.0

The smallest performance gap for Year 3 students with oppositional problem behaviours who had used a health service, compared to their peers without a mental disorder, was 0.4 years for numeracy that grew to 2.1 years by Year 9. The largest performance gap for Year 3 students was 0.7 years for writing, that grew to 3.2 years by Year 9. The smallest performance gap for Year 9 students was 1.3 years for reading, and the largest was for writing (Table 5-5-3).

Table 5-5-3: Average number of equivalent years behind for students with oppositional problem behaviours who used a health service compared to those with no mental disorder, by test domain and Year level

Domain	Number of years behind			
	Year 3	Year 5	Year 7	Year 9
Grammar	0.6	1.4	1.4	2.3
Reading	0.6	0.8	0.8	1.3
Spelling	0.6	1.1	1.5	1.7
Writing	0.7	1.3	1.5	3.2
Numeracy	0.4	1.2	1.8	2.1

The smallest performance gap for Year 3 students with conduct disorder who had used a health service was 0.8 years for numeracy, and the largest was 1.7 years for grammar. For

Year 9 students the smallest gap was 2.2 years for reading, and the largest gap was 4.6 years for writing (Table S5-5A-2).

The smallest performance gap for Year 3 students was 0.7 years for reading and numeracy. The largest gap was 1.0 years for spelling. By Year 9 the smallest performance gap was 2.5 years, and the largest was 4.8 years (Table S5-5A-1).

Figure 5-5-1: Average NAPLAN numeracy test score trajectory of students across all Years from 3 to 9, for those with oppositional problem behaviours by service use, and for those with no mental disorder
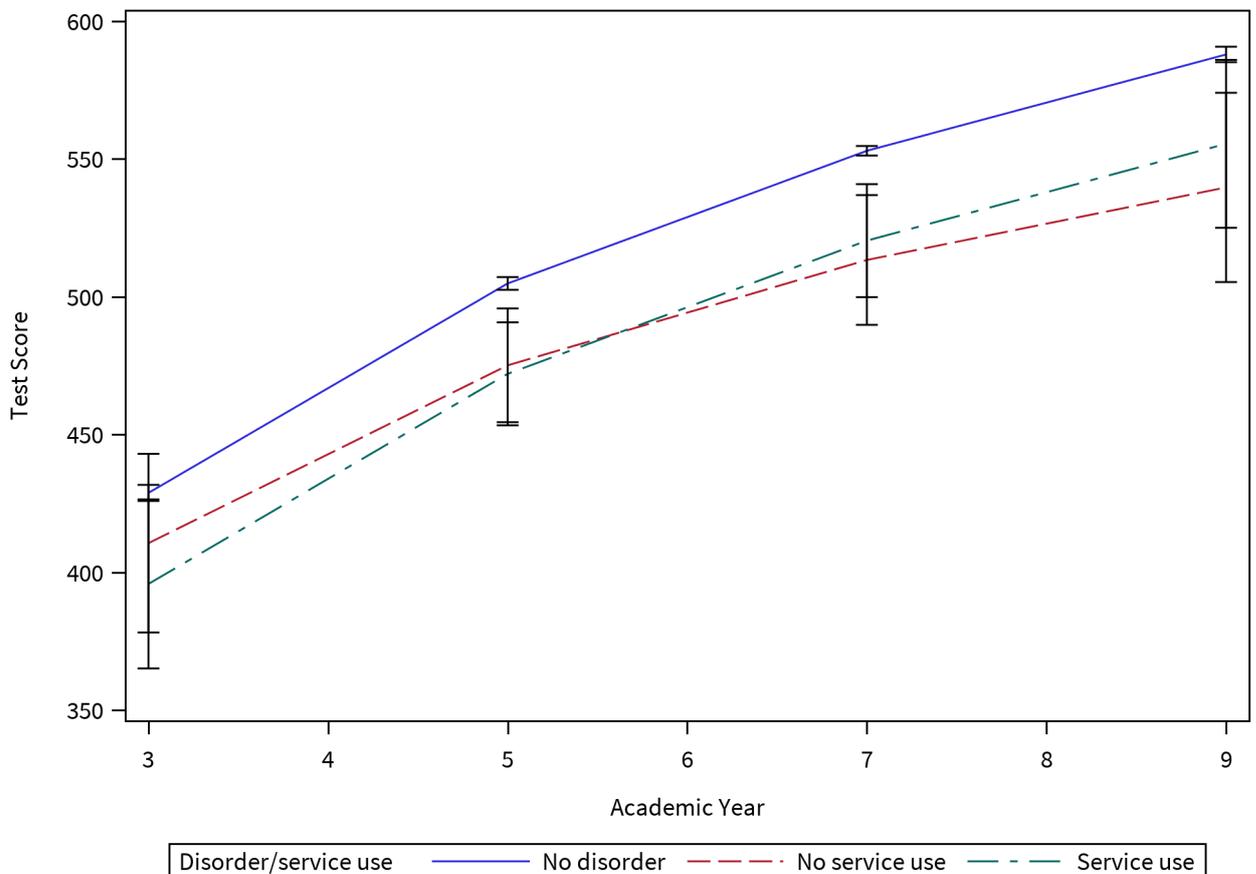
5.6 Summary

Young Minds Matter was a survey and not a controlled experiment. Users of health and educational services for mental disorders were more likely to have moderate or severe impairment of functioning due to their mental disorders than those who did not use services. As such, comparison of academic trajectories for those who did and did not receive services for their mental disorders is not a direct measure of the effectiveness of the service.

6 Attendance at school

Attendance is a critical first step in participation and engagement in school. Rates of school attendance are an indicator of exposure to school programs. While participation and engagement among students attending school are also important indicators of learning and achievement, attendance rates have been linked to levels of academic achievement. Recognising the importance of school attendance, Australian school jurisdictions have policies to promote attendance in school, and Australian schools actively monitor the attendance of their students. National standards are now in place for the reporting of school attendance rates, and these are now provided through *My School*.

Students may be absent from school for a variety of reasons, including physical and mental disorders. This chapter examines the relationship between students' mental disorders and attendance at school, and examine how many absences from school are attributed to mental disorders.

6.1 Attendance rate

In the survey, primary carers were asked how many days the child had been absent from school since the beginning of the school year, excluding school holidays. Based on the date the interview was conducted, the jurisdiction and the school the child was attending, the number of days the child was eligible to attend school so far during the school year was calculated. This was used to calculate an attendance and absence rate for each student, and this attendance rate was used to calculate the estimated total number of days absent over a standard school year. This allowed comparison of reported days absent between students on a consistent basis.

Based on the data reported by primary carers, the average days absent from school was calculated for students with and without a mental disorder. In Kindergarten and Pre-primary, students with a mental disorder were absent on average 1.9 days more than students without a mental disorder (9.6 days compared with 7.7 days). This increased to 3.6 days in Years 1-6, 12.4 days in Years 7-10 and 13.9 days in Years 11-12.

While the average number of days absent from school increased for students without a mental disorder across the years in school from 7.7 days in Kindergarten and Pre-primary to 12.0 days in Years 11-12, there was a much larger increase in days absent across the years in school for

students with a mental disorder, from 9.6 days in Kindergarten and Pre-primary to 25.9 days in Years 11-12 highlighting the extent to which students with mental disorders have higher rates of absence from school in the secondary school years. Similar patterns were observed for both males and females.

Figure 6-1-1: Average days absent from school during the school year by mental disorder status and Year in school
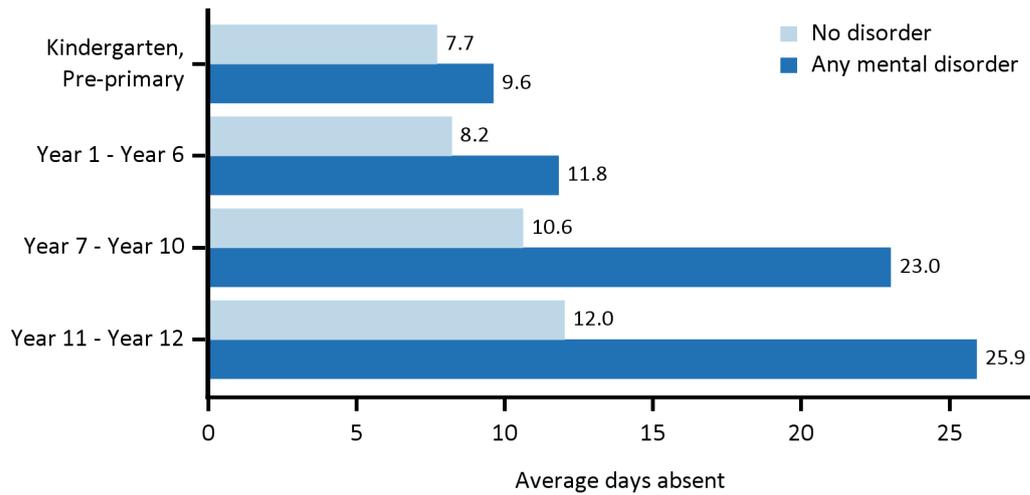
Table 6-1-1: Average days absent from school during the school year for male students, by mental disorder status and Year in school

Year in school	No disorder	Any mental disorder	All students
Kindergarten/Pre-primary	7.1	9.9	7.5
Years 1-6	8.1	12.3	8.8
Years 7-10	10.7	20.1	12.3
Years 11-12	11.8	27.2	13.6

Table 6-1-2: Average days absent from school during the school year for female students, by mental disorder status and Year in school

Year in school	No disorder	Any mental disorder	All students
Kindergarten/Pre-primary	8.3	8.9	8.4
Years 1-6	8.4	11.1	8.7
Years 7-10	10.4	27.4	12.4
Years 11-12	12.2	24.9	14.0

6.2 Distribution of days absent from school

The distribution of days absent from school tends to be skewed with a long tail to the right, with most students absent for a small number of days, and small numbers of students with large absences. Figure 6-2-1 shows the distribution of days absent from school for students with and without mental disorders by year in school. Among students with a mental disorder, the average number of days absent from school is higher, there are fewer students with no days absent from school, and there is a longer tail, that is more students with absences of greater than 20 or 30 days over the course of the school year. Larger differences were seen for students in Years 7-12 when compared to students in Years 1-6.

Figure 6-2-1: Distribution of days absent from school, by mental disorder status and Year in school
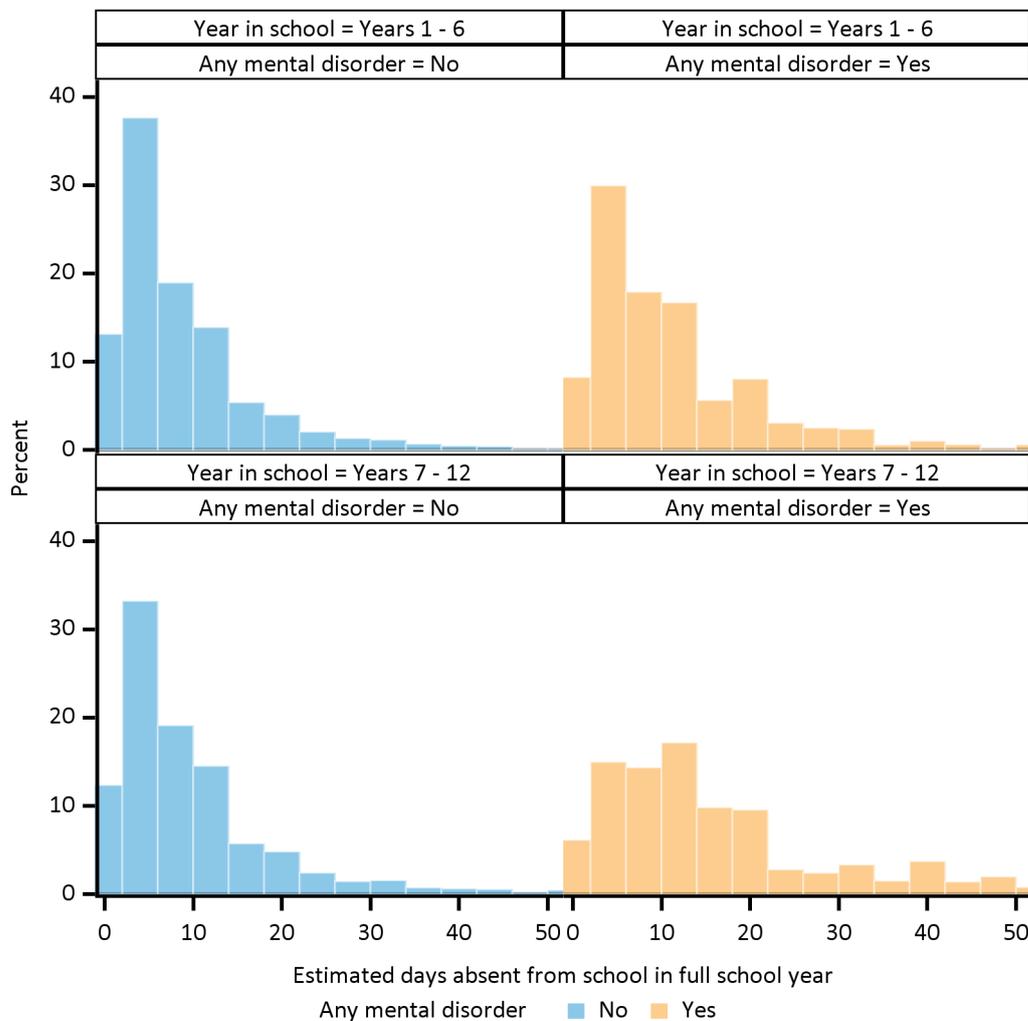
Absences from school are higher in the secondary school years compared with the primary school years. However, the difference in distribution of days absent from school between students with and without a mental disorder in Years 1-6 is larger than the difference between students without a mental disorder in Years 7-12 compared with students without a mental disorder in Years 1-6. As such, there is a higher average number of days absent from school and a larger proportion of students with absences of greater than 20 or 30 days among students in Years 1-6 with a mental disorder, than among students in Years 7-12 without a mental disorder.

6.3 Days absent from school for individual mental disorders

Individual mental disorders were associated with different average attendance rates. In the primary school years, anxiety disorders and major depressive disorder were associated with higher absence rates than ADHD and conduct disorder. All disorders were associated with higher absence rates in the secondary school years compared with the primary school years. In Years 7-12, anxiety disorders, major depressive disorder and conduct disorder all were associated with on average more than 25 days absence over the school year.

Figure 6-3-1: Average days absent from school over the school year by type of mental disorder and Year in school
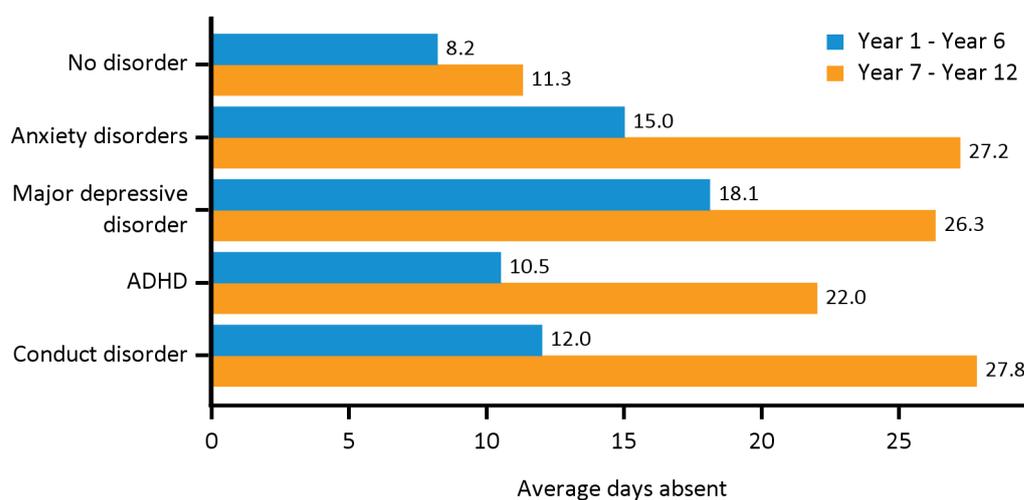
There are some differences among individual anxiety disorders. Separation anxiety is more common in younger children, and a low prevalence disorder among secondary school students. Nonetheless when it occurs it can be associated with substantial impact on

students' functioning. Among secondary school students with an anxiety disorder, separation anxiety was associated with the highest average number of days absent from school.

Table 6-3-1: Average days absent from school over the school year for male students, by type of mental disorder and Year in school

Disorder	Kindergarten/ Pre-primary	Years 1-6	Years 7-10	Years 11-12
Social phobia	4.6	12.3	23.9	19.0
Separation anxiety	9.3	16.9	32.5	69.0
Generalised anxiety	7.3	21.5	37.3	39.8
Obsessive-compulsive	7.9	20.3	21.2	np
Any anxiety disorder	9.0	16.3	27.2	29.0
Major depressive disorder	np	22.3	21.1	27.0
ADHD	11.5	10.1	21.3	25.7
Conduct disorder	12.9	14.6	25.1	24.6
Oppositional problems	8.6	13.2	21.8	15.7
Any mental disorder	**9.9**	**12.3**	**20.1**	**27.2**
No mental disorder	**7.1**	**8.1**	**10.7**	**11.8**

np   Not available for publication because of small cell size, but included in totals where applicable

Table 6-3-2: Average days absent from school over the school year for female students, by type of mental disorder and Year in school

Disorder	Kindergarten/ Pre-primary	Years 1-6	Years 7-10	Years 11-12
Social phobia	np	17.6	29.3	21.9
Separation anxiety	11.2	14.5	36.2	29.1
Generalised anxiety	np	14.4	12.6	26.9
Obsessive-compulsive	np	np	np	27.1
Any anxiety disorder	10.3	13.6	27.0	26.6
Major depressive disorder	np	14.3	30.3	27.5
ADHD	8	11.3	22.9	20.4
Conduct disorder	11.8	7.7	38.9	12.9
Oppositional problems	7.3	12.7	34.6	19.0
Any mental disorder	**8.9**	**11.1**	**27.4**	**24.9**
No mental disorder	**8.3**	**8.4**	**10.4**	**12.2**

np   Not available for publication because of small cell size, but included in totals where applicable

The survey also identified students with oppositional problem behaviours, and the overall prevalence of oppositional problem behaviours in school students is around 5%. Oppositional problem behaviours were also associated with higher average days absent from school compared with students without a mental disorder. For instance, among Year 7-10 students, males with oppositional problem behaviours were absent an average 21.8 days and females were absent an average 34.6 days compared with 10.7 days for males and 10.4 days for females with no mental disorder. Oppositional problem behaviours are negative, hostile and defiant behaviours lasting at least six months and characterised by behaviour such as often losing temper, arguing with adults, and actively defying rules.

While students with mental disorders had on average higher absence rates compared with students without a mental disorder, not all students miss days from school, and the distribution of days absent from school over a school year is skewed. Recent research has shown that there is no safe level of absence from school and that increasing numbers of days absent from school are associated with increased impact on academic performance. Impact on academic performance, as measured by NAPLAN scores, increases almost linearly with increasing numbers of days absent from school, and students who miss a substantial number of days of school over the course of the school year are likely to be impacted in their academic achievement.

Table 6-3-3: Proportion of students absent for more than 20 days during the school year for male students, by mental disorder status and Year in school

Year in school	No disorder	Any mental disorder	All students
Kindergarten/Pre-primary	5.2	13.2	6.3
Years 1-6	8.0	16.0	9.5
Years 7-10	11.8	22.5	13.6
Years 11-12	11.9	28.4	13.9

Table 6-3-4: Proportion of students absent for more than 20 days during the school year for female students, by mental disorder status and Year in school

Year in school	No disorder	Any mental disorder	All students
Kindergarten/Pre-primary	6.6	np	6.7
Years 1-6	7.6	15.0	8.5
Years 7-10	10.8	38.4	14.0
Years 11-12	13.2	34.2	16.2

np   Not available for publication because of small cell size, but included in totals where applicable

A higher proportion of students with a mental disorder were absent from school for more than 20 days over the school year. In Years 1-6, 16.0% of males with a mental disorder were absent more than 20 days compared with 8.0% of males without a mental disorder, with similar proportions of females (15.0% compared with 7.6%). The differences were large in the secondary school years. In students with a mental disorder, 22.5% of males in Years 7-10 and 28.4% of males in Years 11-12 were absent more than 20 days. The proportions were higher in females, with 38.4% of females with a mental disorder absent more than 20 days in Years 7-10, and 34.2% in Years 11-12.

6.4　Absence from school, demographic and socio-economic factors

Analysis of *Young Minds Matter* data has shown that mental disorders were more common in families facing a range of disadvantages and challenges such as unemployment or family breakup. Children and adolescents in low-income families, with parents and carers with lower levels of education and with higher levels of unemployment had higher rates of mental disorders in the previous 12 months. For instance, the prevalence of mental disorders was 22.4% among families with one parent or carer, and 11.8% in families with two parents or carers; the prevalence of mental disorders was 10.5% in families with annual household income of $130,000 or more per year, compared with 20.5% in families with household income less than $52,000 per year; and the prevalence of mental disorders was 29.6% in families with a sole carer not in employment, 21.3% in two parent families with both carers not in employment.

Previous research has demonstrated that socio-demographic factors are also associated with attendance at school, and academic performance. It is possible that the higher rate of absence from school in students with mental disorders could be attributed to the higher rate of mental disorders in disadvantaged families, and the higher rate of absence associated with those disadvantages. To investigate if this was the case, multiple linear regression modelling was undertaken. The purpose of this analysis was to calculate the difference in days absent from school in students with mental disorders while simultaneously accounting for the socio-demographic characteristics of the students and their families.

Figure 6-4-1: Average days absent from school, by mental disorder status, school ICSEA and Year in school
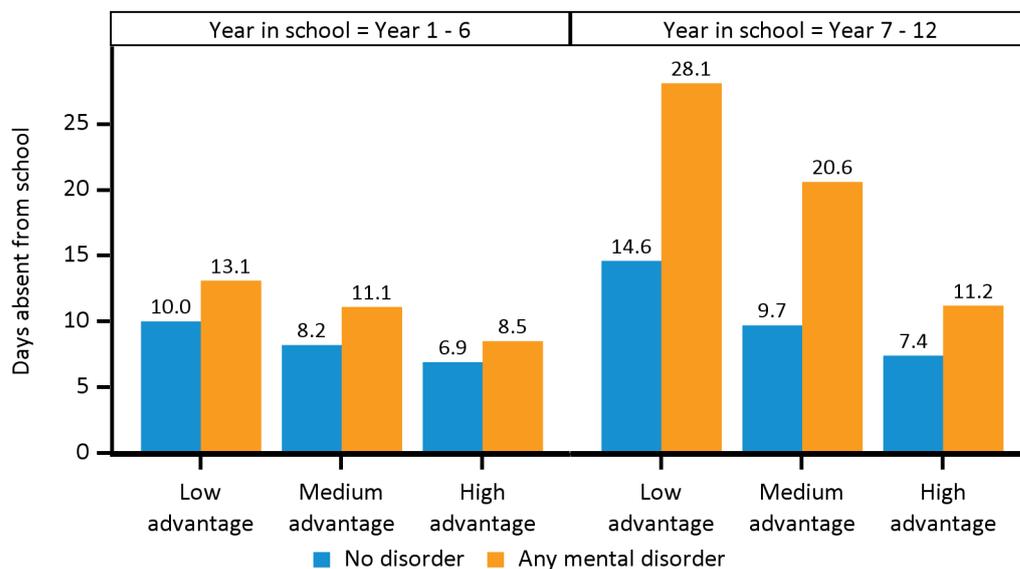
Table 6-4-1 shows the results of two regression models estimating the impact of mental disorders after accounting for other socio-demographic characteristics. Separate models were fitted for students in Years 1-6 and in Years 7-12. The effect estimates shown are the estimated increase in average number of days absent from school associated with that factor after adjusting for all other factors included in the model. For instance, among Year 7-12 students, average days absent was 3.2 days higher in students living in families with annual household income less than $52,000 per year, compared with families with annual household income of $130,000 per year or greater. The models fitted adjust for household income, family blending, SEIFA and remoteness. In addition, the models adjusted for mental disorders of the primary carer as measured using the Kessler 10 measure of psychological distress (K10). The effect of parental labour force status, parental alcohol consumption and family functioning were also tested, but these variables were not found to be independently associated with increased absence from school after accounting for the other variables in the model, and were eliminated from the final models.

These models show that average days absent from school were higher in families with low household income, lone parent families and in families living in areas in the bottom quintile of the Index of Relative Socioeconomic Disadvantage (IRSD). Nevertheless, after accounting for these factors, and parental mental disorders, students with mental disorders had higher average absences from school.

In Years 1-6, major depressive disorder was associated with an additional 3.8 days absent from school, and anxiety disorders were associated with an addition 4.8 days absent from

school. In Years 7-12, ADHD was associated with an additional 4.6 days absent from school, major depressive disorder was associated with an additional 5.5 days absent from school, and anxiety disorders were associated with an additional 9.5 days absent from school. In addition oppositional problem behaviours were associated with an increase of 2.2 days absent from school in Years 1-6 and 4.9 days absent from school in Years 7-12.

The rate of absence associated with a mental disorder was reduced once other significant factors were accounted for. This indicates that some of the higher rates of absence among students with mental disorders can be attributed to other forms of disadvantage that are experienced by these students and their families. However, the effect of mental disorders on absence rates, particularly in Years 7-12, is comparable to or larger than the effect due to measures of socio-economic disadvantage such as IRSD, household income and family blending.

In addition, where the parent or carer was experiencing very high levels of psychological distress (which is strongly correlated with serious mental disorder), average days absent were significantly higher—6.6 days in Years 1-6 and 5.8 days in Years 7-12. There is a known familial and genetic component to the prevalence of mental disorders, and these results suggest that part of the higher rates of absence in students with mental disorders can be associated with the mental disorders of their primary carers.

Table 6-4-1: Multiple linear regression: Average days absent from school associated with mental disorders, demographic and socio-economic factors

Level	Years 1- 6		Years 7-12	
	Effect Estimate	95% CI	Effect Estimate	95% CI
Intercept	6.1		0.9	
Sex—				
Female	-0.1	(-1.0 – 0.7)	0.7	(-0.9 – 2.3)
Male		(Ref)		(Ref)
Age—	(a)			
12				(Ref)
13			1.2	(-5.0 – 7.5)
14			2.5	(-3.7 – 8.8)
15			3.1	(-3.2 – 9.3)
16			6.0	(-0.3 – 12.2)
17			8.5	(2.3 – 14.8)

Level	Years 1- 6		Years 7-12	
	Effect Estimate	95% CI	Effect Estimate	95% CI
Has ADHD—				
Yes	-1.3	(-2.9 – 0.2)	3.5	(-0.2 – 7.2)
No		(Ref)		(Ref)
Has conduct disorder—				
Yes	-0.9	(-4.1 – 1.8)	3.8	(-2.5 – 10.1)
No		(Ref)		(Ref)
Has major depressive disorder—				
Yes	3.8	(0.1 – 7.6)	4.8	(0.8 – 9.0)
No		(Ref)		(Ref)
Has anxiety disorder—				
Yes	4.4	(2.6 – 6.2)	8.6	(5.1 – 12.2)
No		(Ref)		(Ref)
Has oppositional problem behaviours—				
Yes	2.2	(0.2 – 4.2)	4.9	(1.0 – 8.9)
No		(Ref)		(Ref)
School ICSEA—				
Lowest quartile	1.7	(0.1 – 3.3)	5.3	(2.5 – 8.1)
Middle two quartiles	1.0	(-0.3 – 2.2)	1.7	(-0.6 – 4.0)
Highest quartile		(Ref)		(Ref)
Not known	1.9	(0.3 – 3.4)	5.5	(2.7 – 8.3)
Family Blending—				
Intact family		(Ref)		(Ref)
Step family	0.6	(-1.6 – 2.7)	1.4	(-2.3 – 5.1)
Blended family	1.7	(0.0 – 3.4)	0.7	(-2.5 – 3.9)
Lone parent family	2.5	(1.2 – 3.7)	4.4	(2.4 – 6.3)
Other family	-0.7	(-6.6 – 5.2)	-0.6	(-9.6 – 8.5)
Primary carer psychological distress (K10)—				
Low		(Ref)		(Ref)
Moderate	-0.1	(-1.2 – 1.1)	2.8	(0.7 – 4.9)
High	1.9	(0.3 – 3.5)	1.6	(-1.4 – 4.7)
Very High	6.6	(4.1 – 9.1)	5.6	(1.0 – 10.1)

Level	Years 1-6		Years 7-12	
	Effect Estimate	95% CI	Effect Estimate	95% CI
SEIFA Index of Relative Disadvantage—				
Lowest quintile (most disadvantaged)	1.2	(-0.4 – 2.8)	4.8	(1.9 – 7.7)
Second quintile	0.3	(-1.2 – 1.8)	1.5	(-1.2 – 4.1)
Third quintile	0.0	(-1.4 – 1.3)	2.5	(0.1 – 5.1)
Fourth quintile	0.0	(-1.3 – 1.3)	0.2	(-2.2 – 2.6)
Highest quintile (most advantaged)	(Ref)		(Ref)	
Remoteness—				
Major Cities of Australia	(Ref)		(Ref)	
Inner Regional Australia	0.3	(-0.8 – 1.3)	0.6	(-1.3 – 2.5)
Outer Regional Australia	0.0	(-1.4 – 1.4)	1.4	(-1.7 – 4.5)
Remote/Very Remote Australia	5.2	(1.9 – 8.4)	0.3	(-6.2 – 6.8)

(a)   No significant change in attendance was found by age among students in Years 1-6

6.5   Days absent due to symptoms of mental disorders

In addition to collecting information about total days absent from school, the survey also collected information about days absent due to mental disorders. If the primary carer reported symptoms of mental disorders in the DISC modules, they were also asked about the impact that those symptoms may have had on the child's functioning. This included asking the primary carer to report the number of days the child had been absent from school specifically due to the symptoms of mental disorders they had reported. Where the child met all the diagnostic criteria for one or more mental disorders, these reported days absent were used to indicate the number of days the child had been absent from school specifically due to symptoms of a mental disorder. Where the child did not meet diagnostic criteria for a mental disorder, they were assumed to have not been absent from school specifically due to symptoms of a mental disorder.

Figure 6-5-1: Average days absent from school over the school year due to symptoms of mental disorders, by type of mental disorder and Year in school
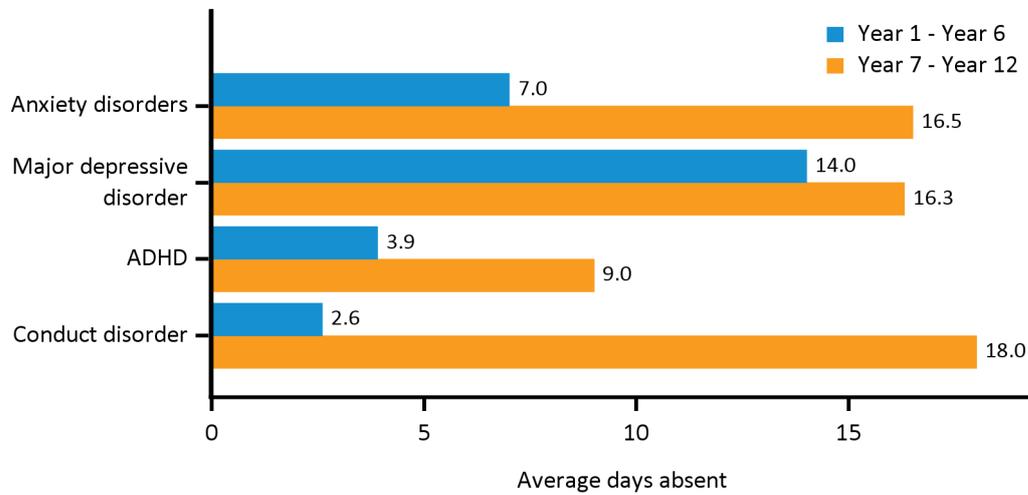
Comparing Figure 6-5-1 with Figure 6-4-1, it can be seen that the average days absent due to symptoms of mental disorders is comparable to the difference in average total days absent between students with and without mental disorders. For example among students in Years 1-6, students with anxiety disorders were absent on average 15.0 days, 6.8 days higher than for students with no mental disorder, while students with anxiety disorders were absent on average 7.0 days due to the symptoms of their mental disorders.

Table 6-5-1: Average days absent from school over the school year due to symptoms of mental disorders, for male students, by type of mental disorder and Year in school

Disorder	Kindergarten/ Pre-primary	Years 1-6	Years 7-10	Years 11-12
Social phobia	2.2	8.0	19.9	11.9
Separation anxiety	2.4	8.2	23.0	33.3
Generalised anxiety	1.4	15.2	25.8	28.3
Obsessive-compulsive	3.0	7.7	19.9	np
Any anxiety disorder	2.7	7.7	19.0	16.2
Major depressive disorder	np	17.8	14.8	20.1
ADHD	2.3	3.4	9.4	9.6
Conduct disorder	1.7	3.8	20.3	5.9
Oppositional problems	0.2	5.6	8.7	10.4
Any mental disorder	**2.2**	**4.5**	**10.5**	**13.1**

np   Not available for publication because of small cell size, but included in totals where applicable

Table 6-5-2: Average days absent from school over the school year due to symptoms of mental disorders, for female students, by type of mental disorder and Year in school

Disorder	Kindergarten/ Pre-primary	Years 1-6	Years 7-10	Years 11-12
Social phobia	np	11.7	13.6	11.9
Separation anxiety	4.6	6.9	18.2	23.7
Generalised anxiety	np	8.5	8.5	13.9
Obsessive-compulsive	np	np	np	13.1
Any anxiety disorder	3.8	6.3	13.9	16.6
Major depressive disorder	np	10.5	16.5	15.9
ADHD	0.5	5.1	7.1	8.4
Conduct disorder	3.4	0.6	24.4	7.9
Oppositional problems	0.0	3.6	6.8	3.8
Any mental disorder	**1.9**	**4.0**	**13.6**	**14.6**

np   Not available for publication because of small cell size, but included in totals where applicable

6.6 Summary

Mental disorders can be chronic and disabling. One measure of disability associated with ill health was the concept of days out of role - days where the person was unable to carry out their usual activities due to ill health. For students, a primary measure of days out of role was days absent from school. Students with mental disorders were absent from school for significantly more days per year than students without a mental disorder. This was particularly so in the secondary school years, where students with mental disorders were absent on average more than an additional 2 weeks per year.

While externalising disorders such as ADHD and conduct disorder can be disruptive to both school and home environments, internalising disorders, specifically anxiety and major depressive disorder, were associated with as high or higher rates of absence from school.

Both mental disorders and absences from school were higher in disadvantaged families. Multiple regression modelling demonstrated that mental disorders were associated with significantly increased absences from school after adjusting for a range of demographic factors, and after adjusting for mental disorders of the primary carer.

7 Connectedness, engagement and dislike of school

This chapter presents data provided by survey participants about their attitudes toward school. Children who attended school were asked questions about connectedness (how much students liked the people at school and the school environment), and engagement (how much students liked the learning environment, quality of teaching, and learning content). Students were also asked whether or not they liked going to school.

The connectedness questions were drawn from the School Connectedness Scale, developed by Resnick for the National Longitudinal Study of Adolescent Health. Questions about engagement were drawn from the School Life Instrument. The responses to these items were combined into scales measuring connectedness and engagement using factor analysis. Cut-points were then identified to classify both connectedness and engagement on three point scales: measured as good, fair, or poor.

7.1 Connectedness and engagement in school students

The majority of students aged 11-17 years were assessed as having "good" levels of connectedness (86.5%) and engagement (78.6%). Though a majority of students experienced good connectedness and engagement with school, approximately 1 in 5 did not experience good engagement, and approximately 1 in 7 did not experience good connectedness.

Table 7-1-1: Connectedness and engagement among 11-17 year-olds who attended school

	Connectedness (%)	Engagement (%)
Good	86.5	78.6
Fair	7.8	12.2
Poor	5.7	9.2

Good connectedness was higher in males (87.6%) than in females (85.3%), as was fair connectedness (8.1% in males and 7.6% in females), but poor connectedness was higher in females (7.1%) than males (4.1%, Table 7-1-2). This implies that males had slightly better

relationships with people and teachers at school, felt more like they were a part of the school, and enjoyed being at school more.

Table 7-1-2: Connectedness among 11-17 year-olds who attended school by sex

Connectedness	Male (%)	Female (%)
Good	87.6	85.3
Fair	8.1	7.6
Poor	4.4	7.1

Good engagement was higher in females (79%) than in males (78.1%, Table 7-1-3). Fair and poor engagement were both higher in males (12.5% and 9.4%) than in females (12.0% and 9.0%). This implies that females enjoyed classrooms and learning slightly more than males.

Table 7-1-3: Engagement among 11-17 year-olds who attended school by sex

Engagement	Male (%)	Female (%)
Good	78.1	79.0
Fair	12.5	12.0
Poor	9.4	9.0

7.2 Connectedness and engagement in students who sat NAPLAN

Connectedness and Engagement was assessed for 11-17 year-olds, including students who sat the Year 7 and Year 9 NAPLAN. Good connectedness decreased from 86.4% in Year 7 to 83.0% in Year 9. Good engagement also decreased, from 77.5% in Year 7, falling to 72.5% in Year 9. Despite decreasing attitudes towards school over a student's schooling, all years and genders had a majority of students with good levels of connectedness and engagement.

Table 7-2-1: Connectedness among students who attended school, by NAPLAN Year

Connectedness	Year 7 (%)	Year 9 (%)
Good	86.4	83.0
Fair	7.6	9.1
Poor	6.0	7.8

Table 7-2-2: Engagement among students who attended school, by NAPLAN Year

Engagement	Year 7 (%)	Year 9 (%)
Good	77.5	72.5
Fair	12.9	15.7
Poor	9.6	11.9

7.3   Connectedness and engagement by mental disorder

School connectedness was associated with prevalence of mental disorders. Because the design of the survey was cross-sectional it is not possible to determine if poor connectedness and engagement contributed to students' mental disorders or the reverse. Causality cannot be inferred from these associations. Of students who had good connectedness, 1 in 10 (10.9%) were found to have a mental disorder (Table 7-3-1). Of those with fair connectedness, 2 in 10 (21.2%) had a mental disorder, and for those with poor connectedness, almost 4 in 10 (36.3%) had a mental disorder.

Table 7-3-1: Prevalence of mental disorder among 11-17 year-olds who attended school, by level of connectedness

Disorder	Good (%)	Fair (%)	Poor (%)
Social phobia	1.8	7.1	13.5
Separation anxiety	2.6	3.6	7.2
Generalised anxiety	2.0	5.9	7.4
Obsessive-compulsive	0.6	np	np
Any anxiety disorder	5.2	10.9	19.4
Major depressive disorder	2.7	12.2	15.3
ADHD	5.4	7.4	11.2
Conduct disorder	1.5	np	5.2
Any mental disorder	**10.9**	**21.2**	**36.3**
No mental disorder	**89.1**	**78.8**	**63.7**

np   Not available for publication because of small cell size, but included in totals where applicable

Amongst students with good and fair engagement with school, 1 in 10 (11.4% and 13.5%, respectively) had a mental disorder (Table 7-3-2). Amongst poorly engaged students, 3 in 10 (27.9%) were found to have a mental disorder.

Table 7-3-2: Prevalence of mental disorder among 11-17 year-olds who attended school, by level of engagement

Disorder	Good (%)	Fair (%)	Poor (%)
Social phobia	2.0	3.4	9.7
Separation anxiety	2.5	4.2	5.2
Generalised anxiety	2.3	2.0	5.7
Obsessive-compulsive	0.6	np	np
Any anxiety disorder	5.3	7.0	15.3
Major depressive disorder	3.0	5.7	11.8
ADHD	5.6	3.7	11.0
Conduct disorder	1.5	np	4.6
Any mental disorder	**11.4**	**13.5**	**27.9**
No mental disorder	**88.6**	**86.5**	**72.1**

np   Not available for publication because of small cell size, but included in totals where applicable

Amongst those with a mental disorder, major depressive disorder, ADHD and social phobia, contributed the most to poor connectedness and engagement with school. Even though students with mental disorders contributed disproportionally more to those with poor connectedness and engagement than those with good connectedness and engagement, they were still the minority (36.3% to 63.7% for connectedness in Table 7-3-1, and 27.9% to 72.1% for engagement in Table 7-3-2).

Table 7-3-3: Connectedness among 11-17 year-olds who attended school, by mental disorder

Disorder	Good (%)	Fair (%)	Poor (%)
Social phobia	53.9	19.4	26.7
Separation anxiety	76.5	9.6	13.9
Generalised anxiety	65.9	17.9	16.2
Obsessive-compulsive	81.2	np	np
Any anxiety disorder	69.5	13.3	17.2
Major depressive disorder	56.0	22.9	21.0
ADHD	79.3	9.8	10.9
Conduct disorder	75.4	np	17.3
Any mental disorder	**71.6**	**12.6**	**15.8**
No mental disorder	**88.7**	**7.1**	**4.2**

np   Not available for publication because of small cell size, but included in totals where applicable

Amongst those with no mental disorders, 9 in 10 (88.7%) students had good connectedness, (Table 7-3-3) and 8 in 10 (80.2%) had good engagement (Table 7-3-4). For those with a mental disorder, 7 in 10 students (71.6% and 67.9%, respectively) had good engagement. Social phobia and major depressive disorder had the lowest proportions of good connectedness (53.9% and 56.0%, respectively), and of good engagement (54.5% and 57.0%, respectively).

Table 7-3-4: Engagement among 11-17 year-olds who attended school, by mental disorder

Disorder	Good (%)	Fair (%)	Poor (%)
Social phobia	54.5	14.4	31.1
Separation anxiety	66.3	17.6	16.1
Generalised anxiety	70.5	9.4	20.1
Obsessive-compulsive	72.6	np	np
Any anxiety disorder	64.8	13.4	21.8
Major depressive disorder	57.0	16.9	26.1
ADHD	75.1	7.7	17.2
Conduct disorder	69.1	np	24.7
Any mental disorder	**67.9**	**12.6**	**19.5**
No mental disorder	**80.2**	**12.2**	**7.6**

np   Not available for publication because of small cell size, but included in totals where applicable

7.4 Connectedness and engagement and risk-taking behaviours

Table 7-4-1: Connectedness of students aged 13-17 years who used substances

Substance	Good (%)	Fair (%)	Poor (%)
Average student	86.5	7.8	5.7
Ever smoked at least once a week	63.7	13.6	22.6
Smoked in last 30 days	58.5	14.5	27.0
Ever drunk alcohol	78.1	11.0	10.9
Drunk alcohol in last 30 days	74.9	13.7	11.4
More than 4 drinks in a row in last 30 days	73.1	14.2	12.7
Ever used cannabis	70.2	14.6	15.2
Used cannabis in last 30 days	65.1	14.6	20.3
Ever used other drugs	65.8	15.1	19.1
Used other drugs in last 30 days	59.7	27.0	13.3

Students who use substances had lower levels of connectedness compared to the "average student" – the average value for all students (including those who have used substances). Despite this, the proportion of students with good connectedness was still more than 50%, for all substance users (Table 7-4-1). The lowest was amongst those who have smoked in the last 30 days (58.5%), and those who had used another drug than alcohol, nicotine, or cannabis

in the last 30 days (59.7%). The highest rates of poor connectedness were for those who had smoked in the last 30 days (27%), or those who had ever smoked at least once a week (22.6%).

The rates of good connectedness were lower for students who self-harmed compared to the average student (Table 7-4-2). They were similar to certain categories of substance users, but had a higher share of students with poor connectedness. The lowest rates of good connectedness amongst those with self-harming behaviour were for those who had ever attempted suicide (52.7%), and those who had self-harmed 4 or more times ever in their life (55.7%). These rates were still more than 50.0%, indicating that while students who self-harmed were more likely to have poor connectedness than an average peer, the majority of those who engaged in self-harming behaviours had good connectedness to their school. The highest rates of poor connectedness were amongst the same two groups: those who had ever attempted suicide (33.4%), and those who had self-harmed four or more times in their life (29.7%).

Table 7-4-2: Connectedness of students aged 12-17 years who engaged in self-harm or suicidal behaviours

Self-harm	Good (%)	Fair (%)	Poor (%)
Average student	86.5	7.8	5.7
Self-harm ever	64.2	14.3	21.5
Self-harm 4 or more times ever	55.7	14.7	29.7
Self-harm in previous 12 months	62.6	15.6	21.9
Suicide ideation in previous 12 months	65.2	12.8	22.1
Suicide plan in previous 12 months	62.1	12.4	25.5
Suicide attempt ever	52.7	13.9	33.4

Good engagement was lower amongst substance users compared to the average student (Table 7-4-3). It was also lower than the rates of connectedness amongst substance users. It is also important to note that the rate of engagement for certain groups of substance users was less than 50.0%. For example, the lowest rates amongst substance users were those who smoked in the last 30 days (43.5%) and those who used cannabis in the last 30 days (43.9%). The highest rates of poor engagement were amongst the same groups of users (30.8% and 30.5%, respectively). People who used other drugs also had rates of under 50.0%. Students who used alcohol, either recently or at any time in their life, were better engaged than other substance users.

Table 7-4-3: Engagement of students aged 13-17 years who used substances

Substance	Good (%)	Fair (%)	Poor (%)
Average student	78.6	12.2	9.2
Ever smoked at least once a week	46.9	23.6	29.5
Smoked in last 30 days	43.5	25.7	30.8
Ever drunk alcohol	63.3	17.8	18.9
Drunk alcohol in last 30 days	58.7	18.4	22.9
More than 4 drinks in a row in last 30 days	57.5	17.5	25.0
Ever used cannabis	54.2	19.0	26.9
Used cannabis in last 30 days	43.9	25.5	30.5
Ever used other drugs	47.2	24.7	28.1
Used other drugs in last 30 days	48.3	31.4	20.4

Engagement rates were slightly higher in students who self-harmed, compared to students who used substances (excluding alcohol). Levels of good engagement dropped below 50.0% for students who had self-harmed four or more times ever (49.6%), and students who had made a suicide plan in the previous 12 months (49.8%). Poor engagement was highest among students who had self-harmed four or more times (28.7%), and those who had attempted suicide (25.7%).

Table 7-4-4: Engagement of students aged 12-17 years who engaged in self-harm or suicidal behaviours

Self-harm	Good (%)	Fair (%)	Poor (%)
Average student	78.6	12.2	9.2
Self-harm ever	55.8	21.0	23.2
Self-harm 4 or more times ever	49.6	21.7	28.7
Self-harm in previous 12 months	52.8	22.4	24.7
Suicide ideation in previous 12 months	53.9	23.8	22.3
Suicide plan in previous 12 months	49.8	25.0	25.2
Suicide attempt ever	52.1	22.3	25.7

7.5 Dislike of school by mental disorder

Young people aged 11-17 years were asked to rate how they feel about going to school on a scale from very much, quite a bit, neither like or dislike, do not like school very much, to I hate school. Parents were asked to rate how much their child likes school on a scale from very much likes, somewhat likes, neither likes or dislikes, somewhat dislikes, very much dislikes school. For the purposes of this section young people who reported they do not like school very much or that they hate school were classified as disliking school, and children whose parents reported they somewhat or very much disliked school were classified as disliking school.

Disliking school as reported by a parent was more strongly associated with the prevalence of a mental disorder than self-report from the student. Of students whose primary carer said they disliked school, 41.2% had a mental disorder (Table 7-5-2), compared to 26.3% of 11-17 year-old students who reported disliking school (Table 7-5-1).

Table 7-5-1: Proportions of students aged 11-17 years, with and without a mental disorder, by whether or not the student disliked school as reported by the student

Disorder	Dislikes school	
	No (%)	Yes (%)
Social phobia	2.5	9.2
Separation anxiety	3.0	4.9
Generalised anxiety	2.6	5.1
Obsessive-compulsive	0.7	np
Any anxiety disorder	5.9	13.9
Major depressive disorder	4.5	11.4
ADHD	5.6	8.4
Conduct disorder	2.0	2.2
Any mental disorder	**12.6**	**26.3**
No mental disorder	**87.4**	**73.7**

np   Not available for publication because of small cell size, but included in totals where applicable

Table 7-5-2: Proportions of students aged 11-17 years, with and without a mental disorder, by whether or not the student disliked school as reported by the parent or carer of the student

Disorder	Dislikes school	
	No (%)	Yes (%)
Social phobia	1.7	10.2
Separation anxiety	3.8	10.2
Generalised anxiety	1.7	8.9
Obsessive-compulsive	0.7	2.6
Any anxiety disorder	5.8	22.0
Major depressive disorder	2.2	10.1
ADHD	6.4	20.3
Conduct disorder	1.6	8.2
Oppositional problems	4.3	14.7
Any mental disorder	**11.8**	**41.2**
No mental disorder	**88.2**	**58.8**

Of students with no mental disorder, 1 in 10 (9.1%) disliked school (as reported by themselves, Table 7-5-3), and 1 in 20 (4.9%) were reported by their parent or carer as disliking school (Table 7-5-4). Among students with social phobia 30.5% disliked school, and 23.0% of those with major depressive disorder disliked school. Those with the highest likelihood of being perceived as disliking school by their parents were social phobia (31.5%), and generalised anxiety (29.1%).

Table 7-5-3: Proportion of students aged 11-17 years who liked and disliked school, as reported by the student, by mental disorder

Disorder	Dislikes school	
	No (%)	Yes (%)
Social phobia	69.5	30.5
Separation anxiety	83.7	16.3
Generalised anxiety	80.9	19.1
Obsessive-compulsive	79.6	20.4
Any anxiety disorder	78.2	21.8
Major depressive disorder	77.0	23.0
ADHD	84.9	15.1
Conduct disorder	88.5	11.5
Any mental disorder	**80.2**	**19.8**
No mental disorder	**90.9**	**9.1**

Table 7-5-4: Proportion of students, 11-17 years-old, who liked and disliked school, as reported by the parent or carer of the student, by mental disorder

Disorder	Dislikes school	
	No (%)	Yes (%)
Social phobia	68.5	31.5
Separation anxiety	82.9	17.1
Generalised anxiety	70.9	29.1
Obsessive-compulsive	77.3	22.7
Any anxiety disorder	77.3	22.7
Major depressive disorder	74.1	25.9
ADHD	80.4	19.6
Conduct disorder	71.9	28.1
Oppositional problems	79.4	20.6
Any mental disorder	**78.9**	**21.1**
No mental disorder	**95.1**	**4.9**

7.6　Summary

Connectedness with school and engagement with schooling are known to be important predictors of academic performance. In *Young Minds Matter*, connectedness and engagement were assessed for young people aged 11-17 years based on their self-reports. For all mental disorders assessed in the survey, higher proportions of young people with a mental disorder had poor connectedness with school and poor engagement with schooling.

As well as being predictors of academic performance, strong connectedness with school and positive engagement with schooling are important to students' sense of emotional wellbeing. One third of students with poor connectedness and 30% of students with poor engagement have a mental disorder. Wellbeing and connectedness and engagement are strongly linked.

Students with mental disorders are more likely to engage in risky behaviours such as smoking, binge drinking and other drug use. Higher proportions of students with poor connectedness or engagement took part in these risky behaviours. Students with a mental disorder, in particular major depressive disorder, are more likely to self-harm, contemplate suicide or attempt suicide. Students who self-harm or have suicidal ideation or behaviours were also more likely to have poor connectedness with school and engagement with schooling.

8 Discussion of results

8.1 Introduction

Young Minds Matter was conducted in 2013-14 and surveyed 6,310 families with children and adolescents aged 4-17 years. Of these families, 5,051 gave consent to access their NAPLAN results for an analysis of children's mental disorders in relation to educational outcomes. Testing authorities gave scaled scores, bands and categories (below, at, or above the National Minimum Standard). Results were obtained for each student for as many years as were available across all NAPLAN years: Years 3, 5, 7 and 9. NAPLAN results were obtained for 4,741 students, with 594 students having completed NAPLAN in one year, 1,981 in two testing years, 1,388 in three testing years, and 778 in four testing years.

To provide context to the educational achievement data we have reported the prevalence of mental disorders in students who attend school and in students in various socio-economic categories, as well as the attendance of students at school, and attitudes towards school including connectedness, engagement, and whether students like or dislike school.

Key questions that were prioritised by the analysis were:

- How many students with low connectedness or engagement at school have mental disorders?
- Is a current mental disorder associated with poorer academic outcomes? How does this vary by type of mental disorder?
- How much of the association between mental disorders and academic outcomes can be attributed to differences in attendance, and to socio-economic factors that are associated with mental disorders?
- Does onset of mental disorder alter trajectories of academic achievement?
- Do students receiving services for mental disorders either within schools or within the health sector have different trajectories of academic achievement?

8.2   Prevalence of mental disorders and risk-taking behaviours in schools

Mental disorders affect 1 in 7 school students, with slightly higher prevalence in males than females. ADHD is the most common mental disorder in Australian school students, and is more common in males than females. ADHD affected 1 in 10 males, while affecting less than 1 in 20 females. After ADHD, the most prevalent mental disorders affecting students were anxiety disorders, and oppositional problem behaviours. Major depressive disorder was uncommon in children aged 4-11 years, but was more common in adolescents aged 12-17 years, affecting almost 1 in 20 adolescents, and was also the most common mental disorder in older adolescent girls.

ADHD and separation anxiety were more common in the primary school years and their prevalence decreased in the secondary school years, while social phobia, generalised anxiety disorder, and major depressive disorder became more common in the secondary school years.

The prevalence of mental disorders was higher in students living in lower socio-economic conditions, including: lower household income; living in one parent families; living in families where the highest level of education of parents or carers was Year 10 or below; living in families where one or more parents or carers were unemployed; living in remote or rural areas instead of urban or suburban areas; living in a family with poor family functioning; or attending schools with a lower ICSEA score.

Alcohol consumption was the most common substance use amongst students, with 1 in 3 having ever drunk alcohol. Cigarette smoking and cannabis use were the next most common substance use. Self-harming behaviours were reported in 1 in 10 students, with suicide attempts occurring in 1 in 30 students, at some point during their lifetime.

8.3   Academic outcomes by mental disorder

Students with mental disorders scored lower than students with no mental disorder in all test domains and Year levels. Their band values were also lower, and hence the proportion of students who are above the national minimum standard was also lower. Students with an anxiety disorder, and major depressive disorder scored lower than students with no mental disorder, but better than those with ADHD, oppositional problem behaviours, and conduct disorder. Students with ADHD or conduct disorder had the lowest test scores, with the proportion of students above the national minimum standard less than 50% for some domains and Year levels.

8.4 Academic trajectories and mental disorders

Students with mental disorders scored lower than students with no mental disorder in every Year level. The difference between test scores of students who have, and those who do not have, a mental disorder, remained consistent from year to year. Variation exists for certain students, depending on the specific type of mental disorder they have, for example the test score of students with ADHD and conduct disorder falls further behind students with no mental disorder, from year to year. The fastest period of test score growth is in earlier years, moving from Year 3 to Year 5, after this, test score growth slows. Increases in test score values at higher academic Year levels requires more effort. Because of this, students with mental disorders may benefit from increased support in earlier years. However, this is not to detract from the fact that certain students still require support in later years, owing to their more severe under-performance in later years, e.g. students with ADHD or conduct disorder.

Recognising that rate of growth in academic achievement typically slows as achievement levels increase, NAPLAN scores can also be converted into an equivalent year level. This is an alternative measure that can be used to give an indication of the average number of years schooling that is typically required for students to make a certain level of progress. Students with no mental disorder consistently perform ahead of students with mental disorders at each Year level. The average number of years that a student with a mental disorder is behind a student with no mental disorder increased from Year 3 to Year 9. Students with a mental disorder in Year 3 were 7 to 11 months behind students with no mental disorder, but by Year 9 this value was 1.5 - 2.8 years behind students with no mental disorder.

Students with major depressive disorder were similarly affected in Year 3, but by Year 9 were 0.4 - 1.5 years behind students who did not have a mental disorder. Students with anxiety disorder in Year 3 were 0.5 - 0.6 years behind, and 1.3 - 2.3 years behind in Year 9. For students with ADHD these values were 0.8 - 1.2 years behind in Year 3, and 2.6 - 5.0 years behind in Year 9. For students with oppositional problem behaviours this was 0.3 - 0.6 years behind in Year 3, and 1.5 - 2.4 years behind in Year 9. For conduct disorder, this was 0.8 - 1.6 years behind in Year 3, and 2.8 - 5.5 years behind in Year 9.

8.5 Academic trajectories, mental disorders and service use

The test scores of students with a mental disorder were consistently lower than those of students who did not have a mental disorder, across all NAPLAN years. Students with more severe mental disorders were more likely to access support services for their mental disorder. As such students who used a service were often achieving lower test scores compared to those who did not use a service at a given point in time. Over time students who did not access support services fell further behind when compared to students receiving support services. On average, students who used services improved over time compared to students with a mental disorder who did not receive support services, but did not fully overcome the differences in academic performance due to their mental disorder compared to students who did not have a mental disorder.

The most utilised services were health services, and school services. On average, students who sought out school services were further behind compared to those who sought out health services in Year 3. Students who received school services in Year 3 made greater gains than those who used health services, however they were still further behind those who used health services by Year 9. The disparities in academic performance of students who did not use services were largely unchanged over time, i.e. they did not manage to improve relative to students with no mental disorder.

For students with major depressive disorder, students who used services were further behind initially, made greater gains over time, but were still behind those who did not use services. For students with anxiety disorder the difference between those who did and did not use services was minimal. For students with ADHD, students who sought service use scored lower initially, improved slightly over time, and overtook those who did not use services by Year 9. The same was true for those with oppositional problem behaviours.

8.6 Attendance

Students with mental disorders were absent from school for significantly more days per year than students without a mental disorder. This was particularly so in the secondary school years. In Years 1-6 students with a mental disorder missed an average 11.8 days per year compared with 8.2 days per year for students without a mental disorder. In Years 7-12 students with a mental disorder missed an average 23.8 days per year compared with 11.0 days per year for students without a mental disorder. All mental disorders were associated with higher

rates of absence from school. Students with ADHD missed an average 10.5 days in Years 1-6 and 22.0 days in Years 7-12. Students with anxiety disorders, major depressive disorder and conduct disorder had similar rates of absence—27.2 days, 26.3 days and 27.8 days respectively in Years 7-12. For absences specifically attributed to symptoms of mental disorders, on average students with mental disorders missed 4.3 days of school in Years 1-6 and 12.3 days of school in Years 7-12 due to symptoms of mental disorders.

Both mental disorders and absences from school were higher in disadvantaged families. Multiple regression modelling demonstrated that mental disorders were associated with significantly increased absences from school after adjusting for a range of demographic factors, and after adjusting for the mental disorder of the primary carer. For instance, in a model that adjusted for both student mental disorder status and school ICSEA, Year 7-12 students in low advantage schools were absent an average 7 days per year more than students in high advantage schools, while students with mental disorders were absent an additional 11 days per year. In a model that adjusted for mental disorder status of the student, primary carer mental disorder, school ICSEA, household index of relative socio-economic disadvantage (IRSED), family type and remoteness, students with mental disorder in Years 7-12 were absent on average 9.8 days more than students without a mental disorder, while students in the bottom quintile of IRSED were absent on average 4.8 days more than students in the top quintile. These results suggest that presence of a mental disorder and low socio-economic status are both independently associated with greater absence from school.

8.7   Connectedness, engagement and dislike of school

Connectedness and engagement was assessed using scales administered to adolescents aged 11-17 years. Most students aged 11-17 years had good connectedness (how much students liked the people at school and the school environment) and engagement (how much students liked the learning environment, quality of teaching, and learning content) with school. Approximately 1 in 7 of all students, including those with or without a mental disorder, did not experience good connectedness with school, and approximately 1 in 5 did not experience good engagement at school. Connectedness was better in males, and engagement was better in females, but only by 2.3 and 0.9 percentage points respectively. Connectedness and engagement were lower in older age groups.

Poor connectedness and poor engagement were more common in students with mental disorders, as well as in students who have self-harmed or who have suicidal thoughts or behaviours. For students who did not have a mental disorder only 1 in 9 (11.3%) students did

not experience good connectedness with their school. Similarly, approximately 1 in 5 (19.8%) students did not experience good engagement if they did not have a mental disorder. For students with a mental disorder, more than 1 in 4 (28.4%) students did not experience good connectedness, and approximately 1 in 6 (15.8%) experienced poor connectedness with their school. Students with a mental disorder had lower engagement, with almost 1 in 3 (32.1%) students not experiencing good engagement, and approximately 1 in 5 (19.5%) experiencing poor engagement.

The proportion of well-connected and engaged students was lower for students with mental disorders, and was lowest for students with social phobia and major depressive disorder. The proportion of well-connected and engaged students in each category of substance use was lowest for cigarette smokers and students who used drugs other than nicotine, cannabis, or alcohol (e.g. methamphetamines, ecstasy, cocaine, etc.). The proportion of students with good connectedness who reported engaging in self-harm or suicidal behaviours was lowest for those who had self-harmed 4 or more times and for those who had attempted suicide (55.7% and 52.7%, respectively). The level of engagement dropped below 50.0% for those students who smoked cigarettes, used other drugs, used cannabis in the 30 days prior to the survey, had self-harmed 4 or more times in their lives, or had made a suicide plan in the 12 months prior to the survey.

Twice as many students reported that they disliked school if they had a mental disorder compared to those who did not have a mental disorder (2 in 10 compared with 1 in 10). Among students who disliked school 4 in 10 had a mental disorder. In comparison, of students whose parent or carer reported that they liked school, only 1 in 10 had a mental disorder.

8.8   Academic outcomes by mental disorder and socio-economic factors

The combination of mental disorder and socio-economic disadvantage compounds the impact on academic achievement. Mental disorders are more common in students living in families experiencing various forms of socio-economic disadvantage including low household income, parental unemployment and family breakup. In general, students from lower socio-economic status backgrounds had lower test scores, for both students with and without mental disorders. Similarly, students with a mental disorder generally had lower test scores than students without a mental disorder, irrespective of their socio-economic status. In combination both mental disorders, and lower socio-economic status were associated with poorer academic performance.

Data was gathered on several socio-economic variables including family type, household income, level of education and labour force status of the parent or carer, area of residence, level of family functioning, and socio-educational advantage or school ICSEA value. In general, students with no mental disorder in better socio-economic situations scored the highest, and students with a mental disorder and in lower socio-economic situations scored the lowest.

For family type, students performed best in two parent or carer families. Within two parent or carer families, those with their original biological parents performed best. This was the same for students with and without a mental disorder. There was some slight variation in this, depending on the specific mental disorder the student had. For example, students in Year 7 and Year 9 with social phobia, students from blended families performed better than those from original families. There were inconsistent trends in test results for students with ADHD, by family type.

For household income, students with no mental disorder performed better in higher-income households than lower income households. For students with a mental disorder this occurred in certain disorders for certain Year levels and domains. For example, students with major depressive disorder tended to perform best in middle-income earning families. This was the same for anxiety disorders. For students with ADHD in Year 7 and 9, most performed better in higher income families, but for younger students the results were inconclusive. For students with oppositional problem behaviours or conduct disorder, students in Years 3 and 5 performed better in higher income families for most domains. For Years 7 and 9 they tended to perform better in middle income families.

For parent or carer education, students with no mental disorder performed better in families where their parents or carers had higher education. This was the same for students with a mental disorder, although some variation occurred depending on the specific disorder. For example, in students with ADHD, oppositional problem behaviours or conduct disorder, the link between academic performance and parental or carer education was not consistent across domains and Year levels.

For parent or carer labour force status, students with no mental disorder performed better in families where all parents or carers are employed. For students with a mental disorder, results varied by the specific disorder. For example, results for students with major depressive disorder indicated that parent or carer employment did not align with better performance in test scores in two parent or carer families, but did in one parent or carer families. For oppositional problem behaviours, parent or carer employment did not correspond to a higher performing test score for most domains and Year levels, except in single parent or carer families.

For area of residence, students performed better in greater capital city areas whether or not they had a mental disorder. Students with certain disorders tended to perform better in areas outside of capital cities, primarily those with major depressive disorder, and older students with certain anxiety disorders. When analysing by area of remoteness, similar trends were evident, with most students performing better in major cities.

For every increase in level of family functioning, a corresponding increase in average test score was not always observed for students, regardless of whether or not they had a mental disorder. Students with no mental disorder who lived in a family with a very good level of functioning had the highest test scores for most domains and Year levels. Conversely, and on average, those students with a mental disorder did not perform best in families with a very good level of family functioning. There were some exceptions to this, depending on the specific mental disorder, Year level, and test domain.

Students who attended a school with a higher ICSEA value tended to have higher NAPLAN scores. This was true for students with or without a mental disorder. Some variation occurred for students with specific disorders for certain Year levels and domains.

8.9 Summary

Mental disorders are common in Australian school students, with approximately 1 in 7 students experiencing a mental disorder in a 12-month period. Mental disorders have substantial impacts on educational outcomes. On average, students with mental disorders have poorer school attendance, lower levels of connectedness and engagement with school, are less likely to like going to school, and perform more poorly on NAPLAN. Over time the gap in achievement between students with and without mental disorders, expressed in equivalent number of years of schooling, grows, with students with mental disorders falling on average several years behind their peers by Year 9.

The survey was not designed to identify whether mental disorders cause poor academic outcomes or whether poor academic outcomes are a risk factor for developing mental disorders. Indeed it is quite likely that for some students both occur. A mental disorder could impact children's development causing students to feel less connected with poorer academic achievement which in turn exacerbates feelings of anxiety or depression, or problem behaviours.

Regardless of the direction of any causal association, it is clear that when mental disorders are persistent and untreated, this is likely to disrupt children's development. Research into child development and how schools can best support children's academic outcomes consistently shows that helping children get off to a good start early, and maintaining their developmental trajectory is more successful and effective than trying to bridge gaps after children fall behind. For instance, there is a substantial body of research into how to most effectively support children from disadvantaged backgrounds to achieve at school, and early intervention is now seen as critical to bridging the performance gap for students from disadvantaged backgrounds.

Mental disorders are one of the most common chronic health conditions affecting children and young people. It is critically important to detect and treat mental disorders as early as possible in order to reduce the impact that they can have on children during key developmental stages in their lives. Where children with persistent mental disorders fall behind over the course of their progression through school, this can impact the course of their adult life, even if the mental disorder does not persist into adulthood. Where children's progress at school is affected, it can result in children failing to achieve their full potential in life, and limiting their choices in their adult lives.

Analyses presented in this report have demonstrated the associations between various mental disorders and connectedness to and engagement with school. Although it is not possible to attribute causality, it does seem that there would be value in extending the use by schools of instruments that survey attitudes such as connectedness and engagement. A number of education authorities provide these tools to schools and the results can help schools to monitor the environments they provide so that they are as supportive and inclusive as possible.

Most teachers are not trained mental health professionals and cannot be expected to diagnose and treat mental disorders in their students. However, understanding typical child development and the sorts of emotional and behavioural problems that students may experience during their development is a core part of the curriculum in teacher education. Improving mental health literacy among teachers and school support staff, can help teachers to know when it is appropriate to seek help for students who may be experiencing difficulties. Schools also have a role to play in helping students develop mental health literacy, both to help students know when it is appropriate to seek help for issues they might be experiencing, and to help break down the stigma that is associated with mental disorders. While *Young Minds Matter* data has shown that more children and adolescents, and their families, with mental disorders are seeking help than in previous years, the data show there continue to be

substantial gaps, with help less likely to be sought when mental disorders are less severe, and delays continuing to persist in seeking help.

Another issue of concern identified by *Young Minds Matter* is the high rates of distress, major depressive disorder, self-harming and suicidal behaviours in older adolescents, particularly 16-17 year-old girls. Hospital statistics show an increase in hospital presentations related to self-harm in young people, highlighting this as an issue of considerable concern particularly in secondary schools.

9   Discussion of implications

9.1   What are the policy implications of the results from this study?

Results from the study show that children and adolescents with mental disorders are less connected and engaged with their schooling, attend school less often, and have poorer academic outcomes than their peers. Over time, students with mental disorders fall further behind such that by Year 9 they are, on average, several years behind their peers (ranging from 1.5 years for reading to 2.8 years for writing). These findings highlight the extent to which good student mental health is an essential prerequisite for the successful achievement of educational goals in both primary and secondary school. Improving the mental health and wellbeing of students in Australia at a population level is likely to be one of the most important prerequisites to improving the academic performance of Australian students.

Access to support services is improving, but prevalence of mental disorders is not decreasing

Of further concern is the evidence from the two national child and adolescent mental health surveys conducted in 1998 and 2013-14 (*Young Minds Matter*) that even though mental health literacy is improving, and more children and adolescents with mental disorders are accessing support and treatment services, there has been little change in the prevalence of mental disorders among Australian students during the last 15 years. Mental disorders are common in school students, affecting approximately 14% of all students, and have significant adverse impacts on their lives. Mental disorders remain the leading cause of disability in children aged under 15 years, as measured via years lived with disability or disability adjusted life years (Institute for Health Metrics and Evaluation, 2013).

Early childhood interventions need improvement

These findings have a number of policy implications. First, findings from the study highlight the need to improve the effectiveness of interventions designed to reduce the prevalence and severity of mental disorders during early childhood. This is important because many mental disorders, including ADHD, conduct disorder and anxiety disorders start early in life and persist for many years. Many students with mental disorders in the present study were already below

their peers in academic achievement in Year 3 and then fell further behind as they progressed through school.

Interventions for students experiencing socio-economic disadvantage need improvement

Second, there is a need to improve the effectiveness of interventions aimed at reducing the prevalence of mental disorders in children experiencing socio-economic disadvantage. Mental disorders are more common in children whose families experience socio-economic disadvantage. Furthermore, results from the study show that mental disorders and socio-economic disadvantage interact with each other to compound the harm associated with each in school attendance and academic performance. In addition, teaching wellbeing and life support skills at school has been shown to help children cope with pressures from life including adverse socio-economic circumstances, learn positive coping strategies and gravitate less towards anti-social or self-harming behaviour, and substance use (Bosma & Hosman 1991, Connell, Turner & Mason 1985, Gold et al 1991, Rutter 1982).

Improved management of disorders during adolescence, including increasing engagement with services

Third, there is a need to improve both the effectiveness of programs designed to help adolescents and the extent to which adolescents engage with such programs. The results show that service use improved academic performance in students with a mental disorder on average (depending on the specific disorder type or service used). If the rate of service use amongst students was increased this may assist more students to perform better at school. This may be particularly important for students with ADHD, who had some of the lowest test scores compared to any other mental disorder, yet had one of the lowest rates of service use.

Implementing regular evaluation and continual improvement for mental health programs

Fourth, schools and education systems currently offer a large number of programs and resources targeted at helping students with mental disorders. However, few of these programs have been rigorously evaluated and there is little evidence of iterative improvement in the effectiveness of programs based on a strategy of 'plan, do, check, adjust' cycles aimed at continual improvement in program effectiveness. Instead, the vast majority of funding is spent on program delivery with little support provided for program evaluation. As there continue to

be significant gaps in attendance, engagement and performance at school for students with mental disorders, it is important to regularly monitor the delivery and uptake of programs and services, and their impact, both to identify ways to improve the reach of programs and services and to improve their effectiveness. The lack of any recent reduction in the prevalence of child and adolescent mental disorders or evidence that educational outcomes are improving, highlights the need to invest in improving the effectiveness of programs and services rather than accepting the status quo.

9.2   What services currently exist to help children and adolescents with mental disorders in Australia?

A number of resources and strategies already exist in the education and health sectors to support students with mental disorders in schools. These include:

- Child and Adolescent Mental Health Service, or Child and Youth Mental Health Service (a government initiative in each state or territory to provide mental health support to young children through clinic-based services)
- Reach Out Australia (an online mental health organisation helping to provide support for children and parents)
- headspace (an organisation that provides mental health support for people 12-25 years old, including online and telephone services, and clinics)
- KidsMatter (a framework to support young children's mental health)
- MindMatters (an initiative to support mental health of children in secondary schools)

And resources and strategies to inform policy and practice, such as:

- Australian Child Wellbeing Project (a national survey of wellbeing amongst children of 8-14 years of age)
- Mission Australia Annual Youth Survey (a yearly survey of Australians of 15-19 years of age asking them about issues they find relevant)
- Foundation for Young Australians (an organisation committed to providing multiple studies and programs at a national level, providing support for children)
- The Student Wellbeing Hub at www.studentwellbeinghub.edu.au is the Australian Government's one-stop-shop for information and resources on student wellbeing for the whole school community including students and their parents
- Other national frameworks and strategies including: the National Framework for Health Promoting Schools, National Framework for Values Education, Mental Health First Aid

Australia, National Safe Schools Framework, National Suicide Prevention Strategy, and National Action Plan on Mental Health.

What is the role of KidsMatter and MindMatters in Australia?

There are currently 1422 secondary schools (MindMatters 2017) out of 2719 secondary or combined primary secondary (Australian Bureau of Statistics 2017) schools participating in MindMatters, representing 52% of schools. KidsMatter has reached 3145 schools out of 7590 total schools with primary enrolments in Australia (Vanna Garrick, pers. comm., 21 April 2017). This represents approximately 41% of schools.

A key issue for these programs is the lack of consistency of implementation across schools, owing to the fact that schools are often left with the responsibility of implementing their own plans. For instance there has only been partial take-up of the KidsMatter and MindMatters programs, and it is not clear that the schools with the greatest need are participating in these programs. Ongoing monitoring of the take-up and reach of major initiatives, and understanding and addressing barriers to the widespread roll-out of programs is an important step to take to ensure that students and schools who could most benefit from these programs have access to them.

Both KidsMatter and MindMatters have been evaluated to differing extents. In an evaluation of KidsMatter in 2009 the impact of the program was assessed on student mental health, student competencies, and on schools and teachers (Slee et al. 2009). KidsMatter was shown to have a range of positive benefits. The evaluation of MindMatters only investigated coverage of the program, and did not address effectiveness or efficiency of the program (Australian Council for Educational Research 2010). The Department of Health noted that: "Based on the evaluation reports available, it is not possible to comment on the extent to which the MindMatters initiative has influenced help-seeking behaviour or measures of mental health (or suicide rates) within the student population" at that time, and "Based on the evaluation reports available to inform this report, it is not possible to comment on the extent to which the MindMatters initiative has been delivered efficiently, or if it represents value for money" (Department of Health 2014). In 2013 the Department of Health initiated the redevelopment of MindMatters (Principals Australia Institute n.d.).

Other initiatives such as the Tell Them From Me (Centre for Education Statistics and Evaluation 2017) student survey undertaken in NSW have allowed some schools to re-start discussions on changing school practices to encourage better student engagement. Similar evaluation processes may be beneficial for these initiatives.

It is suggested that all current and past programs and stakeholders are re-engaged or re-developed to coordinate efforts and form a system that involves: school, community, and service engagement, training and education for schools how to handle these systems and use them, and monitoring and evaluation of programs. More could be done to help create consistency in the implementation phase of school-based plans and programs. This may include delivering consistent training platforms and packages across jurisdictions, through government or third party providers.

The Australian Government has already taken steps to address some of these gaps, with the formation of the Student Wellbeing Hub, a central place through which schools can access relevant policy and recommendations and the review and refresh of the National Safe Schools Framework, which provides Australian schools with a set of guiding principles to assist school communities to develop positive and practical student safety and wellbeing policies and practice.

9.3 What recommendations have been made to reduce mental disorders in schools in other countries?

Australia is not alone in trying to identify more effective methods to reduce child and adolescent mental disorders, particularly among student populations. Key recommendations being made internationally are:

- International Union for Health Promotion and Education – engagement of stakeholders to help meet needs, including the government, education, and health sectors; the need to train staff to provide adequate support; and ensuring that support is not temporary but coordinated over time to ensure that students are helped throughout their developmental period (International Union for Health Promotion and Education n.d.).
- Mental Health Programmes in Schools (WHO) – identifies crucial steps in developing programs to ensure mental health is adequately managed and supported at schools to ensure student success in educational outcomes and personal development; and provides case scenarios of students with problems that managed to receive effective support (World Health Organization Division of Mental Health 1994).
- Schools for Health in Europe (EU) – identifies the link between education and health, the impact of social and environmental factors on student health and performance, and engagement of all stakeholders to reshape and take ownership of the problems (Schools for Health in Europe 2017).

- Promoting Mental Health in Schools (EU) – a research initiative through the European Commission to address the need in the education sector to help manage mental health impacts on student performance and wellbeing. A comprehensive approach was required involving education of mental health and wellbeing to staff and students, engagement of all stakeholders, and formulation of a framework, and monitoring of initiatives (European Commission 2014).
- Partnership for Well-being and Mental Health in Schools (UK) – identifies forming actions from evidence, developing tools and guidance and support to meet needs, and tracking progress and identifying change (National Children's Bureau n.d.).
- Guidelines for Mentally Healthy Schools (NZ) – identifies crucial steps in developing adequate mental health programs in schools, but also goes into detail about the need for student and staff development, including providing a training package with a schedule, tasks, learning content, and assessment (Mental Health Foundation of New Zealand 2001).

Other efforts include social and emotional learning programs, such as the Collaborative for Academic, Social and Emotional Learning in the USA, or the Social and Emotional Aspects of Learning program in the UK. Similar programs have been developed in an Australia context, such as the Social and Emotional Learning program in Victoria. Coordination between stakeholders was also noted as being a vital aspect of helping schools, for example in Adelaide networks have been established between government staff, schools, and training providers to help provide professional development to the people who need it, such as parents and teachers. However, improved coordination of programs with little or no effectiveness was not considered to improve outcomes. For this reason, program evaluation was considered a critical component.

9.4   What is the consensus of knowledge in this area?

The general consensus from each of these initiatives and meta-reviews of the field in an Australian context (Australian Catholic University and Erebus International 2008) highlight a number of points, including:

- The need for a coherent framework for student wellbeing that is evidence-based
- The need to recognise the size and scope of the issue and scale responses accordingly
- The need for collaboration with all stakeholders, including health, education, government, parents, the community, and the school itself, with the need for strong and competent school leadership

- The important role of teachers in helping students, or identifying students who may be at risk, and the engagement of support staff or other stakeholders to fill the gaps where teachers may not be properly trained to fulfil all students needs
- Strategies should be two-pronged, with a dual focus on prevention and intervention, requiring supporting students across all their schooling years from early childhood through to late adolescent years
- Ensuring programs are properly evaluated and revised to focus on continuous program improvement

From this list of gaps we can see that schools need help to implement the policies and recommendations already made by the Australian Government and other related initiatives, and that there is a clear need to evaluate and monitor and continually improve these programs. It is a positive sign that jurisdictions around the country are investing in mental health support services and programs. There are a number of initiatives that are relatively new. Evaluating their impact, reach and effectiveness in a continuous improvement process will be an important step in ensuring that the resources that are available to support students with mental disorders and their families are used most effectively.

9.5   Is there a larger role for "school counsellors" in this area?

It is recognised that teachers are not mental health professionals and should not be expected to take on such a role. However, schools will not achieve their educational goals unless their students are healthy, physically and mentally. As mental disorders are among the most common and burdensome health conditions in children and adolescents, effectively addressing the mental health of students will have a significant impact on the ability of schools to meet their educational goals. As such the role of counselling in schools is potentially very important, as highlighted by the World Health Organisation's report on mental health in schools.

It is recognised that while specialist mental health services such as CAMHS clinics, specialist psychologists and psychiatrists play an important role particularly with children with severe disorders, there is insufficient resource available for the specialist services to be delivered to all students with mental disorders. The mental health care model in Australia will continue to rely on primary supports such as General Practitioners and school counsellors, to provide primary support to students and their families and to direct referral pathways. Schools have a major

role to play in supporting students with emotional and behavioural problems and are often where symptoms of mental disorders are first identified.

While health services are able to provide some of the support, no single system has the required resources to tackle the issue alone. It will require parents, teachers and other school staff to identify students at risk of developing or currently having a mental disorder, and then a coordinated effort to support the student throughout their schooling life. It is also important to connect students with more severe problems with mental health professionals. Mental health professionals can include GPs, psychologists, psychiatrists and other health service professionals. Services directed at mental health in children, such as CAMHS, are a critical component of the solution, and yet alone do not have sufficient capacity to handle the number of students who have mental disorders.

Both Australian national children and adolescent mental health surveys found that school counsellors are one of the professional groups most commonly consulted by children and adolescents with mental disorders. One third of 4-11 year-olds and half of 12-17 year-olds with a mental disorder have accessed support services in schools in the previous 12 months, and 20% of 4-11 year-olds and 40% of 12-17 year-olds have received individual counselling at school.

For this reason, the role of school-based counsellors in Australian schools should be supported to become a critical component of prevention and early intervention services for children and adolescents with a mental disorder. The specific roles, training and qualifications of school-based counsellors vary between jurisdictions and sectors. Nationally the numbers of school-based counsellor and other associated roles may be in the thousands. Current role descriptions generally align with a practice framework based on student wellbeing which responds to the needs of students with mental health concerns (DECD 2017). Moreover, it derives from familiar foundational work such as the World Health Organization's Model for School Mental Health Promotion (for example, see Hendren et al, 1994). This suggests a common baseline of understanding and practice which may assist in developing a national consensus for strengthening school-based support for mental health.

One immediate obstacle, however, arises from South Australia which does not require school-based counsellors in government schools to have formal training and qualifications in therapeutic counselling. While consistent with other Australian jurisdictions in having progressively expanded the role beyond its historical origins in vocational guidance, South Australia (SA) only requires teacher qualifications. It may of course be beneficial for school-based counsellors to be embedded in the organic life of a school as teachers interacting

with a wide range of staff and students. For one thing, it will afford opportunities for building relationships and understandings from a range of professional perspectives. But in the light of results from the study and the known relationship between mental health, educational achievement and early intervention, there is a need for therapeutic support to be universally recognised as central to the school-based counsellor role. The most viable model, based on the evidence of student need, would be to provide school-based support for student mental health that goes beyond referrals to other agencies and services (e.g. CAMHS, headspace, or private providers). At the very least a purpose-designed training program for teacher qualified school counsellors in South Australia would be a significant start, by helping to improve skills at the most basic levels of therapeutic work.

In the other Australian jurisdictions where formal training and qualifications in therapeutic counselling are required, including for staff in sometimes similarly titled or other complementary roles, role descriptions make it clear that staff will design and deliver school-based intervention programs for students. These will be programs which go further than general wellbeing programs and address individual student's mental health needs, involve families, provide capacity building for school staff and, where necessary, carry out referrals to and collaborations with related services outside of the schools (DECD 2017). Wherever these roles require a formal qualification, incumbents will possess the authority to make recommendations about professional relationships and practices in schools. For example, qualified school-based counsellors in schools that have a chaplaincy could utilise these staff to support the delivery of evidence-based intervention programs authentically tailored to meet local student and community needs.

A national approach could require Australian jurisdictions to develop a set of national standards for primary and secondary school-based counselling, which at the very least specify some uniform minimum requirements in therapeutic qualifications. Fortunately, Australia is well on the way to enabling this with the widespread requirement for relevant qualifications and the general coalescence around recognisable wellbeing practice frameworks. The standards would contribute to ensuring that a much greater emphasis would be given to applying programs as a preventative measure with long-term planning and follow-up, in particular for students with highly complex mental disorders who would otherwise continue to fall further behind their peers. For example, though effective, programs such as headspace or mental health first aid programs in suicide and mental health were noted as not being applied frequently enough. Then there is the pressing question of which school-based programs are best supported by evidence of improved student outcomes. A set of national standards would also emphasise strengthening connections between school-based practices and community groups. Sports groups, religious communities, and youth organisations, for example, were

noted for having potential in connecting families, schools, and health agencies together, in providing support for child development that may be relevant to the issue of mental health and wellbeing in schools (Carnegie Council of Adolescent Development 1992).

9.6   Study limitations

This study has several limitations. In particular it was not an experimental study and did not test the effectiveness of specific programs or services in supporting students with mental disorders. It is also important to note that sample sizes were too small to be definitive for some groups, since certain disorders have low prevalence in students, and were then separated by five test domains, and four Year levels.

The results from the analysis of socio-economic factors was inconclusive for several groups of interest, usually owing to the small sample sizes, and would be of interest for focused studies in the future.

9.7   Summary

In responding to this analysis undertaken of *Young Minds Matter* data using NAPLAN academic performance data, we recommend that our findings be used as a resource for practitioners in highlighting awareness of the impact of mental health and socio-economic situations on attitudes towards school, attendance at school, academic performance and trajectories. We have made a number of specific recommendations regarding the need for certain strategies under certain conditions, e.g. the need for early childhood interventions as a way to close initial gaps in academic performance between students with and without a mental disorder, and on-going management to ensure that the performance does not lag behind, differing by disorder type.

We recommend some specific steps be taken to address the general issue of mental health and wellbeing in schools. These recommendations take inspiration from the reports by WHO, and the UK and NZ governments, and also from Australian researchers in the education and mental health fields of study. They are the following:

- Ensure that schools and related stakeholders are aware of current national initiatives and frameworks

- Establish standard information on what programs are available and what the evidence-based strategies for managing common mental health conditions are
- Clarify the goals of schools and related stakeholders in addressing the mental health and wellbeing concerns, particularly when it comes to educational outcomes and personal development
- Ensure that all stakeholders are engaged, with a particular emphasis on training and supporting school counsellors
- Expand training in mental health first aid in the education sector to bring awareness to counsellors, teachers, parents, other stakeholders, and even students
- Encourage greater and more systematic uptake of KidsMatter, MindMatters, and other programs
- Encourage schools to monitor the extent to which students (as a whole not as individuals) are engaged with their schools using instruments such as Tell Them From Me

It is only through successful implementation of these steps that other recommendations, such as: early childhood intervention; on-going management throughout adolescence to combat increases in anxiety, depression, self-harm, suicide, and substance use; or, an increase of service use amongst ADHD sufferers, can be effectively realised.

It is apparent from studies dealing with feedback that schools are struggling to implement effective programs. We suggest more help is given to schools in providing training and personal development options, or making these options more accessible where they already exist. Subsequent to this we suggest following up to see how schools are progressing with their implementation of a functional and practical mental health and wellbeing program. Neither of these steps are new in Australian schools (e.g. Gatehouse project, KidsMatter, MindMatters, the Interagency Referral Process that takes place in South Australia), but are yet to be applied at a national level on a regular and consistent basis. In the case that not enough resources exist in government to address this need, it may be required to use outside agencies or third parties to assist in implementing these next steps. However, it is important to note that successful school-based mental health programs neither need to be expensive, nor resource intensive (Kapur 2004).

The results from the study suggest that if more effective interventions are developed to reduce the prevalence of student mental disorders there is a strong likelihood that there will be significant improvements in school attendance, positive attitudes to schooling and academic performance in Australia.

Acknowledgements

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Appendix 1 – Glossary

Glossary term	Definition
12-month prevalence	Meeting diagnostic criteria according to the DSM-IV (for the purposes of this report) in the 12 months prior to interview. Prevalence includes both new cases, whose symptoms first developed during the 12 months prior to the interview and continuing cases whose symptoms were present prior to the 12 months, but persisted, and were at a level to meet the diagnostic criteria in the 12 months prior to interview.
Adolescent self-report questionnaire	The questionnaire for completion by young people aged 11 years and older. Subject to the permission of their parents or carers, young people were asked to complete this in private using a tablet computer. The questionnaire comprised the following modules: • DISC-IV major depressive disorder module • Presence of symptoms of psychosis • Strengths and Difficulties Questionnaire (SDQ) • Kessler psychological distress scale (K10+) • Use of services and perceived need for services • Use of internet • Youth heath-risk behaviours, including self-harm, suicidal behaviours, substance use, disordered eating behaviours and sexual behaviour • Experience of bullying • Education • Self-esteem.
Alcohol consumption	Young people aged 13 years and over were asked if they had ever had a drink of alcohol other than a few sips, if they had drunk alcohol in the past 30 days and if they had consumed more than four drinks in a row (that is within a couple of hours).
Anxiety disorders	A class of mental disorders defined by the experience of intense and debilitating anxiety. The types of anxiety disorders covered in the survey were social phobia, separation anxiety disorder (SAD), generalized anxiety disorder (GAD), and obsessive-compulsive disorder (OCD). Modules for each of these four anxiety disorders from the DISC-IV were completed by parents and carers and their responses used to determine if the young person met the diagnostic criteria for an anxiety disorder in the 12 months prior to interview. Anxiety disorders were not included in the first survey in 1998.

Glossary term	Definition
Area of residence	Area of residence was categorised as either Greater capital cities or Rest of state based on the ABS Greater Capital City Statistical Area (GCCSA) classification. This classification represents the functional extent of the eight state and territory capital cities in Australia. Households within these areas were classified as Greater capital cities. The remainder were classed as Rest of state.
	The ABS Accessibility/Remoteness Index of Australia (ARIA+) was also used for some analyses. This classification is used by many agencies and represents a measure of geographic remoteness that is consistent across the entire nation. The levels of classification include Major Cities of Australia, Inner Regional Australia, Outer Regional Australia, and Remote Australia.
Attention-deficit/hyperactivity disorder (ADHD)	Persistent pattern of inattention and/or hyperactivity-impulsivity. Children and adolescents may find it difficult to pay attention and see tasks or activities through to the end or make careless mistakes with school work or other tasks. Children and adolescents with problems in the area of hyperactivity may talk excessively, have trouble staying still when it is appropriate or expected and act like they are 'always on the go'.
	There are three subtypes of ADHD based on the most common symptoms. Those with mostly inattentive symptoms are diagnosed with ADHD, predominantly inattentive type and individuals with primarily hyperactivity-impulsivity symptoms are diagnosed with ADHD, predominantly hyperactive-impulsive type. Those children and adolescents with symptoms of both inattentiveness and hyperactivity are diagnosed with ADHD, combined type.
	To meet DSM-IV criteria symptoms must be more frequent and severe than in other individuals at a similar developmental stage, persist for at least six months and some impairment from the symptoms must be present in two or more settings (e.g. at school and at home).
	The module for ADHD from the DISC-IV was completed by parents and carers and their responses used to determine if the young person met the DSM-IV criteria for ADHD in the 12 months prior to interview.
Carer	The primary carer was the individual in the household who knew the most about the child selected for interview in the survey. In a majority of cases this was the mother of the survey child. If a biological, adoptive or foster parent of the child was the primary carer and another biological, adoptive or foster parent of the child was present in the household, this person was designated as the secondary carer. Otherwise, if there was another person present in the household who was also responsible for caring for the study child, they were recorded as the secondary carer.

Glossary term	Definition
Conduct disorder	Repetitive and persistent behaviour to a degree that violates the basic rights of others, major societal norms or rules in terms of aggression towards people or animals, destruction of property, deceitfulness or theft, and serious violation of rules. Young people with conduct disorder exhibit a range of behaviours often including bullying, frequent physical fights, deliberately destroying other's property, breaking into properties or cars, staying out late at night without permission, running away from home or frequent truancy from school.
	The DSM-IV criteria specify that at least three or more of these behaviours must have been present in the past 12 months, with at least one in the past 6 months. These behaviours must also cause clinically significant impairment in social, academic or occupational functioning.
	The module for conduct disorders from the DISC-IV was completed by parents and carers and their responses used to determine if the young person met the DSM-IV criteria for conduct disorder in the 12 months prior to interview.
Connectedness	School connectedness is a term used to capture a student's perception of their school environment such as safety, belonging, feeling cared for and respected at school. Young people aged 11-17 years who attended school were asked questions about connectedness with school. These questions were drawn from the School Connectedness Scale, which was developed by Michael Resnick for the National Longitudinal Study of Adolescent Health.Students were asked to rate the following five items on a five point scale from strongly disagree to strongly agree: • I feel close to people at my school • I feel like I am a part of my school • I am happy to be at my school • The teachers at my school treat students fairly • I feel safe at my school A factor analysis of the responses to these items was used to derive a connectedness scale. For the purposes of this report, this scale has been categorised into good, fair and poor connectedness.
Days absent from school	Number of days the study child was absent from school for any reason.
	Average days absent from school due to symptoms of mental disorder have been reported. Parents and carers were asked how many days their child had been absent from school in the past 12 months specifically due to the symptoms of each of the disorders that they reported symptoms. Averages were then calculated from all children and adolescents who met diagnostic criteria for the mental disorder, including those who did not miss any days of school due to their symptoms.
Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV)	Produced by the American Psychiatric Association the manual provides standard criteria for the classification of all mental disorders for children and adults. These criteria are based on clinically significant sets of symptoms that are associated with impaired functioning by young people with the disorders.

Glossary term	Definition
Diagnostic Interview Schedule for Children Version IV (DISC-IV)	Diagnostic tool comprised of a series of mental disorder modules that implements the criteria for mental disorders set out in the Diagnostic and Statistical Manual of Mental disorders, fourth edition (DSM-IV).
	Modules for seven disorders were used in the survey — social phobia, separation anxiety disorder, generalised anxiety disorder, obsessive-compulsive disorder, major depressive disorder, Attention-Deficit/ Hyperactivity Disorder (ADHD) and conduct disorder.
Drug use	The survey asked whether young people aged 13 years and older had ever used cannabis or marijuana, whether they had used cannabis or marijuana in the last 30 days, and whether they had used other drugs. These included using prescription drugs for non-medical purposes; ecstasy; amphetamines and methamphetamines; cocaine; hallucinogens such as LSD; inhalants such as petrol, glue, aerosols, paint, solvents or nitrous; heroin; steroids; GHB or ketamine.
Engagement	Engagement with school measures students interest and engagement in classroom learning and activities. Young people aged 11-17 years who attended school were asked questions about engagement with learning. These items were drawn from the School Life Instrument.
	Students were asked to rate the following six items on a five point scale from strongly disagree to strongly agree:
	• I get involved and participate in classes at school
	• My school is a place where the things I learn are important to me
	• My school is a place where I like learning
	• My school is a place where I enjoy what I do in class
	• My school is a place where I get excited about the work that we do
	• My school is a place where the things I am taught are worth learning.
	A factor analysis of the responses to these items was used to derive a engagement scale. For the purposes of this report, this scale has been categorised into good, fair and poor engagement.
Family functioning	Family functioning covers issues such as communication and planning within the family, dealing with conflict, and levels of emotional and practical support. A shortened version of the General Functioning Subscale of the McMaster Family Assessment Device was used to classify families into four levels of functioning (Boterhoven De Haan et al, 2015). This ranged from very good through to poor, with poor indicating unhealthy family functioning likely to require clinical intervention. Of all families in the survey 3.7% had a poor level of family functioning.

Glossary term	Definition
Family type	Families were classified into families with two parents or carers and families with one parent or carer. Families with two parents or carers were further categorised into original, step, blended or other families corresponding to the Australian Bureau of Statistics family blending classification variable introduced in the 2006 Census. These are defined as follows: • Original families contain at least one child who is the natural, adopted or foster child of both partners in the couple and no step children. The Australian Bureau of Statistics refers to this category as 'intact families'. • Step families have at least one resident step child, but no child who is the natural or adopted child of both partners. • Blended families have two or more children; at least one child who is the natural or adopted child of both parents, and at least one who is the step child of one of them. • Other families have no children who are the natural, adopted, foster or step child of either parent or carer. These include families with children being raised by their grandparents or other relatives.
Generalised anxiety disorder	An anxiety disorder characterised by excessive anxiety, worry or apprehension about a number of different events or activities. To meet DSM-IV criteria, symptoms must occur more days than not for a period of at least six months. The constant worry causes distress to the individual. The child or adolescent has difficulty controlling the worry, and experiences impairment in social, academic or other important areas of functioning. The module for generalised anxiety disorder from the DISC-IV was completed by parents and carers and their responses used to determine if the young person met the DSM-IV criteria for generalised anxiety disorder in the 12 months prior to interview.
Health service provider	Providers of health services regardless of the setting or medium in which that service is provided. Specific health service providers covered by the survey were: • general practitioner; • paediatrician; • psychiatrist; • psychologist; • nurse; • social worker; • occupational therapist; and • counsellor or family therapist.

Glossary term	Definition
ICSEA	The Index of Community Socio-Educational Advantage (ICSEA) is a scale which allows for comparisons among schools with similar students. It provides an indication of the socio-education background of students. It is based on key factors in students' family backgrounds such as parents' occupation, school and non-school education, as well as geographical location of the school and proportion of Indigenous students.
	ICSEA data used in this publication are sourced from the Australian Curriculum, Assessment and Reporting Authority (ACARA) and are available from ACARA in accordance with its Data Access Protocols.
Labour force status	Classifies people as employed when working full-time, part-time or away from work, or not in employment when unemployed or not in the labour force. Employed includes casual, temporary or part-time work if it was for an hour or more in the reference week.
	For the purposes of the survey this was collected for both parents and carers for the previous week.
Major depressive disorder	The key feature of major depressive disorder is the presence of either depressed mood, loss of interest or pleasure or being grouchy, irritable and in a bad mood. Symptoms may include significant weight loss or weight gain, loss of appetite, insomnia or hypersomnia, restlessness, fatigue and loss of energy, feelings of worthlessness and inability to concentrate.
	The DSM-IV criteria specify that at least five symptoms of depression must be present for a minimum of a two-week period, that these symptoms cause clinically significant distress to the child or adolescent and that they must interfere with the child or adolescent's normal functioning at school, at home or in social settings.
	The module for major depressive disorder from the DISC-IV was completed by parents and carers and their responses used to determine if the young person met the DSM-IV criteria for major depressive disorder in the 12 months prior to interview.
	Young people aged 11 years and older also completed this module and prevalence data based on their responses are reported as 'Major depressive disorder based on adolescent report'.
Mental disorder	Defined according to the detailed diagnostic criteria within classification systems. This covers:
	• the nature, number and combination of symptoms;
	• a time period over which the symptoms have been continuously experienced;
	• the level of distress or impairment experienced; and
	• circumstances for exclusion of a diagnosis, such as it being due to a general medical condition or the symptoms being associated with another mental disorder.
	The classification system used for mental disorders in this report was the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV).

Glossary term	Definition
Not in employment	Both unemployed and not in the labour force.
Obsessive-compulsive disorder	An anxiety disorder characterised by recurrent obsessions or compulsions.

Obsessions are persistent ideas, thoughts, impulses or images that are intrusive and difficult to control and that cause anxiety or distress. Common obsessions include worrying about things being dirty or having germs, or that the person might do something bad in public.

Compulsions are repetitive behaviours, such as washing hands or changing clothes over and over, repetitively checking things, or counting or ordering things over and over.

To meet DSM-IV criteria, the compulsions and obsessions must be severe enough to be time consuming and cause marked distress or significant impairment.

The module for obsessive-compulsive disorder from the DISC-IV was completed by parents and carers and their responses used to determine if the young person met the DSM-IV criteria for obsessive-compulsive disorder in the 12 months prior to interview. |
| Oppositional problem behaviours | Negativistic, hostile and defiant behaviours, such as often losing temper, arguing with adults, actively defying adults' requests and rules, being angry, resentful, spiteful or vindictive, lasting at least six months.

The DISC-IV module for oppositional defiant disorder was included in the survey. However, unlike other disorders, the diagnosis for oppositional defiant disorder includes an element of clinical judgement that could not be implemented within the DISC-IV questions. In particular, for each symptom assessed in oppositional defiant disorder the DSM-IV specifies that the symptom criterion is met only if the behaviour occurs more frequently than is typically observed in individuals of comparable age and developmental level. A clinician is required to make this judgement. The data collection for *Young Minds Matter* was undertaken by lay professional interviewers who were not specifically trained in psychology or psychiatry and expert clinical review of each child or adolescent in the survey was not undertaken. As such it was not possible to identify all criteria for assigning the diagnosis of oppositional defiant disorder. Instead these behaviours are referred to as oppositional problem behaviours to distinguish them from the diagnostic condition of oppositional defiant disorder.

In this survey an exclusion criterion was defined so that children or adolescents who met the diagnostic criteria for conduct disorder were not considered to have oppositional problem behaviours. |

Glossary term	Definition
Psychological distress	Measured by the Kessler Psychological Distress Scale (K10), a widely used scale designed to detect the differing levels of psychological distress in the general population. While high levels of distress are often associated with mental illness, it is not uncommon for some people to experience psychological distress, but not meet criteria for a mental disorder.
	The K10 is based on 10 questions about negative emotional states in the four weeks prior to interview. The K10 is scored from 0 to 40, with higher scores indicating higher levels of distress. In this report, scores are categorised as follows:
	• 0-5 Low levels of psychological distress; • 6-11 Moderate levels of psychological distress; • 12-19 High levels of psychological distress; and • 20-40 Very high levels of psychological distress.
	In this survey the K10 scale was administered to primary carers about themselves, and was also included in the adolescent self-report questionnaire.
	Adolescents completed an enhanced version of the K10+ with additional questions on anger, control, concentration and feeling calm and peaceful. The K10+ also includes questions about whether as a result of any reported distress they had any days when they could not carry out their normal activities.
School services	Individual counselling, group counselling or support program, special class or school, school nurse or other services received from the school or other educational institution that the child or adolescent attends.
Self-harm	Deliberately hurting or injuring yourself without trying to end your life.
	Young people aged 12 years and older were asked if they had ever done something to cause themselves harm or injury without trying to end their life. They were also given the option of not responding and were not asked any further questions about self-harm.
Separation anxiety disorder	An anxiety disorder characterised by excessive anxiety concerning separation from the home or from those to whom the child is attached.
	To meet DSM-IV criteria, the anxiety must be beyond that which is expected for the child or adolescent's developmental level, and cause significant distress in social, academic or other important areas of functioning for at least four weeks.
	The module for separation anxiety disorder from the DISC-IV was completed by parents and carers and their responses used to determine if the young person met the DSM-IV criteria for separation anxiety disorder in the 12 months prior to interview.

Glossary term	Definition
Service use	The use of all health and school services, but only those telephone and online services where these provided structured or personalised information.
	Children or adolescents were defined as having used services when they had used at least one of the following services: a consultation with a health service provider, a hospital admission, a headspace service, a school service, a telephone counselling service and/or online assistance for emotional or behavioural problems in the 12 months prior to interview.
Services	Comprise all the health, school, telephone and online services defined as follows:
	• health services — any service provided by a qualified health professional regardless of where that service was provided (community, hospital inpatient and emergency, and private rooms);
	• school services — any service provided by the school or other educational institution that a young person was attending; and
	telephone and online services where these provided structured or personalised assistance and not just generic information.
Social phobia	An anxiety disorder characterised by a strong fear of social interaction or performance situations. People with social phobia avoid social situations in case of embarrassment or humiliation.
	To meet DSM-IV criteria symptoms must be present for at least six months and the fear or avoidance of social situations must interfere significantly with the child or adolescent's normal routine, academic functioning, or social activities or relationships, or they must experience marked distress about the phobia.
	The module for social phobia from the DISC-IV was completed by parents and carers and their responses used to determine if the young person met the DSM-IV criteria for social phobia in the 12 months prior to interview.
Suicidal behaviours	Suicidal ideation (serious thoughts about taking one's own life), making suicide plans and suicide attempts where the self-injury is intended to end in death.
	Young people aged 12 years and over were asked if during the past 12 months they had seriously considered attempting suicide. Young people were also given the option of not answering and were then not asked any further questions about suicidal behaviours.

Appendix 2 – Academic outcomes by mental disorder and socio-economic factors

Young Minds Matter found that the prevalence of mental disorders in Australian children and young people varied substantially across a range of demographic and socio-economic factors. For example, mental disorders were more prevalent in Australian children and young people who were living in families with low household income, family types other than original two parent families, where both carers or the sole carer was not in employment, and in families living in public housing. Student educational outcomes have also been linked with the socio-economic circumstances of their families. This chapter explores the relationship between mental disorders, socio-economic factors and academic outcomes as measured by NAPLAN scores. Due to the large number of factors, disorders and domains, this chapter presents a summary of findings and examples. Full tables are available in the supplementary material.

Young Minds Matter collected a range of demographic and socio-economic indicators about the surveyed children and their families. This included information on family type, household income, level of education and labour force status of parent and/or carers, area of residence, and level of family functioning (refer to **Appendix 1 – Glossary** for descriptions). In addition, ICSEA (the Index of Community Socio-educational Advantage) values were obtained for each of the schools that survey students were attending. The ICSEA value is a "scale of socio-educational advantage that is computed for each school" (ACARA 2013). It allows for comparisons between schools based on the level of educational advantage or disadvantage that students bring to their academic studies.

A2.1   Family type

Test scores for students with no mental disorder were highest for those students who lived in a family with two parents or carers compared to those who lived in a family with one parent or carer (e.g. Table A2-1-1). Families with two parents or carers were further categorised as: original family, step family, blended family, or other family. These categories match the categories used by the Australian Bureau of Statistics to describe family blending in the Census of Population and Housing.

Test scores in numeracy for Year 9 students with no mental disorder in original families had the highest test score of 604.3 (Table A2-1-1). Students in step families had the next highest test score at 575.7, almost 30 points lower than students in original families. Students from blended families had a score of 572.5, followed by those from other families, with a test score of 565.0. A low proportion of family types were classified as other family, and for this reason the data for this family type should be treated with caution.

This behaviour in test scores, by family type, was generally consistent across years and domains (Table S2-1-1 to S2-1-19). There was some slight variation in test scores for other families potentially due to the small sample size in this category. For example, students from step families sometimes performed better than students from blended families.

A2.1.1   Any disorder

Students with any given mental disorder had a lower test score compared to those students with no mental disorder, regardless of family type (Table A2-1-1). Although the overall test scores were lower compared to those with no mental disorder, the academic benefits of being in certain family types applied to those with a mental disorder just as they had for those with no mental disorder, i.e. students in two parent or carer families consistently performed better than students living in one parent or carer families, and those from original families tended to perform better than those from step or blended families. This was the same for most domains and Year levels, the only differences being that students from blended families sometimes outperformed those from step families and vice versa.

Table A2-1-1: Average numeracy test scores for Year 9 students with and without a mental disorder, by family type

Family type	Any mental disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Families with two parents or carers	563.5	(554 - 573)	599.3	(596 - 603)
Original family	569.9	(558 - 582)	604.3	(600 - 608)
Step family	564.6	(533 - 596)	575.7	(562 - 589)
Blended family	534.5	(511 - 558)	572.5	(563 - 582)
Other family	556.7	(521 - 593)	565.0	(539 - 590)
Families with one parent or carer	549.8	(537 - 563)	576.4	(570 - 583)

A2.1.2   Major depressive disorder

For students with major depressive disorder, on average test scores were lower regardless of family type (Table A2-1-2). The test scores were not always significantly different, although this may be complicated because of the low prevalence of major depressive disorder, and subsequently, low sample sizes among younger students. Again, students living in two parent or carer families performed better than students living in one parent or carer families, and students from original families performed better than students from step, blended and other families. This was the general pattern regardless or test domain or Year level (Table S2-1-20 to S2-1-38).

Table A2-1-2: Average numeracy test scores for Year 9 students with major depressive disorder and those with no mental disorder, by family type

Family type	Major depressive disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Families with two parents or carers	576.2	(561 - 591)	599.3	(596 - 603)
Original family	584.2	(567 - 602)	604.3	(600 - 608)
Step family	569.2	(508 - 630)	575.7	(562 - 589)
Blended family	547.7	(508 - 587)	572.5	(563 - 582)
Other family	np	np	565.0	(539 - 590)
Families with one parent or carer	561.2	(544 - 578)	576.4	(570 - 583)

np   Not available for publication because of small cell size, but included in totals where applicable

A2.1.3 Anxiety disorders

Students with anxiety disorders achieved lower test scores than those with no mental disorder. When analysing by family type, the pattern was generally consistent: students in two parent or carer families outperformed those in single parent or carer families. Those in original families performed the best overall, followed by step and blended families (Table S2-1-39 to S2-1-57). However, students from blended families slightly outperformed students from original families in a small number of cases (writing in Year 3, and reading, spelling and numeracy in Year 7).

Students with social phobia achieved lower test scores than those with no mental disorder (Table S2-1-58 to S2-1-77). When analysing by family type, the differences were more prominent. In students with no mental disorder, original family environments were associated with the highest academic performance. This was also the case for students with social phobia in Years 3 and 5. But for older Years (7 and 9), students in blended families outperformed those from original families for all domains (in addition, students with social phobia from blended families outperformed those from original families in Year 5 for the spelling test). Students from step families outperformed those from original families in Year 7 for reading and writing, and in Year 9 for writing and numeracy.

The pattern by family type for those with separation anxiety (Table S2-1-78 to S2-1-97) or generalised anxiety disorder (Table S2-1-98 to S2-1-117) was similar to those with no mental disorder. For example, students from original families outperformed those from step or blended families in most cases (students from step families with separation anxiety outperformed those from original families in Year 9 for spelling; students from blended families with separation anxiety outperformed those from original families in Year 9 in writing; students from blended families with generalised anxiety disorder outperformed those from original families in Year 3 for writing and Year 7 for numeracy). Again, students living in two parent or carer families outperformed those from single parent or carer families.

The prevalence of obsessive-compulsive disorder was too low to perform an analysis by family type.

Table A2-1-3: Average numeracy test scores for Year 9 students with any anxiety disorder and those with no mental disorder, by family type

Family type	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Families with two parents or carers	561.9	(548 - 576)	599.3	(596 - 603)
Original family	563.9	(548 - 580)	604.3	(600 - 608)
Step family	554.2	(507 - 602)	575.7	(562 - 589)
Blended family	557.2	(515 - 599)	572.5	(563 - 582)
Other family	np	np	565.0	(539 - 590)
Families with one parent or carer	556.7	(542 - 572)	576.4	(570 - 583)

np   Not available for publication because of small cell size, but included in totals where applicable

A2.1.4   ADHD

There were inconsistent trends of academic performance of students with ADHD by family type (Table S2-1-118 to S2-1-136). In some cases students from step families outperformed those from original families (in Year 3 for reading and writing, in Year 7 for numeracy, and in Year 9 for grammar and numeracy), and sometimes those from blended families outperformed those from original families (in Year 3 for writing, in Year 5 for grammar, in Year 7 for grammar, reading and spelling, and in Year 9 for spelling).

Table A2-1-4: Average numeracy test scores for Year 9 students with ADHD and those with no mental disorder, by family type

Family type	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Families with two parents or carers	550.6	(535 - 566)	599.3	(596 - 603)
Original family	557.9	(536 - 580)	604.3	(600 - 608)
Step family	569.0	(512 - 626)	575.7	(562 - 589)
Blended family	522.1	(497 - 547)	572.5	(563 - 582)
Other family	np	np	565.0	(539 - 590)
Families with one parent or carer	527.1	(503 - 551)	576.4	(570 - 583)

np   Not available for publication because of small cell size, but included in totals where applicable

A2.1.5   Oppositional problem behaviours and conduct disorder

Students with oppositional problem behaviours from original families typically outperformed those from all other family types (Table S2-1-137 to S2-1-155). However, students with oppositional problem behaviours from step families outperformed those from original families for grammar in Year 3, numeracy in Year 7, and writing and numeracy in Year 9; and, students with the disorder from blended families outperformed those from original families for reading in Year 5, reading in Year 7, and writing in Year 9.

The prevalence for conduct disorder was too low to perform an analysis by family type.

Table A2-1-5: Average numeracy test scores for Year 9 students with oppositional problem behaviours and those with no mental disorder, by family type

Family type	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Families with two parents or carers	571.1	(555 - 587)	599.3	(596 - 603)
Original family	574.5	(556 - 594)	604.3	(600 - 608)
Step family	576.6	(529 - 624)	575.7	(562 - 589)
Blended family	548.1	(498 - 598)	572.5	(563 - 582)
Other family	np	np	565.0	(539 - 590)
Families with one parent or carer	539.1	(520 - 558)	576.4	(570 - 583)

np   Not available for publication because of small cell size, but included in totals where applicable

A2.2   Household income

Students with no mental disorder who lived in a household with a higher income did, on average, achieve better test scores than those who lived in a household with a lower income. This was evident in all domains and all Year levels (Table S2-2-1 to S2-2-4). Family incomes were sorted into three distinct categories: those who earned less than $52,000 per year which is approximately the bottom 25% of the household income distribution, those who earned more than $130,000 per year which is approximately the top 25% of the household income distribution, and those whose family income was in the middle 50%.

A2.2.1   Any disorder

Test scores were lower for students with a mental disorder compared to students in the same household income band who did not have a mental disorder (Table A2-2-1). This was true for all income bands. Those who had a mental disorder, but were in a high household income family, would often perform as well as those with no mental disorder in a low household income family. Out of those students who had mental disorders, test scores were higher for students in a household with a higher income. Though this was the pattern for most groups (11 of 20), it was not universal across all domains and Year levels (Table S2-2-1 to S2-2-4). Those in the $52,000 - $129,999 income range performed better in Year 5 (grammar, and numeracy), Year 7 (grammar, reading, spelling, writing), and Year 9 (grammar, reading, spelling).

Table A2-2-1: Average numeracy test scores for Year 9 students with and without a mental disorder, by household income

Household income	Any mental disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Less than $52,000 per year	536.0	(523 - 549)	567.2	(560 - 574)
$52,000-$129,999 per year	565.8	(555 - 577)	592.6	(588 - 597)
$130,000 or more per year	569.2	(555 - 583)	612.2	(607 - 618)

A2.2.2   Major depressive disorder

Contrary to the behaviour of those with no mental disorder, students with major depressive disorder performed best in families who earned $52,000 - $129,999 a year. This was true for all Years and domains (Table A2-2-2 and Table S2-2-5 to S2-2-8) except in Year 3 for reading, spelling and grammar, and in Year 9 for writing.

Table A2-2-2: Average numeracy test scores for Year 9 students with major depressive disorder and those with no mental disorder, by household income

Household income	Major depressive disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Less than $52,000 per year	548.4	(526 - 571)	567.2	(560 - 574)
$52,000-$129,999 per year	580.9	(564 - 598)	592.6	(588 - 597)
$130,000 or more per year	561.3	(544 - 578)	612.2	(607 - 618)

A2.2.3 Anxiety disorders

The academic performance of students with anxiety disorders, by family household income, was complicated due to the differences in anxiety disorder types. Overall, it appeared to be similar to the case of major depressive disorder, where students for most domains and Year levels performed better in families who earned a medium-range income (Table A2-2-3 and Table S2-2-9 to S2-2-12). However, this was not the case for any domains in Year 3, or writing in Years 5 or 9, where students scored higher in the highest income band, and lower in the lowest income band.

Table A2-2-3: Average numeracy test scores for Year 9 students with any anxiety disorder and those with no mental disorder, by household income

Household income	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Less than $52,000 per year	540.3	(525 - 556)	567.2	(560 - 574)
$52,000-$129,999 per year	572.5	(557 - 588)	592.6	(588 - 597)
$130,000 or more per year	558.4	(540 - 577)	612.2	(607 - 618)

For students with social phobia or separation anxiety, those in higher income bands achieved higher test scores (true for all domains and Year levels, Table S2-2-13 to S2-2-20). Differences in this pattern occurred in those students with generalised anxiety disorder or obsessive-compulsive disorder. Students with generalised anxiety disorder performed better if they were from middle income earning families in Year 3 for the numeracy test, Year 5 for the grammar and numeracy tests, Year 7 for all domains, and Year 9 for grammar, reading, and numeracy (Table S2-2-21 to S2-2-24). Students with obsessive-compulsive disorder performed better if they were from middle income earning families in Year 5 for all domains except grammar, Year 7 for grammar, reading, and numeracy, and Year 9 for reading and numeracy. For all other domains and Year levels students scored higher in higher income-earning bands (Table S2-2-25 to S2-2-28).

A2.2.4 ADHD

Data for ADHD students did not paint a consistent picture as to whether higher income environments were associated with better academic achievement (Table A2-2-4 and Table S2-2-29 to S2-2-32). Students with ADHD from higher income families did perform better for most groups (11 of 20), for spelling and writing in Year 3, grammar in Year 5, all domains in

Year 7, and grammar, reading, and numeracy in Year 9. However, all other domain results were inconclusive.

Table A2-2-4: Average numeracy test scores for Year 9 students with ADHD and those with no mental disorder, by household income

Household income	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Less than $52,000 per year	521.0	(501 - 541)	567.2	(560 - 574)
$52,000-$129,999 per year	537.3	(519 - 555)	592.6	(588 - 597)
$130,000 or more per year	581.7	(556 - 607)	612.2	(607 - 618)

A2.2.5   Oppositional problem behaviours and conduct disorder

Students with oppositional problem behaviours achieved higher test scores in higher income families for Years 3 and 5 (Table S2-2-33 and S2-2-34). Students with conduct disorder also scored higher in higher income families for Year 3 (except grammar and spelling, Table S2-2-37) and Year 5 (except numeracy, Table S2-2-38).

For older students with oppositional problem behaviours, academic performance was higher in medium income earning families for Year 7 (except numeracy, Table S2-2-35), and Year 9 (except writing, Table A2-2-5 and Table S2-2-36). This was also the case for those with conduct disorder in Year 7 (except reading and spelling, Table S2-2-39) and Year 9 (Table S2-2-40).

Table A2-2-5: Average numeracy test scores for Year 9 students with oppositional problem behaviours and those with no mental disorder, by household income

Household income	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Less than $52,000 per year	540.6	(523 - 559)	567.2	(560 - 574)
$52,000-$129,999 per year	574.2	(553 - 595)	592.6	(588 - 597)
$130,000 or more per year	573.1	(544 - 603)	612.2	(607 - 618)

A2.3   Parent and/or carer education

Students with no mental disorder who lived in a family where at least one parent or carer had a bachelor degree or higher achieved better test scores than students where the highest level

of education of their parent or carer was a diploma or certificate 3 or 4 (Table A2-3-1). They in turn, achieved a higher test score than the student whose parent's or carer's highest level of education was Year 11 or 12. The lowest test scores were observed for students whose parent's or carer's highest level of education was Year 10 or below. This was the same for all domains and Year levels for students with no mental disorder (Table S2-3-1 to S2-3-4).

A2.3.1 Any disorder

For students with any mental disorder, the average test scores were lower than those of their peers with no mental disorder, regardless of the level of education of their parent or carer (Table A2-3-1). The pattern of the test scores was generally the same – a higher parent or carer education level was associated with a better overall test score. This was generally the same for all domains and Year levels for all students with any given mental disorder (Table S2-3-1 to S2-3-4). Exceptions to this occurred for the spelling and writing tests in Year 7, and the reading test in Year 9. Although on average, a student with any given mental disorder performed better at school if they had parents or carers with higher education, this was not necessarily true for each specific mental disorder.

Table A2-3-1: Average numeracy test scores for Year 9 students with and without a mental disorder, by parent or carer education

Parent or carer education	Any mental disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Bachelor degree or higher	582.7	(569 - 596)	618.3	(613 - 623)
Diploma or certificate III/IV	551.9	(541 - 562)	585.2	(581 - 590)
Year 11 or 12	546.7	(527 - 567)	570.3	(562 - 578)
Year 10 or below	529.8	(505 - 554)	551.4	(538 - 565)

A2.3.2 Major depressive disorder

Generally, students with major depressive disorder achieved better scores when their parents or carers had higher levels of education (Table A2-3-2 and Table S2-3-5 to S2-3-8). Students had better test results with each successive level of parent or carer education in Year 3 for numeracy, Year 5 for numeracy and reading, and Year 7 for all domains except spelling, and Year 9 for all domains except reading and writing. Though, in general students in other domains performed better if they had parents or carers with higher education, the relationship between these factors was weaker.

Table A2-3-2: Average numeracy test scores for Year 9 students with major depressive disorder and those with no mental disorder, by parent or carer education

Parent or carer education	Major depressive disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Bachelor degree or higher	591.9	(571 - 613)	618.3	(613 - 623)
Diploma or certificate III/IV	563.1	(547 - 579)	585.2	(581 - 590)
Year 11 or 12	555.8	(527 - 584)	570.3	(562 - 578)
Year 10 or below	535.2	(506 - 564)	551.4	(538 - 565)

A2.3.3 Anxiety disorders

Students with an anxiety disorder achieved better scores when their parents or carers had higher levels of education, with a clear association between these factors for most domains in Year 3 to 7 (Table A2-3-3 and Table S2-3-9 to S2-3-12). For certain domains and Year levels this relationship was weaker or non-existent - for spelling in Year 3, and all domains except reading in Year 9.

Table A2-3-3: Average numeracy test scores for Year 9 students with any anxiety disorder and those with no mental disorder, by parent or carer education

Parent or carer education	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Bachelor degree or higher	576.8	(558 - 596)	618.3	(613 - 623)
Diploma or certificate III/IV	561.7	(547 - 576)	585.2	(581 - 590)
Year 11 or 12	529.9	(509 - 551)	570.3	(562 - 578)
Year 10 or below	530.7	(507 - 555)	551.4	(538 - 565)

A2.3.4 ADHD

For students with ADHD, having a better educated parent or carer was clearly associated with achieving higher test scores in grammar and spelling in Year 3, grammar in Year 5, grammar and writing in Year 7, and grammar and spelling in Year 9, but inconclusive for other combinations of test domain and Year level (Table A2-3-4 and Table S2-3-25 to S2-3-28).

Table A2-3-4: Average numeracy test scores for Year 9 students with ADHD and those with no mental disorder, by parent or carer education

Parent or carer education	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Bachelor degree or higher	564.8	(545 - 585)	618.3	(613 - 623)
Diploma or certificate III/IV	534.1	(516 - 552)	585.2	(581 - 590)
Year 11 or 12	557.6	(493 - 623)	570.3	(562 - 578)
Year 10 or below	518.7	(477 - 561)	551.4	(538 - 565)

A2.3.5 Oppositional problem behaviours and conduct disorder

For students with oppositional problem behaviours the advantage of having higher educated parents or carers was evident in data for Year 7 tests in grammar and spelling, and for the Year 9 test for spelling (Table A2-3-5 and Table S2-3-29 to S2-3-32). For conduct disorder, it was evident in grammar, writing and numeracy in Years 3 and 5, and grammar and spelling in Year 7 (Table S2-3-33 to S2-3-36). This was not consistent in other groups of test domain and Year level.

Table A2-3-5: Average numeracy test scores for Year 9 students with oppositional problem behaviours and those with no mental disorder, by parent or carer education

Parent or carer education	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Bachelor degree or higher	597.8	(570 - 625)	618.3	(613 - 623)
Diploma or certificate III/IV	541.4	(528 - 555)	585.2	(581 - 590)
Year 11 or 12	558.0	(529 - 587)	570.3	(562 - 578)
Year 10 or below	533.7	(508 - 560)	551.4	(538 - 565)

A2.4 Parent and/or carer labour force status

The parents and/or carers of students were asked whether or not they were in a two parent or carer family and the employment status of parents or carers in the family.

Findings for those students with no mental disorder were generally consistent across Year levels. For two parent or carer families, having both parents or carers employed was associated with better academic performance compared with than having one parent or carer employed,

and this was associated with better test scores than having neither parent or carer employed. There was some slight variation for test scores in Years 5 and 7 (spelling), and Year 9 (grammar, spelling, numeracy, Table A2-4-1), where students performed better where only one parent or carer was employed (Table S2-4-1 to S2-4-4). Having a sole parent or carer employed was always associated with better test scores compared with having both parents or carers unemployed. A sole parent or carer employed was consistently associated with better test scores than a two parent or carer family where neither parent or carer was employed, but were not as good compared with two parent or carer families where one was employed and the other was not. Being in an unemployed sole parent or carer family was consistently associated with lower test scores than a two parent or carer family where both parents or carers were unemployed, except in Year 5 for numeracy, Year 7 for reading and spelling, Year 9 for reading.

A2.4.1   Any disorder

For students with a mental disorder in two parent or carer families having both parents or carers employed was associated with better academic performance than having one parent or carer employed, which was associated with better academic performance than having neither parent or carer employed, for all domains in Years 3 and 5, for only writing in Year 7, and grammar, reading, and writing in Year 9 (Table A2-4-1 and Table S2-4-1 to S2-4-4). For students with a mental disorder in one parent or carer families having their sole parent or carer employed was associated with better academic performance compared with families where the sole carer was unemployed for all Year levels and domains.

Table A2-4-1: Average numeracy test scores for Year 9 students with and without a mental disorder, by parent or carer labour force status

Parent or carer labour force status	Any mental disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Both parents or carers employed	564.4	(553 - 576)	600.3	(596 - 604)
One parent or carer employed, one parent or carer not in employment	566.0	(546 - 586)	601.5	(594 - 610)
Both parents or carers not employed	551.0	(511 - 591)	545.6	(523 - 568)
Sole parent or carer employed	563.5	(550 - 577)	587.0	(579 - 595)
Sole parent or carer not employed	523.6	(501 - 546)	541.8	(529 - 554)

A2.4.2　Major depressive disorder

If a student had major depressive disorder, the labour force status of their parents in a two parent family was a poor predictor for the student's academic test scores (Table A2-4-2 and Table S2-4-5 to S2-4-8). For students with major depressive disorder in one parent or carer families having their sole parent or carer employed was better than them being unemployed for all Year levels and domains, except numeracy in Year 5 and spelling in Year 9.

Table A2-4-2: Average numeracy test scores for Year 9 students with major depressive disorder and those with no mental disorder, by parent or carer labour force status

Parent or carer labour force status	Major depressive disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Both parents or carers employed	573.1	(555 - 591)	600.3	(596 - 604)
One parent or carer employed, one parent or carer not in employment	581.8	(550 - 614)	601.5	(594 - 610)
Both parents or carers not employed	np	np	545.6	(523 - 568)
Sole parent or carer employed	566.0	(547 - 585)	587.0	(579 - 595)
Sole parent or carer not employed	551.9	(515 - 588)	541.8	(529 - 554)

np   Not available for publication because of small cell size, but included in totals where applicable

A2.4.3　Anxiety disorders

In families with two parents or carers, students performed better on average if both parents or carers were employed, followed by students in families with only one parent or carer employed, and lowest in families with neither parent employed. This pattern was consistently observed for all domains and Year levels except writing in Year 5, grammar, reading, spelling, and numeracy in Year 7, and spelling in Year 9 (Table A2-4-3 and Table S2-4-9 to S2-4-12). In sole parent families, higher average performance was observed in families where the sole parent or carer was employed for all Year levels and domains.

For students with social phobia in two parent or carer families having both employed was associated with better academic performance than having one employed, which was associated with better academic performance than having none employed, for all except writing in Year 3, grammar and reading in Year 5, writing in Year 7, and reading and writing in Year 9 (Table S2-4-13 to S2-4-16). For those in one parent or carer families having their sole parent or carer employed was better than them being unemployed for all domains in Year 3, reading and writing in Year 5, grammar, reading, spelling, and writing in Year 7, and grammar in Year 9.

For students with separation anxiety in two parent or carer families having both employed was associated with better academic performance than having one employed, which was associated with better academic performance than having none employed, for all in Year 3 except reading, all in Year 5 except grammar and writing, and none in Years 7 or 9 (Table S2-4-17 to S2-4-20). For those in one parent or carer families having their sole parent or carer employed was better than them being unemployed for all domains in Years 3, 5, and 7, and all except spelling in Year 9.

For students with generalised anxiety disorder in two parent or carer families having both employed was associated with better academic performance than having one employed, which was associated with better academic performance than having none employed, for reading and grammar in Year 3, reading and writing in Year 5, and for reading, spelling and writing in Year 9 (Table S2-4-21 to S2-4-24). For those in one parent or carer families having their sole parent or carer employed was better than them being unemployed for all Year levels and domains.

Sample sizes were too small for an analysis of test scores of students with obsessive-compulsive disorder by parent or carer labour force status.

Table A2-4-3: Average numeracy test scores for Year 9 students with any anxiety disorder and those with no mental disorder, by parent or carer labour force status

Parent or carer labour force status	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Both parents or carers employed	564.8	(548 - 582)	600.3	(596 - 604)
One parent or carer employed, one parent or carer not in employment	556.3	(530 - 582)	601.5	(594 - 610)
Both parents or carers not employed	555.7	(469 - 642)	545.6	(523 - 568)
Sole parent or carer employed	562.7	(546 - 579)	587.0	(579 - 595)
Sole parent or carer not employed	541.2	(513 - 569)	541.8	(529 - 554)

A2.4.4 ADHD

For students with ADHD in two parent or carer families having both employed was associated with better academic performance than having one employed, which was associated with better academic performance than having none employed, for all domains in Year 3 except writing and numeracy, all domains in Year 5, the numeracy test in Year 7, and all domains in Year 9 except spelling (Table A2-4-4 and Table S2-4-25 to S2-4-28). For those in one parent or

carer families having their sole parent or carer employed was associated with better academic performance than them being unemployed for all year levels and domains.

Table A2-4-4: Average numeracy test scores for Year 9 students with ADHD and those with no mental disorder, by parent or carer labour force status

Parent or carer labour force status	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Both parents or carers employed	553.6	(536 - 571)	600.3	(596 - 604)
One parent or carer employed, one parent or carer not in employment	547.2	(509 - 585)	601.5	(594 - 610)
Both parents or carers not employed	528.5	(466 - 591)	545.6	(523 - 568)
Sole parent or carer employed	562.9	(532 - 594)	587.0	(579 - 595)
Sole parent or carer not employed	499.8	(465 - 535)	541.8	(529 - 554)

A2.4.5   Oppositional problem behaviours and conduct disorder

For students with oppositional problem behaviours in two parent or carer families having both employed was associated with better academic performance than having one employed, which was associated with better academic performance than having none employed, for reading and numeracy in Year 7, and reading in Year 9, but no other groups (Table A2-4-5 and Table S2-4-29 to S2-4-32). For those in one parent or carer families having their sole parent or carer employed was associated with better academic performance than them being unemployed for all domains and Year levels.

For students with conduct disorder in two parent or carer families having both employed was associated with better academic performance than having one employed, which was associated with better academic performance than having none employed, for all domains in Year 3 and 5, but for Years 7 and 9 the sample sizes for certain groups were too small to discern any information (Table S2-4-33 to S2-4-36). For those in one parent or carer families having their sole parent or carer employed was associated with better academic performance than them being unemployed for grammar and numeracy in Year 3, all domains in Year 5 except grammar, and all domains in Years 7 and 9 except spelling and writing.

Table A2-4-5: Average numeracy test scores for Year 9 students with oppositional problem behaviours and those with no mental disorder, by parent or carer labour force status

Parent or carer labour force status	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Both parents or carers employed	567.6	(546 - 589)	600.3	(596 - 604)
One parent or carer employed, one parent or carer not in employment	579.6	(551 - 608)	601.5	(594 - 610)
Both parents or carers not employed	558.3	(490 - 627)	545.6	(523 - 568)
Sole parent or carer employed	559.5	(533 - 586)	587.0	(579 - 595)
Sole parent or carer not employed	519.7	(497 - 542)	541.8	(529 - 554)

A2.5 Area of residence

Students with no mental disorder who lived in greater capital cities achieved higher test scores compared with those students who lived in other areas.

A2.5.1 Any disorder

Table A2-5-1 shows the average numeracy test score for Year 9 students by whether or not they have a mental disorder, using the ABS GCCSA and ARIA+ classification systems.

By GCCSA area, on average, students with a mental disorder performed better in a greater capital city area compared to students with a mental disorder who were located in other areas of the country. This behaviour was true for all domains and Year levels except numeracy in Years and 9, and reading in Year 9 (Table S2-5-1 to S2-5-4). Regardless of location, those who had a mental disorder scored lower in their tests than those who had no mental disorder. This pattern was true for all domains and Year levels.

Table A2-5-1-1: Average numeracy test scores for Year 9 students with or without a mental disorder, by area of residence

Area of residence	Any mental disorder		No mental disorder	
Greater Capital City Statistical Area—	**Average**	**95% CI**	**Average**	**95% CI**
Greater capital cities	556.8	(548 - 566)	601.1	(597 - 605)
Rest of state	560.4	(547 - 574)	583.1	(578 - 588)
Remoteness (ARIA+)—	**Average**	**95% CI**	**Average**	**95% CI**
Major Cities of Australia	559.5	(550 - 569)	601.0	(597 - 605)
Inner Regional Australia	554.5	(538 - 571)	585.1	(580 - 590)
Outer Regional Australia	555.1	(535 - 576)	575.7	(565 - 586)
Remote or Very Remote Australia	576.1	(532 - 620)	576.0	(550 - 602)

By ARIA+ area, on average, students without a mental disorder performed better in less remote areas. This was true for all domains and Year levels. For students with a mental disorder, this was true for all domains in Year 3, all domains except writing in Year 5, reading and spelling in Year 7, and grammar and reading in Year 9 (Tables S2-5-41 to S2-5-44). Because of low sample sizes in the Remote or Very Remote Australia category, this data should be treated with caution.

A2.5.2 Major depressive disorder

Students who had major depressive disorder achieved lower test scores on average in their tests than those who had no mental disorder, regardless of location. This was true for all domains and Year levels except writing in rest of state areas for Year 7 students, and reading in rest of state areas in Years 7 and 9. On average, those students who suffer major depressive disorder performed better in areas outside greater capital cities. This was true for all domains and Year levels except reading in Year 3, numeracy in Year 5, grammar in Year 9, and writing in Years 5 and 9 (Table A2-5-2 and Table S2-5-5 to S2-5-8).

Table A2-5-2: Average numeracy test scores for Year 9 students with major depressive disorder and those with no mental disorder, by area of residence

Area of residence	Major depressive disorder		No mental disorder	
	Average	**95% CI**	**Average**	**95% CI**
Greater capital cities	565.9	(554 - 578)	601.1	(597 - 605)
Rest of state	578.4	(554 - 603)	583.1	(578 - 588)

A2.5.3 Anxiety disorders

Students with anxiety disorders recorded lower scores in their tests than those who had no mental disorder regardless of location. This was true for all domains and Year levels. On average, students with any of the given anxiety disorders performed better in greater capital city areas compared with those students who lived in other areas of the country. However, as students progressed through school this became less definitive, with students performing better in numeracy and reading in other areas in Year 7, and performing better in all domains except writing in other areas by Year 9 (Table A2-5-3 and Table S2-5-9 to S2-5-12).

Table A2-5-3: Average numeracy test scores for Year 9 students with any anxiety disorder and those with no mental disorder, by area of residence

Area of residence	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Greater capital cities	551.2	(541 - 562)	601.1	(597 - 605)
Rest of state	575.0	(555 - 595)	583.1	(578 - 588)

Social phobia sufferers performed better in great capital cities during Years 3 and 5 (except for spelling in Year 5), and performed better in rest of state areas for Years 7 and 9 (except for writing in Year 9). They scored lower in their tests compared to those who had no mental disorder, regardless of location, for all domains except reading, spelling, and writing in Year 7, and numeracy in Year 9 (Table S2-5-13 to S2-5-16).

Students who suffered from separation anxiety performed better in greater capital city areas during Years 3, 5, and 7. In Year 9 they performed better in rest of state areas, except in writing. When split by location they all scored lower in their tests compared to those with no mental disorder except in Year 9 for rest of state areas for reading and spelling (Table S2-5-17 to S2-5-20).

Students with generalised anxiety disorder performed better in greater capital cities during Years 3 and 5, and then for Years 7 and 9 they performed better in rest of state areas, except in writing (Table S2-5-21 to S2-5-24). In terms of how they compare to their peers who had no mental disorder: they performed better in rest of state areas in Year 7 for reading, and in Year 9 for grammar and reading, but not in other categories.

Students with obsessive-compulsive disorder performed better in greater capital city areas than rest of state areas except for Year 3 in writing, Year 7 in grammar and writing, and Year 9 in reading and spelling (Table S2-5-25 to S2-5-28). Students with obsessive-compulsive disorder

scored lower than those with no mental disorder except in reading for all locations, and rest of state for writing in Year 7, and in Year 9 for reading in rest of state.

A2.5.4 ADHD

ADHD sufferers scored considerably lower in test scores than most other mental disorders. For this reason, no category of ADHD sufferer by location performed better than those who did not have a mental disorder. Almost all students with ADHD performed better in greater capital cities than in other areas, except in Year 9 for grammar and spelling (Table A2-5-4 and Table S2-5-29 to S2-5-32).

Table A2-5-4: Average numeracy test scores for Year 9 students with ADHD and those with no mental disorder, by area of residence

Area of residence	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Greater capital cities	545.5	(529 - 562)	601.1	(597 - 605)
Rest of state	539.3	(519 - 560)	583.1	(578 - 588)

A2.5.5 Oppositional problem behaviours and conduct disorder

Students with oppositional problem behaviours (Table A2-5-5 and Table S2-5-33 to S2-5-36) and conduct disorder (Table S2-5-37 to S2-5-40) typically performed better in metropolitan areas. There were a few exceptions to this for students with oppositional problem behaviours, for example in reading for students in Year 5 and 7, grammar for Year 7, and writing for Year 9, results were better for those in rest of state areas.

Table A2-5-5: Average numeracy test scores for Year 9 students with oppositional problem behaviours and those with no mental disorder, by area of residence

Area of residence	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Greater capital cities	557.4	(542 - 573)	601.1	(597 - 605)
Rest of state	569.6	(549 - 590)	583.1	(578 - 588)

A2.6   Family functioning

For every increase in level of family functioning, a corresponding increase in average test score was not always observed for those students with no mental disorder. However, students with no mental disorder who lived in a family with a very good level of functioning had the highest test scores by level of family functioning for all domains in Years 3 and 5, and grammar and spelling in Year 7, and reading and numeracy in Year 9. Students performed best when they lived in a family with a good level of functioning in all remaining cases except for spelling in Year 9, where they performed best if they were in a family with a fair level of functioning (Table A2-6-1 and Table S2-6-1 to S2-6-4).

A2.6.1   Any disorder

Students with a mental disorder did not show a strong link between their test scores and the level of family functioning they experience. One notable aspect to the results is that the highest scoring students, by family functioning, were not in families with very good functioning environments. This was true for all domains in Year 3, 5, 7, and 9 (Table A2-6-1 and Table S2-6-1 to S2-6-4), and was the main difference between the results for those with and without a mental disorder, by family functioning. Instead, the highest performing students with a mental disorder were found in a variety of families by level of functioning, depending on which test domain and Year level they were in.

For example, students in Year 3 with a mental disorder performed best when in a family with a good level of functioning for writing and numeracy, but for grammar and spelling they performed best when in a family with a fair level of functioning, while for the reading test they performed best when in a family with a poor level of functioning. For students in Year 5 with a mental disorder, they performed best when in a family with a fair level of functioning for all domains except reading, where they performed best if they were in a family with a poor level of functioning. For those students with a mental disorder in Year 7, they performed best for reading and numeracy when in a family with a fair level of functioning, and best for all other domains when in a family with a poor level of functioning. For those in Year 9, they performed best in a family with a good level of functioning for grammar and reading, a fair level of functioning for numeracy, and a poor level of functioning for spelling and writing.

Table A2-6-1: Average numeracy test scores for Year 9 students with and without a mental disorder, by level of family functioning

Family functioning	Any mental disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Very good	551.0	(541 - 561)	595.7	(592 - 600)
Good	562.7	(549 - 576)	594.1	(588 - 600)
Fair	570.9	(548 - 593)	592.0	(583 - 601)
Poor	554.2	(524 - 584)	581.8	(566 - 597)

A2.6.2 Major depressive disorder

For students with major depressive disorder there was no clear relationship between level of family functioning and average test scores (Table A2-6-2 and Table S2-6-5 to S2-6-8). Students performed best if they were in families with very good levels of family functioning for certain Year levels and domains.

Students with major depressive disorder in Year 3 performed best when in a family with a very good (writing), good (grammar and spelling), fair (numeracy), or poor (reading) level of functioning. Those in Year 5 performed best when in a family with a very good (writing), good (spelling), fair (grammar and numeracy), or poor (reading) level of functioning. Those in Year 7 performed best when in a family with a very good (all domains) level of functioning. Those in Year 9 performed best when in a family with a fair (grammar, reading, numeracy), or poor (spelling, writing) level of functioning.

Table A2-6-2: Average numeracy test scores for Year 9 students with major depressive disorder and those with no mental disorder, by level of family functioning

Family functioning	Major depressive disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Very good	565.1	(551 - 579)	595.7	(592 - 600)
Good	561.9	(541 - 583)	594.1	(588 - 600)
Fair	590.3	(556 - 625)	592.0	(583 - 601)
Poor	578.7	(516 - 642)	581.8	(566 - 597)

A2.6.3   Anxiety disorders

For students with an anxiety disorder there was no clear relationship between level of family functioning and average test scores. Students could perform best at any level of family functioning depending on the Year level and test domain (Table A2-6-3 and Table S2-6-9 to S2-6-12).

For example, students with an anxiety disorder in Year 3 performed best when in a family with a very good (writing), good (spelling and numeracy), or fair (grammar and reading) level of functioning. Those in Year 5 performed best when in a family with a good (grammar, reading, spelling and numeracy), or poor (writing) level of functioning. Those in Year 7 performed best when in a family with a very good (numeracy), good (grammar, spelling, and writing), and fair (reading) level of functioning. Students in Year 9 performed best when in a family with a good (grammar, reading, spelling, and numeracy), or poor (writing) level of functioning.

Table A2-6-3: Average numeracy test scores for Year 9 students with any anxiety disorder and those with no mental disorder, by level of family functioning

Family functioning	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Very good	549.8	(537 - 563)	595.7	(592 - 600)
Good	573.8	(552 - 596)	594.1	(588 - 600)
Fair	567.0	(540 - 594)	592.0	(583 - 601)
Poor	554.8	(515 - 594)	581.8	(566 - 597)

No distinct pattern could be seen for students with social phobia in terms of family functioning (Table S2-6-13 to S2-6-16). Students did not perform at their best when in a family with very good family functioning in any of the domains at any Year level, in fact the lowest scores tended to occur in families with a "very good" level of family functioning. Certain Year levels and domains have the best performers in the poorest functioning families.

For example, students with social phobia in Year 3 performed best when in a family with a poor (grammar, reading, spelling, numeracy), or fair (writing) level of functioning. Those in Year 5 performed best when in a family with a good (spelling), fair (writing), or poor (grammar, reading, and numeracy) level of functioning. Those in Year 7 performed best when in a family with a good (numeracy), fair (grammar, reading, and spelling), or poor (writing) level of functioning. Those in Year 9 performed best when in a family with a fair (grammar, reading, and numeracy), or poor (spelling, writing) level of functioning.

Those students with separation anxiety tended to perform better in families with very good or good levels of functioning (Table S2-6-17 to S2-6-20).

For example, students with separation anxiety in Year 3 performed best when in a family with a very good (reading, writing and numeracy), or good (grammar, spelling) level of functioning. Those in Year 5 performed best when in a family with a very good (grammar and numeracy), good (reading and spelling), or poor (writing) level of functioning. Those in Year 7 performed best when in a family with a very good (grammar, reading, spelling, writing and numeracy) level of functioning. Those in Year 9 performed best when in a family with a good (grammar, reading and numeracy), or poor (spelling and writing) level of functioning.

Students with generalised anxiety disorder tended to perform better in families with very good or good levels of functioning. Exceptions to this included grammar and reading in Years 3 and 5, where they performed better in poor levels of family functioning (Table S2-6-21 to S2-6-24).

Students with generalised anxiety disorder in Year 3 performed best when in a family with a very good (writing), good (spelling and numeracy) or poor (grammar and reading) level of functioning. Those in Year 5 performed best when in a family with a very good (spelling, writing and numeracy), or poor (grammar and reading) level of functioning. Those in Year 7 performed best when in a family with a very good (writing), or good (grammar, reading, spelling and numeracy) level of functioning. Those in Year 9 performed best when in a family with a good (grammar, reading, spelling, and numeracy) level of functioning. The sample sizes for generalised anxiety sufferers in the writing test made the data insufficient for analysis.

Obsessive-compulsive disorder had a relatively low prevalence in schools, and made data for Years 3 and 5 insufficient for analysis by level of family functioning. Those in Year 7 performed best when in a family with a good (grammar, reading, and numeracy), or poor (spelling and writing) level of functioning. Those in Year 9 performed best when in a family with a good (reading), or poor (grammar, spelling, writing, and numeracy) level of functioning (Table S2-6-25 to S2-6-26).

A2.6.4   ADHD

Students with ADHD never performed at their best when in a family with a very good level of functioning (Table A2-6-4 and Table S2-6-27 to S2-6-30). For those in Year 3, they performed best when in a family with a good (writing and numeracy), fair (grammar), or poor (reading and spelling) level of functioning. Those in Year 5 performed best when in a family with a good (writing), fair (grammar, spelling, and numeracy), or poor (reading) level of functioning. Those in

Year 7 performed best when in a family with a good (grammar and reading), fair (numeracy), or poor (spelling and writing) level of functioning. Those in Year 9 performed best when in a family with a fair (grammar, reading, writing and numeracy), or poor (spelling) level of functioning.

Table A2-6-4: Average numeracy test scores for Year 9 students with ADHD and those with no mental disorder, by level of family functioning

Family functioning	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Very good	532.0	(516 - 548)	595.7	(592 - 600)
Good	549.6	(527 - 573)	594.1	(588 - 600)
Fair	564.3	(524 - 605)	592.0	(583 - 601)
Poor	534.4	(474 - 595)	581.8	(566 - 597)

A2.6.5   Oppositional problem behaviours and conduct disorder

Students with oppositional problem behaviours (Table A2-6-5 and Table S2-6-31 to S2-6-34) in Year 3 performed best when in a family with a very good (writing and numeracy), good (spelling), or poor (grammar and reading) level of functioning. Those in Year 5 performed best when in a family with a good (numeracy), or poor (grammar, reading, spelling, and writing) level of functioning. Those in Year 7 performed best when in a family with a very good (spelling), or good (grammar, reading, writing and numeracy) level of functioning. Those in Year 9 performed best when in a family with a good (writing), fair (reading and numeracy), or poor (grammar and spelling) level of functioning.

Students with conduct disorder (Table S2-6-35 to S2-6-38) in Year 3 performed best when in a family with a good (numeracy), fair (grammar, reading and spelling), or poor (writing) level of functioning. Those in Year 5 performed best when in a family with a fair (grammar, spelling, writing and numeracy), or poor (reading) level of functioning. Those in Year 7 performed best when in a family with a poor (all domains) level of functioning. Those in Year 9 performed best when in a family with a fair (spelling), or poor (grammar, reading, writing and numeracy) level of functioning.

Table A2-6-5: Average numeracy test scores for Year 9 students with oppositional problem behaviours and those with no mental disorder, by level of family functioning

Family functioning	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Very good	555.8	(537 - 574)	595.7	(592 - 600)
Good	565.9	(539 - 593)	594.1	(588 - 600)
Fair	576.9	(545 - 609)	592.0	(583 - 601)
Poor	550.2	(516 - 585)	581.8	(566 - 597)

A2.7   School ICSEA

For students with no mental disorder, attending a school with a higher ICSEA band was associated with higher test scores. This was true regardless of what test the student was doing, or what Year they were in (Table A2-7-1 and Table S2-7-1 to S2-7-4). ICSEA values are designed with a median of 1000, and a standard deviation of 100. Those with a score less than 1000 have less socio-educational advantage, and those with a score higher than 1000 have higher socio-educational advantage. For the purposes of this analysis, schools were split into three categories: those with ICSEA values in the bottom 25% (low advantage), those in the middle 50% (moderate advantage), and those in the top 25% (high advantage). This corresponded to the three groups: < 970, 970 – 1069, and > 1069. A small number of schools were not assigned an ICSEA value, for instance schools catering exclusively to students with special needs. Students attending these schools have been excluded from the analyses reported in this section.

A2.7.1   Any disorder

On average, students with any given mental disorder performed better in schools with high ICSEA values. This was true for all domains and all Year levels (Table A2-7-1 and Table S2-7-1 to S2-7-4).

Table A2-7-1: Average numeracy test scores for Year 9 students with and without a mental disorder, by school ICSEA band

ICSEA band	Any mental disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Low advantage	548.2	(536 - 560)	560.5	(554 - 567)
Moderate advantage	560.6	(549 - 572)	593.4	(590 - 597)
High advantage	577.4	(556 - 598)	632.3	(625 - 640)

A2.7.2   Major depressive disorder

Students with major depressive disorder in Year 3 who sat the writing and numeracy tests performed better in lower scoring ICSEA schools (Table S2-7-5). The same was true in Year 5 for grammar, but for numeracy they performed better in middle scoring ICSEA schools (Table S2-7-6). In Year 7, students with major depressive disorder did best in the middle scoring ICSEA band for numeracy, reading, and grammar, and better in higher scoring schools for spelling and writing (Table S2-7-7). For Year 9, students did better in middle scoring schools for reading, but otherwise did better in higher scoring schools (Table A2-7-2 and Table S2-7-8).

Table A2-7-2: Average numeracy test scores for Year 9 students with major depressive disorder and those with no mental disorder, by school ICSEA band

ICSEA band	Major depressive disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Low advantage	559.1	(540 - 578)	560.5	(554 - 567)
Moderate advantage	572.7	(556 - 589)	593.4	(590 - 597)
High advantage	582.4	(547 – 617)	632.3	(625 - 640)

A2.7.3   Anxiety disorders

Students with any given anxiety disorder in Years 3 and 5 performed better in higher advantage schools (Table S2-7-9 and S2-7-10). This was also the case in Years 7 and 9 (Table A2-7-3 and Table S2-7-11 and S2-7-12), with the exceptions of reading in Year 7, and grammar in Year 9, where they performed better in medium advantage schools.

Students with social phobia attending high advantage schools had higher average test scores than students with social phobia attending low advantage schools (Table S2-7-13 to S2-7-16) for

most domains in Years 3 (except spelling and numeracy), 5, 7 (except reading and numeracy), and 9 (except grammar).

For students with separation anxiety (Table S2-7-17 to S2-7-20), higher average test scores were observed in high advantage schools in Years 3 and 5, and for most domains in Year 7 (except reading). Results in Year 9 was inconclusive.

For students with generalised anxiety disorder, higher advantage schools had higher average test scores for most Year 3 domains (inconclusive for spelling and writing), for writing and numeracy in Year 5 (other tests inconclusive), for most domains in Year 7 (inconclusive for reading and numeracy), and all domains in Year 9 (Table S2-7-21 to S2-7-24).

For students with obsessive-compulsive disorder (Table S2-7-25 to S2-7-27) students in moderate advantage schools had higher average test scores in Year 3 for reading, spelling, and writing, in Year 7 for reading, spelling, and writing. Students in high advantage schools had higher average test scores in Year 3 for grammar, in Year 5 for reading, writing and numeracy, in Year 7 for grammar. Data for Year 9 was insufficient for analysis due to low sample sizes.

Table A2-7-3: Average numeracy test scores for Year 9 students with any anxiety disorder and those with no mental disorder, by school ICSEA band

ICSEA band	Any anxiety disorder		No mental disorder	
	Average	95% CI	Average	95% CI
Low advantage	553.7	(538 - 569)	560.5	(554 - 567)
Moderate advantage	563.7	(548 - 579)	593.4	(590 - 597)
High advantage	565.6	(533 - 598)	632.3	(625 - 640.

A2.7.4 ADHD

Students with ADHD achieved better test scores in higher scoring ICSEA schools. This was the case for all domains and Year levels except writing in Years 7 and 9, where data was inconclusive (Table A2-7-4 and Table S2-7-28 and S2-7-31).

Table A2-7-4: Average grammar test scores for Year 9 students with ADHD and those with no mental disorder, by school ICSEA band

ICSEA band	ADHD		No mental disorder	
	Average	95% CI	Average	95% CI
Low advantage	537.2	(514 - 560)	560.5	(554 - 567)
Moderate advantage	537.5	(520 - 555)	593.4	(590 - 597)
High advantage	571.2	(540 - 602)	632.3	(625 - 640)

A2.7.5   Oppositional problem behaviours and conduct disorder

Students with oppositional problem behaviours achieved better test scores in higher scoring ICSEA schools. This was the case for all domains and Year levels except writing in Year 3, and spelling in Year 9, where students from the middle scoring schools performed better (Table A2-7-5 and Table S2-7-32 and S2-7-35).

Students with conduct disorder (Table S2-7-36 to S2-7-39) achieved better test scores in higher scoring ICSEA schools, with the exceptions of spelling in Year 3, and grammar and numeracy in Year 7. Sample sizes were too small for students with conduct disorder to investigate behaviour by ICSEA bands for Year 9 students.

Table A2-7-5: Average grammar test scores for Year 9 students with oppositional problem behaviours and those with no mental disorder, by school ICSEA band

ICSEA band	Oppositional problem behaviours		No mental disorder	
	Average	95% CI	Average	95% CI
Low advantage	560.5	(554 - 567)	554.4	(533 - 576)
Moderate advantage	593.4	(590 - 597)	558.7	(542 - 576)
High advantage	632.3	(625 - 640)	581.7	(543 - 621)

A2.8   Summary

Students attending schools with high ICSEA scores have consistently higher NAPLAN scores across testing domains and Year levels. Mental disorders were more common in families experiencing a range of disadvantages. As such it is theoretically possible that the lower average test scores observed in students with mental disorders could be explained by the higher level of disadvantage that is associated with higher prevalence of mental disorders.

The figures presented in this chapter show that students with mental disorders consistently have lower average NAPLAN scores than students with no mental disorder within categories of socio-economic status and school advantage.

These findings suggest that association between mental disorder and NAPLAN scores persists after accounting for social disadvantage.

Appendix 3 – Project scope

Background

Young Minds Matter (YMM) was the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. The survey was conducted during 2013-14 by the Telethon Kids Institute at The University of Western Australia in conjunction with Roy Morgan Research, with funding from the Australian Government Department of Health.

Some 6,310 families with children and adolescents aged 4-17 years participated in the survey, which included a face-to-face diagnostic interview with the parents or carers on a tablet computer from 2,967 young people aged 11-17 years.

Additional education-related data available in *Young Minds Matter*

Information on attendance at school and use of services within the education sector has been published in *The Mental Health of Children and Adolescents: Report on the second Australian Child and Adolescent Survey of Mental Health and Wellbeing*. In addition to the information reported in that publication, YMM collected information on:

Parent-reported information:

- Number of schools attended
- Whether ever suspended from school
- Parent-rated performance in maths, English, art or drawing, sports or physical education, and science (for children aged 11 and over)

Youth self-report information:

- School connectedness (6 item scale about sense of belonging at school)
- School engagement (5 item scale about engagement in class work and learning activities)
- Self-rated performance in maths, English, art or drawing, sports or physical education, and science

The survey also collected some information on experiences of bullying and cyber-bullying and parent's own experiences when they were at school.

NAPLAN

In addition parents or guardians were asked for consent to access NAPLAN test results from 2008 through to 2016. NAPLAN data have being obtained from state testing authorities. Testing authorities have provided scaled scores, bands and categories (below, at, or above the National Minimum Standard) for each of the five testing domains.

Assessment of mental disorders and mental health problems in YMM

YMM included several measures of social and emotional wellbeing. These included:

- Diagnostic Interview Schedule for Children Version IV (DISC-IV). This tool applies standard diagnostic criteria as described in the Diagnostic and Statistical Manual for Mental Disorders (DSMIV) to assess number and duration of symptoms and associated impairment of functioning to diagnostic status for the following mental disorders:

  - Anxiety disorders
  - Social phobia
  - Separation anxiety
  - Generalised anxiety
  - Obsessive-compulsive disorder
  - Major depressive disorder
  - Attention-Deficit/Hyperactivity Disorder
  - Conduct disorder

  The DISC-IV also collects information on onset and duration of symptoms, and severity of impairment (mild, moderate or severe). The DISC-IV also assesses Oppositional Problem Behaviours.

- Strengths and Difficulties Questionnaire (SDQ) - Parent and Youth report
- Kessler 10 level of psychological distress (K10) - Youth Self-Report

Other contextual information collected in YMM

The survey collected a wide range of contextual information related to prevalence of mental disorders and academic outcomes including:

- Family structure

- Household income
- Parent/carer education and employment status
- Housing tenure
- Remoteness
- Socio-economic status of place of residence (SEIFA)
- Country of birth
- Family functioning
- Life stress events
- Financial strain
- Parent/carer mental health and substance use
- Youth risk behaviours (smoking, alcohol & other drugs, risky sexual behaviours) Self-harm, suicidal thoughts and behaviours
- Self-esteem (youth self-report)

Work program

1.   Validation and cleaning of NAPLAN data received from jurisdictional testing authorities.

2.   De-identification of NAPLAN test scores, and prepare update to Confidentialised Unit Record File (CURF) for YMM.

3.   Analysis of relationship between mental health and educational outcomes. Analyses to include:

i)   Association between mental disorder status and school connectedness and engagement

ii)   Associations between mental disorder status and academic achievement using contemporaneous NAPLAN results

iii)   Associations between mental disorder status and achievement trajectories

Key research questions:

1.   How many students with low connectedness or engagement at school have mental health problems?

2.   Is a current mental health problem associated with poorer academic outcomes? How does this vary by type of mental health problem?

3.   How much of the association between mental health problems and academic outcomes can be attributed to differences in attendance, and to socio-economic factors that are associated with mental disorders?

4.   Does onset of mental disorder alter trajectories of academic achievement?

5.   Do children receiving services for mental health problems either within schools or within the health sector have different trajectories of academic achievement?

Analysis methods

YMM data have been weighted to represent the population of 4-17 year-old children and adolescents in Australia. Weighted tables will be produced accounting for the survey design providing estimated numbers, proportions and confidence intervals to describe associations between mental health problems, contextual factors and academic outcomes. In addition multi-level modelling techniques will be used to assess changes in academic achievement over time.