MEDICINEINSIGHT

Epidemiology of mental health conditions and antidepressant use in people aged less than 25 years attending general practice

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EXECUTIVE SUMMARY

The Therapeutic Goods Administration (TGA) is investigating whether antidepressants contribute to an increased suicide risk in young people aged less than 25 years. A recent Australian study[1] using data on publicly subsidised antidepressant use and suicides among young people found increasing trends over the past 20 years for both. Rising antidepressant use among young people may be due to the prevalence of mental illnesses increasing, mental illness being better identified, and barriers to accessing non-pharmacological therapies and psychiatric or psychological services.

This study provides an insight into the prevalence of antidepressant use, mental health and related conditions among young people attending one of 444 MedicineInsight general practices between 2011 and 2020, which includes the COVID-19 period. The feasibility of using general practice records to identify suicides and self-harm is also explored.

Conditions were selected based on being:

- an indicated or off-label use of antidepressants such as depression, anxiety[i], post-traumatic stress disorder (PTSD), obsessive compulsive disorder (OCD), bipolar disorder, pain or menstrual disorders; or
- a condition that might contribute to the risk of depression, anxiety or suicide such as schizophrenia, personality disorders, substance abuse, attention deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD), eating disorders, gender dysphoria and sleep problems.

When interpreting the results provided on patient prevalence, it should be noted that:

- current or point prevalence estimates are based on conditions recorded only during the year(s) of interest
- ever or lifetime prevalence estimates are based on conditions recorded at any time up to the end of the year(s) of interest.

This report is funded by the Australian Government Department of Health.

Key findings

Prevalence of mental health and other relevant conditions (2018–2019)

- Among 693,260 patients aged less than 25 years who visited a MedicineInsight practice at least twice during 2018 and 2019, 7.6% had depression and/or anxiety recorded in 2018 or 2019 and 10.8% had either a history of, or current, depression and/or anxiety.
- The prevalence of anxiety (with or without depression) was 5.9% (current) and 8.6% (ever), followed by depression (with or without anxiety) at 4.3% (current) and 6.0% (ever).
- The next most recorded conditions were sleep problems (2.0% current and 3.5% ever), ADHD (1.8% current and 2.7% ever), pain (1.3% current and 2.3% ever) and ASD (1.1% current and 1.9% ever).
- For all other selected conditions, the ever prevalence was under 0.5%.

[i] Due to the nature of recording in general practice, our definition of anxiety includes both patients with anxiety disorder and those that might have anxiety recorded as a symptom.

- Prevalence (ever) was greater in females than males for depression (7.7% vs 4.2%), anxiety (10.6% vs 6.4%), bipolar disorder (0.3% vs 0.2%), PTSD (0.5% vs 0.2%), personality disorders (0.27% vs 0.04%) and eating disorders (0.8% vs 0.2%), respectively.
- In contrast, prevalence was significantly greater among males than females for schizophrenia/schizoaffective disorder (0.14% vs 0.09%), ASD (2.9% vs 0.9%), ADHD (4.2% vs 1.4%), other disruptive behaviour disorders (not ADHD; 0.5% vs 0.2%) and substance abuse (0.10% vs 0.05%), respectively.
- The patient prevalence (ever) estimates of the assessed mental health and other relevant conditions increased significantly with age, including depression, anxiety, bipolar disorder, schizophrenia/schizoaffective disorder, OCD, PTSD, personality disorders, eating disorders, sleep problems and substance abuse.

Use of antidepressant medicines

- Approximately 105,000 issued prescriptions for antidepressants were recorded during 2018–2019, and 71% of these were selective serotonin reuptake inhibitors (SSRIs).
- Among the 693,260 patients aged less than 25 years, 40,420 (5.8%) had at least one antidepressant prescription recorded during 2018–2019.
- Of the 40,420 patients prescribed an antidepressant during 2018–2019:
  - the majority were prescribed Pharmaceutical Benefits Scheme (PBS)-subsidised prescriptions (94.8%)
  - SSRIs were the most prescribed class of antidepressants (80.1%), and fluoxetine the most frequently prescribed medicine (30.3% of patients)
  - the average age of patients prescribed antidepressants was 19.6 years, greater than the mean age (11.5 years) of all patients aged less than 25 years
  - 65.5% were females, almost double the proportion of males (34.5%), consistent with a higher prevalence of depression in females than males.
- Among the 5,580 patients newly diagnosed with depression (with or without anxiety) and who had a current record of antidepressant use (recorded in the month before first diagnosis record to 31 December 2019), 67.8% had a mental health care plan or referral to a mental health specialist in the month prior to, or within 6 months of, first diagnosis record. A similar proportion (66.4%) was observed for the 5,629 patients newly diagnosed with anxiety (with or without depression) and who had a current record of antidepressant use.

Conditions recorded among patients prescribed antidepressants

- Of the 40,420 patients aged less than 25 years prescribed an antidepressant during 2018–2019, the prevalence (current and ever recorded, respectively) of mental health or other relevant conditions was:
  - depression and/or anxiety – 71.0% (current) and 80.6% (ever)
  - anxiety – 51.1% and 60.8%
  - depression – 51.0% and 59.9%
  - sleep problems – 10.1% and 15.4%
  - pain (including arthritis, fibromyalgia, migraine, neuropathic pain) – 6.1% and 10.0%
  - ADHD – 5.3% and 8.1%

- ASD – 4.0% and 6.7%.

Management of patients with current, ever and newly diagnosed depression or anxiety

- Among the 29,537 patients aged less than 25 years with a current record of depression, just over two thirds (69.8%) were prescribed at least one antidepressant during 2018–2019, and of the 41,768 patients with ever-recorded depression, 58.0% were prescribed an antidepressant during 2018–2019.
- Among the 41,165 patients with current anxiety, 50.2% were prescribed at least one antidepressant during 2018–2019 and of the 59,479 patients with ever-recorded anxiety 41.3% were prescribed an antidepressant during 2018–2019.
- Among the 8,861 patients with a newly recorded diagnosis of depression during 2018–19, 63.0% had at least one antidepressant prescription recorded in the period from one month before the first diagnosis record up to 31 December 2019. The average time between the first record of depression and first antidepressant prescription was approximately 7 weeks (mean 43 days).
- The majority (71.3%) of patients newly diagnosed with depression had a record of a mental health care plan or referral to a mental health specialist in the period from one month before to six months after the first diagnosis record. The average time between the first record of depression and first record of referral or treatment plan was approximately 2 weeks (mean 13 days).
- Of the 14,119 patients with a newly recorded diagnosis of anxiety during 2018–2019, 39.9% had an antidepressant prescription recorded in the period from one month prior to the first diagnosis record up to 31 December 2019. The average time between the first anxiety record and first antidepressant prescription was approximately 9 weeks (mean 65 days).
- Like patients with depression, 67.3% of patients newly diagnosed with anxiety had a record of a mental health care plan or referral to a mental health specialist. The time between the first anxiety record and first record of a treatment plan or referral was also 2 weeks (mean 14 days).

Antidepressant co-prescribing with other neurological/psychotropic medicines

- Of the 40,420 patients prescribed an antidepressant in 2018–2019, an antidepressant was prescribed on the same day as a/an:
  - antipsychotic for 8.7% of the patients
  - benzodiazepine/z-drug – 7.1%
  - melatonin – 5.8%
  - opioid – 3.6%
  - ADHD stimulant (dexamphetamine, methylphenidate) – 2.6%
  - non-stimulant for ADHD (atomoxetine, guanfacine, clonidine) – 1.9%.

10-year trends in antidepressant use, mental health and other relevant conditions, and suicide or suicidality

- The 10-year trend analysis covered the period 2011 to 2020. The patient cohort in each calendar year was patients aged less than 25 years who had at least two clinical encounters during the year of, and the year preceding, the calendar year of interest.

Antidepressant use

- Antidepressant prescribing in young people increased significantly across the 10-year study, by 1.8 times, from 2.6% of patients in 2011 to 4.7% in 2020.
- The antidepressant prescribing rate in patients aged 0–14 years increased from 0.3% in 2011 to 0.8% in 2020, and similarly increased for those aged 15–19 years from 4.9% to 9.4%, and from 7.0% to 11.9% among those aged 20–24 years.
- Prescribing of classes of antidepressant medicines, including SSRIs, noradrenergic and specific serotonergic antidepressants (NaSSAs), tricyclic antidepressants (TCAs), other antidepressants (including agomelatine, moclobemide, reboxetine and vortioxetine), also increased over the 10-year period.
- Antidepressant prescribing in patients aged less than 25 years increased with age and was greater among females than males, across the 10-year period.

Mental health and relevant conditions

- Across 10 years, the annual prevalence of depression increased at the same rate (1.8 times) as prescribing of antidepressants, from 1.7% in 2011 to 2.9% in 2020 for current (recorded in each calendar year of interest) depression, and from 3.7% in 2011 to 6.5% in 2020 for ever-recorded depression.
- Current anxiety increased by 3.6 times, from 1.2% in 2011 to 4.3% in 2020 and ever-recorded anxiety increased by 3.8 times, from 2.6% in 2011 to 9.8% in 2020.
- Ever-recorded ASD increased 2.9 times, from 0.7% in 2011 to 2.1% in 2020.
- Ever-recorded ADHD increased 2.7 times, from 1.2% in 2011 to 3.3% in 2020.
- Although remaining low (less than 0.3% in 2020), the ever prevalence of schizophrenia and bipolar disorder almost doubled, while eating disorders increased by 2.3 times.
- The prevalence of depression or anxiety increased with age, and consistent with other data, was more common in females than males, over the 10 years.
- The proportion of patients with multiple selected mental health and related conditions (multimorbidity) recorded each year increased over the 10-year period. The proportion of patients with:
  - two of the selected conditions recorded increased from 0.6% in 2011 to 2.1% in 2020
  - three of the selected conditions recorded increased from 0.03% in 2011 to 0.25% in 2020
  - at least four selected conditions recorded increased from 0.00% in 2011 to 0.03% in 2020.

  Similar findings were observed in analyses that were stratified by sex and age group.

Suicides, suicidality and self-harm

- The number of suicides recorded annually over the 10 years was very low, with fewer than 10 recorded. However, the recorded rate of suicidality and self-harm in patients increased significantly over the 10-year period.
  - Recorded suicide attempts increased 3 times, from 0.01% in 2011 to 0.03% in 2020.
  - Recorded suicidal ideation increased 4.5 times, from 0.02% in 2011 to 0.09% in 2020.
  - Recorded self-harm increased 3.3 times, from 0.03% in 2011 to 0.10% in 2020.

  Unlike the prevalence of depression and antidepressant prescribing, which is highest in 20–24-year-olds, the rate of suicide, suicidality and self-harm seems to be greatest in 15–19-year-olds.

1. BACKGROUND

Introduction

The Australian medicines regulator, the Therapeutic Goods Administration (TGA), is investigating whether antidepressants contribute to an increased suicide risk in young people under the age of 25 years. A recent Australian paper by Whitely et al, using data on publicly subsidised antidepressant use and suicides among young people, found increasing trends over the past 20 years for both.[1]

In response to the Whitely et al. paper, this study used information from MedicineInsight, an Australian primary care database, to investigate publicly subsidised and private-market antidepressant prescribing by general practitioners (GPs) for young people under the age of 25 years. We also provide information about the mental health and related conditions recorded in general practice for this age group and among those prescribed antidepressants. We examined trends from 2011 to 2020 in prescriptions for antidepressants, recording of mental health and related conditions, and suicides. The findings from this report will be used by the TGA, the Drug Utilisation Sub Committee (DUSC), policy makers and medicine sponsors to help inform their safety investigations, quality use of medicine activities and future research.

This report is funded by the Australian Government Department of Health.

Epidemiology of mental health conditions and suicidality in young people

Prevalence of mental health disorders in children and adolescents

The 2013–14 Second Australian Child and Adolescent Survey of Mental Health and Wellbeing, a national household survey, found that mental health disorders were common in children and adolescents aged 4–17 years. Almost 14% of the population in this age group experienced a mental health disorder in the preceding 12 months.[2] These findings are similar to the 2015 Global Burden of Disease study.

Attention deficit hyperactivity disorder (ADHD) was the most common mental disorder (7.4% of all children and adolescents), followed by anxiety disorders (6.9%), major depressive disorder (MDD, 2.8%) and conduct disorder (2.1%).[2] The prevalence of MDD was higher in adolescents (12–17 years) than children (4–11 years), 5% compared to 1.1%.

Comorbidity of mental health conditions was also relatively common – almost one-third of those with a disorder experienced two or more mental disorders at some time in the previous 12 months, equivalent to 4.2% of all 4–17-year-olds.[2]

MDD was severe in 42.8% of cases and moderate in 35.8%. The majority of anxiety disorders, ADHD and conduct disorder cases were mild. Two-thirds (65.7%) of 4–17 year-olds with ADHD, 53.8% with anxiety disorders and 58.7% with conduct disorder were assessed as having a mild disorder.[2]

Death by suicide among children and adolescents

Deaths of children by suicide is a complex and sensitive issue. The number of deaths of children attributed to suicide may be influenced by coronial processes and considerations as to whether the deceased was mature and aware of the consequences of their actions or committed to die.[3] Deaths by suicide are reported only for 5–17 year-olds; there have not been any deaths by suicide recorded in children aged under 5 years.

There were 100 deaths by suicide among children and adolescents (aged 5–17 years) in Australia in 2018, with the majority occurring in those aged 15–17 years. Although suicide is considered rare in this age group, in 2018 suicide was the leading cause of death among Australian children and adolescents aged 5–17 years. This is partly explained by low rates of other causes of death, reflecting Australia's high standard of living and high life expectancy.[3]

Suicidal ideation, plans and attempts, and self-harm in children

Suicidal ideation has been reported to be more common than suicide plans or attempts. About 8% of children and adolescents aged 12–17 years seriously consider attempting suicide every year and girls are twice as likely to seriously consider attempting suicide than boys (11% and 5%, respectively).[2]

According to findings from an Australian survey published in 2015, around one in 10 young people aged 12–17 reported having ever self-harmed (10.9%) and about three-quarters (73.5%) of these had harmed themselves in the previous 12 months. Around one in 13 young people (7.5%) aged 12–17 years had seriously considered attempting suicide in the previous 12 months.[2]

Suicidality and mental illness

For individuals who have a mental illness, suicidality (a term that encompasses suicide plans, attempts and ideation) is more prevalent than for those who have no mental illness. The 2013–14 National Survey of Mental Health and Wellbeing revealed that 8.6% of people with mental disorders lasting at least 12 months reported being suicidal in the 12 months prior to the survey; 0.8% of people without a 12-month mental disorder reported suicidality in that same period.[4] Overall, 72% of people who exhibited suicidality had a 12-month mental disorder.[4]

TGA response to antidepressant use and risk of suicide in young people

In December 2020, the TGA conducted a safety investigation in response to a review article by Whitely et al.[1] that suggested increased antidepressant prescribing over the past two decades may be contributing to an increased suicide rate in young people. The TGA's safety investigation covered the following:[5]

- The strength of evidence for the causal association between prescribing of antidepressants and rates of youth suicide in Australia.
- The international regulatory landscape with respect to antidepressant use in children and adolescents and risk minimisation.

- The current role of antidepressants in clinical practice for the treatment of psychiatric and developmental disorders in young people in Australia.
- Whether current Australian risk-minimisation measures are adequate.

As part of this investigation the TGA analysed Pharmaceutical Benefits Scheme (PBS) dispensing data between 2009 and 2018, which confirmed a steady increase in the antidepressant prescribing rate for Australian young people, male and female, between 2013 and 2019. Rates of suicide of young people also increased but with a more complex trajectory. Male and female suicide rates show differing trends. Male suicide rates increased over the 10-year period, by 33%, but with a smaller increase of 10% from 2013–15 to 2016–18, compared with an increase of 20% from 2009–12 to 2013–15. Female suicide rates increased by 9% over the 10 years, but the trend reversed in the latter half of the 10-year period, with a 4% decrease between 2013–15 and 2016–18, compared with an increase of 14% in the earlier years.[5]

Guidelines for the management of depression and anxiety among children and young adults

Most antidepressants are only registered for use in adults, 18 years or over. However, sertraline and fluvoxamine are indicated for the treatment of obsessive-compulsive disorder (OCD) in children aged 6 or 8 years and over, respectively. The PBS does not place restriction on age for antidepressant prescriptions.

Off-label prescribing is very common in paediatric populations because the clinical trials on which approved indications are based are usually conducted in adults and therapeutic options are therefore more limited.[5]

In the absence of registered indications for the use of antidepressants in children and adolescents, clinical guidelines provide clinicians with recommendations for the appropriate treatment of depression in these age groups. The Royal Australian and New Zealand College of Psychiatrists (RANZCP) 2020 clinical practice guidelines (Box 1) recommend fluoxetine and/or psychological interventions as first-line therapy for moderate-to-severe MDD in children and adolescents.[6] The previous guidelines from RANZCP (2005) recommended psychological interventions first line, and fluoxetine as second-line treatment for moderate-to-severe MDD in children and adolescents.[7] In contrast to studies in adults, combined therapy has not been shown to be superior to psychological or pharmacological monotherapy for first-line treatment of adolescents with MDD.[6]

Trial evidence suggests there is a faster time to response with antidepressants than psychological therapy, but this is largely offset by higher rates of suicidal ideation.[6] The 2020 guidelines also recommend that children and adolescents receiving treatment must be closely monitored for emergent suicidality, hostility, agitation, mania and unusual changes in behaviour.[6]

Selective serotonin reuptake inhibitors (SSRIs) are effective treatments for anxiety disorders in children and adolescents and are the preferred antidepressant class in children.[8] Because there is more safety data for fluoxetine use in children, it is the preferred SSRI, but other medicines in this class are also used. However, paroxetine is not recommended for children because it has been

associated with a greater risk of suicidal thoughts and behaviours and other serious adverse events. Of note, use of pharmacotherapy for children 6 years or younger is not recommended.[8]

Box 1. RANZCP recommendations for the treatment of MDD in children and adolescents

- Mild MDD should be managed with active monitoring in the first instance.
- Moderate-severe MDD should be managed in the first instance with fluoxetine and/or psychological interventions. If symptoms are unresponsive to one treatment modality, the other treatment modality should be added.
- Children and adolescents receiving treatment must be closely monitored for emergent suicidality, hostility, agitation, mania and unusual changes in behaviour.
- For unresponsive MDD, clinicians with child/adolescent expertise can consider switching to another SSRI or a non-SSRI antidepressant. Augmentation with a mood stabiliser or psychological therapy may be most effective if instituted at the same time as the antidepressant switch.

Interactions

Concurrent use of certain antidepressants with other psychotropic or neurological medicines may be associated with adverse effects. Care should be taken when using certain antidepressant medicines with:

- benzodiazepines/z-drugs
- opioids
- other antipsychotics
- lithium
- melatonin
- antiepileptics (carbamazepine, gabapentin, pregabalin, valproate, lamotrigine)
- stimulants for ADHD (dexamphetamine, methylphenidate)
- non-stimulants for ADHD (atomoxetine, guanfacine, clonidine).

For some medicines, depression may be a potential adverse effect. These include:

- combined oral contraceptives (although there is conflicting literature for this); and
- isotretinoin (acne treatments).

MedicineInsight program

MedicineInsight is a large-scale primary care data set of longitudinal de-identified electronic health records in Australia. MedicineInsight was initially established by NPS MedicineWise in 2011, with core funding from the Australian Government Department of Health. It collects general practice data to support quality improvement in Australian primary care and post-market surveillance of medicines. The monthly collation of collected data can be analysed for the purposes of improving patient care, quality improvement and evaluation, performing population health analysis, research and developing health policy.

MedicineInsight uses third-party data extraction tools to extract, de-identify, encrypt and securely transmit whole-of-practice data from the clinical information systems of over 700 general practices. Patient-level data are de-identified ‘at source’ meaning patients’ personal identifiers such as name,

date of birth and address are not extracted by the tool (although year of birth and postcode are extracted, enabling the calculation of age and Socio-Economic Indexes for Areas [SEIFA]). However, each patient has a unique identifying number, which allows all the records (clinical, prescription, referral etc) held in the database to be linked to the associated patient identifying number.

As of March 2020, 5,199 GPs were participating in the MedicineInsight program, representing 14% of the national GP workforce. MedicineInsight has national coverage across all states, territories and remote areas. Practices in South Australia are underrepresented and practices in Tasmania are overrepresented, but otherwise the distribution of MedicineInsight practices in each state is similar to the distribution of all practices in each state or territory. Compared with Medicare Benefits Schedule (MBS) data, MedicineInsight patients are representative of the Australian patient population in terms of age and gender. Of the patients in the MedicineInsight cohort, 3.0% were identified as Aboriginal or Torres Strait Islander people, similar to the 2.9% rate reported in the ABS Census of Population and Housing. Further information about MedicineInsight is available elsewhere[9,10] and online: https://www.nps.org.au/medicine-insight.

Rationale for this study

The findings of this study will be used by the DUSC and the TGA to help inform their safety investigations and quality use of medicines considerations, providing further context to our understanding of depression and antidepressant use among young Australians. MedicineInsight is well placed to provide an up-to-date picture of mental health and antidepressant use in young people. It is complementary to other data sources such as PBS data, providing information on PBS-subsidised and private prescriptions. MedicineInsight can also provide information on the sociodemographic and clinical characteristics of patients prescribed antidepressant medicines. Unlike PBS data, MedicineInsight can provide insights on the indications for use of antidepressants and comorbidities. MedicineInsight data can also be used to provide prevalence estimates of mental health conditions among young Australians and 10-year trends, as we await the ABS's Mental Health Study,[11] which commenced in December 2020. MedicineInsight prevalence estimates are based on GP-identified diagnoses and may reduce subjective biases inherent in self-reported health surveys.

There is potential for MedicineInsight data to be linked to other data sources such as PBS data, hospital admissions and death registrations in future projects pending ethics and data custodian approval. Linkage of MedicineInsight to other datasets could enable the identification and comparison of a control group of patients with depression who were not prescribed antidepressants to those that were, with complete dispensing and death data. The results of this descriptive study will inform the feasibility of any such future hypothesis-testing linkage project, in terms of the sample size and availability of information of the exposure and outcomes.

The findings from this research will also inform the quality use of medicines (QUM) considerations and activities of NPS MedicineWise.

Ethics and data governance approvals

In December 2017, NPS MedicineWise was granted ethics approval for the standard operations and uses of the MedicineInsight database by NPS MedicineWise. This program approval was given by the RACGP NREEC (NREEC 17-017).

This study was approved by the RACGP NREEC on 29 April 2021 (Application number: 20-068) and the MedicineInsight Data Governance Committee on 10 February 2021 (Application number: 2021–004).

2. AIM AND OBJECTIVES

Aim and specific objectives

The aim of this study is to provide descriptive information about young people aged less than 25 years relating to:

- the prevalence of mental health and other relevant conditions
- the use of antidepressant medicines
- the prevalence of mental health and other relevant conditions among patients prescribed antidepressant medicines
- the time to commence antidepressant medicines and the use of mental health care plans/referrals to specialists (where available) among patients newly diagnosed with depression or anxiety
- 10-year trends in the prevalence of mental health and other relevant conditions, antidepressant use, and suicide, suicidality (suicidal ideation – serious thoughts about taking one's own life, suicide plans and attempts) or self-harm.

Research questions

The specific objectives and research questions are presented in Table 1.

Table 1: SPECIFIC OBJECTIVES AND RESEARCH QUESTIONS

Objective	Research questions
1. Estimate the prevalence of depression or anxiety and other relevant conditions	a. What is the prevalence of depression (with or without anxiety) among MedicineInsight patients aged <25 years?
	b. What is the prevalence of anxiety (with or without depression) among MedicineInsight patients aged <25 years?
	c. What is the prevalence of depression and/or anxiety among MedicineInsight patients aged <25 years? [i]
	d. What is the prevalence of other mental health and related conditions among MedicineInsight patients aged <25 years?
	e. What is the prevalence of mental health and other relevant conditions among MedicineInsight patients aged <25 years, stratified by sociodemographic and clinical characteristics?
	f. What are the sociodemographic and clinical characteristics of patients with recorded depression (with or without anxiety), anxiety and depression and/or anxiety?
2. Describe the use of antidepressant medications	a. What are the sociodemographic and clinical characteristics of patients aged <25 years prescribed at least one antidepressant in 2018–2019?
	b. What antidepressant classes and antidepressant medicines were prescribed in 2018–2019 (overall, PBS, private) for patients aged <25 years?

[i] There are anecdotal and documented reports of a reluctance to record a diagnosis of depression for young patients in general practice, based on provider concerns about liability and patient concerns about confidentiality, particularly in the absence of specialist diagnosis. Alternative but related terms, such as anxiety, may be used instead. Therefore, we will report on depression and depression and/or anxiety throughout this report.

		c. What antidepressant classes and antidepressant medicines were prescribed in 2018–2019 for patients with current (recorded in 2018 or 2019) or a history (ever recorded up to 2019) of i) depression (with or without anxiety) ii) anxiety (with or without depression) iii) depression and/or anxiety iv) neither depression nor anxiety?
3.	Describe the conditions among patients using antidepressant medications	a. Among patients prescribed at least one antidepressant medicine in 2018–2019, what mental health or other relevant conditions did they have?
4.	Describe the co-prescribing among patients using antidepressant medications	a. Among patients prescribed at least one antidepressant medicine in 2018–2019, what other psychotropic or neurological medicines were prescribed concurrently – on the same day or any time during 2018–2019?
		b. Among patients prescribed at least one antidepressant medicine in 2018–2019, what proportion were prescribed 1, 2 or 3+ psychotropic or neurological medicines concurrently (ie, on the same day)?
5.	Explore the management of patients with newly diagnosed depression or anxiety	a. Among patients with i) depression or ii) anxiety, ever recorded and during 2018–2019, how many were prescribed an antidepressant?
		b. Among patients with newly diagnosed i) depression or ii) anxiety, how many were prescribed an antidepressant?
		c. Among patients with newly diagnosed i) depression and ii) anxiety who were prescribed an antidepressant, what was the average time to first recorded prescription?
		d. Among patients with newly diagnosed i) depression or ii) anxiety, how many were referred to a specialist and/or had a mental health care plan within 6 months?
		e. Among patients with newly diagnosed depression or anxiety who were prescribed an antidepressant, what was the average duration of therapy?
6.	Explore 10-year trends in mental health and relevant conditions, antidepressant use and suicide, suicidality or self-harm	a. What was the annual prevalence of mental health and relevant conditions among patients aged <25 years from 2011 to 2020, overall and stratified by age and sex?
		b. What was the annual proportion of patients prescribed an antidepressant medicine among patients aged <25 years from 2011 to 2020, overall and stratified by age and sex?
		c. What was the annual proportion of patients with suicide, suicidality or self-harm recorded among patients aged <25 years from 2011 to 2020, overall and stratified by age and sex?
		d. What proportion of patients aged <25 years had multiple mental health conditions recorded from 2011 to 2020, overall and stratified by age and sex?

3. METHODS

Study type/design

This is a descriptive analysis of data from patients attending MedicineInsight practices.

Study period

Study 1: 2 years from 1 January 2018 to 31 December 2019, inclusive, unless otherwise specified. Historical records outside of the study period were included when identifying patient demographics and diagnoses.

Study 2 (newly diagnosed with depression or anxiety analysis): 3 years from 1 January 2017 to 31 December 2019.

Study 3 (10-year trend analysis): calendar years over 10 years from 1 January 2011 to 31 December 2020 (Table 2), including the COVID-19 period in 2020.

Study cohort

General practice sites

De-identified patient data were obtained from 393 general practice sites, including 444 individual general practices, which met the standard data quality criteria in the MedicineInsight April 2021 download. A general practice site is used to describe one or more practices that share the same general practice database, either because they are operating within a common administrative system (eg, the same corporate entity) or in the same geographical area.

The standard data quality criteria applied included:

- the site had been established for at least 2 years, and
- had no significant interruptions of longer than 2 months in the 2 years prior to their practice data, and
- met the minimum threshold of clinical activity of at least 50 patients in the last 2 years.

Patient populations

The **general study population** were patients who met the following inclusion criteria:

- had visited a practice site that contributed data to MedicineInsight and met specific MedicineInsight data quality requirements
- had valid information for age (0–24 years as at 1 July 2019) and sex (male, female or indeterminate)

- had at least two clinical encounters[i] during the study period (1 January 2018 to 31 December 2019).

The **newly diagnosed with depression or anxiety population**, a subset of the general population, were patients who met all the above criteria and the following additional criteria:

- had been diagnosed with depression or anxiety with the first recorded diagnosis between 1 January 2018 and 30 June 2019 (allowing at least 6 months post diagnosis for management to be recorded)
- had at least one encounter 12 months or more prior to the first record of depression or anxiety (to ensure sufficient medical records available to exclude prior medical history).

The **10-year trend population** was calculated for each calendar year from 2011 to 2020 for patients who met the following inclusion criteria:

- Had visited a practice site that contributed data to MedicineInsight and met specific MedicineInsight data quality requirements.
- Had valid information for age (0–24 years as at 1 July calendar year of interest) and sex (male, female and indeterminate).
- Had at least two clinical encounters during the year of and the year preceding the calendar year of interest (eg, had at least two clinical encounters during 1 January 2010 to 31 December 2011 for calendar year 2011, and so on) (Table 2).

Table 2: 10-YEAR STUDY PERIOD

Calendar year	Study period	Patient cohort (at least two clinical encounters in this period)
2011	1 Jan 2011 – 31 Dec 2011	1 Jan 2010 – 31 Dec 2011
2012	1 Jan 2012 – 31 Dec 2012	1 Jan 2011 – 31 Dec 2012
2013	1 Jan 2013 – 31 Dec 2013	1 Jan 2012 – 31 Dec 2013
2014	1 Jan 2014 – 31 Dec 2014	1 Jan 2013 – 31 Dec 2014
2015	1 Jan 2015 – 31 Dec 2015	1 Jan 2014 – 31 Dec 2015
2016	1 Jan 2016 – 31 Dec 2016	1 Jan 2015 – 31 Dec 2016
2017	1 Jan 2017 – 31 Dec 2017	1 Jan 2016 – 31 Dec 2017
2018	1 Jan 2018 – 31 Dec 2018	1 Jan 2017 – 31 Dec 2018
2019	1 Jan 2019 – 31 Dec 2019	1 Jan 2018 – 31 Dec 2019
2020	1 Jan 2020 – 31 Dec 2020	1 Jan 2019 – 31 Dec 2020

[i] The Royal Australian College of General Practitioners' (RACGP) definition of an 'active' patient is one who visits the same practice at least three times in the past 2 years. However, based on previous work by NPS MedicineWise assessing whether regularly attending patients (three visits in the past 2 years) and infrequent attenders (1–2 visits in the past 2 years) are representative compared to national MBS information for patients who visited a GP, younger patients (<40 years) are slightly underrepresented in the MedicineInsight regularly attending cohort. To improve representation of younger patients in this study, patients with at least two visits in the past 2 years were selected.

Definitions

Clinical encounters

Clinical encounters, or any professional exchange between a patient and a healthcare professional, were defined as all encounters at the practice site with a GP or a nurse that were: a) not identified as administrator entries nor encounters that have been transferred/imported from another practice; and b) were not identified by predefined 'administration-type' terms found in the 'reason for encounter' field, such as 'administrative reasons', 'forms', and 'recall'[i].

Sociodemographic characteristics

The definitions used for the sociodemographic characteristics are presented in Table 3.

Table 3: SOCIODEMOGRAPHIC DEFINITIONS

Characteristic	Definition
Age	Age was calculated at 1 July in each calendar year of interest based on the patient's date of birth (defined as 1 July in the patient's year of birth) and presented as <10, 10–14, 15–19, and 20–24 years.
Sex	As recorded in the CIS (male, female or indeterminate/intersex).
State in Australia	State or territory was assigned based on each patient's postcode of residence. If patient postcode was missing, the practice postcode was used as a proxy.
Rurality/remoteness	Rurality was assigned based on a mapping of each patient's postcode of residence using ABS mapping of Postcode 2016 to the ASGS Remoteness Areas 2016 data.[12]
Socioeconomic status (SEIFA)	SEIFA was assigned based on mapping of each patient's postcode of residence using the ABS mapping of Postcode 2016 to the IRSAD.[13]

ABS = Australian Bureau of Statistics; ASGS = Australian Statistical Geography Standard; CIS = clinical information system; IRSAD = Index of Relative Socioeconomic Advantage and Disadvantage; SEIFA = Socio-Economic Indexes for Areas

Prescriptions

MedicineInsight prescription data are restricted to medicines prescribed by GPs and recorded in their clinical information system (CIS). These prescriptions include medicines that are partly or wholly government rebated from the PBS and Repatriation Schedule of Pharmaceutical Benefits (RPBS), and private (non-rebated) prescriptions. Private prescriptions are those paid for entirely by the patient or their private health insurer as they do not meet PBS/RPBS requirements related to the medicine prescribed, its indication for use, the amount supplied, or the number of repeats. Prescription data do not necessarily indicate whether a medicine was dispensed or used by the patient.

There are two potential sources of information about prescriptions in MedicineInsight – Medicine history ('Prescription') table and Prescription issued ('Script Item') table – which are linked to the patient. The 'Prescription' table contains details of medications prescribed to a patient and may also include medicines prescribed by specialists, hospital etc. The 'Script Item' table contains details of individual prescriptions issued for patients by their GP.

[i] Please note that in this instance, this term denotes that the reason for contact was to ask the patient to return to the practice, and it does not refer to the encounter itself.

Antidepressant medicines

Patients were defined as having had a prescription for an antidepressant medicine (Table 4) during the period of interest if they had a) at least one record of an issued prescription (from the 'Script Item' table) where the script date was during the study period, or b) at least one record of a prescription (from the 'Prescription' table) where the 'first_date' was during the study period. Imported scripts (transferred from a patient's previous GP) were excluded from the analysis as the date of prescribing for imported scripts may not be accurate. Antidepressant prescriptions were identified using the Anatomical Therapeutic Chemical (ATC) classification codes when available, or the medicine active ingredient text record was used (Table 4).

Table 4: ANTIDEPRESSANT MEDICINES OF INTEREST AND THEIR ATC CODES

Medicine class	Generic name	ATC code
SSRI	citalopram	N06AB04
	escitalopram	N06AB10
	fluoxetine	N06AB03
	fluvoxamine	N06AB08
	paroxetine	N06AB05
	sertraline	N06AB06
SNRI	desvenlafaxine	N06AX23
	duloxetine	N06AX21
	venlafaxine	N06AX16
NaSSA	mianserin	N06AX03
	mirtazapine	N06AX11
TCA	amitriptyline	N06AA09
	clomipramine	N06AA04
	doxepin	N06AA12
	dosulepin	N06AA16
	imipramine	N06AA02
	nortriptyline	N06AA10
MAOI	phenelzine	N06AF03
	tranylcypromine	N06AF04
Other antidepressants	agomelatine	N06AX22
	moclobemide	N06AG02
	reboxetine	N06AX18
	vortioxetine	N06AX26

MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI: selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant

Other medicines or medicine groups

Issued prescriptions for other medicines or medicine groups that may be associated with adverse effects when prescribed concurrently with certain antidepressants were assessed. These include

antipsychotics, opioids, benzodiazepines/z-drugs, opioids, melatonin, stimulants for ADHD (dexamphetamine, methylphenidate), non-stimulants for ADHD (atomoxetine, guanfacine, clonidine), lithium, and antiepileptics (carbamazepine, gabapentin, pregabalin, valproate, lamotrigine). Other medicines that have been associated with depression were also included such as combined oral contraceptives and isotretinoin (acne treatment). These medicines were identified based on ATC codes and the medicine active ingredient text record (Appendix A Table A1).

Co-prescribing

Co-prescribing was defined as having at least one record of an antidepressant prescription and at least one of each of the other assessed medicines or medicine groups – such as antipsychotics, opioids, benzodiazepines/z-drugs, opioids, melatonin, stimulants or non-stimulants for ADHD, lithium, antiepileptics, combined oral contraceptives and isotretinoin – with prescription recorded on the same date or during the study period.

Conditions and events

Mental health and other relevant conditions

Conditions were selected based on being:

- an indicated or off-label use of antidepressants, such as depression, anxiety, post-traumatic stress disorder (PTSD), OCD, bipolar disorder, pain (including arthritis, fibromyalgia, neuropathic pain, migraine), menstrual disorders (such as premenstrual dysphoric disorder); or
- a condition that might contribute to the risk of depression, anxiety or suicidality, such as schizophrenia, personality disorders, substance abuse, ADHD, autism spectrum disorder (ASD), eating disorders, gender dysphoria and sleep problems.

MedicineInsight ‘condition flags’ were used to identify patients with depression, anxiety and other relevant conditions. MedicineInsight condition flags have been developed by a team of medical advisors (practising GPs) and clinical coders to indicate those records where the conditions of interest (or their relevant synonyms) are reported in MedicineInsight. Both coded conditions (entered by the GP using a drop-down list in the CIS) and non-coded conditions (free text) are searched for in one or more of the 'Diagnosis', 'Reason for visit' or 'Reason for prescription' fields. These can be recorded at any time from the patient's earliest record up to the download date or end of study (ie, ever recorded in the medical history). Relevant terms used to identify the included condition are shown in Table 5.

Records identified by a free text string alone are not automatically flagged. Instead, a clinical coder reviews the text string to determine if it refers to the condition indicated or is present in another context (eg, a search for 'cancer' may identify ‘partner died from cancer'). Each record is flagged accordingly. Records indicating ‘suspected’, ‘query’ or ‘?’ records of the condition are not flagged as the condition, unless otherwise specified.

Due to the way conditions are recorded in general practice, the definition of anxiety includes patients with anxiety disorder and those with symptoms of anxiety. Patients with depression and/or anxiety were defined as those with either depression (without a record of anxiety), anxiety (without a record of

depression), depression and anxiety recorded together, or depression and anxiety recorded on separate occasions during 2018–2019.

Table 5: DEFINITIONS OF CONDITIONS

Condition	Definition
Depression	Relevant terms included: depression (disorder, endogenous, major, melancholic, organic, non-melancholic, psychotic, reactive, recurrent), anxiety/depression, neurotic depression, depressive anxiety disorder, mixed anxiety depression.
Anxiety	Relevant terms included: agoraphobia, anxiety, anxiety/depression, anxiety disorder, depressive anxiety disorder, GAD, generalised anxiety disorder, mixed anxiety/depressive disorder, nervous anxiety, neurotic anxiety, panic disorder, phobic anxiety, social anxiety disorder, social phobia.
Bipolar disorder	Relevant terms included: bipolar affective disorder, bipolar 1 disorder, bipolar 2 disorder, bipolar spectrum disorder, manic depressive illness, manic depressive psychosis.
OCD	Relevant terms included: obsessive compulsive disorder, obsessive-compulsive personality disorder, OCD.
PTSD	Relevant terms included: post-traumatic stress disorder, PTSD.
Schizophrenia, schizoaffective disorders, personality disorders	Relevant terms included: schizophrenia (catatonic, chronic, disorganised, hebephrenic, paranoid, undifferentiated), schizoaffective disorder, schizophreniform disorder, psychosis senile, senile dementia with psychosis, borderline schizophrenia, brief reactive schizophrenia, para schizophrenia.
Substance abuse	Relevant terms included: (abuse or dependence or addiction) of an opiate, IDU, injecting drug user, intravenous drug use, IV drug use, long-term opiate use, (abuse or dependence or addiction) of alcohol, alcohol addiction, alcohol dependence, alcohol-related brain injury, alcohol use disorder, alcoholic, alcohol withdrawal, alcoholism, Antabuse-type reaction, delirium tremens, Korsakoff's syndrome / dementia. Relevant medicines recorded in the scripts issued table or prescription history/current medication table. Relevant medications included: naltrexone, buprenorphine or methadone products when solely indicated for opiate substitution therapy, acamprosate (Campral) disulfiram (Antabuse), naltrexone.
Pain (including neuropathic pain, migraine, arthritis)	Relevant terms included: postherpetic neuralgia, neuropathic pain, tension headache, migraine, facial pain, fibromyalgia, pelvic pain due to MS, RA, rheumatoid arthritis, osteoarthritis (many of these conditions are rare in the <25 years age group).
Sleep problems	Relevant terms included: difficulty sleeping, insomnia (anxiety related, chronic, depression related, initial, late, middle, shift-work related, stimulant related, travel related), poor sleep, sleep disturbance, sleeping difficulty, trypanosomiasis/sleeping sickness.
Menstrual problems	Relevant terms included: premenstrual dysphoric disorder, menstrual dysphoria, PMS (premenstrual syndrome), PMT (premenstrual tension), premenstrual irritability, amenorrhoea, polymenorrhea, oligomenorrhea, excessive menstrual flow.

Condition	Definition
ASD	Relevant terms included: autism spectrum disorder, autistic, Asperger's, pervasive development disorder.
ADHD	Relevant terms included: attention deficit hyperactivity disorder, ADHD, attention deficit disorder, ADD, ADDH, ADHS, hyperkinesis, hyperactive.
Disruptive behaviour disorders (other than ADHD)	Relevant terms included: oppositional defiant disorder, ODD, conduct disorder, CD.
Gender dysphoria	Relevant terms included: gender dysphoria, gender identity disorder, gender incongruence.
Eating disorder	Relevant terms included: anorexia nervosa, bulimia nervosa, binge eating disorder, anorexia syndrome, orthorexia nervosa, compulsive eating, appetite – pica.
Borderline personality disorder and other personality disorders	Relevant terms included: borderline personality disorder, inadequate personality, BPD.

ADD = attention deficit disorder; ADDH = attention deficit disorder with hyperactivity; ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder; BPD = borderline personality disorder; CD = conduct disorder; GAD = generalised anxiety disorder; IRSAD = Index of Relative Socio-economic Advantage and Disadvantage; OCD = obsessive compulsive disorder; ODD = oppositional defiant disorder; PTSD = post-traumatic stress disorder; SEIFA = Socio-economic Indexes for Areas

Suicide, suicidality and self-harm

An algorithm was developed to identify records of suicide, suicidality (including suicide attempts or suicidal ideation) and self-harm recorded in the fields available, such as diagnosis and reason for encounter fields – recorded at any time from the patient's earliest record up to the data download date or end of the study (Table 6). This was an exploratory analysis for the purposes of assessing the feasibility of using MedicineInsight data to describe suicide or self-harm with the caveat that these events in general practice data in Australia have not been validated. Additionally, if a suicide is recorded as recently as 2020, the coronial process may still be ongoing, although suicide may not be recorded in MedicineInsight even if the process has been completed. The search terms were developed in conjunction with medical advisors at NPS MedicineWise and the Department of Health using Docle and Pyefinch (Table 6), SNOMED and MedDRA terms.[14]

Table 6: SEARCH TERMS FOR IDENTIFYING SUICIDE AND RELATED EVENTS IN MEDICINEINSIGHT

Event	Definition
Suicide	Relevant terms included: suicide, death (hanging, jumping, self-poison, non-accidental death, intentional, deliberate, self-inflicted).
Suicide attempt (suicidality)	Relevant terms included: attempted suicide, suicide attempt, parasuicide.
Suicidal ideation (suicidality)	Relevant terms included: suicidal ideation, suicidal thoughts, thinking of suicide, suicide ideas, suicidal tendencies.
Self-harm	Relevant terms included: self-harm, self-mutilation, self-injury.

Management of patients with depression or anxiety

Management of patients with depression or anxiety recorded was assessed as:

- At least one antidepressant prescription recorded for patients with prevalent (current or ever recorded) and for those identified as newly diagnosed with depression or anxiety during 2018–2019. Prescribing of an antidepressant medicine for newly diagnosed patients was assessed from the month prior to the first diagnosis record up to 31 December 2019. For patients with prevalent depression or anxiety, the assessment for antidepressant prescribing covered 2018–2019.
- At least one record of a mental health care plan or referral to a mental health specialist in the month prior to or within 6 months of the first diagnosis record, for patients newly diagnosed with depression or anxiety.

For patients newly diagnosed with depression or anxiety in 2018–2019, the duration (in days) from the first diagnosis record to first recorded antidepressant prescription or referral and/or mental health care plan was also determined. Calculation of this duration was based on the date of the first diagnosis, even for patients who had an antidepressant prescription or referral and/or mental health care plan recorded in the month before the first diagnosis record.

The duration of antidepressant therapy among newly diagnosed patients who started an antidepressant between 1 January 2018 and 30 June 2019 (the end period for identifying newly diagnosed patients to allow at least 6 months post-diagnosis for management to be recorded) was assessed. Duration of therapy was defined as the number of days between the first recorded prescription and the expected end date of the last prescription (ie, including gaps) until 31 December 2019.

Data analysis

Analyses of the data were conducted using SAS version 9.4 (SAS Institute Inc., Cary, NC, USA), including the use of the SURVEYFREQ procedure. Measures included descriptive statistics, frequencies, and proportions as appropriate. To indicate the reliability of the estimates of prevalence and proportion, 95% confidence intervals and p-values were included as needed. Robust errors were used to adjust for clustering by practice site when calculating confidence intervals.

Analyses involving the whole cohort (not stratified by sex) include patients with indeterminate sex. However, due to the small number of patients recorded as indeterminate sex, and to protect patient confidentiality, for the majority of the sex-stratified analyses only data for males and females are reported. Where possible, estimates for the indeterminate sex group are reported but should be interpreted with caution.

If a particular result was only seen in 1–4 patients, the result was reported as <5, aggregated with another patient category, or supressed entirely, to preserve the privacy of individuals.

4. STUDY COHORTS

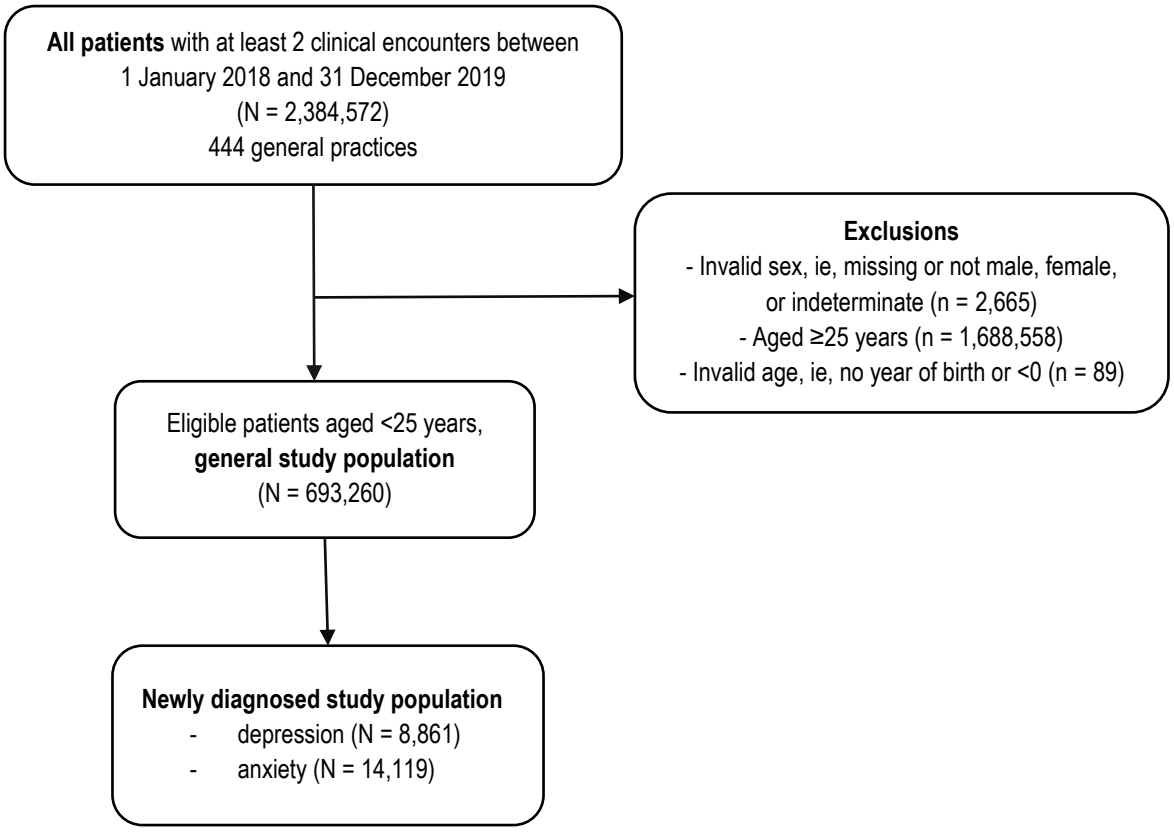
- The general study population included 693,260 patients aged less than 25 years with at least two clinical encounters during 2018–2019, from 444 MedicineInsight general practices.
- There were 8,861 patients newly diagnosed with depression (+/- anxiety) and 14,119 patients newly diagnosed with anxiety (+/- depression) in the 2018–2019 study population.
- The number of patients aged less than 25 years who were eligible for the 10-year trend analysis ranged from just over 464,000 in 2011 to 693,000 in 2019. The number of eligible general practices ranged from 376 in 2011 to 444 in both 2019 and 2020.

Patient cohorts and general practices

Study 1 and study 2 populations

Figure 1 shows the selection flowchart for patient cohorts in the general and newly diagnosed with anxiety or depression populations. From 444 MedicineInsight general practices, 693,260 patients aged less than 25 years were eligible for the general population. There were 8,861 patients identified as having newly diagnosed depression (with/without anxiety) and 14,119 patients with newly diagnosed anxiety (with/without depression).

FIGURE 1. STUDY SELECTION FLOWCHART FOR THE GENERAL POPULATION AND THE NEWLY DIAGNOSED WITH DEPRESSION OR ANXIETY POPULATION



10-year trend populations

The patient cohorts for each calendar year from 2011 to 2020 are presented in Table 7. The number of eligible general practices ranged from 376 in 2011 to 444 in both 2019 and 2020. The number of patients eligible for the study ranged from 464,478 in 2011 to 693,260 in 2019 and dropped to

675,465 in 2020. The sociodemographic characteristics of the patient cohort for each calendar year are presented in Appendix B.

Table 7: PATIENT COHORT SELECTION CRITERIA FOR EACH CALENDAR YEAR OF STUDY

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
All patients with at least 2 clinical encounters in the last 2 years	1,596,668	1,693,997	1,801,135	1,893,219	2,003,228	2,118,851	2,219,029	2,312,944	2,384,572	2,385,638
Invalid (not recorded) sex (excluded)	665	742	858	919	1,068	1,266	1,721	2,255	2,665	7,324
Patients aged ≥25 years (excluded)	1,131,367	1,203,085	1,281,134	1,348,387	1,424,342	1,503,080	1,572,718	1,638,578	1,688,558	1,702,765
Invalid age (excluded)	158	154	159	156	146	133	134	116	89	84
Eligible patients*	**464,478**	**490,016**	**518,984**	**543,757**	**577,672**	**614,372**	**644,456**	**671,995**	**693,260**	**675,465**
General practices	376	387	399	411	425	436	441	443	444	444
Practice sites	329	340	350	361	375	386	390	392	393	393

*Aged 0 to 24 years, valid gender (male, female, or indeterminate), at least 2 clinical encounters (on different days) in the last 2 years.

5. PREVALENCE OF MENTAL HEALTH AND RELEVANT CONDITIONS

- Among the 693,260 patients aged less than 25 years, the current (recorded in 2018 or 2019) and ever (recorded at any time up to December 2019) patient prevalence estimates of mental health and selected relevant conditions, respectively, were:
  - depression and/or anxiety – 7.64% (current) and 10.78% (ever)
  - anxiety – 5.94% and 8.58%
  - depression – 4.26% and 6.02%
  - ADHD – 1.76% and 2.70%
  - ASD – 1.08% and 1.89%
  - PTSD – 0.22% and 0.33%
  - bipolar disorder – 0.18% and 0.25%
  - OCD – 0.16% and 0.29%
  - schizophrenia/schizoaffective disorder – 0.08% and 0.12%.
- The patient prevalence (ever recorded) estimates of the assessed mental health and other relevant conditions increased significantly with age, including depression, anxiety, bipolar disorder, schizophrenia/schizoaffective disorder, OCD, PTSD, personality disorders, eating disorders, sleep problems and substance abuse.
- Prevalence (ever) was greater in females than males for depression (7.7% vs 4.2%), anxiety (10.6% vs 6.4%), bipolar disorder, PTSD, personality disorders and eating disorders, respectively.
- In contrast, the prevalence of schizophrenia/ schizoaffective disorder, ASD, ADHD, other disruptive behaviour disorders (not ADHD) and substance abuse was significantly greater among males than females.
- On average, patients with depression (mean age 20.0 years), anxiety (18.0 years), depression and/or anxiety (18.4 years) were older than the population of patients aged less than 25 years (11.5 years).

Study questions

- What is the prevalence of depression (with or without anxiety) among MedicineInsight patients aged <25 years?
- What is the prevalence of anxiety (with or without depression) among MedicineInsight patients aged <25 years?
- What is the prevalence of depression and/or anxiety among MedicineInsight patients aged <25 years?
- What is the prevalence of other mental health and related conditions among MedicineInsight patients aged <25 years?
- What is the prevalence of mental health and other relevant conditions among MedicineInsight patients aged <25 years, stratified by sociodemographic and clinical characteristics?
- What are the sociodemographic and clinical characteristics of patients with recorded depression (with or without anxiety), anxiety and depression and/or anxiety?

The general study population was used for the analyses in this chapter (see Figure 1 for further details about the patient cohorts). The study population comprised 693,260 patients aged less than 25 years with at least two clinical encounters recorded during 2018–2019.

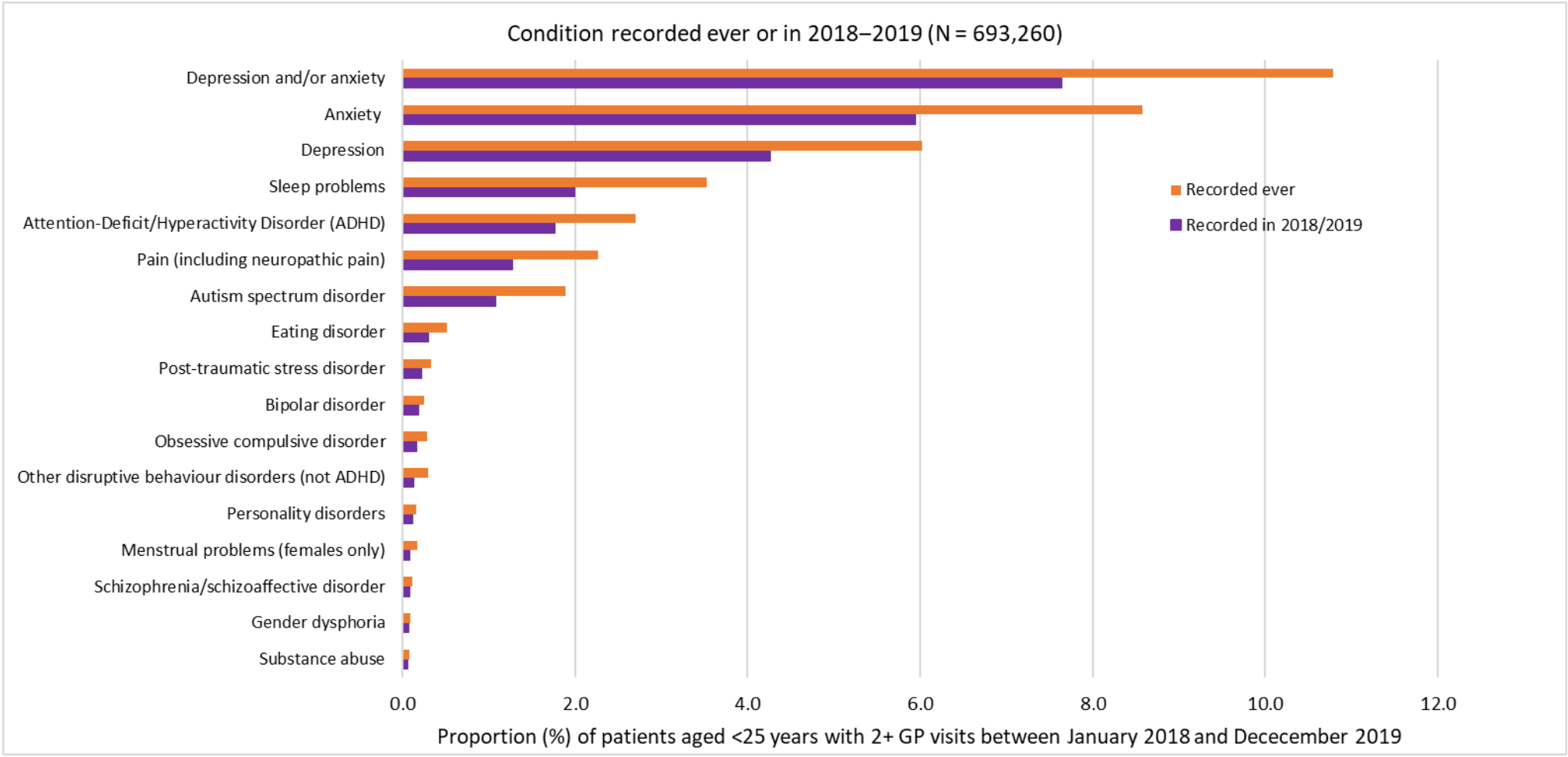
Prevalence of mental health and relevant conditions

Table 8 and Figure 2 show the crude patient prevalence estimates – current (recorded in 2018 or 2019) and ever (recorded at any time up to the end of 2019) – of mental health and other relevant conditions for patients aged less than 25 years.

As expected, and consistent with other Australian data,[2,15] anxiety and depression were the most prevalent mental health conditions. Among the 693,260 patients aged less than 25 years, 7.6% had depression and/or anxiety recorded in 2018 or 2019 and 10.8% had either a history of, or current depression and/or anxiety. The ever prevalence estimates of the other mental health conditions (PTSD, OCD, bipolar disorder and schizophrenia) were all below 0.35%.

Of the selected conditions that might contribute to the risk of depression, anxiety or suicide, sleep problems (3.5% ever) were the most prevalent, followed by ADHD (2.7% ever), pain (2.3% ever) and ASD (1.9% ever) (Table 8, Figure 2). Data from the second Australian Child and Adolescent Survey of Mental Health and Wellbeing, a national household survey conducted in 2013–14 (also known as the 'Young Minds Matter' survey), found the prevalence of ADHD was 7.4% among young people aged 4–17 years.[2] The ever prevalence of ADHD recorded in the MedicineInsight data for patients aged less than 25 years (2.7%) is likely underestimating the true prevalence because patients with ADHD are mainly diagnosed and managed by paediatricians and child psychiatrists, rather than GPs. Differences in the methods used may also partly explain the variation in estimates as the Young Minds Matter survey used self-reported data whereas this study used GP recorded diagnoses and a wider age range.

FIGURE 2. PATIENT PREVALENCE (CURRENT AND EVER) OF MENTAL HEALTH AND OTHER RELEVANT CONDITIONS IN PATIENTS AGED <25 YEARS IN 2018–2019



Menstrual problems were limited to females only, N = 360,949.

Table 8: PATIENT PREVALENCE (CURRENT AND EVER) OF MENTAL HEALTH AND OTHER RELEVANT CONDITIONS IN PATIENTS <25 YEARS IN 2018–2019 (N = 693,260)

Condition	Current (recorded in 2018 or 2019)		Ever (recorded at any time up to December 2019)		ABS NHS 2017–18 (0–14 years)	ABS NHS 2017–18 (15–24 years)	Child and Adolescent Survey of Mental Health and Wellbeing*
	Number	% (95% CI)	Number	% (95% CI)	%	%	% (age group)
Mental health conditions							
Depression	29,537	4.26 (4.00, 4.52)	41,768	6.02 (5.68, 6.37)	1.0	11.7	
Anxiety	41,165	5.94 (5.58, 6.30)	59,479	8.58 (8.08, 9.08)	5.7	17.3	6.9 (4–17 years)
Depression and/or anxiety	52,956	7.64 (7.22, 8.06)	74,746	10.78 (10.21, 11.35)			
OCD	1,138	0.16 (0.15, 0.18)	1,995	0.29 (0.26, 0.31)	0.7	2.2	0.8 (4–17 years)
PTSD	1,522	0.22 (0.20, 0.24)	2,282	0.33 (0.30, 0.36)	0.1	1.3	
Bipolar disorder	1,255	0.18 (0.16, 0.20)	1,767	0.25 (0.23, 0.28)			3.4 (16–24 years)[16]
Schizophrenia/schizoaffective disorder	575	0.08 (0.07, 0.09)	813	0.12 (0.10, 0.13)			
Other relevant conditions							
Substance abuse	385	0.06 (0.05, 0.06)	532	0.08 (0.07, 0.09)	0.0	0.8	
ASD	7,501	1.08 (0.97, 1.19)	13,119	1.89 (1.73, 2.05)			3.3 (10–14 years), 2.8 (15–19 years), 1.2 (20–24 years)[17]
ADHD	12,210	1.76 (1.55, 1.97)	18,706	2.70 (2.43, 2.96)			7.4 (4–17 years)
Other disruptive behaviour disorders (not ADHD)	901	0.13 (0.11, 0.15)	2,084	0.30 (0.26, 0.34)			
Personality disorders	846	0.12 (0.11, 0.14)	1,129	0.16 (0.15, 0.18)			
Eating disorders	2,092	0.30 (0.27, 0.33)	3,564	0.51 (0.47, 0.56)			2.4 (11–17 years)
Gender dysphoria	482	0.07 (0.05, 0.09)	596	0.09 (0.07, 0.11)			
Sleep problems	13,782	1.99 (1.81, 2.17)	24,474	3.53 (3.23, 3.84)			
Pain (including neuropathic pain)	8,803	1.27 (1.21, 1.33)	15,763	2.27 (2.16, 2.39)			
Menstrual problems (females only, n = 360,949)	302	0.08 (0.07, 0.10)	605	0.17 (0.15, 0.19)			

ABS NHS = Australian Bureau of Statistics National Health Survey 2017–2018; ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder

*Except where explicitly indicated, estimates are from the second Australian Child and Adolescent Survey of Mental Health and Wellbeing.

Prevalence of mental health and relevant conditions stratified by patient characteristics

The patient prevalence estimates (ever recorded) of mental health and relevant conditions for patients aged less than 25 years, stratified by sociodemographic and clinical characteristics are presented in Table 9 and Table 10. The patient prevalence estimates of most of the assessed mental health conditions increased significantly with age. For depression, prevalence increased from 0.09% in children aged less than 10 years to 17.2% in young adults, aged 20–24 years. The prevalence of anxiety was 1.3% in children aged less than 10 years and increased to 18.8% in those aged 20–24 years. Similar findings were observed for bipolar disorder, schizophrenia/schizoaffective disorder, OCD and PTSD.

Consistent with our previous data and other Australian literature,[2,18] females were more likely than males to have depression recorded (7.7% vs 4.2%) and anxiety (10.6% vs 6.4%). Also, the prevalence of bipolar disorder and PTSD was greater in females than males. In contrast, the prevalence of schizophrenia/schizoaffective disorder was significantly greater among males than females (0.14% vs 0.09%, respectively). The prevalence of OCD was similar for both females and males.

By remoteness, the prevalence of depression was greater in residents from inner regional areas (7.7%) than those from major cities (5.6%) or remote areas (4.0%). Anxiety was more prevalent among residents from inner regional areas compared with all the other areas. Like depression, the prevalence of bipolar disorder, schizophrenia/schizoaffective disorder and PTSD was greater among patients who resided in inner regional areas compared with those from major cities or remote areas. Patients living in inner regional areas (0.4%) were more likely to have OCD than those living in remote areas (0.1%). Data from the 'Young Minds Matter' survey, also showed higher rates of mental disorders in children or adolescents who reside in non-metropolitan areas compared with those who live in metropolitan areas.[2]

Similar to other Australian data that show greater rates of mental illnesses in children who reside in the lowest socioeconomic areas,[2] the prevalence of depression was significantly greater in patients from the most socioeconomically disadvantaged areas compared with those from the most advantaged areas (7.3% vs 5.2%). As with depression, bipolar disorder, schizophrenia/schizoaffective disorder and PTSD were more prevalent in patients from the most socioeconomically disadvantaged areas than those from the most advantaged areas. However, our findings indicate that there is no variation in the prevalence of anxiety or OCD in young people by socioeconomic status.

Variations in the prevalence of mental health conditions by jurisdiction were observed. In Tasmania the prevalence of depression, anxiety and OCD was significantly greater than each condition's overall prevalence for the entire cohort. On the other hand, the prevalence of depression, anxiety, bipolar disorder, schizophrenia/schizoaffective disorder, PTSD and OCD in the Northern Territory was significantly lower than each condition's overall prevalence for the entire cohort.

Table 9: PREVALENCE (EVER) OF MENTAL HEALTH CONDITIONS IN PATIENTS AGED <25 YEARS IN 2018–2019, STRATIFIED BY SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS

Characteristic	General population (n)	Depression		Anxiety		Depression and/or anxiety		Bipolar disorder		Schizophrenia/schizo affective disorder		OCD		PTSD	
		n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Total	**693,260**	**41,768**	**6.02 (5.68, 6.37)**	**59,479**	**8.58 (8.08, 9.08)**	**74,746**	**10.78 (10.21, 11.35)**	**1,767**	**0.25 (0.23, 0.28)**	**813**	**0.12 (0.10, 0.13)**	**1,995**	**0.29 (0.26, 0.31)**	**2,282**	**0.33 (0.30, 0.36)**
Age group (years)															
<10	310,586	270	0.09 (0.07, 0.10)	3,985	1.28 (1.16, 1.40)	4,137	1.33 (1.21, 1.45)	<5	0.00 (0.00, 0.00)	8	0.00 (0.00, 0.00)	75	0.02 (0.02, 0.03)	74	0.02 (0.02, 0.03)
10–14	115,610	2,206	1.91 (1.76, 2.06)	9,341	8.08 (7.49, 8.67)	10,202	8.82 (8.21, 9.44)	<25	0.02 (0.01, 0.03)	16	0.01 (0.01, 0.02)	338	0.29 (0.25, 0.33)	245	0.21 (0.18, 0.25)
15–19	120,014	13,992	11.66 (11.01, 12.31)	18,514	15.43 (14.56, 16.29)	23,710	19.76 (18.76, 20.75)	318	0.27 (0.22, 0.30)	162	0.14 (0.11, 0.16)	698	0.58 (0.52, 0.64)	706	0.59 (0.52, 0.66)
20–24	147,050	25,300	17.21 (16.04, 18.37)	27,639	18.80 (17.48, 20.11)	36,697	24.96 (23.38, 26.53)	1,421	0.97 (0.86, 1.07)	627	0.43 (0.36, 0.49)	884	0.60 (0.53, 0.67)	1,257	0.85 (0.77, 0.94)
Sex															
Male	332,205	13,895	4.18 (3.94, 4.43)	21,094	6.35 (5.96, 6.74)	26,945	8.11 (7.65, 8.57)	580	0.17 (0.15, 0.20)	470	0.14 (0.12, 0.16)	909	0.27 (0.25, 0.30)	647	0.19 (0.17, 0.22)
Female	360,949	27,840	7.71 (7.27, 8.15)	38,344	10.62 (10.01, 11.23)	47,756	13.23 (12.55, 13.92)	1,180	0.33 (0.29, 0.36)	342	0.09 (0.08, 0.11)	1,084	0.30 (0.27, 0.33)	1,630	0.45 (0.41, 0.49)
Indeterminate/intersex*	106	33	31.13 (22.78, 39.48)	41	38.68 (29.94, 47.42)	45	42.45 (33.49, 51.42)	7	6.60 (1.95, 11.26)	<5	0.94 (-0.91, 2.80)	<5	1.89 (-0.74, 4.51)	5	4.72 (0.95, 8.49)
Age – Sex															
M <10	161,976	151	0.09 (0.07, 0.11)	2,038	1.26 (1.13, 1.39)	2,119	1.31 (1.18, 1.44)	<5	0.00 (0.00, 0.00)	<5	0.00 (0.00, 0.00)	46	0.03 (0.02, 0.04)	39	0.02 (0.02, 0.03)
M 10–14	59,227	888	1.50 (1.36, 1.64)	4,460	7.53 (6.95, 8.11)	4,821	8.14 (7.53, 8.75)	12	0.02 (0.01, 0.03)	7	0.01 (0.00, 0.02)	196	0.33 (0.28, 0.39)	122	0.21 (0.16, 0.25)
M 15–19	53,467	4,564	8.54 (8.01, 9.06)	6,116	11.44 (10.71, 12.16)	8,090	15.13 (14.25, 16.01)	91	0.17 (0.13, 0.21)	83	0.16 (0.12, 0.19)	316	0.59 (0.51, 0.67)	182	0.34 (0.28, 0.40)
M 20–24	57,535	8,292	14.41 (13.54, 15.28)	8,480	14.74 (13.81, 15.66)	11,915	20.71 (19.54, 21.88)	475	0.83 (0.71, 0.94)	376	0.65 (0.55, 0.75)	351	0.61 (0.54, 0.68)	304	0.53 (0.46, 0.60)
F <10	148,591	119	0.08 (0.06, 0.10)	1,947	1.31 (1.19, 1.43)	2,018	1.36 (1.23, 1.48)	<5	0.00 (0.00, 0.00)	<5	0.00 (0.00, 0.01)	29	0.02 (0.01, 0.03)	35	0.02 (0.01, 0.03)

Characteristic		General population (n)	Depression		Anxiety		Depression and/or anxiety		Bipolar disorder		Schizophrenia/schizo affective disorder		OCD		PTSD	
			n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
F	10–14	56,373	1,316	2.33 (2.13, 2.54)	4,878	8.65 (8.02, 9.29)	5,378	9.54 (8.87, 10.21)	<15	0.02 (0.01, 0.03)	<10	0.02 (0.01, 0.03)	142	0.25 (0.21, 0.30)	123	0.22 (0.17, 0.26)
F	15–19	66,512	9,414	14.15 (13.37, 14.94)	12,382	18.62 (17.59, 19.64)	15,600	23.45 (22.31, 24.60)	226	0.34 (0.28, 0.39)	78	0.12 (0.09, 0.15)	380	0.57 (0.50, 0.64)	521	0.78 (0.69, 0.88)
F	20–24	89,473	16,991	18.99 (17.50, 20.48)	19,137	21.39 (19.69, 23.08)	24,760	27.67 (25.67, 29.68)	940	1.05 (0.94, 1.17)	251	0.28 (0.23, 0.33)	533	0.60 (0.51, 0.68)	951	1.06 (0.94, 1.18)
I	<10	19	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)
I	10–14	10	<5	20.00 (-4.90, 44.90)	<5	30.00 (1.47, 58.53)	<5	30.00 (1.47, 58.53)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)
I	15–19	35	<15	40.00 (24.33, 55.67)	<20	45.71 (29.70, 61.73)	<25	57.14 (40.99, 73.29)	<5	2.86 (-2.70, 8.41)	<5	2.86 (-2.70, 8.41)	<5	5.71 (-2.05, 13.48)	<5	8.57 (-0.22, 17.36)
I	20–24	42	17	40.48 (25.17, 55.78)	22	52.38 (38.36, 66.40)	22	52.38 (38.36, 66.40)	<10	14.29 (3.70, 24.87)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	<5	4.76 (-1.48, 11.00)
Rurality**																
	Major city	480,056	26,632	5.55 (5.14, 5.96)	40,387	8.41 (7.79, 9.03)	49,277	10.26 (9.56, 10.97)	1,094	0.23 (0.20, 0.26)	455	0.09 (0.08, 0.11)	1,324	0.28 (0.25, 0.30)	1,376	0.29 (0.26, 0.32)
	Inner regional	138,806	10,618	7.65 (7.13, 8.17)	14,024	10.10 (9.30, 10.91)	18,330	13.21 (12.40, 14.01)	467	0.34 (0.28, 0.39)	233	0.17 (0.13, 0.20)	479	0.35 (0.30, 0.39)	623	0.45 (0.37, 0.53)
	Outer regional	66,022	4,184	6.34 (5.43, 7.24)	4,717	7.14 (5.87, 8.42)	6,615	10.02 (8.58, 11.46)	190	0.29 (0.22, 0.35)	123	0.19 (0.11, 0.26)	180	0.27 (0.20, 0.35)	268	0.41 (0.32, 0.49)
	Remote/very remote	8,376	334	3.99 (3.25, 4.72)	351	4.19 (3.18, 5.20)	524	6.26 (5.14, 7.37)	16	0.19 (0.12, 0.26)	<5	0.02 (-0.01, 0.06)	12	0.14 (0.06, 0.23)	15	0.18 (0.08, 0.28)
Socioeconomic status (SEIFA IRSAD quintile)**																
	1 (most disadvantaged)	97,609	7,106	7.28 (6.45, 8.11)	8,569	8.78 (7.73, 9.82)	11,475	11.76 (10.53, 12.99)	359	0.37 (0.29, 0.44)	185	0.19 (0.15, 0.23)	300	0.31 (0.25, 0.36)	460	0.47 (0.38, 0.57)
	2	107,611	7,404	6.88 (6.38, 7.38)	9,795	9.10 (8.39, 9.81)	12,611	11.72 (10.93, 12.51)	299	0.28 (0.23, 0.32)	170	0.16 (0.12, 0.20)	316	0.29 (0.24, 0.34)	447	0.42 (0.35, 0.48)
	3	160,071	10,404	6.50 (6.02, 6.98)	14,334	8.95 (8.28, 9.63)	18,135	11.33 (10.57, 12.09)	400	0.25 (0.21, 0.29)	198	0.12 (0.10, 0.15)	441	0.28 (0.24, 0.31)	608	0.38 (0.32, 0.44)
	4	161,964	8,150	5.03 (4.56, 5.50)	12,669	7.82 (7.04, 8.61)	15,491	9.56 (8.67, 10.46)	323	0.20 (0.16, 0.23)	133	0.08 (0.06, 0.10)	376	0.23 (0.20, 0.27)	416	0.26 (0.22, 0.29)

Characteristic	General population (n)	Depression		Anxiety		Depression and/or anxiety		Bipolar disorder		Schizophrenia/schizo affective disorder		OCD		PTSD	
		n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
5 (most advantaged)	166,005	8,704	5.24 (4.78, 5.71)	14,112	8.50 (7.75, 9.25)	17,034	10.26 (9.44, 11.08)	386	0.23 (0.19, 0.28)	127	0.08 (0.06, 0.09)	562	0.34 (0.30, 0.38)	351	0.21 (0.17, 0.25)
State / territory															
ACT	20,351	1,374	6.75 (5.31, 8.19)	1,955	9.61 (7.75, 11.46)	2,373	11.66 (9.50, 13.83)	82	0.40 (0.20, 0.61)	18	0.09 (0.03, 0.14)	82	0.40 (0.29, 0.52)	69	0.34 (0.15, 0.52)
NSW	267,729	17,043	6.37 (5.70, 7.03)	23,523	8.79 (7.84, 9.73)	29,786	11.13 (10.03, 12.22)	886	0.33 (0.28, 0.38)	382	0.14 (0.12, 0.17)	823	0.31 (0.27, 0.34)	1,010	0.38 (0.32, 0.44)
NT	9,835	268	2.73 (2.03, 3.42)	234	2.38 (1.60, 3.16)	384	3.90 (2.90, 4.90)	9	0.09 (0.02, 0.16)	5	0.05 (0.02, 0.09)	8	0.08 (0.04, 0.12)	<5	0.04 (0.01, 0.07)
QLD	142,176	7,724	5.43 (4.99, 5.88)	11,214	7.89 (7.23, 8.55)	14,270	10.04 (9.31, 10.76)	276	0.19 (0.17, 0.22)	156	0.11 (0.07, 0.15)	375	0.26 (0.22, 0.31)	433	0.30 (0.26, 0.35)
SA	13,772	829	6.02 (5.15, 6.89)	1,243	9.03 (7.01, 11.04)	1,563	11.35 (9.24, 13.46)	20	0.15 (0.06, 0.23)	16	0.12 (0.04, 0.20)	31	0.23 (0.12, 0.33)	<50	0.35 (0.25, 0.45)
TAS	34,776	2,792	8.03 (6.76, 9.30)	3,827	11.00 (9.39, 12.62)	4,877	14.02 (12.28, 15.77)	111	0.32 (0.22, 0.42)	53	0.15 (0.08, 0.22)	160	0.46 (0.35, 0.57)	120	0.35 (0.24, 0.45)
VIC	126,268	6,928	5.49 (4.69, 6.28)	10,782	8.54 (7.22, 9.86)	13,097	10.37 (8.88, 11.87)	230	0.18 (0.13, 0.23)	119	0.09 (0.07, 0.12)	322	0.26 (0.19, 0.32)	336	0.27 (0.20, 0.33)
WA	78,353	4,810	6.14 (5.46, 6.82)	6,701	8.55 (7.61, 9.49)	8,396	10.72 (9.61, 11.83)	153	0.20 (0.15, 0.24)	64	0.08 (0.06, 0.11)	194	0.25 (0.20, 0.29)	262	0.33 (0.27, 0.40)
Comorbidity															
Substance abuse	532	255	47.93 (43.15, 52.71)	252	47.37 (42.38, 52.36)	325	61.09 (56.01, 66.18)	37	6.95 (4.50, 9.41)	31	5.83 (3.98, 7.67)	13	2.44 (1.05, 3.83)	33	6.20 (4.16, 8.25)
ASD	13,119	1,409	10.74 (10.02, 11.46)	3,456	26.34 (24.93, 27.75)	3,856	29.39 (27.95, 30.83)	86	0.66 (0.50, 0.81)	77	0.59 (0.45, 0.72)	276	2.10 (1.83, 2.38)	101	0.77 (0.61, 0.93)
ADHD	18,706	2,372	12.68 (11.66, 13.70)	4,417	23.61 (22.27, 24.95)	5,221	27.91 (26.47, 29.35)	193	1.03 (0.83, 1.23)	81	0.43 (0.33, 0.54)	282	1.51 (1.31, 1.70)	241	1.29 (1.08, 1.50)
Other disruptive behaviour disorders (not ADHD)	2,084	341	16.36 (14.50, 18.22)	605	29.03 (26.62, 31.44)	730	35.03 (32.52, 37.54)	30	1.44 (0.93, 1.95)	16	0.77 (0.36, 1.18)	57	2.74 (2.03, 3.45)	58	2.78 (2.10, 3.47)
OCD	1,995	668	33.48 (30.97, 36.00)	1,235	61.90 (59.55, 64.26)	1,366	68.47 (66.00, 70.94)	66	3.31 (2.50, 4.12)	36	1.80 (1.19, 2.42)	0	0.00 (0.00, 0.00)	54	2.71 (1.97, 3.44)
PTSD	2,282	1,214	53.20 (50.76, 55.63)	1,300	56.97 (54.47, 59.46)	1,596	69.94 (67.50, 72.37)	123	5.39 (4.30, 6.48)	54	2.37 (1.69, 3.05)	54	2.37 (1.75, 2.98)	0	0.00 (0.00, 0.00)

Characteristic	General population (n)	Depression		Anxiety		Depression and/or anxiety		Bipolar disorder		Schizophrenia/schizo affective disorder		OCD		PTSD	
		n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Personality disorders	1,129	837	74.14 (71.60, 76.67)	733	64.92 (62.03, 67.82)	930	82.37 (80.08, 84.67)	172	15.23 (12.93, 17.54)	46	4.07 (2.82, 5.33)	29	2.57 (1.68, 3.45)	175	15.50 (13.39, 17.61)
Eating disorders	3,564	1,524	42.76 (40.56, 44.96)	1,695	47.56 (45.34, 49.78)	2,076	58.25 (56.01, 60.49)	85	2.39 (1.81, 2.96)	26	0.73 (0.44, 1.02)	123	3.45 (2.88, 4.02)	124	3.48 (2.82, 4.14)
Gender dysphoria	596	284	47.65 (43.36, 51.94)	315	52.85 (46.99, 58.72)	384	64.43 (59.08, 69.77)	19	3.19 (1.63, 4.74)	8	1.34 (0.40, 2.28)	23	3.86 (2.20, 5.52)	20	3.36 (1.64, 5.07)
Sleep problems	24,474	6,056	24.74 (23.15, 26.34)	8,477	34.64 (33.22, 36.05)	10,037	41.01 (39.43, 42.59)	366	1.50 (1.27, 1.72)	143	0.58 (0.46, 0.71)	284	1.16 (1.02, 1.30)	431	1.76 (1.53, 1.99)

* Due to the small number of patients with indeterminate sex, these estimates should be interpreted with caution.

**Patients with missing or indeterminate residential postcode were assigned the postcode for the general practice they attend. Cells with values less than five are suppressed including complementary suppression of other cells.

ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder; IRSAD = Index of Relative Socio-economic Advantage and Disadvantage; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder; SEIFA = Socio-economic Indexes for Areas

In separate analyses for males and females, the prevalence of assessed mental health conditions increased significantly with age (Table 9 and Figures 3–5). The prevalence of depression was similar for both boys and girls aged less than 10 years and, thereafter, was significantly greater among females than males (Figure 3). For anxiety, prevalence was similar for boys and girls aged less than 15 years but was significantly greater among females than males aged 15–24 years. Similar findings were observed for bipolar disorder (Figure 4) and PTSD (Figure 5). Males aged 20–24 years were more likely to have schizophrenia/schizoaffective disorder compared with females in the same age group (0.7% vs 0.3%, respectively) (Figure 4). The prevalence of OCD was similar for both males and females across all age groups (Figure 5).

FIGURE 3. AGE- AND SEX-SPECIFIC PATIENT PREVALENCE (EVER) OF DEPRESSION, ANXIETY AND DEPRESSION AND/OR ANXIETY FOR PATIENTS AGED <25 YEARS, 2018–2019

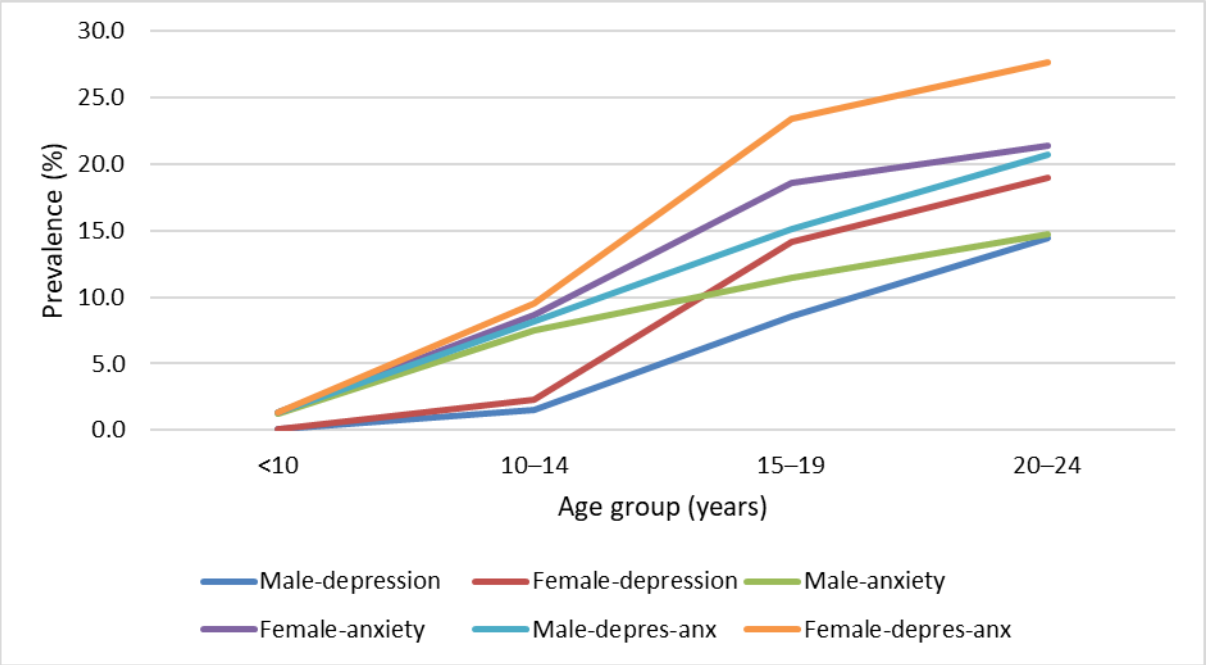


FIGURE 4. AGE- AND SEX-SPECIFIC PATIENT PREVALENCE OF BIPOLAR DISORDER AND SCHIZOPHRENIA/SCHIZOAFFECTIVE DISORDER FOR PATIENTS AGED <25 YEARS, 2018–2019

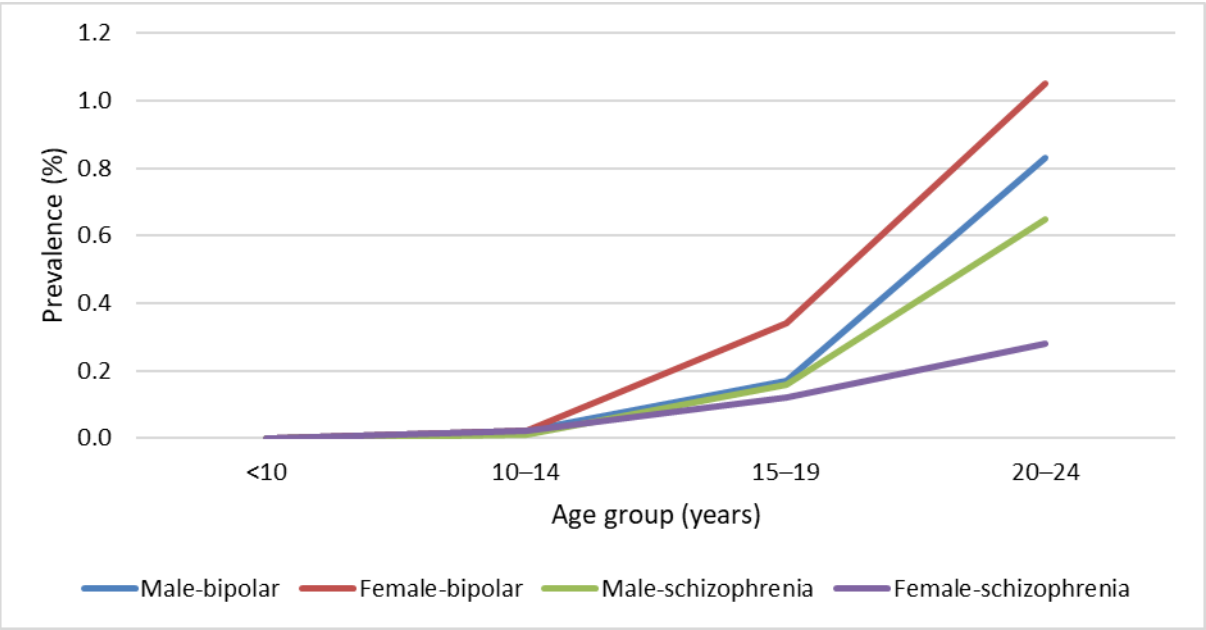
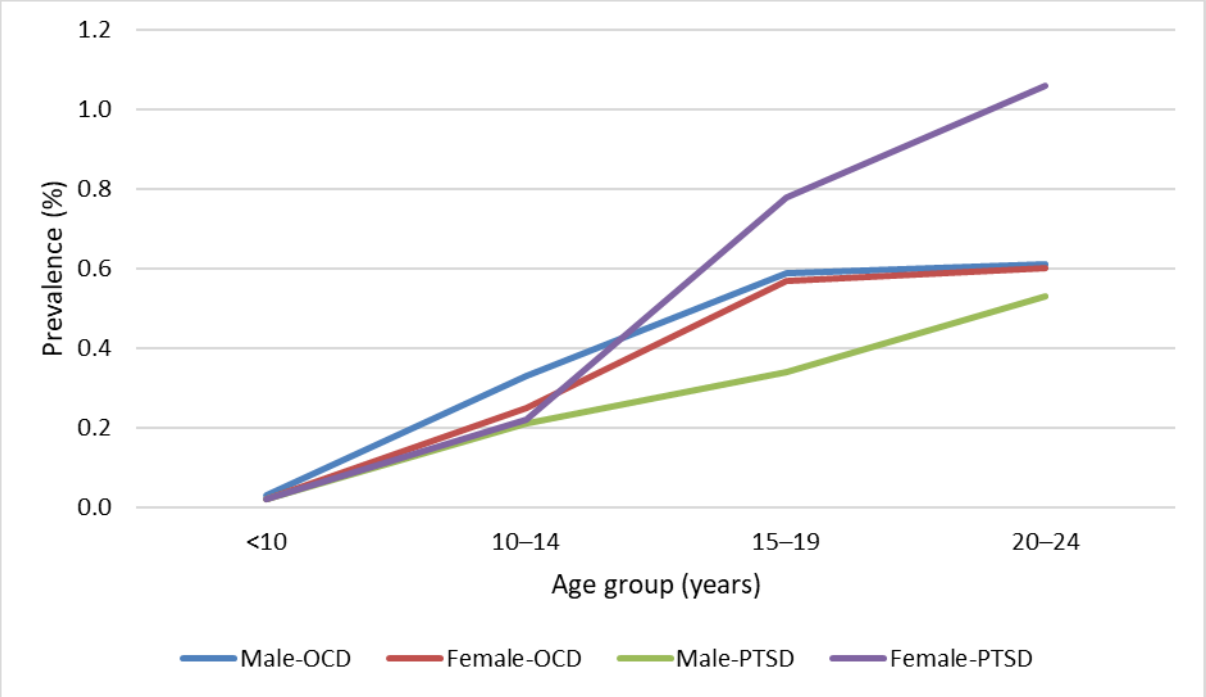


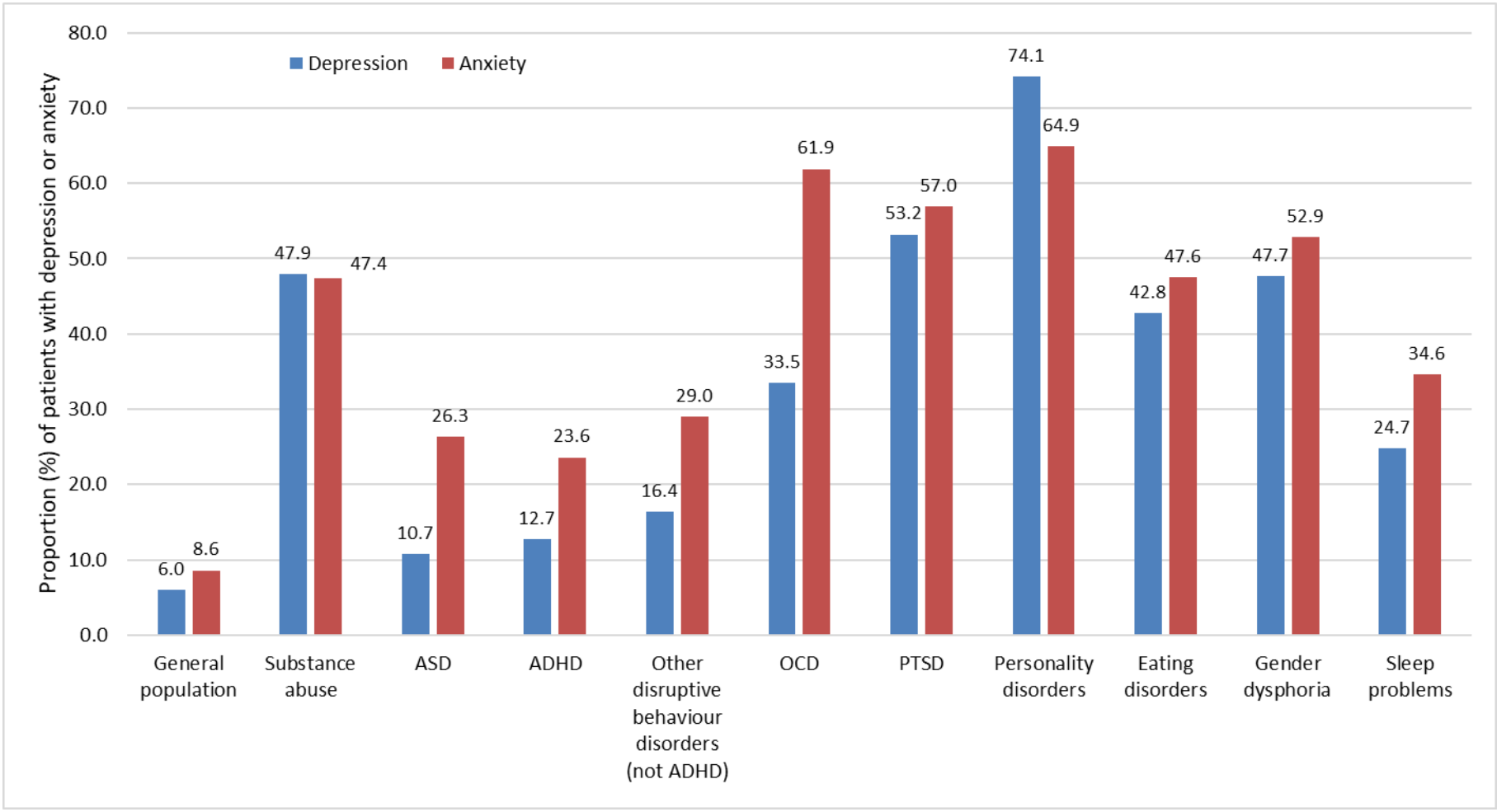
FIGURE 5. AGE- AND SEX-SPECIFIC PATIENT PREVALENCE OF OCD AND PTSD FOR PATIENTS AGED <25 YEARS, 2018–2019



OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder

Figure 6 and Table 9 show the patient prevalence of ever-recorded depression or anxiety in the general population and among patients with other selected conditions (ever recorded). While the ever prevalence of depression and anxiety was 6.0% and 8.6% among the general population, respectively, the prevalence was much higher among patients with some of the comorbidities assessed. Just under three-quarters (74.1%) of the 1,129 patients with personality disorders had ever had depression recorded and nearly two-thirds had anxiety (64.9%). Over half (53.2%) of the 2,282 patients with PTSD ever had depression and 57.0% had anxiety. Close to half of the 532 patients with substance abuse ever had depression and close to half ever had anxiety. Among the 3,564 patients with eating disorders, 47.6% had anxiety and 42.8% had depression, and among 596 patients with gender dysphoria 52.9% had anxiety and 47.7% depression. The ever prevalence of depression was somewhat raised among patients with ASD (10.7%) or ADHD (12.7%), whereas anxiety was much more common in these patients at around 25%.

FIGURE 6. PREVALENCE OF DEPRESSION AND ANXIETY (EVER RECORDED) IN THE GENERAL POPULATION AND PATIENTS WITH SELECTED COMORBIDITIES (EVER RECORDED)



ADHD = attention-deficit/hyperactivity disorder; ASD = autism spectrum disorder; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder.
General population, n = 693,260; ever-recorded cohort (n) – substance abuse = 532; ASD = 13,119; ADHD = 18,706; other disruptive behaviour disorders (not ADHD) = 2,084; OCD = 1,995; PTSD =2,282; personality disorders = 1,129; eating disorders = 3,564; gender dysphoria = 596; sleep problems = 24,474.

Table 10 presents the prevalence estimates (ever recorded) of other relevant conditions, including ASD, ADHD, other disruptive behaviour disorders (not ADHD), personality disorders, eating disorders, gender dysphoria, sleep problems and substance abuse (including alcohol or opioid abuse), stratified by patient characteristics. The patient prevalence (ever recorded) of the relevant conditions among patients aged less than 25 years:

- increased significantly with age for personality disorders, eating disorders, sleep problems and substance abuse
- was greater in adolescents aged 10–14 years compared with other age groups for ASD, ADHD and other disruptive behaviour disorders (not ADHD)
- was greater in patients aged 15–24 years compared with those aged less than 15 years for gender dysphoria.

Comparing males to females, the patient prevalence (ever recorded) of the relevant conditions among patients aged less than 25 years was:

- greater among females for personality disorders and eating disorders
- greater among males for ASD, ADHD, other disruptive behaviour disorders (not ADHD) and substance abuse
- similar between the two sexes for sleep problems and gender dysphoria.

Data from the Young Minds Matter survey also demonstrated a greater prevalence of ADHD in males aged 4–17 years than females in the same age group, with more than twice as many males as females having ADHD in the previous 12 months (10.4% vs 4.3%, respectively).[2]

Table 10: PREVALENCE (EVER) OF OTHER RELEVANT CONDITIONS IN PATIENTS AGED <25 YEARS IN 2018–2019, STRATIFIED BY SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS

Characteristic	Substance abuse		ASD		ADHD		Other disruptive behaviour disorders (not ADHD)		Personality disorders		Eating disorders		Gender dysphoria		Sleep problems	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Total	**532**	**0.08 (0.07, 0.09)**	**13,119**	**1.89 (1.73, 2.05)**	**18,706**	**2.70 (2.43, 2.96)**	**2,084**	**0.30 (0.26, 0.34)**	**1,129**	**0.16 (0.15, 0.18)**	**3,564**	**0.51 (0.47, 0.56)**	**596**	**0.09 (0.07, 0.11)**	**24,474**	**3.53 (3.23, 3.84)**
Age group (years)																
<10	11	0.00 (0.00, 0.01)	4,538	1.46 (1.33, 1.60)	4,430	1.43 (1.25, 1.61)	455	0.15 (0.12, 0.17)	0	0.00 (0.00, 0.00)	332	0.11 (0.09, 0.12)	25	0.01 (0.00, 0.01)	7,637	2.46 (2.19, 2.73)
10–14	8	0.01 (0.00, 0.01)	4,131	3.57 (3.24, 3.91)	6,780	5.86 (5.23, 6.50)	835	0.72 (0.63, 0.81)	11	0.01 (0.00, 0.02)	316	0.27 (0.23, 0.31)	88	0.08 (0.06, 0.09)	3,934	3.40 (2.86, 3.94)
15–19	77	0.06 (0.05, 0.08)	2,880	2.40 (2.21, 2.59)	4,651	3.88 (3.50, 4.26)	544	0.45 (0.39, 0.52)	264	0.22 (0.19, 0.25)	1,284	1.07 (0.96, 1.18)	251	0.21 (0.16, 0.26)	5,281	4.40 (3.97, 4.83)
20–24	436	0.30 (0.25, 0.34)	1,570	1.07 (0.94, 1.19)	2,845	1.93 (1.75, 2.12)	250	0.17 (0.14, 0.20)	854	0.58 (0.50, 0.66)	1,632	1.11 (0.98, 1.24)	232	0.16 (0.11, 0.21)	7,622	5.18 (4.83, 5.53)
Sex*																
Male	334	0.10 (0.08, 0.12)	9,733	2.93 (2.69, 3.17)	13,824	4.16 (3.73, 4.59)	1,540	0.46 (0.41, 0.52)	<150	0.04 (0.04, 0.05)	571	0.17 (0.15, 0.19)	260	0.08 (0.06, 0.10)	11,482	3.46 (3.08, 3.83)
Female	198	0.05 (0.05, 0.06)	3,378	0.94 (0.84, 1.03)	4,877	1.35 (1.23, 1.48)	544	0.15 (0.13, 0.17)	979	0.27 (0.24, 0.30)	2,988	0.83 (0.75, 0.91)	309	0.09 (0.07, 0.10)	12,981	3.60 (3.32, 3.87)
Indeterminate/intersex	0	0.00 (0.00, 0.00)	8	7.55 (2.63, 12.47)	5	4.72 (-0.08, 9.52)	0	0.00 (0.00, 0.00)	<5	1.89 (-0.56, 4.33)	5	4.72 (0.86, 8.57)	27	25.47 (15.27, 35.68)	11	10.38 (4.50, 16.26)
Age – Sex*																
M <10	<10	0.00 (0.00, 0.01)	3,426	2.12 (1.92, 2.31)	3,385	2.09 (1.82, 2.36)	344	0.21 (0.18, 0.25)	0	0.00 (0.00, 0.00)	177	0.11 (0.09, 0.13)	14	0.01 (0.00, 0.01)	4,323	2.67 (2.36, 2.98)
M 10–14	<5	0.01 (0.00, 0.01)	3,073	5.19 (4.72, 5.66)	5,224	8.82 (7.86, 9.78)	640	1.08 (0.93, 1.23)	<5	0.00 (0.00, 0.01)	100	0.17 (0.13, 0.20)	27	0.05 (0.03, 0.06)	2,192	3.70 (2.95, 4.45)
M 15–19	40	0.07 (0.05, 0.10)	2,080	3.89 (3.58, 4.20)	3,344	6.25 (5.60, 6.91)	389	0.73 (0.62, 0.83)	<35	0.06 (0.04, 0.09)	158	0.30 (0.24, 0.35)	102	0.19 (0.14, 0.25)	2,160	4.04 (3.48, 4.60)
M 20–24	284	0.49 (0.41, 0.58)	1,154	2.01 (1.79, 2.23)	1,871	3.25 (2.95, 3.55)	167	0.29 (0.23, 0.35)	113	0.20 (0.16, 0.24)	136	0.24 (0.19, 0.28)	117	0.20 (0.14, 0.27)	2,807	4.88 (4.55, 5.21)
F <10	<10	0.00 (0.00, 0.01)	1,112	0.75 (0.66, 0.83)	1,045	0.70 (0.61, 0.79)	111	0.07 (0.06, 0.09)	0	0.00 (0.00, 0.00)	155	0.10 (0.09, 0.12)	9	0.01 (0.00, 0.01)	3,312	2.23 (1.99, 2.47)

Characteristic	Substance abuse		ASD		ADHD		Other disruptive behaviour disorders (not ADHD)		Personality disorders		Eating disorders		Gender dysphoria		Sleep problems	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
F 10–14	<5	0.01 (0.00, 0.01)	1,057	1.88 (1.65, 2.10)	1,555	2.76 (2.46, 3.06)	195	0.35 (0.29, 0.41)	10	0.02 (0.01, 0.03)	214	0.38 (0.32, 0.44)	59	0.10 (0.07, 0.14)	1,741	3.09 (2.73, 3.45)
F 15–19	37	0.06 (0.04, 0.07)	796	1.20 (1.06, 1.33)	1,307	1.97 (1.77, 2.16)	155	0.23 (0.19, 0.28)	229	0.34 (0.29, 0.39)	1,126	1.69 (1.51, 1.87)	141	0.21 (0.16, 0.26)	3,115	4.68 (4.29, 5.08)
F 20–24	152	0.17 (0.14, 0.20)	413	0.46 (0.39, 0.53)	970	1.08 (0.95, 1.22)	83	0.09 (0.07, 0.12)	740	0.83 (0.71, 0.94)	1,493	1.67 (1.46, 1.87)	100	0.11 (0.07, 0.15)	4,813	5.38 (4.96, 5.80)
I <10	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	<5	10.53 (-3.50, 24.56)	<5	10.53 (-2.67, 23.73)
I 10–14	0	0.00 (0.00, 0.00)	<5	10.00 (-8.68, 28.68)	<5	10.00 (-8.68, 28.68)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	<5	20.00 (-4.90, 44.90)	<5	20.00 (-4.90, 44.90)	<5	10.00 (-8.68, 28.68)
I 15–19	0	0.00 (0.00, 0.00)	<5	11.43 (1.42, 21.43)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	<5	2.86 (-2.36, 8.08)	0	0.00 (0.00, 0.00)	8	22.86 (8.35, 37.37)	6	17.14 (4.38, 29.90)
I 20–24	0	0.00 (0.00, 0.00)	<5	7.14 (-0.86, 15.15)	<5	9.52 (0.32, 18.73)	0	0.00 (0.00, 0.00)	<5	2.38 (-2.17, 6.93)	<5	7.14 (-0.67, 14.95)	15	35.71 (19.70, 51.73)	<5	4.76 (-1.64, 11.17)
Rurality**																
Major city	323	0.07 (0.06, 0.08)	8,009	1.67 (1.52, 1.82)	10,859	2.26 (2.07, 2.45)	1,137	0.24 (0.20, 0.27)	735	0.15 (0.13, 0.17)	2,537	0.53 (0.47, 0.59)	425	0.09 (0.06, 0.11)	16,148	3.36 (3.06, 3.67)
Inner regional	146	0.11 (0.08, 0.13)	3,759	2.71 (2.24, 3.18)	5,573	4.02 (3.13, 4.90)	719	0.52 (0.42, 0.62)	297	0.21 (0.16, 0.26)	755	0.54 (0.48, 0.60)	143	0.10 (0.06, 0.14)	6,097	4.39 (3.47, 5.31)
Outer regional	57	0.09 (0.06, 0.11)	1,269	1.92 (1.69, 2.16)	2,103	3.19 (2.70, 3.67)	220	0.33 (0.26, 0.41)	91	0.14 (0.10, 0.18)	247	0.37 (0.26, 0.48)	<30	0.04 (0.02, 0.06)	2,054	3.11 (2.55, 3.67)
Remote/very remote	6	0.07 (0.03, 0.12)	82	0.98 (0.77, 1.19)	171	2.04 (1.28, 2.81)	8	0.10 (0.00, 0.19)	6	0.07 (0.02, 0.12)	25	0.30 (0.16, 0.44)	<5	0.02 (-0.01, 0.06)	175	2.09 (1.40, 2.78)
Socioeconomic status (SEIFA IRSAD quintile)**																
1 (most disadvantaged)	100	0.10 (0.08, 0.13)	2,533	2.60 (2.18, 3.01)	3,861	3.96 (3.07, 4.84)	562	0.58 (0.46, 0.69)	214	0.22 (0.16, 0.28)	408	0.42 (0.35, 0.49)	91	0.09 (0.06, 0.13)	3,471	3.56 (2.78, 4.33)
2	81	0.08 (0.05, 0.10)	2,424	2.25 (1.97, 2.53)	3,320	3.09 (2.73, 3.44)	424	0.39 (0.32, 0.47)	212	0.20 (0.16, 0.23)	513	0.48 (0.40, 0.55)	92	0.09 (0.05, 0.12)	3,850	3.58 (3.13, 4.03)
3	136	0.09 (0.07, 0.10)	3,309	2.07 (1.84, 2.29)	4,418	2.76 (2.46, 3.06)	557	0.35 (0.30, 0.40)	280	0.17 (0.14, 0.21)	756	0.47 (0.41, 0.54)	107	0.07 (0.05, 0.08)	5,555	3.47 (3.12, 3.82)

Characteristic	Substance abuse		ASD		ADHD		Other disruptive behaviour disorders (not ADHD)		Personality disorders		Eating disorders		Gender dysphoria		Sleep problems	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
4	95	0.06 (0.04, 0.07)	2,696	1.66 (1.47, 1.85)	3,278	2.02 (1.77, 2.28)	267	0.16 (0.13, 0.20)	197	0.12 (0.10, 0.14)	767	0.47 (0.40, 0.54)	143	0.09 (0.06, 0.12)	5,069	3.13 (2.73, 3.53)
5 (most advantaged)	120	0.07 (0.05, 0.09)	2,157	1.30 (1.14, 1.46)	3,829	2.31 (2.09, 2.52)	274	0.17 (0.13, 0.20)	226	0.14 (0.11, 0.16)	1,120	0.67 (0.59, 0.76)	163	0.10 (0.06, 0.13)	6,529	3.93 (3.52, 4.35)
State / territory																
ACT	13	0.06 (0.02, 0.11)	278	1.37 (1.17, 1.56)	505	2.48 (2.20, 2.76)	49	0.24 (0.07, 0.41)	34	0.17 (0.13, 0.20)	147	0.72 (0.53, 0.91)	24	0.12 (0.04, 0.20)	981	4.82 (4.07, 5.57)
NSW	221	0.08 (0.07, 0.10)	4,823	1.80 (1.59, 2.01)	7,873	2.94 (2.61, 3.27)	1,296	0.48 (0.41, 0.56)	515	0.19 (0.16, 0.23)	1,449	0.54 (0.46, 0.62)	204	0.08 (0.06, 0.10)	9,220	3.44 (3.00, 3.89)
NT	<5	0.01 (-0.01, 0.03)	78	0.79 (0.60, 0.99)	130	1.32 (1.10, 1.55)	11	0.11 (0.05, 0.17)	6	0.06 (0.01, 0.11)	9	0.09 (0.03, 0.15)	0	0.00 (0.00, 0.00)	76	0.77 (0.48, 1.07)
QLD	94	0.07 (0.05, 0.08)	3,001	2.11 (1.81, 2.41)	4,164	2.93 (2.51, 3.35)	323	0.23 (0.18, 0.28)	162	0.11 (0.09, 0.13)	633	0.45 (0.37, 0.52)	82	0.06 (0.04, 0.07)	4,258	2.99 (2.65, 3.34)
SA	<15	0.07 (0.03, 0.11)	279	2.03 (1.32, 2.73)	195	1.42 (1.09, 1.74)	26	0.19 (0.12, 0.26)	36	0.26 (0.19, 0.34)	74	0.54 (0.37, 0.70)	20	0.15 (0.06, 0.23)	492	3.57 (2.45, 4.70)
TAS	31	0.09 (0.06, 0.12)	817	2.35 (2.10, 2.60)	1,676	4.82 (1.60, 8.04)	73	0.21 (0.14, 0.28)	62	0.18 (0.12, 0.24)	224	0.64 (0.50, 0.79)	32	0.09 (0.05, 0.13)	2,033	5.85 (2.85, 8.84)
VIC	106	0.08 (0.05, 0.12)	2,956	2.34 (1.74, 2.95)	2,378	1.88 (1.30, 2.47)	222	0.18 (0.12, 0.23)	200	0.16 (0.12, 0.20)	640	0.51 (0.39, 0.63)	160	0.13 (0.05, 0.21)	4,877	3.86 (3.03, 4.70)
WA	56	0.07 (0.05, 0.09)	887	1.13 (0.98, 1.28)	1,785	2.28 (1.96, 2.60)	84	0.11 (0.07, 0.14)	114	0.15 (0.10, 0.19)	388	0.50 (0.34, 0.65)	74	0.09 (0.03, 0.16)	2,537	3.24 (2.70, 3.77)
Comorbidity																
Depression and/or anxiety	325	0.43 (0.38, 0.49)	3,856	5.16 (4.71, 5.61)	5,221	6.99 (6.46, 7.51)	730	0.98 (0.85, 1.11)	930	1.24 (1.12, 1.36)	2,076	2.78 (2.54, 3.02)	384	0.51 (0.41, 0.62)	10,037	13.43 (12.66, 14.20)

* Due to the small number of patients with indeterminate sex, these estimates should be interpreted with caution.

**Patients with missing or indeterminate residential postcode were assigned the postcode for the general practice they attend. Cells with values less than five are suppressed including complementary suppression of other cells.

ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder; IRSAD = Index of Relative Socio-economic Advantage and Disadvantage; SEIFA = Socio-economic Indexes for Areas

Sociodemographic characteristics

Table 11 shows the distribution of sociodemographic and clinical characteristics of the general population (study period 1 population), depression and anxiety (ever recorded) sub-populations and the cohort of patients prescribed at least one antidepressant in 2018–2019. The characteristics of patients prescribed antidepressants are discussed in chapter 8.

Just over half of the general population were female (52.1%) and 44.8% were younger than 10 years. The majority resided in major cities (69.3%).

On average, patients with depression (mean age 20.0 years), anxiety (18.0 years), and depression and/or anxiety (18.4 years) were older than the entire cohort of patients aged less than 25 years (mean age 11.5 years). Unlike the age distribution of all patients aged less than 25 years, a greater proportion of patients with depression (60.6%), anxiety (46.5%), and depression and/or anxiety (49.1%) were in the 20–24 years age group compared with the younger age groups (Figure 7).

The majority of patients with depression (66.7%), anxiety (64.5%), and depression and/or anxiety (63.9%) were women. In line with the general population, the majority of patients aged less than 25 years with depression or anxiety resided in major cities, with NSW and Victoria accounting for more than half of these patients.

FIGURE 7. AGE DISTRIBUTION (%) FOR ALL PATIENTS AGED <25 YEARS, DEPRESSION AND ANXIETY (EVER) COHORTS AND THE COHORT OF PATIENTS PRESCRIBED AT LEAST ONE ANTIDEPRESSANT IN 2018–2019

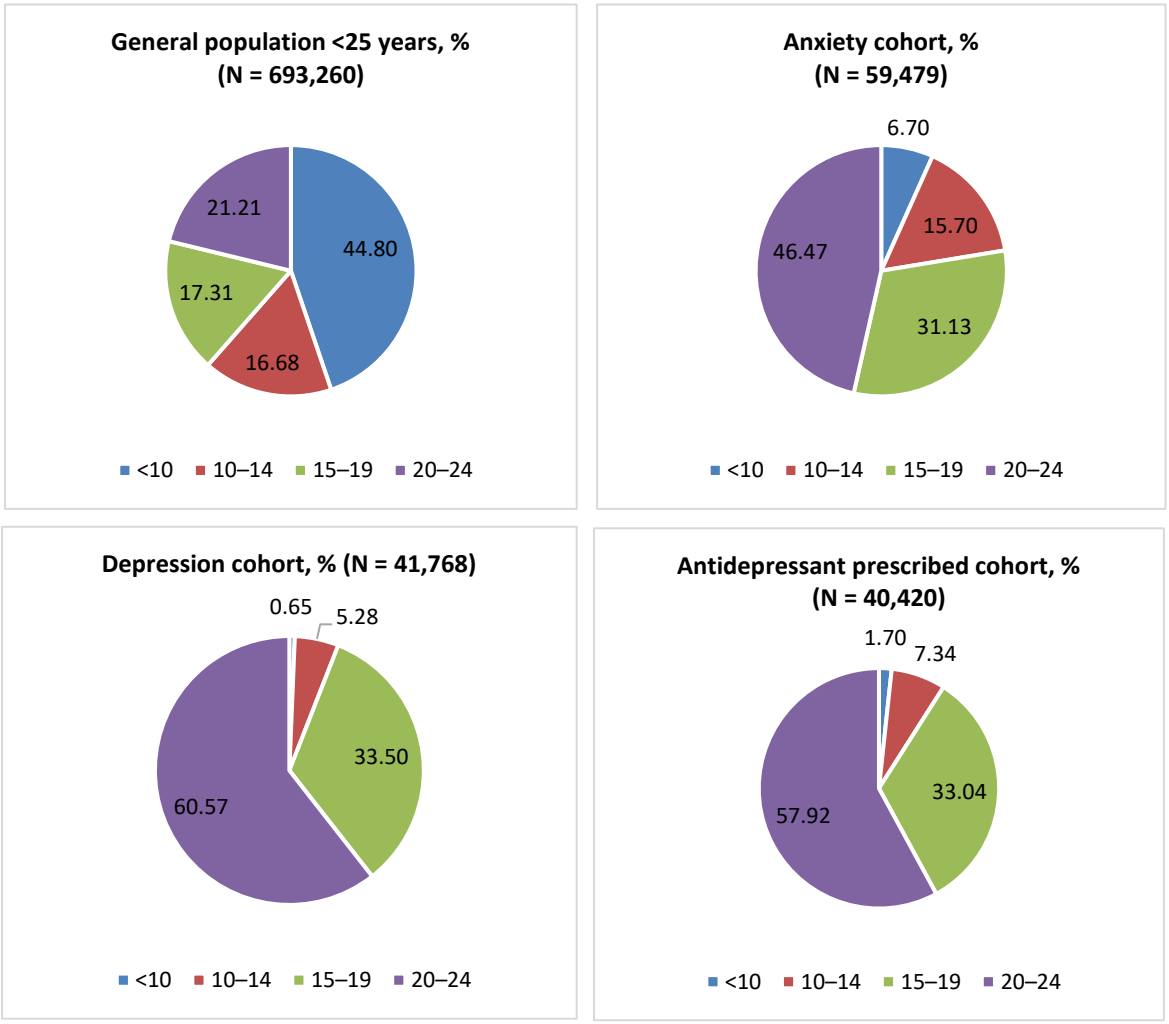


Table 11: DISTRIBUTION OF SOCIODEMOGRAPHIC AND CLINICAL CHARACTERISTICS AMONG PATIENTS WITH DEPRESSION OR ANXIETY (EVER RECORDED) AND IN PATIENTS PRESCRIBED AT LEAST ONE ANTIDEPRESSANT IN 2018–19

Characteristic	All patients aged <25 years		Depression (ever)		Anxiety (ever)		Depression and/or anxiety (ever)		Prescribed at least one antidepressant in 2018–2019	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Total	**693,260**	**100**	**41,768**	**100**	**59,479**	**100**	**74,746**	**100**	**40,420**	**100**
Age (mean [SE])	11.5 (0.1)		20.0 (0.0)		18.0 (0.1)		18.4 (0.1)		19.6 (0.1)	
Age group (years)										
<10	310,586	44.80 (43.51, 46.09)	270	0.65 (0.53, 0.76)	3,985	6.70 (6.22, 7.18)	4,137	5.53 (5.12, 5.95)	686	1.70 (1.42, 1.97)
10–14	115,610	16.68 (16.20, 17.16)	2,206	5.28 (4.97, 5.60)	9,341	15.70 (14.95, 16.45)	10,202	13.65 (12.97, 14.32)	2,967	7.34 (6.76, 7.92)
15–19	120,014	17.31 (16.81, 17.81)	13,992	33.50 (32.56, 34.44)	18,514	31.13 (30.41, 31.84)	23,710	31.72 (30.97, 32.47)	13,355	33.04 (32.11, 33.97)
20–24	147,050	21.21 (19.87, 22.56)	25,300	60.57 (59.50, 61.65)	27,639	46.47 (45.01, 47.92)	36,697	49.10 (47.70, 50.49)	23,412	57.92 (56.50, 59.35)
Sex										
Male	332,205	47.92 (47.43, 48.41)	13,895	33.27 (32.59, 33.94)	21,094	35.46 (34.82, 36.11)	26,945	36.05 (35.44, 36.65)	13,926	34.45 (33.72, 35.18)
Female	360,949	52.07 (51.58, 52.56)	27,840	66.65 (65.98, 67.33)	38,344	64.47 (63.82, 65.11)	47,756	63.89 (63.29, 64.49)	26,459	65.46 (64.73, 66.19)
Indeterminate/intersex	106	0.02 (0.01, 0.02)	33	0.08 (0.05, 0.11)	41	0.07 (0.05, 0.09)	45	0.06 (0.04, 0.08)	35	0.09 (0.06, 0.12)
Rurality*										
Major city	480,056	69.25 (64.22, 74.27)	26,632	63.76 (57.99, 69.53)	40,387	67.90 (62.33, 73.47)	49,277	65.93 (60.35, 71.50)	25,272	62.52 (56.72, 68.33)
Inner regional	138,806	20.02 (15.98, 24.06)	10,618	25.42 (20.45, 30.39)	14,024	23.58 (18.69, 28.47)	18,330	24.52 (19.65, 29.40)	10,761	26.62 (21.52, 31.73)
Outer regional	66,022	9.52 (6.71, 12.34)	4,184	10.02 (6.89, 13.14)	4,717	7.93 (5.31, 10.55)	6,615	8.85 (6.07, 11.63)	4,008	9.92 (6.89, 12.94)
Remote/very remote	8,376	1.21 (0.53, 1.89)	334	0.80 (0.34, 1.26)	351	0.59 (0.23, 0.95)	524	0.70 (0.29, 1.11)	379	0.94 (0.38, 1.50)
Socioeconomic status (SEIFA IRSAD quintile)*										
1 (most disadvantaged)	97,609	14.08 (11.37, 16.79)	7,106	17.01 (13.64, 20.39)	8,569	14.41 (11.39, 17.42)	11,475	15.35 (12.28, 18.43)	7,003	17.33 (13.95, 20.70)
2	107,611	15.52 (12.96, 18.08)	7,404	17.73 (14.77, 20.68)	9,795	16.47 (13.52, 19.42)	12,611	16.87 (13.96, 19.78)	6,968	17.24 (14.46, 20.02)
3	160,071	23.09 (19.49, 26.69)	10,404	24.91 (20.92, 28.90)	14,334	24.10 (20.16, 28.04)	18,135	24.26 (20.42, 28.11)	10,016	24.78 (20.91, 28.65)
4	161,964	23.36 (19.69, 27.03)	8,150	19.51 (16.36, 22.66)	12,669	21.30 (17.96, 24.64)	15,491	20.72 (17.55, 23.90)	7,934	19.63 (16.54, 22.72)
5 (most advantaged)	166,005	23.95 (19.79, 28.10)	8,704	20.84 (16.91, 24.76)	14,112	23.73 (19.35, 28.10)	17,034	22.79 (18.62, 26.96)	8,499	21.03 (17.13, 24.93)
State / territory										

Characteristic	All patients aged <25 years		Depression (ever)		Anxiety (ever)		Depression and/or anxiety (ever)		Prescribed at least one antidepressant in 2018–2019	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
ACT	20,351	2.94 (0.89, 4.98)	1,374	3.29 (0.94, 5.64)	1,955	3.29 (0.96, 5.61)	2,373	3.17 (0.93, 5.42)	1,346	3.33 (1.04, 5.62)
NSW	267,729	38.62 (32.36, 44.88)	17,043	40.80 (34.14, 47.47)	23,523	39.55 (32.84, 46.26)	29,786	39.85 (33.34, 46.36)	15,946	39.45 (33.01, 45.89)
NT	9,835	1.42 (0.23, 2.61)	268	0.64 (0.09, 1.19)	234	0.39 (0.06, 0.73)	384	0.51 (0.07, 0.95)	335	0.83 (0.09, 1.57)
QLD	142,176	20.51 (15.69, 25.33)	7,724	18.49 (13.98, 23.01)	11,214	18.85 (14.20, 23.51)	14,270	19.09 (14.48, 23.70)	8,104	20.05 (15.21, 24.89)
SA	13,772	1.99 (0.52, 3.45)	829	1.98 (0.54, 3.42)	1,243	2.09 (0.59, 3.59)	1,563	2.09 (0.61, 3.57)	713	1.76 (0.48, 3.05)
TAS	34,776	5.02 (2.66, 7.37)	2,792	6.68 (3.52, 9.85)	3,827	6.43 (3.26, 9.61)	4,877	6.52 (3.38, 9.67)	2,826	6.99 (3.55, 10.43)
VIC	126,268	18.21 (13.14, 23.29)	6,928	16.59 (11.75, 21.43)	10,782	18.13 (12.66, 23.59)	13,097	17.52 (12.41, 22.64)	6,450	15.96 (11.25, 20.67)
WA	78,353	11.30 (7.34, 15.26)	4,810	11.52 (7.34, 15.70)	6,701	11.27 (7.09, 15.44)	8,396	11.23 (7.16, 15.31)	4,700	11.63 (7.54, 15.71)
Comorbidity (ever)										
Depression	41,768	6.02 (5.68, 6.37)	-	-	26,501	44.56 (43.16, 45.95)	41,768	55.88 (54.60, 57.16)	24,227	59.94 (58.53, 61.35)
Anxiety	59,479	8.58 (8.08, 9.08)	26,501	63.45 (61.82, 65.08)	-	-	59,479	79.57 (78.52, 80.63)	24,566	60.78 (59.15, 62.41)
Depression and/or anxiety	74,746	10.78 (10.21, 11.35)	41,768	100.00 (100.00, 100.00)	59,479	100.00 (100.00, 100.00)	-	-	32,557	80.55 (79.35, 81.74)
Bipolar disorder	1,767	0.25 (0.23, 0.28)	1,036	2.48 (2.23, 2.73)	874	1.47 (1.30, 1.63)	1,230	1.65 (1.48, 1.81)	984	2.43 (2.20, 2.67)
Schizophrenia / schizoaffective disorder	813	0.12 (0.10, 0.13)	359	0.86 (0.74, 0.98)	301	0.51 (0.43, 0.58)	446	0.60 (0.52, 0.68)	377	0.93 (0.82, 1.05)
Substance abuse	532	0.08 (0.07, 0.09)	255	0.61 (0.53, 0.69)	252	0.42 (0.37, 0.48)	325	0.43 (0.38, 0.49)	260	0.64 (0.56, 0.73)
ASD	13,119	1.89 (1.73, 2.05)	1,409	3.37 (3.08, 3.67)	3,456	5.81 (5.29, 6.33)	3,856	5.16 (4.71, 5.61)	2,697	6.67 (6.02, 7.32)
ADHD	18,706	2.70 (2.43, 2.96)	2,372	5.68 (5.28, 6.07)	4,417	7.43 (6.83, 8.02)	5,221	6.99 (6.46, 7.51)	3,252	8.05 (7.33, 8.76)
Other disruptive behaviour disorders (not ADHD)	2,084	0.30 (0.26, 0.34)	341	0.82 (0.69, 0.95)	605	1.02 (0.88, 1.16)	730	0.98 (0.85, 1.11)	402	0.99 (0.85, 1.14)
OCD	1,995	0.29 (0.26, 0.31)	668	1.60 (1.45, 1.75)	1,235	2.08 (1.93, 2.22)	1,366	1.83 (1.70, 1.96)	1,188	2.94 (2.71, 3.17)
PTSD	2,282	0.33 (0.30, 0.36)	1,214	2.91 (2.67, 3.14)	1,300	2.19 (2.00, 2.37)	1,596	2.14 (1.97, 2.30)	1,258	3.11 (2.87, 3.36)
Personality disorders	1,129	0.16 (0.15, 0.18)	837	2.00 (1.80, 2.21)	733	1.23 (1.10, 1.37)	930	1.24 (1.12, 1.36)	809	2.00 (1.80, 2.21)
Eating disorders	3,564	0.51 (0.47, 0.56)	1,524	3.65 (3.28, 4.02)	1,695	2.85 (2.61, 3.09)	2,076	2.78 (2.54, 3.02)	1,500	3.71 (3.33, 4.09)
Gender dysphoria	596	0.09 (0.07, 0.11)	284	0.68 (0.53, 0.83)	315	0.53 (0.42, 0.64)	384	0.51 (0.41, 0.62)	278	0.69 (0.53, 0.85)
Sleep problems	24,474	3.53 (3.23, 3.84)	6,056	14.50 (13.72, 15.28)	8,477	14.25 (13.40, 15.11)	10,037	13.43 (12.66, 14.20)	6,233	15.42 (14.37, 16.47)

Characteristic	All patients aged <25 years		Depression (ever)		Anxiety (ever)		Depression and/or anxiety (ever)		Prescribed at least one antidepressant in 2018–2019	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Pain (including neuropathic pain)	15,763	2.27 (2.16, 2.39)	3,893	9.32 (8.90, 9.74)	4,920	8.27 (7.93, 8.62)	6,026	8.06 (7.74, 8.38)	4,028	9.97 (9.51, 10.43)
Menstrual problems (females only)	605	0.17 (0.15, 0.19)	243	0.87 (0.74, 1.00)	291	0.76 (0.65, 0.87)	349	0.73 (0.64, 0.83)	241	0.91 (0.77, 1.05)

*Patient with missing or indeterminate residential postcode were assigned the postcode for the general practice they attend.

ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder; IRSAD = Index of Relative Socio-economic Advantage and Disadvantage; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder; SE = standard error; SEIFA = Socio-economic Indexes for Areas

6. ANTIDEPRESSANT PRESCRIPTIONS RECORDED IN 2018–2019

- Approximately 105,000 antidepressant prescriptions were issued during 2018–2019 for 40,420 patients aged less than 25 years.
- The majority of the antidepressant prescriptions recorded during 2018–2019 were PBS subsidised (96.5%).
- SSRIs accounted for most of the antidepressant prescriptions recorded during 2018–2019 (71% of all antidepressant prescriptions) and monoamine oxidase inhibitors (MAOIs) were the least recorded.

Study questions

- What volume of antidepressant prescriptions was recorded during 2018–2019 for patients aged <25 years (overall, PBS, private)?
- What antidepressant classes and antidepressant medicines were recorded in 2018–2019 (overall, PBS, private) for patients aged <25 years?

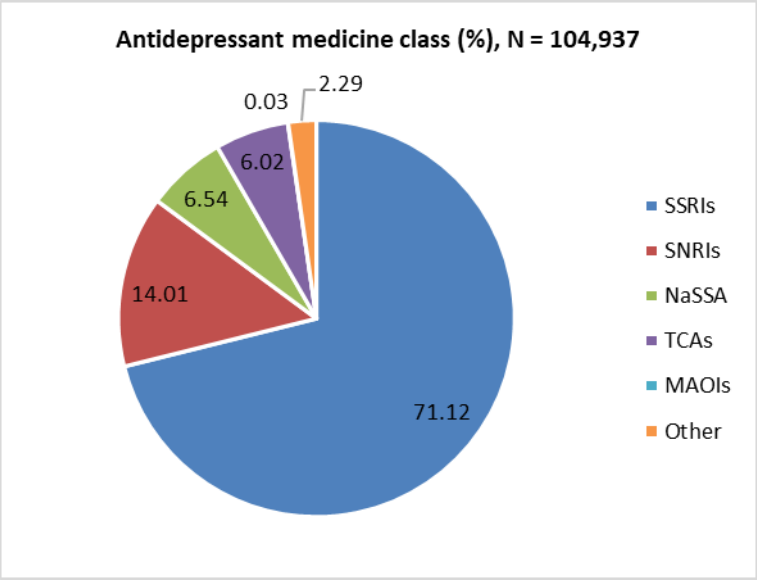
The general study population, which comprised 693,260 patients aged less than 25 years, was used for the analyses in this chapter (see Figure 1 for further details about the patient cohorts).

Volume of antidepressant prescriptions

Approximately 105,000 antidepressant prescriptions were issued during 2018–2019 for 40,420 patients aged less than 25 years (Table 12).

SSRIs accounted for the bulk of antidepressant prescriptions recorded during 2018–2019 (71% of all antidepressant prescriptions). MAOIs were the least prescribed antidepressants (0.03%; Figure 8).

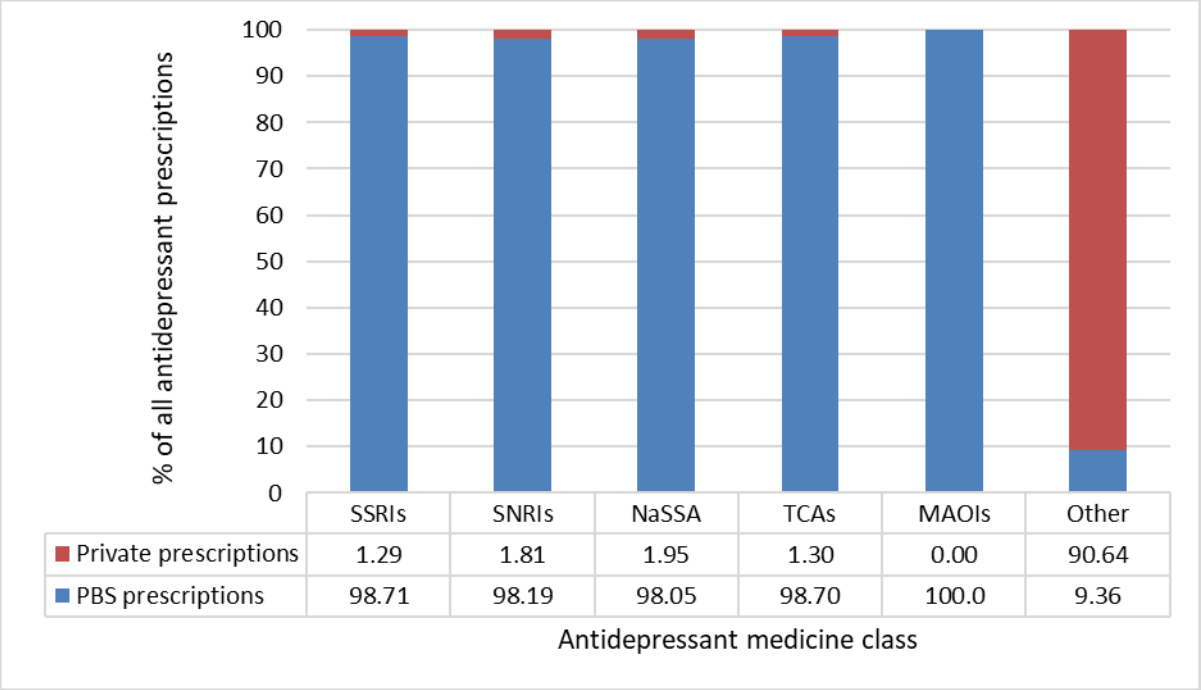
FIGURE 8. DISTRIBUTION (%) OF ANTIDEPRESSANT PRESCRIPTIONS BY MEDICINE CLASS



MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor;; TCA = tricyclic antidepressant;. Other includes agomelatine, moclobemide, reboxetine and vortioxetine.

Overall, the majority of the antidepressant prescriptions issued were PBS subsidised (96.5%). This is consistent for all the antidepressant medicine classes except for the 'other' category where almost all the prescriptions for agomelatine and vortioxetine were non-PBS subsidised (Figure 9).

FIGURE 9. PROPORTION OF ANTIDEPRESSANT PRESCRIPTIONS FOR EACH MEDICINE CLASS STRATIFIED BY PBS STATUS (N = 104,937)



MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant. Other includes agomelatine, moclobemide, reboxetine and vortioxetine.

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Note: The few prescriptions (n = 425) with two scripts for the same prescription issued on the same date with different PBS status (one non-PBS, the other PBS) were assigned as non-PBS allowing a maximum of one script for each medicine per patient date.

Table 12: NUMBER AND PROPORTION OF ANTIDEPRESSANT MEDICATIONS RECORDED IN 2018–2019 (OVERALL, PBS, PRIVATE)

Antidepressant class and medicines	PBS prescriptions		Private prescription		Total prescriptions
	n	% (95% CI)	n	% (95% CI)	
Total (any antidepressant)	**101,311**	**96.54 (96.13, 96.96)**	**3,626**	**3.46 (3.04, 3.87)**	**104,937**
SSRIs	**73,662**	98.71 (98.46, 98.95)	**966**	**1.29 (1.05, 1.54)**	**74,628**
Citalopram	3,784	99.08 (98.44, 99.72)	35	0.92 (0.28, 1.56)	3,819
Escitalopram	20,116	99.15 (98.88, 99.42)	172	0.85 (0.58, 1.12)	20,288
Fluoxetine	24,786	97.97 (97.62, 98.32)	514	2.03 (1.68, 2.38)	25,300
Fluvoxamine	3,309	99.04 (98.53, 99.55)	32	0.96 (0.45, 1.47)	3,341
Paroxetine	1,591	98.70 (98.01, 99.39)	21	1.30 (0.61, 1.99)	1,612
Sertraline	20,076	99.05 (98.62, 99.48)	192	0.95 (0.52, 1.38)	20,268
SNRIs	**14,432**	**98.19 (97.50, 98.88)**	**266**	**1.81 (1.12, 2.50)**	**14,698**
Desvenlafaxine	5,165	99.10 (98.22, 99.97)	47	0.90 (0.03, 1.78)	5,212
Duloxetine	3,785	96.53 (95.21, 97.85)	136	3.47 (2.15, 4.79)	3,921
Venlafaxine	5,482	98.51 (98.04, 98.98)	83	1.49 (1.02, 1.96)	5,565
NaSSA	**6,727**	**98.05 (97.51, 98.58)**	**134**	**1.95 (1.42, 2.49)**	**6,861**
Mianserin	26	100.0 (100.0, 100.0)	0	0.00 (0.00, 0.00)	26
Mirtazapine	6,701	98.04 (97.50, 98.58)	134	1.96 (1.42, 2.50)	6,835
TCAs	**6,232**	**98.70 (98.26, 99.14)**	**82**	**1.30 (0.86, 1.74)**	**6,314**
Amitriptyline (<25mg)	3,286	99.16 (98.73, 99.58)	28	0.84 (0.42, 1.27)	3,314

Antidepressant class and medicines	PBS prescriptions		Private prescription		Total prescriptions
	n	% (95% CI)	n	% (95% CI)	
Amitriptyline (≥25mg)	2,038	98.74 (97.83, 99.65)	26	1.26 (0.35, 2.17)	2,064
Clomipramine	265	96.36 (92.93, 99.80)	10	3.64 (0.20, 7.07)	275
Doxepin	<95	97.89 (93.86, 101.93)	<5	2.11 (0.00, 6.14)	95
Dosulepin	164	100.0 (100.0, 100.0)	0	0.00 (0.00, 0.00)	164
Imipramine	<137	98.54 (96.53, 100.55)	<5	1.46 (-0.55, 3.47)	137
Nortriptyline	251	94.72 (91.49, 97.94)	14	5.28 (2.06, 8.51)	265
MAOIs	**33**	**100.0 (100.0, 100.0)**	**0**	**0.00 (0.00, 0.00)**	**33**
Phenelzine	<5	100.0 (100.0, 100.0)	0	0.00 (0.00, 0.00)	<5
Tranylcypromine	29	100.0 (100.0, 100.0)	0	0.00 (0.00, 0.00)	29
Other	**225**	**9.36 (7.01, 11.71)**	**2,178**	**90.64 (88.29, 92.99)**	**2,403**
Agomelatine*	<5	0.05 (0.00, 0.16)	<1,842	99.95 (99.84, 100.00)	1,842
Moclobemide	124	100.0 (100.0, 100.0)	0	0.00 (0.00, 0.00)	124
Reboxetine	100	100.0 (100.0, 100.0)	0	0.00 (0.00, 0.00)	100
Vortioxetine*	0	0.00 (0.00, 0.00)	337	100.0 (100.0, 100.0)	337

*Agomelatine and vortioxetine are not PBS subsidised, therefore the few PBS scripts for agomelatine might be a result of a recording error.
MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant
Note: The few prescriptions (n = 425) with two scripts for the same prescription issued on the same date with different PBS status (one non-PBS, the other PBS) were assigned as non-PBS, allowing a maximum of one script for each medicine per patient date.

7. PRESCRIBING OF ANTIDEPRESSANTS IN PATIENTS AGED LESS THAN 25 YEARS

- Of the 693,260 patients aged less than 25 years, 40,420 (5.8%) had at least one antidepressant recorded during 2018–2019.
- Of the 40,420 patients prescribed an antidepressant during 2018–2019, the majority were prescribed PBS-subsidised prescriptions (94.8%), 1.9% only private prescriptions, and 3.3% both PBS and private prescriptions.
- SSRIs were the most prescribed class of antidepressants with four in five young people prescribed antidepressants issued an SSRI. Fluoxetine was the most frequently prescribed antidepressant medicine (30.3% of patients prescribed an antidepressant).
- The age-specific prescribing rate of an antidepressant increased with age from 0.2% of patients aged less than 10 years to 15.9% of those aged 20–24 years.
- Females were more likely than males to have an antidepressant recorded – 7.3% of females and 4.2% of males were prescribed an antidepressant in 2018–2019.
- Among patients with depression or anxiety recorded in 2018 or 2019, at least one antidepressant was prescribed during 2018–2019 to:
  - 69.8% of the patients with depression
  - 50.2% of the patients with anxiety
  - 54.2% of the patients with depression and/or anxiety
  - 1.8% of the patients with neither depression nor anxiety recorded in 2018 or 2019.
- Of the 40,420 patients prescribed an antidepressant during 2018–2019, the prevalence (recorded in 2018 or 2019) of mental health or other relevant conditions was:
  - depression and/or anxiety – 71.0%
  - anxiety – 51.1%
  - depression – 51.0%
  - sleep problems – 10.1%
  - pain (including neuropathic pain) – 6.1%
  - ADHD – 5.3%
  - ASD – 4.0%.
- In an attempt to explore the most likely indication for the antidepressant, patients were categorised into mutually exclusive groups based on having a recorded diagnosis of one of the most likely or common indications first, followed by off-label and least common indications. Based on these assumptions:
  - the most common indication for an antidepressant was having both depression and anxiety (ever prevalence 39.0%), followed by anxiety only – without depression (ever prevalence 20.3%) and then depression only – without anxiety (ever prevalence 19.2%).

Study questions

- What are the sociodemographic and clinical characteristics of patients aged <25 years prescribed at least one antidepressant in 2018–2019?
- What antidepressant classes and antidepressant medicines were prescribed in 2018–2019 (overall, PBS, private) for patients aged <25 years?
- What antidepressant classes and antidepressant medicines were prescribed in 2018–2019 for patients with current (recorded in 2018 or 2019) or a history (ever recorded) of i) depression (with or without anxiety) ii) anxiety (with or without depression) iii) depression and/or anxiety iv) neither depression nor anxiety?

- Among patients prescribed at least one antidepressant medicine in 2018–2019, what mental health or other relevant conditions did they have?

The general study population, comprising 693,260 patients aged less than 25 years with at least two clinical encounters recorded during 2018–2019, was used for the analyses in this chapter (see Figure 1 for further details about the patient cohorts).

Sociodemographic characteristics of patients prescribed antidepressants

The frequency distribution of sociodemographic and clinical characteristics of patients prescribed at least one antidepressant during 2018–2019 are presented in Table 11 (in chapter 5). Patients (n = 40,420) prescribed antidepressants (mean age 19.6 years) were older than the general population (mean age 11.5 years). The proportion of patients prescribed at least one antidepressant during 2018–2019 increased with age and was greatest for those aged 20–24 years (57.9%) (Figure 7, see chapter 5).

A greater proportion of females was prescribed antidepressants than males (65.5% vs 34.5%, respectively). Like the general population, most patients aged below 25 years who were prescribed antidepressants during 2018–2019 resided in major cities (62.5%), with NSW and Victoria accounting for more than half of these patients.

Characteristic-specific prescribing rate of at least one antidepressant

Of the 693,260 patients aged under 25 years, 40,420 (5.8%) were prescribed at least one antidepressant during 2018–2019. Table 13 shows the characteristic-specific rate of being prescribed at least one antidepressant during 2018–2019 for patients aged less than 25 years. The likelihood of having an antidepressant prescription recorded increased with age from 0.2% of patients aged less than 10 years to 15.9% of those aged 20–24 years. Similar to PBS data,[5] females were significantly more likely than males to have an antidepressant recorded – 7.3% of females and 4.2% of males were prescribed an antidepressant in 2018–2019.

Table 13: CHARACTERISTIC-SPECIFIC RATE OF BEING PRESCRIBED AT LEAST ONE ANTIDEPRESSANT IN 2018–2019

Characteristic	N (denominator)	Rate of being prescribed at least one antidepressant in 2018–2019	
		n	% (95% CI)
All patients <25 years	**693,260**	**40,420**	**5.83 (5.50, 6.16)**
Age group (years)			
<10	310,586	686	0.22 (0.18, 0.26)
10–14	115,610	2,967	2.57 (2.32, 2.81)
15–19	120,014	13,355	11.13 (10.53, 11.72)
20–24	147,050	23,412	15.92 (14.89, 16.95)
Sex			
Male	332,205	13,926	4.19 (3.94, 4.45)
Female	360,949	26,459	7.33 (6.93, 7.73)

Characteristic	N (denominator)	Rate of being prescribed at least one antidepressant in 2018–2019	
		n	% (95% CI)
Indeterminate/intersex*	106	35	33.02 (23.26, 42.78)
Rurality**			
Major city	480,056	25,272	5.26 (4.90, 5.63)
Inner regional	138,806	10,761	7.75 (7.21, 8.29)
Outer regional	66,022	4,008	6.07 (5.22, 6.92)
Remote/very remote	8,376	379	4.52 (3.83, 5.22)
Socioeconomic status (SEIFA IRSAD quintile)**			
1 (most disadvantaged)	97,609	7,003	7.17 (6.43, 7.92)
2	107,611	6,968	6.48 (5.99, 6.96)
3	160,071	10,016	6.26 (5.77, 6.74)
4	161,964	7,934	4.90 (4.44, 5.35)
5 (most advantaged)	166,005	8,499	5.12 (4.70, 5.54)
State / territory			
ACT	20,351	1,346	6.61 (5.20, 8.03)
NSW	267,729	15,946	5.96 (5.36, 6.55)
NT	9,835	335	3.41 (2.86, 3.95)
QLD	142,176	8,104	5.70 (5.27, 6.13)
SA	13,772	713	5.18 (4.73, 5.63)
TAS	34,776	2,826	8.13 (6.88, 9.37)
VIC	126,268	6,450	5.11 (4.24, 5.98)
WA	78,353	4,700	6.00 (5.39, 6.61)
Comorbidity (ever)			
Depression	41,768	24,227	58.00 (56.91, 59.10)
Anxiety	59,479	24,566	41.30 (40.16, 42.45)
Depression and/or anxiety	74,746	32,557	43.56 (42.40, 44.72)
Bipolar disorder	1,767	984	55.69 (53.11, 58.27)
Schizophrenia/schizoaffective disorder	813	377	46.37 (43.01, 49.73)
Substance abuse	532	260	48.87 (44.50, 53.24)
ASD	13,119	2,697	20.56 (19.37, 21.75)
ADHD	18,706	3,252	17.38 (16.51, 18.26)
Other disruptive behaviour disorders (not ADHD)	2,084	402	19.29 (17.51, 21.07)
OCD	1,995	1,188	59.55 (56.97, 62.12)
PTSD	2,282	1,258	55.13 (52.60, 57.65)
Personality disorders	1,129	809	71.66 (68.78, 74.53)
Eating disorders	3,564	1,500	42.09 (39.88, 44.29)
Gender dysphoria	596	278	46.64 (42.19, 51.10)
Sleep problems	24,474	6,233	25.47 (24.34, 26.59)
Pain (including neuropathic pain)	15,763	4,028	25.55 (24.52, 26.59)
Menstrual problems (females only)	605	241	39.83 (35.57, 44.10)

* Due to the small number of patients with indeterminate sex, these estimates should be interpreted with caution.

**Patient with missing or indeterminate residential postcode were assigned the postcode of the general practice they attend.

ADHD = attention deficit hyperactivity disorder; IRSAD = Index of Relative Socio-economic Advantage and Disadvantage; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder; SEIFA = Socio-economic Indexes for Areas

By remoteness, similar to the prevalence of depression, the rate of being prescribed an antidepressant was greater in residents of inner regional areas (7.8%) than those from major cities (5.3%) or remote areas (4.5%). This finding is consistent with PBS data for all Australians given mental-health-related prescriptions in 2019–2020.[19] Other Australian reports have shown higher rates of antidepressant use in people who reside in regional areas compared with those who live in non-regional areas.[20]

Similarly, as with the prevalence of depression shown in this report – and consistent with other Australian data that show greater rates of mental illnesses in young people who reside in the lowest socioeconomic areas[2] –patients from the most socioeconomically disadvantaged areas were found to be significantly more likely than those from the most advantaged areas to be prescribed an antidepressant (7.2% vs 5.1%, respectively). However, other investigators have demonstrated a greater likelihood of antidepressant use in socioeconomically disadvantaged people, independent of higher rates of depression in this group.[21] This might also reflect barriers to access of non-pharmacological therapies and psychiatric services.[22]

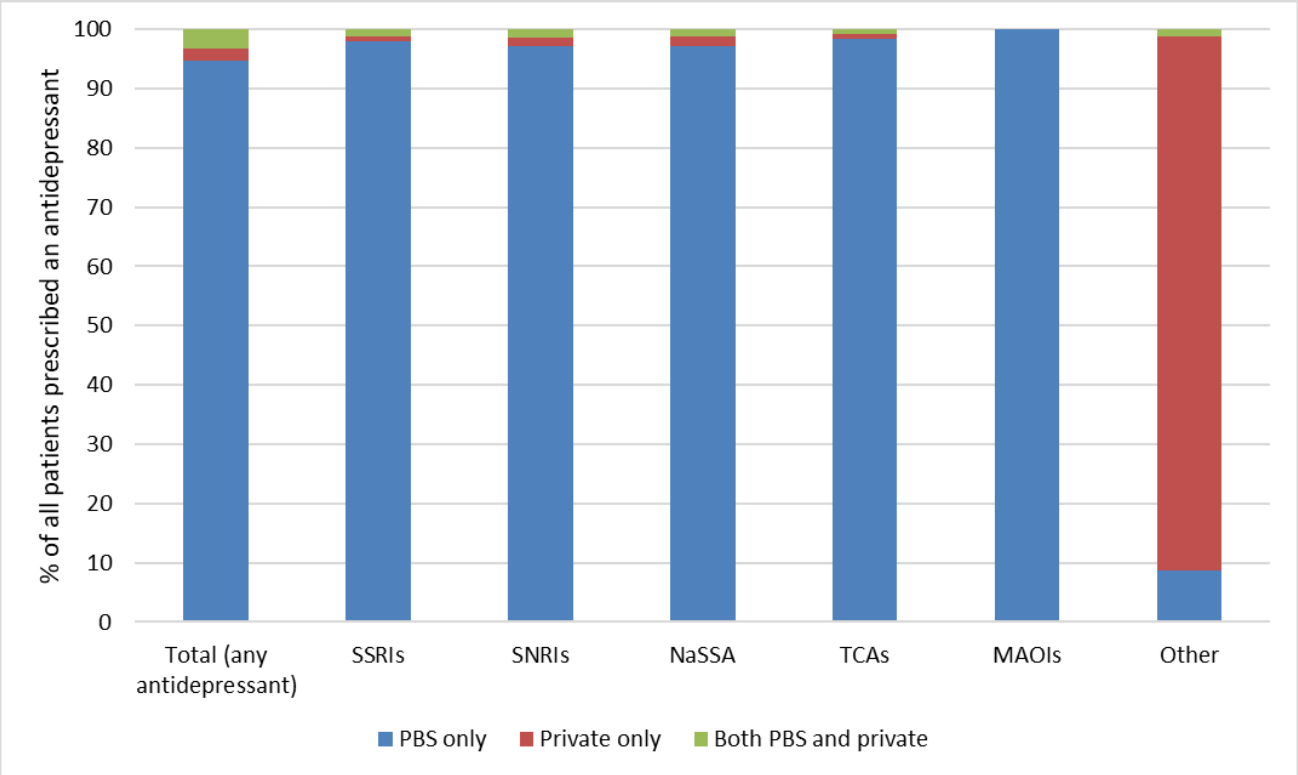
Consistent with PBS data for all Australians dispensed mental-health-related medications in 2019–2020,[19] variations in prescribing of antidepressants by jurisdiction were observed, with the prescribing rate for Tasmania (8.1%) significantly greater, and that for the Northern Territory (3.4%) significantly lower, than the national rate (5.8%; all patients aged under 25 years).

The findings in this report also show that the likelihood of having at least one antidepressant recorded among patients with mental health and other relevant conditions (ever recorded) ranged from 17.4% in patients with ADHD to 71.7% among those with personality disorders.

Prescribing rate of antidepressants in patients aged <25 years by PBS status

Consistent with the volume of the antidepressant prescriptions issued in 2018–2019, the majority of patients were prescribed PBS-subsidised prescriptions (94.8%; Table 14 and Figure 10). This was consistent across all medicine classes and individual medicines except for agomelatine and vortioxetine, which are not PBS subsidised. Almost all patients prescribed these medicines accessed them via the private market. Approximately 3.3% of the patients were prescribed at least one PBS and one non-PBS prescription for antidepressants during 2018–2019.

FIGURE 10. PROPORTION OF PATIENTS PRESCRIBED AN ANTIDEPRESSANT DURING 2018–2019 FOR EACH MEDICINE CLASS BY PBS STATUS (N = 40,420)



MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant;. Other includes agomelatine, moclobemide, reboxetine and vortioxetine.
Note: The few prescriptions (n = 425) with two scripts for the same prescription issued on the same date with different PBS status (one non-PBS, the other PBS) were assigned as non-PBS allowing a maximum of one script for each medicine per patient date.

Consistent with data indicating that SSRIs are effective treatments for anxiety disorders in children and adolescents, and are the preferred antidepressant class for young people,[8] this report shows that four in five young people prescribed antidepressants were issued an SSRI. Furthermore, fluoxetine – the preferred antidepressant medicine in children because more information about its safety is available – was the most prescribed antidepressant medicine among the SSRIs as well as all the other medicine classes (Figure 11).

Table 14: NUMBER AND PROPORTION OF PATIENTS WITH AT LEAST ONE PRESCRIPTION FOR ANTIDEPRESSANT MEDICINE IN 2018–2019 BY PBS STATUS

Antidepressant class and medicines	PBS only		Private only		Both PBS and private		Total
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	
Total (any antidepressant)	**38,301**	**94.76 (94.21, 95.31)**	**774**	**1.91 (1.61, 2.22)**	**1,345**	**3.33 (3.02, 3.64)**	**40,420**
SSRIs	**31,764**	**98.06 (97.74, 98.37)**	**273**	**0.84 (0.64, 1.05)**	**357**	**1.10 (0.94, 1.26)**	**32,394**
Citalopram	1,772	99.05 (98.52, 99.58)	7	0.39 (0.03, 0.75)	10	0.56 (0.22, 0.89)	1,789
Escitalopram	9,793	98.83 (98.51, 99.15)	50	0.50 (0.31, 0.70)	66	0.67 (0.47, 0.86)	9,909
Fluoxetine	11,886	97.11 (96.67, 97.55)	188	1.54 (1.24, 1.83)	166	1.36 (1.10, 1.61)	12,240
Fluvoxamine	1,525	98.71 (98.08, 99.33)	7	0.45 (0.12, 0.79)	13	0.84 (0.37, 1.32)	1,545
Paroxetine	850	98.27 (97.44, 99.09)	7	0.81 (0.22, 1.40)	8	0.92 (0.31, 1.54)	865
Sertraline	9,749	98.83 (98.35, 99.32)	58	0.59 (0.19, 0.99)	57	0.58 (0.38, 0.78)	9,864
SNRIs	**5,781**	**97.18 (96.39, 97.97)**	**82**	**1.38 (0.72, 2.03)**	**86**	**1.45 (1.15, 1.74)**	**5,949**
Desvenlafaxine	2,289	98.66 (97.62, 99.71)	16	0.69 (0.00, 1.54)	15	0.65 (0.31, 0.98)	2,320
Duloxetine	1,544	94.96 (93.51, 96.40)	40	2.46 (1.19, 3.73)	42	2.58 (1.83, 3.34)	1,626
Venlafaxine	2,205	97.57 (96.86, 98.28)	29	1.28 (0.79, 1.77)	26	1.15 (0.72, 1.58)	2,260
NaSSA	**3,582**	**97.18 (96.45, 97.91)**	**57**	**1.55 (1.05, 2.05)**	**47**	**1.28 (0.85, 1.70)**	**3,686**
Mianserin	16	100.0 (100.0,100.0)	0	-	0	-	16
Mirtazapine	3,570	97.17 (96.44, 97.90)	57	1.55 (1.05, 2.05)	47	1.28 (0.86, 1.70)	3,674
TCAs	**3,308**	**98.48 (98.03, 98.94)**	**27**	**0.80 (0.50, 1.10)**	**24**	**0.71 (0.41, 1.02)**	**3,359**
Amitriptyline (low dose <25mg/day)	2,187	99.05 (98.61, 99.49)	13	0.59 (0.28, 0.90)	8	0.36 (0.09, 0.64)	2,208
Amitriptyline (high dose ≥25mg/day)	982	98.79 (98.07, 99.52)	6	0.60 (0.12, 1.08)	6	0.60 (0.05, 1.16)	994
Clomipramine	114	95.00 (91.11, 98.89)	<10	4.17 (0.58, 7.76)	<5	0.83 (0.00, 2.48)	120
Dosulepin	56	100.0 (100.0,100.0)	0	-	0	-	56
Doxepin	<59	98.31 (94.86, 100.00)	0	-	<5	1.69 (0.00, 5.14)	59
Imipramine	<82	97.56 (94.18, 100.00)	<5	1.22 (0.00, 3.65)	<5	1.22 (0.00, 3.65)	82
Nortriptyline	159	94.08 (90.44, 97.72)	5	2.96 (0.34, 5.57)	5	2.96 (0.36, 5.56)	169
MAOIs	**15**	**100.0 (100.0,100.0)**	**0**	**-**	**0**	**-**	**15**

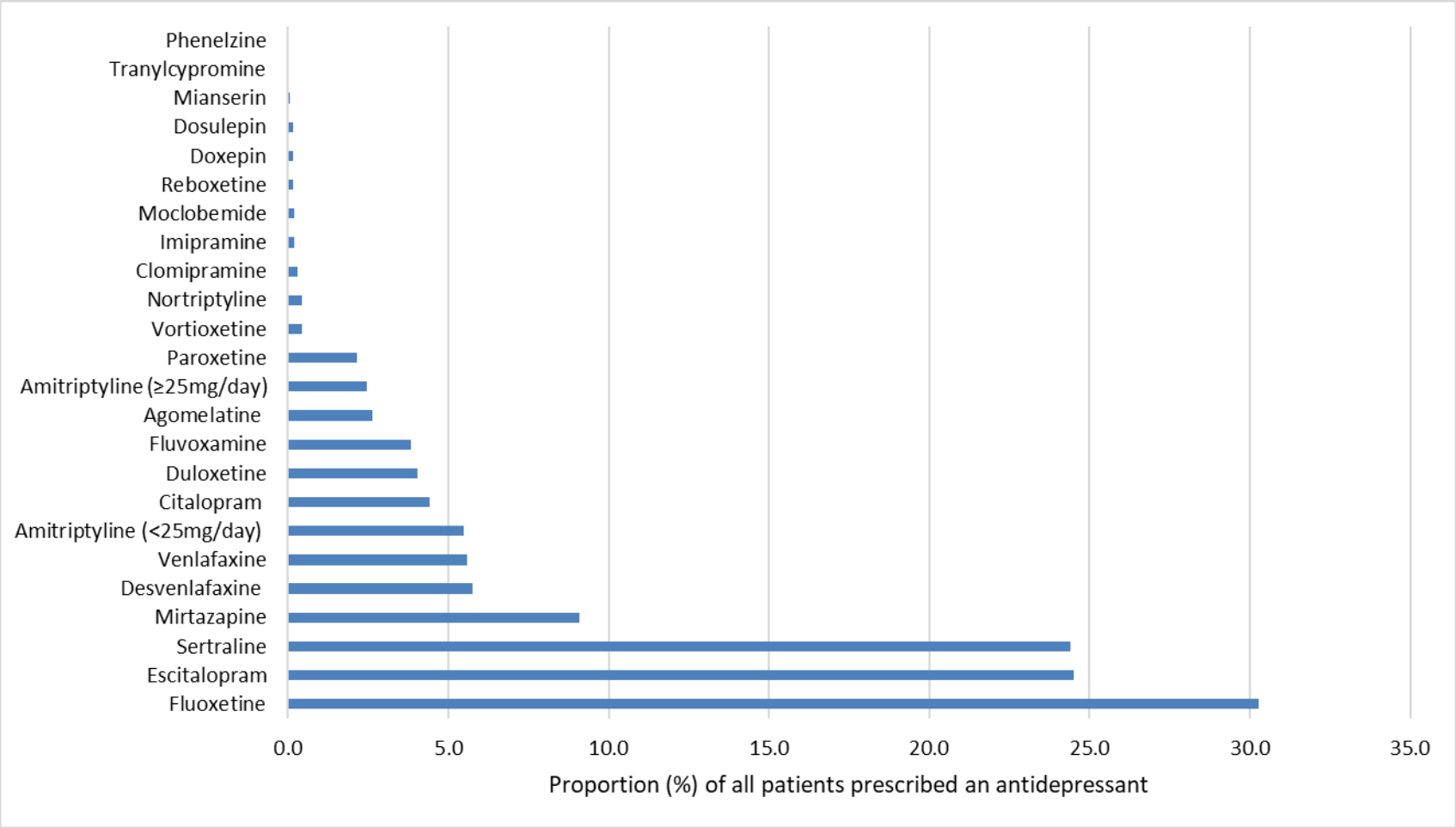
Antidepressant class and medicines	PBS only		Private only		Both PBS and private		Total
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	
Phenelzine	<5	100.0 (100.0,100.0)	0	-	0	-	<5
Tranylcypromine	13	100.0 (100.0,100.0)	0	-	0	-	13
Other	**115**	**8.73 (6.79, 10.67)**	**1,185**	**89.98 (87.67, 92.28)**	**17**	**1.29 (0.52, 2.06)**	**1,317**
Agomelatine*	<5	0.09 (0.00, 0.28)	<1,056	99.91 (99.72, 100.00)	0	-	1,056
Moclobemide	70	100.0 (100.0,100.0)	0	-	0	-	70
Reboxetine	62	100.0 (100.0,100.0)	0	-	0	-	62
Vortioxetine*	0	-	173	100.0 (100.0,100.0)	0	-	173

*Agomelatine and vortioxetine are not PBS subsidised, therefore the few patients with PBS scripts for agomelatine might be a result of a recording error. Cells with values less than five are suppressed including complementary suppression of other cells.

MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA= tricyclic antidepressant.

Note: The few prescriptions (n = 425) with two scripts for the same prescription issued on the same date with different PBS status (one non-PBS, the other PBS) were assigned as non-PBS allowing a maximum of one script for each medicine per patient date.

FIGURE 11. PROPORTION OF PATIENTS AGED <25 YEARS PRESCRIBED AT LEAST ONE ANTIDEPRESSANT MEDICINE DURING 2018–2019 (N = 40,420)



Note that a patient could be prescribed more than one of the antidepressant medicines, thus the groups are not mutually exclusive.

Patients with depression or anxiety prescribed an antidepressant

The proportion of patients with depression or anxiety (current or ever recorded) who were prescribed at least one antidepressant during 2018–2019 is presented in Table 15 and Table 16.

Among the 29,537 patients aged less than 25 years who had a record of depression in 2018 or 2019, 69.8% (n = 20,613) were prescribed at least one antidepressant during 2018–2019. Of the 41,768 patients with a history (ever recorded up to 2019) of depression, more than half (58.0%) were prescribed at least one antidepressant during 2018–2019.

Half of the patients (50.2%) aged less than 25 years who had a record of anxiety in 2018 or 2019 were prescribed at least one antidepressant during 2018–2019. Among the 59,479 patients with a history of anxiety, 41.3% were prescribed at least one antidepressant during 2018–2019.

Table 15: NUMBER AND PROPORTION OF PATIENTS AGED <25 YEARS AND PATIENTS WITH A CURRENT RECORD (2018 OR 2019) OF DEPRESSION, ANXIETY, DEPRESSION AND/OR ANXIETY, OR NEITHER DEPRESSION NOR ANXIETY PRESCRIBED SELECTED ANTIDEPRESSANT CLASSES AND MEDICINES IN 2018–2019

Antidepressant class and medicines	All patients aged <25 years N = 693,260		Depression (recorded 2018 or 2019) N = 29,537		Anxiety (recorded 2018 or 2019) N = 41,165		Depression and/or anxiety (recorded 2018 or 2019) N = 52,956		Neither depression nor anxiety recorded in 2018 or 2019 N = 640,304	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Total (any antidepressant)	**40,420**	**5.83 (5.50, 6.16)**	**20,613**	**69.79 (68.63, 70.94)**	**20,661**	**50.19 (48.95, 51.43)**	**28,702**	**54.20 (52.96, 55.44)**	**11,718**	**1.83 (1.69, 1.97)**
SSRIs	**32,394**	**4.67 (4.40, 4.94)**	**17,135**	**58.01 (56.90, 59.12)**	**17,634**	**42.84 (41.70, 43.97)**	**24,121**	**45.55 (44.44, 46.65)**	**8,273**	**1.29 (1.19, 1.40)**
Citalopram	1,789	0.26 (0.23, 0.29)	1,087	3.68 (3.29, 4.07)	929	2.26 (1.99, 2.53)	1,382	2.61 (2.32, 2.90)	407	0.06 (0.05, 0.07)
Escitalopram	9,909	1.43 (1.33, 1.52)	5,636	19.08 (18.17, 20.00)	6,129	14.89 (14.13, 15.64)	7,951	15.01 (14.30, 15.73)	1,958	0.31 (0.27, 0.34)
Fluoxetine	12,240	1.77 (1.63, 1.90)	6,318	21.39 (20.40, 22.38)	6,438	15.64 (14.74, 16.54)	8,847	16.71 (15.84, 17.57)	3,393	0.53 (0.48, 0.58)
Fluvoxamine	1,545	0.22 (0.20, 0.25)	730	2.47 (2.17, 2.77)	797	1.94 (1.71, 2.16)	1,059	2.00 (1.77, 2.23)	486	0.08 (0.06, 0.09)
Paroxetine	865	0.12 (0.11, 0.14)	396	1.34 (1.15, 1.53)	551	1.34 (1.15, 1.53)	642	1.21 (1.05, 1.37)	223	0.03 (0.03, 0.04)
Sertraline	9,864	1.42 (1.32, 1.52)	5,671	19.20 (18.23, 20.17)	5,424	13.18 (12.46, 13.89)	7,632	14.41 (13.68, 15.14)	2,232	0.35 (0.32, 0.38)
SNRIs	**5,949**	**0.86 (0.80, 0.92)**	**3,772**	**12.77 (12.15, 13.39)**	**3,097**	**7.52 (7.08, 7.96)**	**4,570**	**8.63 (8.17, 9.09)**	**1,379**	**0.22 (0.19, 0.24)**
Desvenlafaxine	2,320	0.33 (0.30, 0.37)	1,535	5.20 (4.75, 5.65)	1,160	2.82 (2.57, 3.07)	1,800	3.40 (3.11, 3.69)	520	0.08 (0.07, 0.09)
Duloxetine	1,626	0.23 (0.21, 0.26)	1,000	3.39 (3.07, 3.70)	856	2.08 (1.84, 2.32)	1,226	2.32 (2.09, 2.54)	400	0.06 (0.05, 0.07)
Venlafaxine	2,260	0.33 (0.30, 0.36)	1,443	4.89 (4.51, 5.26)	1,250	3.04 (2.76, 3.31)	1,777	3.36 (3.08, 3.63)	483	0.08 (0.06, 0.09)
NaSSA	**3,686**	**0.53 (0.48, 0.59)**	**2,289**	**7.75 (7.19, 8.31)**	**1,989**	**4.83 (4.38, 5.29)**	**2,854**	**5.39 (4.95, 5.83)**	**832**	**0.13 (0.11, 0.15)**
Mianserin	16	0.00 (0.00, 0.00)	11	0.04 (0.02, 0.06)	10	0.02 (0.01, 0.04)	14	0.03 (0.01, 0.04)	<5	0.00 (0.00, 0.00)
Mirtazapine	3,674	0.53 (0.48, 0.58)	2,282	7.73 (7.16, 8.29)	1,980	4.81 (4.36, 5.26)	2,844	5.37 (4.93, 5.81)	<835	0.13 (0.11, 0.15)
TCAs	**3,359**	**0.48 (0.45, 0.52)**	**853**	**2.89 (2.62, 3.15)**	**1,100**	**2.67 (2.43, 2.91)**	**1,375**	**2.60 (2.38, 2.81)**	**1,984**	**0.31 (0.28, 0.34)**
Amitriptyline (<25 mg/day)	2,208	0.32 (0.29, 0.35)	514	1.74 (1.54, 1.94)	714	1.73 (1.53, 1.94)	868	1.64 (1.46, 1.82)	1,340	0.21 (0.19, 0.23)
Amitriptyline (≥25 mg/day)	994	0.14 (0.13, 0.16)	311	1.05 (0.92, 1.19)	350	0.85 (0.76, 0.94)	463	0.87 (0.79, 0.96)	531	0.08 (0.07, 0.09)
Clomipramine	120	0.02 (0.01, 0.02)	33	0.11 (0.07, 0.15)	52	0.13 (0.09, 0.16)	61	0.12 (0.08, 0.15)	59	0.01 (0.01, 0.01)
Doxepin	59	0.01 (0.01, 0.01)	22	0.07 (0.04, 0.11)	19	0.05 (0.03, 0.07)	27	0.05 (0.03, 0.07)	32	0.00 (0.00, 0.01)
Dosulepin	56	0.01 (0.01, 0.01)	24	0.08 (0.04, 0.12)	26	0.06 (0.04, 0.09)	33	0.06 (0.04, 0.09)	23	0.00 (0.00, 0.01)

Antidepressant class and medicines	All patients aged <25 years N = 693,260		Depression (recorded 2018 or 2019) N = 29,537		Anxiety (recorded 2018 or 2019) N = 41,165		Depression and/or anxiety (recorded 2018 or 2019) N = 52,956		Neither depression nor anxiety recorded in 2018 or 2019 N = 640,304	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Imipramine	82	0.01 (0.01, 0.02)	9	0.03 (0.01, 0.05)	9	0.02 (0.01, 0.04)	15	0.03 (0.01, 0.05)	67	0.01 (0.01, 0.01)
Nortriptyline	169	0.02 (0.02, 0.03)	60	0.20 (0.14, 0.27)	61	0.15 (0.10, 0.19)	82	0.15 (0.11, 0.20)	87	0.01 (0.01, 0.02)
MAOIs	**15**	**0.00 (0.00, 0.00)**	**10**	**0.03 (0.01, 0.05)**	**5**	**0.01 (0.00, 0.02)**	**11**	**0.02 (0.01, 0.03)**	**<5**	**0.00 (0.00, 0.00)**
Phenelzine	<5	0.00 (0.00, 0.00)	<5	0.01 (0.00, 0.02)	<5	0.00 (0.00, 0.01)	<5	0.01 (0.00, 0.01)	<5	0.00 (0.00, 0.00)
Tranylcypromine	13	0.00 (0.00, 0.00)	9	0.03 (0.01, 0.05)	<5	0.01 (0.00, 0.02)	10	0.02 (0.01, 0.03)	<5	0.00 (0.00, 0.00)
Other	**1,317**	**0.19 (0.16, 0.22)**	**903**	**3.06 (2.63, 3.49)**	**792**	**1.92 (1.65, 2.20)**	**1,085**	**2.05 (1.77, 2.33)**	**232**	**0.04 (0.03, 0.04)**
Agomelatine	1,056	0.15 (0.13, 0.17)	736	2.49 (2.12, 2.86)	637	1.55 (1.31, 1.79)	875	1.65 (1.41, 1.89)	181	0.03 (0.02, 0.03)
Moclobemide	70	0.01 (0.01, 0.01)	39	0.13 (0.09, 0.18)	39	0.09 (0.06, 0.13)	53	0.10 (0.07, 0.13)	17	0.00 (0.00, 0.00)
Reboxetine	62	0.01 (0.01, 0.01)	43	0.15 (0.08, 0.21)	34	0.08 (0.05, 0.12)	50	0.09 (0.06, 0.13)	12	0.00 (0.00, 0.00)
Vortioxetine	173	0.03 (0.02, 0.03)	119	0.40 (0.30, 0.51)	111	0.27 (0.20, 0.33)	146	0.28 (0.21, 0.34)	27	0.00 (0.00, 0.01)
No antidepressant	**652,840**	**94.17 (93.84, 94.50)**	**8,924**	**30.21 (29.06, 31.37)**	**20,504**	**49.81 (48.57, 51.05)**	**24,254**	**45.80 (44.56, 47.04)**	**628,586**	**98.17 (98.03, 98.31)**

*A patient could be prescribed more than one medicine within or across each class of antidepressant medicines during 2018 to 2019. Cells with values less than five are suppressed including complementary suppression of other cells.
MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA= tricyclic antidepressant.

Table 16: NUMBER AND PROPORTION OF PATIENTS AGED <25 YEARS AND PATIENTS WITH A HISTORY OF DEPRESSION, ANXIETY, DEPRESSION AND/OR ANXIETY, OR NEITHER DEPRESSION NOR ANXIETY PRESCRIBED SELECTED ANTIDEPRESSANT CLASSES AND MEDICINES IN 2018–2019

Antidepressant class and medicines*	All patients aged <25 years N = 693,260		Depression (ever) N = 41,768		Anxiety (ever) N = 59,479		Depression and/or anxiety (ever) N = 74,746		Neither depression nor anxiety ever recorded N = 618,514	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Total (any antidepressant)	**40,420**	**5.83 (5.50, 6.16)**	**24,227**	**58.00 (56.91, 59.10)**	**24,566**	**41.30 (40.16, 42.45)**	**32,557**	**43.56 (42.40, 44.72)**	**7,863**	**1.27 (1.17, 1.37)**
SSRIs	**32,394**	**4.67 (4.40, 4.94)**	**19,895**	**47.63 (46.62, 48.65)**	**20,671**	**34.75 (33.74, 35.77)**	**27,054**	**36.19 (35.19, 37.20)**	**5,340**	**0.86 (0.79, 0.94)**
Citalopram	1,789	0.26 (0.23, 0.29)	1,255	3.00 (2.69, 3.32)	1,082	1.82 (1.61, 2.03)	1,534	2.05 (1.83, 2.28)	255	0.04 (0.03, 0.05)
Escitalopram	9,909	1.43 (1.33, 1.52)	6,444	15.43 (14.68, 16.18)	6,902	11.60 (10.99, 12.22)	8,666	11.59 (11.01, 12.18)	1,243	0.20 (0.18, 0.23)
Fluoxetine	12,240	1.77 (1.63, 1.90)	7,292	17.46 (16.68, 18.23)	7,652	12.87 (12.15, 13.58)	10,012	13.39 (12.71, 14.08)	2,228	0.36 (0.32, 0.40)
Fluvoxamine	1,545	0.22 (0.20, 0.25)	856	2.05 (1.81, 2.29)	964	1.62 (1.44, 1.80)	1,238	1.66 (1.47, 1.84)	307	0.05 (0.04, 0.06)
Paroxetine	865	0.12 (0.11, 0.14)	479	1.15 (1.00, 1.30)	622	1.05 (0.90, 1.19)	708	0.95 (0.82, 1.07)	157	0.03 (0.02, 0.03)
Sertraline	9,864	1.42 (1.32, 1.52)	6,481	15.52 (14.74, 16.29)	6,321	10.63 (10.06, 11.19)	8,443	11.30 (10.72, 11.87)	1,421	0.23 (0.21, 0.25)
SNRIs	**5,949**	**0.86 (0.80, 0.92)**	**4,436**	**10.62 (10.12, 11.12)**	**3,738**	**6.28 (5.92, 6.65)**	**5,158**	**6.90 (6.53, 7.27)**	**791**	**0.13 (0.11, 0.14)**
Desvenlafaxine	2,320	0.33 (0.30, 0.37)	1,809	4.33 (3.98, 4.69)	1,417	2.38 (2.18, 2.59)	2,043	2.73 (2.50, 2.96)	277	0.04 (0.04, 0.05)
Duloxetine	1,626	0.23 (0.21, 0.26)	1,162	2.78 (2.54, 3.02)	1,024	1.72 (1.54, 1.91)	1,384	1.85 (1.68, 2.02)	242	0.04 (0.03, 0.04)
Venlafaxine	2,260	0.33 (0.30, 0.36)	1,686	4.04 (3.73, 4.34)	1,494	2.51 (2.29, 2.74)	1,977	2.65 (2.43, 2.86)	283	0.05 (0.04, 0.05)
NaSSA	**3,686**	**0.53 (0.48, 0.59)**	**2,584**	**6.19 (5.74, 6.64)**	**2,289**	**3.85 (3.49, 4.20)**	**3,121**	**4.18 (3.83, 4.52)**	**565**	**0.09 (0.08, 0.11)**
Mianserin	16	0.00 (0.00, 0.00)	15	0.04 (0.02, 0.05)	12	0.02 (0.01, 0.03)	16	0.02 (0.01, 0.03)	0	0.00 (0.00, 0.00)
Mirtazapine	3,674	0.53 (0.48, 0.58)	2,573	6.16 (5.71, 6.61)	2,279	3.83 (3.48, 4.19)	3,109	4.16 (3.81, 4.51)	565	0.09 (0.08, 0.11)
TCAs	**3,359**	**0.48 (0.45, 0.52)**	**1,146**	**2.74 (2.53, 2.96)**	**1,439**	**2.42 (2.23, 2.61)**	**1,752**	**2.34 (2.18, 2.51)**	**1,607**	**0.26 (0.24, 0.28)**
Amitriptyline (<25mg/day)	2,208	0.32 (0.29, 0.35)	685	1.64 (1.47, 1.81)	929	1.56 (1.40, 1.73)	1,102	1.47 (1.33, 1.62)	1,106	0.18 (0.16, 0.20)
Amitriptyline (≥25mg/day)	994	0.14 (0.13, 0.16)	401	0.96 (0.86, 1.06)	452	0.76 (0.68, 0.84)	574	0.77 (0.70, 0.84)	420	0.07 (0.06, 0.08)
Clomipramine	120	0.02 (0.01, 0.02)	50	0.12 (0.08, 0.16)	68	0.11 (0.08, 0.15)	81	0.11 (0.08, 0.13)	39	0.01 (0.00, 0.01)
Doxepin	59	0.01 (0.01, 0.01)	24	0.06 (0.03, 0.08)	25	0.04 (0.02, 0.06)	32	0.04 (0.02, 0.06)	27	0.00 (0.00, 0.01)
Dosulepin	56	0.01 (0.01, 0.01)	38	0.09 (0.06, 0.12)	38	0.06 (0.04, 0.08)	46	0.06 (0.04, 0.08)	10	0.00 (0.00, 0.00)

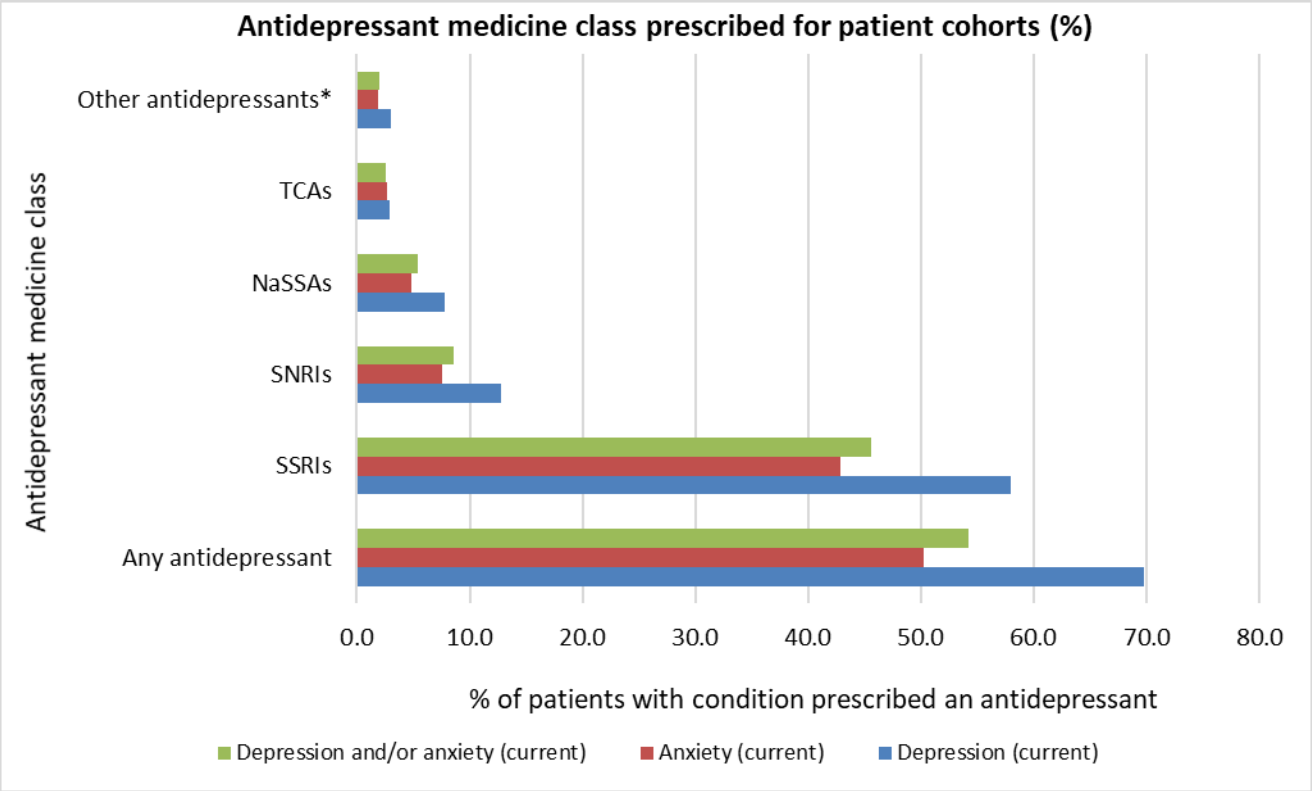
Antidepressant class and medicines*	All patients aged <25 years N = 693,260		Depression (ever) N = 41,768		Anxiety (ever) N = 59,479		Depression and/or anxiety (ever) N = 74,746		Neither depression nor anxiety ever recorded N = 618,514	
	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Imipramine	82	0.01 (0.01, 0.02)	14	0.03 (0.02, 0.05)	19	0.03 (0.02, 0.05)	25	0.03 (0.02, 0.05)	57	0.01 (0.01, 0.01)
Nortriptyline	169	0.02 (0.02, 0.03)	80	0.19 (0.14, 0.24)	76	0.13 (0.09, 0.16)	102	0.14 (0.10, 0.17)	67	0.01 (0.01, 0.01)
MAOIs	**15**	**0.00 (0.00, 0.00)**	**12**	**0.03 (0.01, 0.04)**	**9**	**0.02 (0.01, 0.02)**	**14**	**0.02 (0.01, 0.03)**	**<5**	**0.00 (0.00, 0.00)**
Phenelzine	<5	0.00 (0.00, 0.00)	<5	0.01 (0.00, 0.02)	<5	0.00 (0.00, 0.01)	<5	0.00 (0.00, 0.01)	<5	0.00 (0.00, 0.00)
Tranylcypromine	13	0.00 (0.00, 0.00)	<15	0.03 (0.01, 0.04)	8	0.01 (0.00, 0.02)	13	0.02 (0.01, 0.03)	0	0.00 (0.00, 0.00)
Other	**1,317**	**0.19 (0.16, 0.22)**	**1,018**	**2.44 (2.10, 2.77)**	**906**	**1.52 (1.32, 1.73)**	**1,173**	**1.57 (1.36, 1.77)**	**144**	**0.02 (0.02, 0.03)**
Agomelatine	1,056	0.15 (0.13, 0.17)	822	1.97 (1.68, 2.25)	725	1.22 (1.04, 1.40)	944	1.26 (1.08, 1.44)	112	0.02 (0.01, 0.02)
Moclobemide	70	0.01 (0.01, 0.01)	47	0.11 (0.08, 0.15)	50	0.08 (0.06, 0.11)	58	0.08 (0.06, 0.10)	<15	0.00 (0.00, 0.00)
Reboxetine	62	0.01 (0.01, 0.01)	52	0.12 (0.07, 0.18)	43	0.07 (0.04, 0.10)	58	0.08 (0.05, 0.11)	<5	0.00 (0.00, 0.00)
Vortioxetine	173	0.03 (0.02, 0.03)	134	0.32 (0.24, 0.40)	122	0.21 (0.16, 0.25)	154	0.21 (0.16, 0.25)	19	0.00 (0.00, 0.00)
No antidepressant	**652,840**	**94.17 (93.84, 94.50)**	**17,541**	**42.00 (40.90, 43.09)**	**34,913**	**58.70 (57.55, 59.84)**	**42,189**	**56.44 (55.28, 57.60)**	**610,651**	**98.73 (98.63, 98.83)**

*A patient could be prescribed more than one medicine within or across each class of antidepressant medicines during 2018 to 2019. Cells with values less than five are suppressed including complementary suppression of other cells.
MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA= tricyclic antidepressant.

SSRIs were the most commonly prescribed antidepressants, with 4.7% of eligible patients prescribed an SSRI at least once in 2018–2019. Similarly, 58.0% of patients with a record of depression in 2018 or 2019 were prescribed at least one SSRI medicine during 2018–2019: 42.8% for patients with anxiety and 45.6% for those with depression and/or anxiety (Figure 12). The other classes of antidepressants were less commonly used in these patients. MAOIs, the least recorded class of medicine, were prescribed to fewer than 20 patients.

The most frequently recorded antidepressant medicines among all the cohorts (all patients aged less than 25 years, patients with depression or anxiety) were fluoxetine, escitalopram and sertraline.

FIGURE 12. PROPORTION (%) OF PATIENTS WITH DEPRESSION, ANXIETY, DEPRESSION AND/OR ANXIETY RECORDED IN 2018 OR 2019 PRESCRIBED SELECTED ANTIDEPRESSANT CLASSES DURING 2018–2019



*Other antidepressants include agomelatine, moclobemide, reboxetine and vortioxetine.
Note that a patient could be prescribed more than one medicine within or across each class of antidepressants during 2018 to 2019.
Depression cohort, N = 29,537; anxiety cohort, N = 41,165; depression and/or anxiety cohort, N = 52,956.
SSRI: selective serotonin reuptake inhibitors; SNRI: Serotonin–noradrenaline reuptake inhibitors; NaSSA: noradrenergic and specific serotonergic antidepressant; TCA: Tricyclic antidepressants.
NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA= tricyclic antidepressant
Less than 0.05% of patients with a current record of depression, anxiety or depression and/or anxiety were prescribed MAOIs (monoamine oxidase inhibitors). Current refers to condition recorded during 2018 or 2019.

Prevalence of mental health and other relevant conditions in patients prescribed antidepressants

Among the 40,420 patients prescribed at least one antidepressant during 2018–2019, just over half had depression (51.0%) and half had anxiety (51.1%) recorded in 2018 or 2019 (Table 17). The majority of patients prescribed at least one antidepressant during 2018–2019 had a record of either depression or anxiety (71.0%) in 2018 or 2019. Other frequently recorded current conditions among patients prescribed at least one antidepressant were sleep problems (10.1%), pain (6.1%), ADHD (5.3%), ASD (4.0%) and eating disorders (2.4%).

Of the 40,420 patients prescribed at least one antidepressant during 2018–2019, the prevalence (ever) of mental health or other relevant conditions was:

- 59.9% depression
- 60.8% anxiety
- 80.6% depression and/or anxiety
- 15.4% sleep problems
- 10.0% pain
- 8.1% ADHD
- 6.7% ASD.

Of note, it is possible that for some patients, an antidepressant was prescribed for management of existing conditions other than the ones identified.

Table 17: PREVALENCE (CURRENT AND EVER) OF MENTAL HEALTH AND OTHER RELEVANT CONDITIONS IN PATIENTS AGED <25 YEARS WHO WERE PRESCRIBED AT LEAST ONE ANTIDEPRESSANT IN 2018–2019 (N = 40,420)

Conditions*	Current (recorded in 2018 or 2019) N = 40,420		Ever (recorded at any time up to 2019) N = 40,420	
	Number	% (95% CI)	Number	% (95% CI)
Mental health conditions				
Depression	20,613	51.00 (49.44, 52.55)	24,227	59.94 (58.53, 61.35)
Anxiety	20,661	51.12 (49.39, 52.84)	24,566	60.78 (59.15, 62.41)
Depression and/or anxiety disorder	28,702	71.01 (69.47, 72.55)	32,557	80.55 (79.35, 81.74)
Bipolar disorder	741	1.83 (1.63, 2.04)	984	2.43 (2.20, 2.67)
Schizophrenia/schizoaffective disorder	277	0.69 (0.59, 0.78)	377	0.93 (0.82, 1.05)
OCD	795	1.97 (1.80, 2.13)	1,188	2.94 (2.71, 3.17)
PTSD	941	2.33 (2.13, 2.53)	1,258	3.11 (2.87, 3.36)
Other relevant conditions				
Substance abuse	200	0.49 (0.42, 0.57)	260	0.64 (0.56, 0.73)
ASD	1,607	3.98 (3.50, 4.45)	2,697	6.67 (6.02, 7.32)
ADHD	2,124	5.25 (4.65, 5.86)	3,252	8.05 (7.33, 8.76)
Other disruptive behaviour disorders (not ADHD)	143	0.35 (0.28, 0.43)	402	0.99 (0.85, 1.14)
Personality disorders	645	1.60 (1.42, 1.77)	809	2.00 (1.80, 2.21)
Eating disorders	979	2.42 (2.12, 2.72)	1,500	3.71 (3.33, 4.09)
Gender dysphoria	228	0.56 (0.42, 0.71)	278	0.69 (0.53, 0.85)
Sleep problems	4,094	10.13 (9.36, 10.90)	6,233	15.42 (14.37, 16.47)
Pain (including neuropathic pain)	2,461	6.09 (5.76, 6.42)	4,028	9.97 (9.51, 10.43)
Menstrual problems (females only, n = 26,459)	129	0.49 (0.38, 0.59)	241	0.91 (0.77, 1.05)

ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder

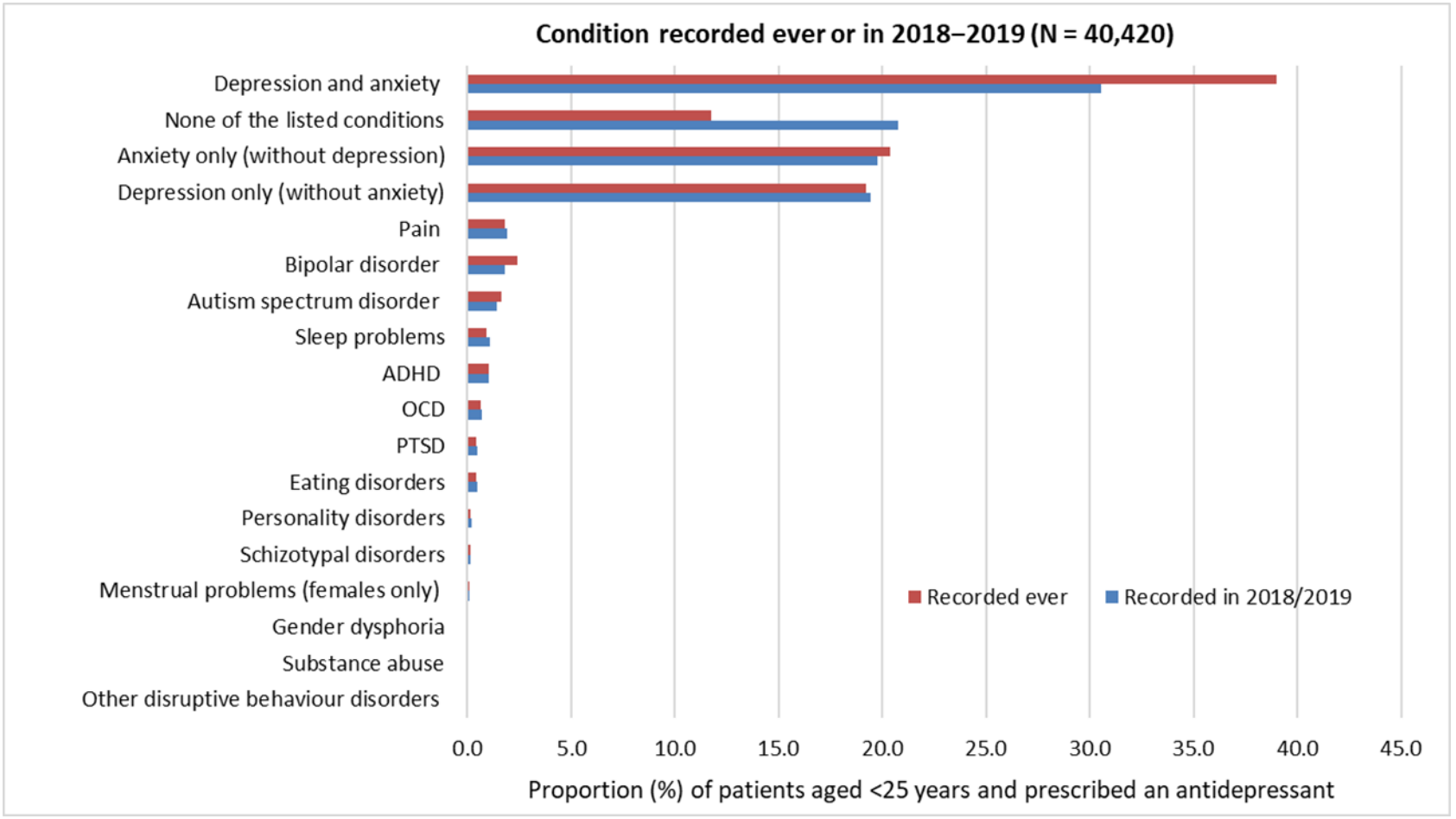
*Groups of conditions are not mutually exclusive as a patient can have more than one of these conditions.

In an attempt to explore the most likely indication for the antidepressant, Table 18 and Figure 13 show the prevalence (current and ever) of mental health and other relevant conditions in patients aged less

than 25 years prescribed at least one antidepressant in 2018–2019, with patients categorised into mutually exclusive groups. Conditions were prioritised in the order presented in Table 18. Note that the order of prioritisation was based on the most likely or common indications first, followed by off-label and least likely or common indications. A patient's actual indication for the antidepressant may be different to the condition group in which they have been categorised. These findings should therefore be interpreted cautiously.

Based on the above assumptions, the most common indication for an antidepressant was having both depression and anxiety (ever prevalence 39.0%), followed by anxiety only – without depression (ever prevalence 20.3%) and then depression only – without anxiety (ever prevalence 19.2%). A tenth (11.7%) of patients did not have a record of any of the selected conditions that might explain the use of an antidepressant. It is possible that these patients have a condition that warrants the use of these medicines, but it has been recorded in a way that is not accessible to MedicineInsight, or the condition is not one of the specified conditions. Another potential explanation could be the reluctance of GPs to formally diagnose young patients in certain circumstances.

FIGURE 13. PREVALENCE (CURRENT AND EVER) OF MENTAL HEALTH AND OTHER RELEVANT CONDITIONS (BY MUTUALLY EXCLUSIVE GROUPS) IN PATIENTS <25 YEARS PRESCRIBED AT LEAST ONE ANTIDEPRESSANT IN 2018–2019



Conditions are presented as mutually exclusive groups prioritised in the order presented in Table 18. Except where explicitly stated, patients in each group might have other mental health or relevant conditions listed or those not included in this list. ADHD = attention deficit hyperactivity disorder; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder. For menstrual problems, total number (N) of females is 26,459.

Table 18: PREVALENCE (CURRENT AND EVER) OF MENTAL HEALTH AND OTHER RELEVANT CONDITIONS (BY MUTUALLY EXCLUSIVE GROUPS) IN PATIENTS <25 YEARS PRESCRIBED AT LEAST ONE ANTIDEPRESSANT IN 2018–2019

Mutually exclusive groups for selected conditions (prioritised as presented)	Current (recorded in 2018 or 2019) N = 40,420		Ever (recorded at any time up to December 2019) N = 40,420	
	Number	% (95% CI)	Number	% (95% CI)
Bipolar disorder alone (with or without other mental health conditions)	741	1.83 (1.63, 2.04)	984	2.43 (2.20, 2.67)
Depression only (with or without other mental health conditions, excluding anxiety)	7,857	19.44 (18.35, 20.52)	7,767	19.22 (18.11, 20.32)
Depression and anxiety (with or without other mental health conditions listed below)	12,339	30.53 (29.01, 32.05)	15,761	38.99 (37.50, 40.48)
Anxiety only (with or without other mental health conditions, excluding depression)	7,986	19.76 (18.89, 20.63)	8,226	20.35 (19.43, 21.27)
OCD	280	0.69 (0.61, 0.78)	262	0.65 (0.57, 0.73)
PTSD	194	0.48 (0.41, 0.55)	177	0.44 (0.37, 0.51)
Eating disorders	189	0.47 (0.39, 0.55)	166	0.41 (0.34, 0.48)
Pain, including neuropathic pain, migraine, arthritis	767	1.90 (1.73, 2.06)	730	1.81 (1.63, 1.99)
Menstrual problems (eg, premenstrual dysphoric disorder; females only, n = 26,459)	22	0.08 (0.05, 0.12)	19	0.07 (0.04, 0.10)
Schizotypal disorders (schizophrenia, schizoaffective disorders)	56	0.14 (0.10, 0.17)	56	0.14 (0.10, 0.18)
Personality disorders	89	0.22 (0.18, 0.26)	52	0.13 (0.10, 0.16)
Substance abuse	23	0.06 (0.03, 0.08)	14	0.03 (0.01, 0.06)
ASD	581	1.44 (1.23, 1.64)	660	1.63 (1.42, 1.85)
ADHD	429	1.06 (0.94, 1.18)	410	1.01 (0.89, 1.14)
Other disruptive behaviour disorders	12	0.03 (0.01, 0.05)	14	0.03 (0.02, 0.05)
Gender dysphoria	27	0.07 (0.03, 0.10)	14	0.03 (0.00, 0.07)
Sleep problems	432	1.07 (0.95, 1.19)	368	0.91 (0.80, 1.02)
None of the above conditions recorded	8,396	20.77 (19.32, 22.23)	4,740	11.73 (10.74, 12.72)
Total	**40,420**	**100**	**40,420**	**100**

ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder; OCD = obsessive compulsive disorder; PTSD = post-traumatic stress disorder. Except where explicitly stated, patients in each group might have other mental health or relevant conditions listed or those not included in this list.

8. MANAGEMENT OF PATIENTS NEWLY DIAGNOSED WITH DEPRESSION OR ANXIETY

- There were 8,861 patients with depression and 14,119 patients with anxiety identified as having a first recorded diagnosis during 2018–2019 (newly diagnosed).
  - Of those newly diagnosed with depression, almost two-thirds (63.0%) had at least one antidepressant prescription recorded in the month before the first diagnosis record up to 31 December 2019.
  - Of those newly diagnosed with anxiety, over one-third (39.9%) had an antidepressant prescription recorded in the month prior to the first diagnosis record up to 31 December 2019.
- The majority of patients aged less than 25 years newly diagnosed with depression (71.3%) had a record of a mental health care plan or referral to a mental health specialist in the month prior to or within 6 months of the first diagnosis record.
- Similarly, just over two-thirds (67.3%) of patients aged less than 25 years newly diagnosed with anxiety had a record of a mental health care plan or referral to a mental health specialist.
- For patients newly diagnosed with depression or anxiety, the average number of days between the first diagnosis record and an antidepressant prescription was:
  - 43 days for patients with depression, and
  - 65 days for patients with anxiety.
- The mean duration between the first diagnosis record and first record of mental health treatment referral/plan was approximately 2 weeks for patients newly diagnosed with depression (13 days) or anxiety (14 days).

Study questions

- Among patients with newly diagnosed i) depression or ii) anxiety, how many were prescribed an antidepressant?
- Among patients with newly diagnosed i) depression and ii) anxiety who were prescribed an antidepressant, what was the average time to first recorded prescription?
- Among patients with newly diagnosed i) depression or ii) anxiety, how many were referred to a specialist and/or had a mental health care plan within 6 months?
- Among patients newly diagnosed with depression or anxiety who were prescribed an antidepressant in the month prior to, or any time after, the first record of depression or anxiety, and who started their antidepressant between 1 January 2018 and 30 June 2019, what was the average duration of therapy?

Patients newly diagnosed with depression or anxiety

Patients newly diagnosed with depression or anxiety are a subset of the total population of patients aged less than 25 years. These patients:

- were diagnosed with depression or anxiety, with the first recorded diagnosis between 1 January 2018 and 30 June 2019 (allowing at least 6 months post diagnosis for management to be recorded)

- had at least one encounter 12 months or more prior to the first record of depression or anxiety (to ensure sufficient medical records are available to exclude prior medical history).

There were 8,861 patients with depression and 14,119 patients with anxiety identified as having a first recorded diagnosis during 2018–2019.

Patients prescribed an antidepressant

Of the 8,861 patients aged less than 25 years who were newly diagnosed with depression (with or without anxiety) in 2018–2019, almost two-thirds (63.0%) had a record of an antidepressant prescription in the month before the first diagnosis record up until 31 December 2019 (Table 19). A similar proportion (65.4%) had ever been prescribed an antidepressant medicine (any time up to 31 December 2019). The large proportion of young adults with depression prescribed an antidepressant may suggest barriers to access of non-pharmacological therapies and psychiatric services.[22] A recent report by the Productivity Commission on Mental Health recognised limited access to affordable and timely support services as one of the barriers to management of mental health conditions in young Australians and early identification of mental illness in those at risk.[23]

Among the 14,119 patients newly diagnosed with anxiety (with or without depression) in 2018–2019, over one-third (39.9%) had an antidepressant prescription recorded in the month prior to the first diagnosis record up to 31 December 2019.

Table 19: MANAGEMENT ASPECTS FOR PATIENTS AGED <25 YEARS WITH NEWLY DIAGNOSED DEPRESSION OR ANXIETY IN 2018–2019

	Patients newly diagnosed with depression (N = 8,861)		Patients newly diagnosed with anxiety (N = 14,119)	
	n	% (95% CI)	n	% (95% CI)
Antidepressant medicine prescribed in the month before first diagnosis record to 31 December 2019 (current record)	5,580	62.97 (61.47, 64.47)	5,629	39.87 (38.26, 41.48)
Antidepressant medicine ever prescribed up to 31 December 2019	5,795	65.40 (63.90, 66.90)	6,018	42.62 (40.97, 44.27)
Had a mental health care plan or referral to a mental health specialist in the month prior to or within 6 months of first diagnosis record				
All newly diagnosed patients	6,316	71.28 (68.90, 73.66)	9,499	67.28 (65.07, 69.48)
Patients with a current record of antidepressant use*	3,785	67.83 (65.25, 70.41)	3,739	66.42 (63.46, 69.38)
Patients with no current record of antidepressant use**	2,531	77.14 (74.58, 79.70)	5,760	67.84 (65.74, 69.95)

*Depression, n = 5,580 and anxiety, n = 5,629. **Depression, n = 3,281 and anxiety, n = 8,490.

Patients referred to a specialist and/or given mental health care plan

The majority of patients aged less than 25 years newly diagnosed with depression (71.3%) had a record of a mental health care plan or referral to a mental health specialist in the month prior to or within 6 months of the first diagnosis record (Table 19). This proportion was even greater among patients who did not have a current record of antidepressant use (medicine prescribed in the month

before first diagnosis record to 31 December 2019) compared to those who had a current record of antidepressant use (77.1% vs 67.8%, respectively).

Just over two-thirds (67.3%) of patients aged less than 25 years newly diagnosed with anxiety had a record of a mental health care plan or referral to a mental health specialist in the month prior to or within 6 months of first diagnosis record. Unlike depression, the proportion of patients newly diagnosed with anxiety who had a mental health care plan or referral to a mental health specialist recorded in the month prior to or within 6 months of first diagnosis was similar to those who had and did not have a current record of antidepressant use (66.4% vs 67.8%, respectively).

Time to first antidepressant prescription or referral and/or mental health care plan

The time from first diagnosis record to first recorded antidepressant prescription or referral and/or mental health care plan was calculated among patients who had:

- an antidepressant medicine prescribed in the month before first diagnosis record up to 31 December 2019
- a mental health care plan or referral to a mental health specialist in the month prior to or within 6 months of first diagnosis record.

Calculation of time to first antidepressant or referral and/or mental health care plan was based on the date of the first diagnosis record, even for patients who had an antidepressant prescription or referral and/or mental health care plan recorded in the month before the first diagnosis record. This implies that there were no negative days included in the calculation.

For patients with newly diagnosed depression or anxiety, the average number of days between the first diagnosis record and an antidepressant prescription was about 43 days for patients with depression, and just over 2 months (65 days) for patients with anxiety (Table 20). On average, a shorter duration was observed between the first diagnosis record of depression or anxiety and first record of mental health treatment referral/plan – just under 2 weeks for both patients with newly diagnosed depression (13 days) or anxiety (14 days).

Table 20: TIME (DAYS) FROM FIRST DIAGNOSIS RECORD TO FIRST RECORDED ANTIDEPRESSANT PRESCRIPTION OR FIRST MENTAL HEALTH TREATMENT REFERRAL/PLAN AND DURATION OF THERAPY IN PATIENTS AGED <25 YEARS WITH NEWLY DIAGNOSED DEPRESSION OR ANXIETY

	Patients with newly diagnosed depression			Patients with newly diagnosed anxiety		
	Estimate (days)	Variability	Range	Estimate (days)	Variability	Range
Time (days) from first diagnosis record to first recorded antidepressant prescription*						
Mean (SE)	42.8	1.9		65.0	2.5	
Median (Q1, Q3)	0.0	0.0–12.7	715.0	0.0	0.0–70.8	710.0
Time (days) from first diagnosis record to first record of mental health treatment referral/plan**						

	Patients with newly diagnosed depression			Patients with newly diagnosed anxiety		
	Estimate (days)	Variability	Range	Estimate (days)	Variability	Range
Mean (SE)	12.6	0.7		13.8	0.6	
Median (Q1, Q3)	0.0	0.0–0.4	182.0	0.0	0.0–2.0	182.0
Duration of antidepressant therapy among newly diagnosed patients who started their antidepressant between 1 January 2018 and 30 June 2019†						
Mean (SE)	332.0	3.3		334.1	3.5	
Median (Q1, Q3)	299.0	168.0–490.0	868.0	310.0	168.0–493.5	868.0

Range: difference between smallest and largest value; variability: SE (standard error) or Q1 (quartile 1, 25th percentile) – Q3 (75th percentile), where relevant.

*Depression, N = 5,580 and anxiety, N = 5,629. **Depression, N = 6,316 and anxiety, N = 9,499.

†Duration of therapy is defined as the number of days between the first prescription and the expected end date of the last prescription (ie, including gaps). Depression, N = 4,388 and anxiety, N = 4,088.

A detailed distribution of days from the first diagnosis record to the first recorded antidepressant prescription and first record of mental health treatment plan/referral to a specialist in patients aged <25 years newly diagnosed with depression or anxiety is presented in Appendix C (Figures C1 and C2).

Duration of antidepressant therapy

The analysis of duration of antidepressant treatment for patients newly diagnosed with depression or anxiety who started an antidepressant between 1 January 2018 and 30 June 2019 includes antidepressant prescriptions recorded up to 31 December 2019. Duration of therapy was defined as the number of days between the first prescription and the expected end date of the last prescription (ie, including gaps). This was based on the assumption that one prescription lasts for 28 days and the prescription may have 0–5 repeats. Therefore, therapy duration = [end-date] – [first-script_date]. The patient-specific end-date was calculated as the maximum of (script_date + 28*[REPEATS+1]) for all antidepressant scripts (recorded from 1/1/18 to 31/12/19 only) for each patient, noting this does not take into account weaning regimes to cease therapy.[24]

There were 4,388 patients newly diagnosed with depression and 4,088 patients newly diagnosed with anxiety who were prescribed an antidepressant medicine in the month prior to, or any time after, the first record of depression or anxiety, and who started their antidepressant between 1 January 2018 and 30 June 2019.

Among patients newly diagnosed with depression or anxiety who started their antidepressant between 1 January 2018 and 30 June 2019, the average duration of antidepressant therapy was similar for patients with depression and those with anxiety – 332 days (11 months) for patients newly diagnosed with depression and 334 days for those newly diagnosed with anxiety (Table 20).

Detailed information about the distribution of days for the antidepressant therapy duration in patients aged <25 years newly diagnosed with depression or anxiety, and who started their antidepressant between 1 January 2018 and 30 June 2019, is presented in Appendix C (Figure C3).

9. ANTIDEPRESSANTS CO-PRESCRIBING WITH OTHER MEDICINES

- Care should be taken when using certain antidepressant medicines with other psychotropic or neurological medicines due to potential adverse effects. Of the 40,420 patients prescribed an antidepressant in 2018–2019, an antidepressant was prescribed on the same day as a/an:
  - antipsychotic for 8.7% of patients
  - benzodiazepine/z-drug – 7.1%
  - melatonin – 5.8%
  - opioid – 3.6%
  - ADHD stimulant (dexamphetamine, methylphenidate) – 2.6%
  - antiepileptic (carbamazepine, gabapentin, pregabalin, valproate, lamotrigine) – 2.5%
  - non-stimulant for ADHD (atomoxetine, guanfacine, clonidine) – 1.9%
  - lithium – 0.4%.
- For medicines that may contribute to depression, an antidepressant was prescribed on the same day as a/an:
  - combined oral contraceptive for 23.4% of the female patients
  - isotretinoin (acne treatment) for 0.2% of all patients.

Study questions

- Among patients prescribed at least one antidepressant medicine in 2018–2019, what other psychotropic or neurological medicines were prescribed concurrently – on the same day or any time during 2018–2019?
- Among patients prescribed at least one antidepressant medicine in 2018–2019, what proportion were prescribed 1, 2 or 3+ psychotropic or neurological medicines concurrently (ie, on the same day)?

Data for the analyses in this chapter were based on the 40,420 patients who had at least one antidepressant prescribed during 2018–2019, from the cohort of all those aged less than 25 years.

Co-prescribing antidepressants with psychotropic or neurological medicines

Among patients prescribed an antidepressant in 2018–2019, co-prescribing was defined as having at least one record of a prescription for antipsychotics, opioids, benzodiazepines/z-drugs, melatonin, stimulants or non-stimulants for ADHD, lithium, antiepileptics, combined oral contraceptives or isotretinoin (acne treatment), recorded on the same date or during the study period (Table 21 and Figure 14).

Depression is said to be a potential adverse effect of using combined oral contraceptives or isotretinoin. Although there is conflicting literature about the association between use of combined oral contraceptives and depression,[25,26] our findings suggest that about one in four females (23.4%) prescribed an antidepressant during 2018–2019 were also prescribed a combined oral contraceptive

on the same day. Only 0.2% of the patients were prescribed an antidepressant and isotretinoin on the same day.

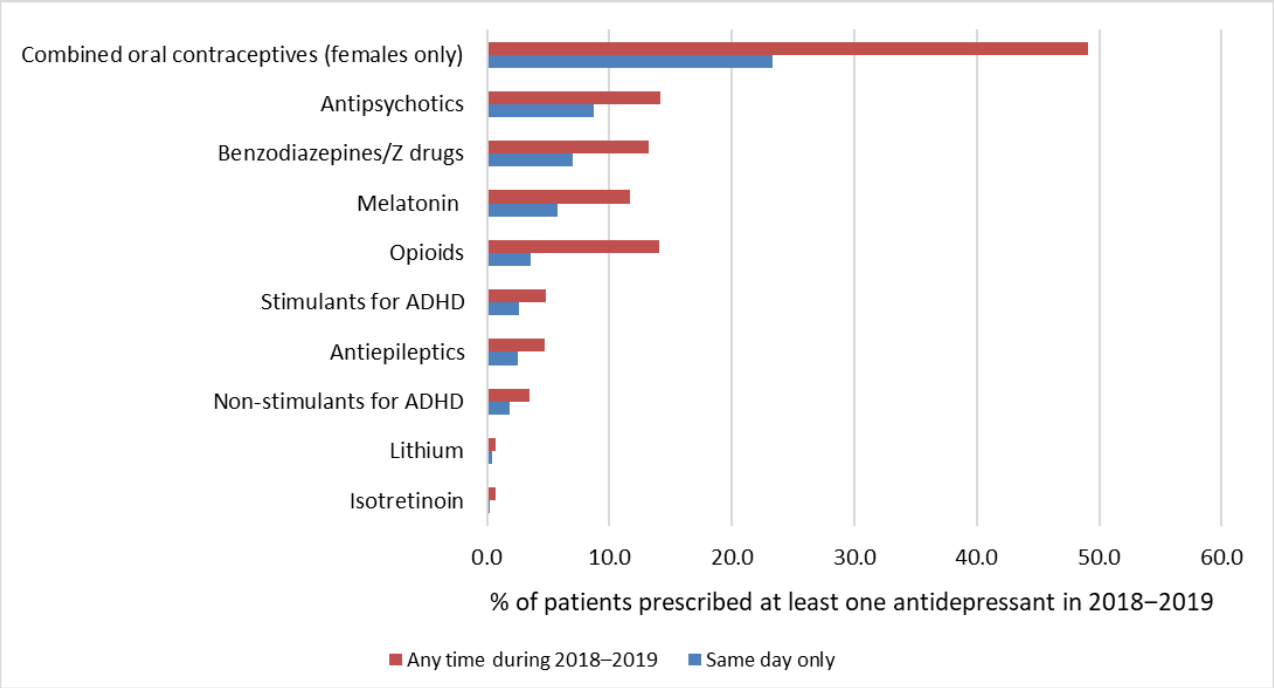
Concurrent use of certain antidepressants and other psychotropic or neurological medicines is associated with adverse effects. Our results show that, of the 40,420 patients prescribed at least one antidepressant during 2018–2019, an antidepressant was prescribed on the same day as a/an:

- antipsychotic to 8.7%
- benzodiazepines/z-drug to 7.1%
- melatonin to 5.8%
- opioid to 3.6%
- ADHD stimulant to 2.6%
- antiepileptic to 2.5%
- non-stimulant for ADHD to 1.9%
- lithium to 0.4%.

Using a less specific proxy for concurrent use (ie, any time in 2018–2019), of the 40,420 patients prescribed at least one antidepressant during 2018–2019, an antidepressant was prescribed with a/an:

- combined oral contraceptive to 49.1% of the female patients
- antipsychotic to 14.2%
- opioid to 14.1%
- benzodiazepines/z-drug to 13.2%
- melatonin to 11.7%
- antiepileptic to 4.9%
- ADHD stimulant to 4.8%
- non-stimulant for ADHD to 3.5%
- lithium to 0.7%
- isotretinoin (acne treatment) to 0.7%.

FIGURE 14. CO-PRESCRIBING AMONG THE POPULATION WHO WERE PESCRIBED AT LEAST ONE ANTIDEPRESSANT, BASED ON SAME-DAY PRESCRIBING AND ANY TIME DURING 2018–2019 (N = 40,420)



ADHD = attention deficit hyperactivity disorder. Combined oral contraceptives are limited to females only, N = 26,459.

Table 21: PSYCHOTROPIC OR NEUROLOGICAL MEDICINES PRESCRIBED CONCURRENTLY WITH ANTIDEPRESSANT MEDICINES DURING 2018–2019 FOR PATIENTS AGED <25 YEARS (N = 40,420)

Psychotropic or neurological medicines	At least one prescription for an antidepressant medicine and other selected medicine recorded during 2018–2019		At least one prescription for an antidepressant medicine and other selected medicine recorded on the same day during 2018–2019	
	n	% (95% CI)	n	% (95% CI)
Antipsychotics	5,737	14.19 (13.44, 14.94)	3,514	8.69 (8.02, 9.36)
Benzodiazepines and or z-drugs	5,342	13.22 (12.44, 13.99)	2,850	7.05 (6.49, 7.61)
Melatonin (where recorded)	4,716	11.67 (10.92, 12.41)	2,343	5.80 (5.32, 6.27)
Opioids	5,694	14.09 (13.29, 14.88)	1,462	3.62 (3.34, 3.90)
Stimulants for ADHD: dexamphetamine, methylphenidate	1,929	4.77 (4.21, 5.34)	1,048	2.59 (2.27, 2.92)
Non-stimulants for ADHD: atomoxetine, guanfacine, clonidine	1,400	3.46 (2.95, 3.97)	766	1.90 (1.62, 2.17)
Lithium	299	0.74 (0.64, 0.84)	169	0.42 (0.35, 0.49)
Antiepileptics: carbamazepine, gabapentin, pregabalin, valproate, lamotrigine	1,919	4.75 (4.43, 5.06)	1,019	2.52 (2.31, 2.74)
Combined oral contraceptives (medicines that may contribute to depression; females only n = 26,459)	12,985	49.08 (47.91, 50.25)	6,181	23.36 (22.42, 24.30)
Isotretinoin (acne treatment, medicines that may contribute to depression)	270	0.67 (0.56, 0.78)	89	0.22 (0.17, 0.27)

ADHD = attention deficit hyperactivity disorder.

Same-day co-prescribing of an antidepressant with one or more psychotropic or neurological medicines

Among the 40,420 patients aged <25 years prescribed an antidepressant during 2018–2019, same-day co-prescribing of an antidepressant with 0, 1, 2 or ≥3 of each of the specified medicine classes was assessed. The specified medicine classes included: other antidepressants; antipsychotics; benzodiazepines and/or z-drugs; opioids; stimulants for ADHD (dexamphetamine, methylphenidate); non-stimulants for ADHD (atomoxetine, guanfacine, clonidine); lithium; and antiepileptics: carbamazepine, gabapentin, pregabalin, valproate and lamotrigine.

Of the 40,420 patients prescribed at least one antidepressant during 2018–2019, an antidepressant was prescribed on the same day with (Table 22):

- one of each of the specified medicine classes for 18.4% of the patients
- two of each of the specified medicine classes for 4.3% of the patients
- at least three of each of the specified medicine classes for 1.2% of the patients.

Results were similar in analyses stratified by sex, but compared with females, a greater proportion of males were prescribed an antidepressant on the same day with 1, 2 or ≥3 of each of the specified medicine classes (Table 22).

Table 22: NUMBER AND PROPORTION OF PATIENTS PRESCRIBED AN ANTIDEPRESSANT ON THE SAME DAY WITH 0, 1, 2 OR ≥3 OF EACH OF OTHER SPECIFIED MEDICINE CLASSES OR ANOTHER ANTIDEPRESSANT, 2018–2019

Number of selected psychotropic or neurological medicines prescribed on the same day as an antidepressant*	Same-day co-prescribing of an antidepressant and other psychotropic or neurological medicine during 2018–2019	
	n	% (95% CI)
All patients aged <25 years prescribed an antidepressant with:	**(N = 40,420)**	
None of the selected medicines	30,752	76.08 (75.26, 76.90)
1	7,421	18.36 (17.82, 18.90)
2	1,744	4.31 (3.98, 4.65)
≥3	503	1.24 (1.11, 1.38)
Males aged <25 year prescribed an antidepressant with:	**(N = 13,926)**	
None of the selected medicines	10,291	73.90 (72.83, 74.97)
1	2,722	19.55 (18.76, 20.33)
2	705	5.06 (4.57, 5.56)
≥3	208	1.49 (1.26, 1.72)
Females aged <25 years prescribed an antidepressant with:	**(N = 26,459)**	
None of the selected medicines	20,433	77.23 (76.34, 78.11)
1	4,695	17.74 (17.16, 18.33)
2	1,037	3.92 (3.56, 4.28)
≥3	294	1.11 (0.97, 1.25)

*Selected psychotropic or neurological medicines include other antidepressants; antipsychotics; benzodiazepines and/or z-drugs; opioids; stimulants for ADHD: dexamphetamine, methylphenidate; non-stimulants for ADHD: atomoxetine, guanfacine, clonidine; lithium; antiepileptics: carbamazepine, gabapentin, pregabalin, valproate, lamotrigine.

10. 10-YEAR TRENDS IN ANTIDEPRESSANT USE, MENTAL HEALTH AND RELEVANT CONDITIONS AND SUICIDE

Antidepressant use

- The prescribing rate of antidepressants in young people increased significantly across the 10-year study, by 1.8 times, from 2.6% in 2011 to 4.7% in 2020.
- The prescribing rates for the following classes of antidepressant medicines increased across the 10-year period:
  - SSRIs increased 2.1 times, from 1.8% in 2011 to 3.7% in 2020.
  - Noradrenergic and specific serotonergic antidepressants (NaSSAs) increased 2.4 times, from 0.2% in 2011 to 0.4% in 2020.
  - Tricyclic antidepressants (TCAs) increased 1.3 times, from 0.2% in 2011 to 0.3% in 2020.
  - Other antidepressants, including agomelatine, moclobemide, reboxetine and vortioxetine, increased 6.5 times, from 0.02% in 2011 to 0.13% in 2020.
- The prescribing rates of antidepressants in patients aged <25 years increased with age and were greater among females than males, across the 10-year period.

Mental health and relevant conditions

- Across the 10-year study, the annual prevalence of depression increased at the same rate (1.8 times) as antidepressant prescribing , from 1.7% in 2011 to 2.9% in 2020 for current (recorded in each calendar year of interest) depression and from 3.7% in 2011 to 6.5% in 2020 for ever-recorded depression.
- The annual prevalence also increased across the 10-year study period for the following conditions:
  - Current anxiety increased by 3.6 times, from 1.2% in 2011 to 4.3% in 2020 and ever-recorded anxiety increased by 3.8 times, from 2.6% in 2011 to 9.8% in 2020.
  - Current depression and/or anxiety increased by 2.3 times, from 2.4% in 2011 to 5.4% in 2020 and ever-recorded depression and/or anxiety increased by 2.4 times, from 5.1% in 2011 to 11.9% in 2020.
  - Ever-recorded ASD increased 2.9 times, from 0.7% in 2011 to 2.1% in 2020.
  - Ever-recorded ADHD increased 2.7 times, from 1.2% in 2011 to 3.3% in 2020.
- Although remaining low (less than 0.3% in 2020), the ever prevalence of schizophrenia and bipolar disorder almost doubled, while eating disorders increased by 2.3 times.
- The prevalence of depression and anxiety increased with age, and consistent with other data, was more common in females than males, across the 10 years.
- The proportion of patients with multiple selected mental health and related conditions (multimorbidity) recorded each year increased over the 10-year period. The proportion of patients with:
  - two of the selected conditions recorded increased 3.5 times, from 0.6% in 2011 to 2.1% in 2020
  - three selected conditions recorded increased 8.3 times, from 0.03% in 2011 to 0.25% in 2020
  - at least four selected conditions recorded increased from 0.00% in 2011 to 0.03% in 2020.

Suicide, suicidality and self-harm

- The number of suicides recorded annually across the 10 years was very low (<10 recorded). However, the rate of suicidality and self-harm in patients aged less than 25 years increased significantly over the 10-year period.
  - suicide attempt increased 3 times, from 0.01% in 2011 to 0.03% in 2020
  - suicidal ideation increased 4.5 times, from 0.02% in 2011 to 0.09% in 2020
  - self-harm increased 3.3 times, from 0.03% in 2011 to 0.10% in 2020.
- Unlike the prevalence of depression and antidepressant prescribing, which is highest in 20–24-year-olds, the rate of suicide, suicidality and self-harm appears to be greatest in those aged 15–19 years.

Study questions

- What was the annual prevalence of mental health and relevant conditions among patients aged <25 years from 2011 to 2020, overall and stratified by age and sex?
- What was the annual proportion of patients prescribed an antidepressant medicine among patients aged <25 years from 2011 to 2020, overall and stratified by age and sex?
- What was the annual proportion of patients with suicide, suicidality or self-harm recorded among patients aged <25 years from 2011 to 2020, overall and stratified by age and sex?
- What proportion of patients aged <25 years had multiple mental health conditions recorded from 2011 to 2020, overall and stratified by age and sex?

For the 10-year trend analysis, data for the study 3 population were used. The patient cohorts for each calendar year from 2011 to 2020 are presented in Table 7, chapter 4. The number of patients aged less than 25 years who were eligible for the study ranged from 464,478 in 2011 to 693,260 in 2019. The sociodemographic characteristics of the patient cohort for each calendar year are presented in Appendix B.

Changes made in the CIS to a patient's recorded sex are currently not recorded longitudinally in the MedicineInsight data. Patient sex is as recorded in the CIS at the time of the data extract (in 2021). For the 10-year trend analysis, misclassification of sex in earlier years is possible for patients whose recorded sex has changed during this time. The 10-year trends in recorded diagnoses of gender dysphoria, stratified by sex, should be interpreted with caution.

Annual trends in patient prevalence of depression and anxiety

The annual patient prevalence estimates (current – recorded in calendar year of interest and ever recorded up to end of calendar year) of mental health conditions in patients aged less than 25 years are presented in Table 23, Figure 15 and Figure 16). Consistent with other Australian data,[2] the findings show an increase in the prevalence of depression and anxiety across the 10-year study (Figure 15, Figure 16).

- The current and ever prevalence of depression increased 1.8 times, from 1.67% in 2011 to 2.94% in 2020.
- The current prevalence of anxiety increased 3.6 times, from 1.19% in 2011 to 4.27% in 2020, and the ever prevalence increased by 3.8 times in the same period.
- Similarly, the current and ever prevalence of depression and/or anxiety increased by 2.3 and 2.4 times, between 2011 and 2020 respectively.

FIGURE 15. ANNUAL CURRENT PREVALENCE OF MENTAL HEALTH CONDITIONS IN PATIENTS AGED <25 YEARS RECORDED IN EACH CALENDAR YEAR AND ANTIDEPRESSANT PRESCRIBING TRENDS, 2011–2020

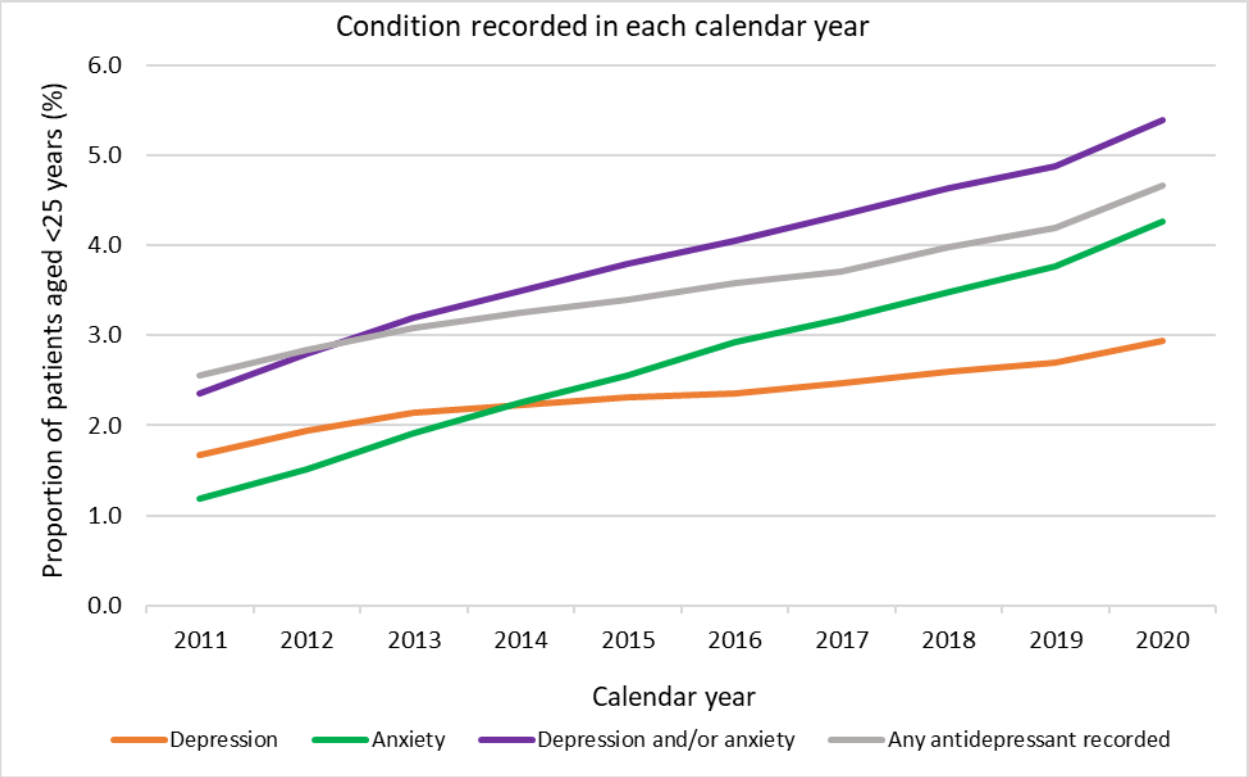


FIGURE 16. ANNUAL EVER PREVALENCE OF MENTAL HEALTH CONDITIONS FOR PATIENTS AGED <25 YEARS EVER RECORDED UP TO THE END OF EACH CALENDAR YEAR AND ANTIDEPRESSANT PRESCRIBING TRENDS, 2011–2020

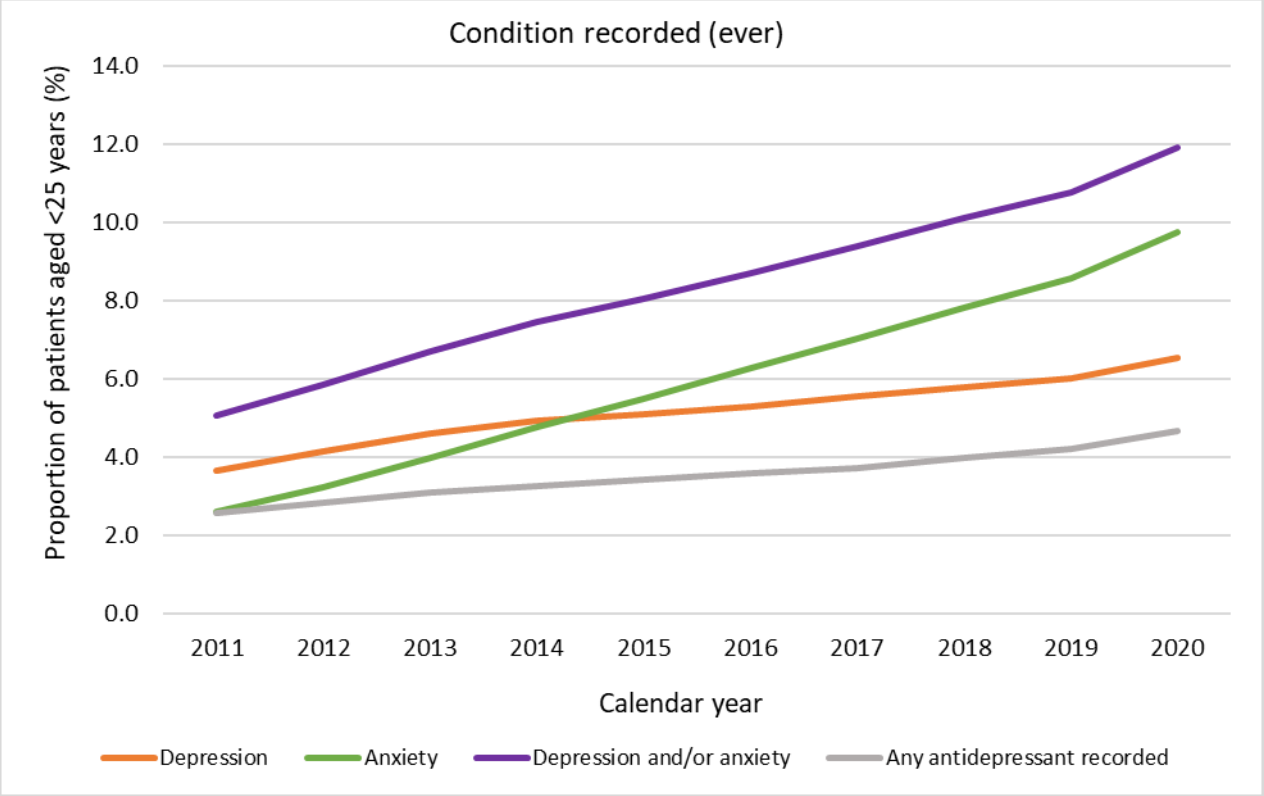


Table 23: ANNUAL PATIENT PREVALENCE (EVER AND CURRENT) OF MENTAL HEALTH AND RELEVANT CONDITIONS AMONG PATIENTS AGED <25 YEARS, 2011–2020

	Number; % (95% CI)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total (N)	464,478	490,016	518,984	543,757	577,672	614,372	644,456	671,995	693,260	675,465
Depression										
Recorded in calendar year	7,734; 1.67 (1.54–1.80)	9,507; 1.94 (1.79–2.09)	11,124; 2.14 (1.98–2.30)	12,098; 2.22 (2.07–2.38)	13,342; 2.31 (2.14–2.48)	14,483; 2.36 (2.20–2.52)	15,909; 2.47 (2.31–2.63)	17,497; 2.60 (2.43–2.77)	18,727; 2.70 (2.51–2.89)	19,881; 2.94 (2.77–3.12)
Ever recorded up to end of calendar year	16,989; 3.66 (3.42–3.90)	20,266; 4.14 (3.87–4.40)	23,845; 4.59 (4.30–4.88)	26,749; 4.92 (4.62–5.22)	29,485; 5.10 (4.79–5.42)	32,489; 5.29 (4.97–5.61)	35,678; 5.54 (5.21–5.86)	38,764; 5.77 (5.44–6.10)	41,768; 6.02 (5.68–6.37)	44,180; 6.54 (6.18–6.90)
Anxiety										
Recorded in calendar year	5,538; 1.19 (1.08–1.30)	7,470; 1.52 (1.39–1.65)	9,889; 1.91 (1.76–2.05)	12,246; 2.25 (2.08–2.42)	14,792; 2.56 (2.37–2.75)	17,913; 2.92 (2.71–3.12)	20,472; 3.18 (2.96–3.40)	23,417; 3.48 (3.26–3.71)	26,132; 3.77 (3.52–4.02)	28,847; 4.27 (4.01–4.53)
Ever recorded up to end of calendar year	11,972; 2.58 (2.38–2.77)	15,754; 3.21 (2.98–3.45)	20,608; 3.97 (3.70–4.24)	25,944; 4.77 (4.46–5.08)	31,750; 5.50 (5.15–5.85)	38,561; 6.28 (5.88–6.67)	45,366; 7.04 (6.60–7.48)	52,497; 7.81 (7.35–8.28)	59,479; 8.58 (8.08–9.08)	65,864; 9.75 (9.22–10.28)
Depression and/or anxiety										
Recorded in calendar year	10,902; 2.35 (2.17–2.52)	13,676; 2.79 (2.59–2.99)	16,627; 3.20 (2.98–3.43)	19,041; 3.50 (3.27–3.73)	21,873; 3.79 (3.53–4.04)	24,898; 4.05 (3.79–4.31)	27,898; 4.33 (4.06–4.60)	31,192; 4.64 (4.36–4.92)	33,844; 4.88 (4.58–5.18)	36,419; 5.39 (5.09–5.69)
Ever recorded up to end of calendar year	23,524; 5.06 (4.75–5.38)	28,693; 5.86 (5.50–6.21)	34,767; 6.70 (6.30–7.09)	40,544; 7.46 (7.03–7.88)	46,518; 8.05 (7.60–8.51)	53,406; 8.69 (8.20–9.19)	60,481; 9.38 (8.86–9.91)	67,870; 10.10 (9.55–10.64)	74,746; 10.78 (10.21–11.35)	80,610; 11.93 (11.34–12.53)
Bipolar disorder										
Recorded in calendar year	404; 0.09 (0.07–0.10)	482; 0.10 (0.08–0.11)	578; 0.11 (0.10–0.13)	648; 0.12 (0.10–0.14)	704; 0.12 (0.10–0.14)	736; 0.12 (0.10–0.14)	772; 0.12 (0.11–0.13)	796; 0.12 (0.10–0.13)	811; 0.12 (0.10–0.13)	1,101; 0.16 (0.15–0.18)
Ever recorded up to end of calendar year	866; 0.19 (0.17–0.21)	1,008; 0.21 (0.18–0.23)	1,185; 0.23 (0.20–0.25)	1,352; 0.25 (0.22–0.28)	1,475; 0.26 (0.23–0.29)	1,595; 0.26 (0.23–0.29)	1,682; 0.26 (0.23–0.29)	1,748; 0.26 (0.23–0.29)	1,767; 0.25 (0.23–0.28)	2,033; 0.30 (0.27–0.33)
Schizophrenia/schizoaffective disorders										
Recorded in calendar year	174; 0.04 (0.03–0.04)	199; 0.04 (0.03–0.05)	222; 0.04 (0.04–0.05)	252; 0.05 (0.04–0.06)	255; 0.04 (0.04–0.05)	273; 0.04 (0.04–0.05)	341; 0.05 (0.04–0.06)	352; 0.05 (0.04–0.06)	366; 0.05 (0.04–0.06)	501; 0.07 (0.06–0.08)
Ever recorded up to end of calendar year	432; 0.09 (0.08–0.11)	450; 0.09 (0.08–0.10)	500; 0.10 (0.08–0.11)	557; 0.10 (0.09–0.12)	601; 0.10 (0.09–0.12)	610; 0.10 (0.09–0.11)	683; 0.11 (0.09–0.12)	743; 0.11 (0.10–0.13)	813; 0.12 (0.10–0.13)	932; 0.14 (0.12–0.15)
ASD										
Recorded in calendar year	1,060; 0.23 (0.20–0.25)	1,364; 0.28 (0.25–0.31)	1,545; 0.30 (0.27–0.33)	1,949; 0.36 (0.32–0.39)	2,321; 0.40 (0.36–0.44)	2,647; 0.43 (0.39–0.48)	3,314; 0.51 (0.46–0.57)	4,046; 0.60 (0.55–0.66)	4,562; 0.66 (0.57–0.75)	4,904; 0.73 (0.62–0.83)
Ever recorded up to end of calendar year	3,435; 0.74 (0.68–0.80)	4,151; 0.85 (0.78–0.91)	4,951; 0.95 (0.88–1.03)	5,900; 1.09 (1.00–1.17)	7,021; 1.22 (1.12–1.31)	8,144; 1.33 (1.22–1.43)	9,513; 1.48 (1.36–1.60)	11,372; 1.69 (1.56–1.83)	13,119; 1.89 (1.73–2.05)	14,468; 2.14 (1.96–2.33)

	Number; % (95% CI)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
ADHD										
Recorded in calendar year	1,668; 0.36 (0.32–0.40)	2,056; 0.42 (0.37–0.47)	2,498; 0.48 (0.43–0.54)	3,003; 0.55 (0.49–0.61)	3,420; 0.59 (0.53–0.65)	4,115; 0.67 (0.59–0.75)	5,243; 0.81 (0.71–0.91)	6,613; 0.98 (0.85–1.11)	8,022; 1.16 (0.99–1.32)	10,450; 1.55 (1.31–1.79)
Ever recorded up to end of calendar year	5,653; 1.22 (1.11–1.33)	6,449; 1.32 (1.20–1.43)	7,453; 1.44 (1.32–1.56)	8,536; 1.57 (1.44–1.70)	9,733; 1.68 (1.55–1.82)	11,397; 1.86 (1.67–2.04)	13,244; 2.06 (1.85–2.26)	15,813; 2.35 (2.12–2.59)	18,706; 2.70 (2.43–2.96)	22,314; 3.30 (2.98–3.63)
Gender dysphoria										
Recorded in calendar year	9; 0.00 (0.00–0.00)	12; 0.00 (0.00–0.00)	34; 0.01 (0.00–0.01)	44; 0.01 (0.00–0.01)	90; 0.02 (0.01–0.02)	116; 0.02 (0.01–0.02)	170; 0.03 (0.02–0.03)	244; 0.04 (0.03–0.05)	351; 0.05 (0.04–0.06)	415; 0.06 (0.05–0.08)
Ever recorded up to end of calendar year	13; 0.00 (0.00–0.00)	21; 0.00 (0.00–0.01)	45; 0.01 (0.00–0.01)	69; 0.01 (0.01–0.02)	139; 0.02 (0.02–0.03)	203; 0.03 (0.02–0.04)	282; 0.04 (0.03–0.05)	425; 0.06 (0.05–0.08)	596; 0.09 (0.07–0.11)	764; 0.11 (0.09–0.14)
Eating disorders										
Recorded in calendar year	431; 0.09 (0.07–0.11)	559; 0.11 (0.09–0.13)	660; 0.13 (0.11–0.15)	739; 0.14 (0.12–0.15)	753; 0.13 (0.11–0.15)	749; 0.12 (0.11–0.14)	931; 0.14 (0.13–0.16)	1,147; 0.17 (0.15–0.19)	1,275; 0.18 (0.16–0.21)	1,960; 0.29 (0.26–0.32)
Ever recorded up to end of calendar year	1,306; 0.28 (0.25–0.32)	1,529; 0.31 (0.27–0.35)	1,792; 0.35 (0.31–0.39)	2,071; 0.38 (0.34–0.42)	2,305; 0.40 (0.36–0.44)	2,458; 0.40 (0.36–0.44)	2,735; 0.42 (0.38–0.47)	3,165; 0.47 (0.43–0.51)	3,564; 0.51 (0.47–0.56)	4,402; 0.65 (0.59–0.71)
Substance abuse										
Recorded in calendar year	124; 0.03 (0.02–0.03)	155; 0.03 (0.03–0.04)	183; 0.04 (0.03–0.04)	169; 0.03 (0.02–0.04)	181; 0.03 (0.02–0.04)	178; 0.03 (0.02–0.03)	202; 0.03 (0.03–0.04)	233; 0.03 (0.03–0.04)	227; 0.03 (0.03–0.04)	258; 0.04 (0.03–0.04)
Ever recorded up to end of calendar year	402; 0.09 (0.07–0.10)	418; 0.09 (0.07–0.10)	445; 0.09 (0.07–0.10)	452; 0.08 (0.07–0.10)	481; 0.08 (0.07–0.10)	466; 0.08 (0.07–0.09)	482; 0.07 (0.06–0.08)	511; 0.08 (0.07–0.09)	532; 0.08 (0.07–0.09)	588; 0.09 (0.08–0.10)

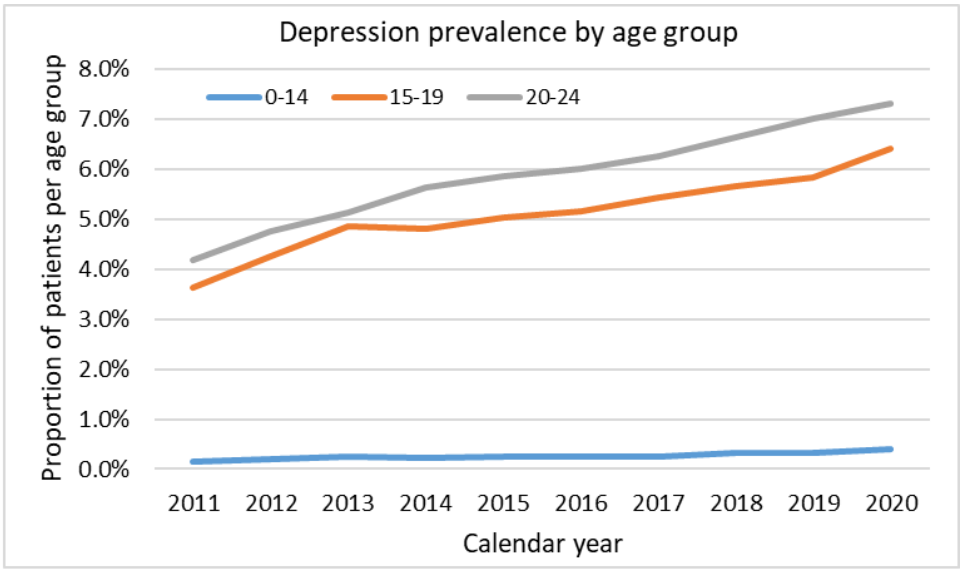
* Includes agomelatine, moclobemide, reboxetine, vortioxetine. Substance abuse includes mostly alcohol and opioid misuse.

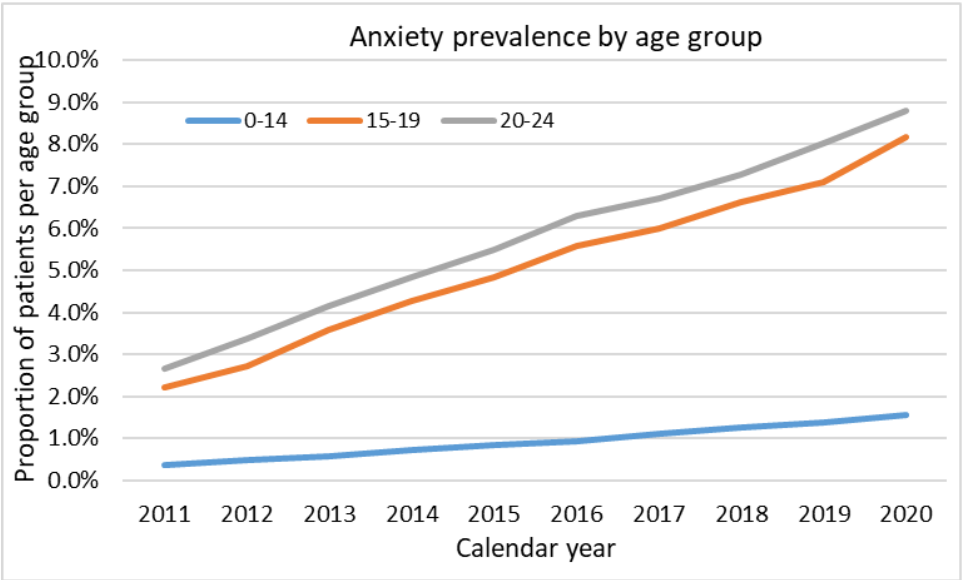
ADHD = attention deficit hyperactivity disorder

Annual prevalence estimates of depression and anxiety stratified by demographic characteristics

The annual patient prevalence (recorded each calendar year) estimates of depression and anxiety for patients aged less than 25 years, stratified by age and sex are presented in Table 24. The prevalence estimates of depression and anxiety increased with age and each year across the 10-year period (Figure 17). For depression, prevalence in children/adolescents aged 0–14 years increased from 0.16% in 2011 to 0.41% in 2020. Depression prevalence similarly increased for those aged 15–19 years, from 3.62% to 6.41%, and from 4.18% to 7.32% among those aged 20–24 years. The prevalence of anxiety in children/ adolescents aged 0–14 years increased from 0.36% in 2011 to 1.57% in 2020 and, similarly, rose for those aged 15–19 years from 2.20% to 8.16%, and for those aged 20–24 years, from 2.66% to 8.79%.

FIGURE 17. ANNUAL PATIENT PREVALENCE OF DEPRESSION AND ANXIETY IN PATIENTS AGED <25 YEARS BY AGE GROUP, 2011–2020





Findings for both depression and anxiety were consistent in separate analyses for males and females, with the prevalence consistently greater in females than males for all age groups (Figures 18 and 19).

FIGURE 18. AGE-SPECIFIC ANNUAL PREVALENCE OF DEPRESSION IN MALES AND FEMALES AGED <25 YEARS, 2011–2020

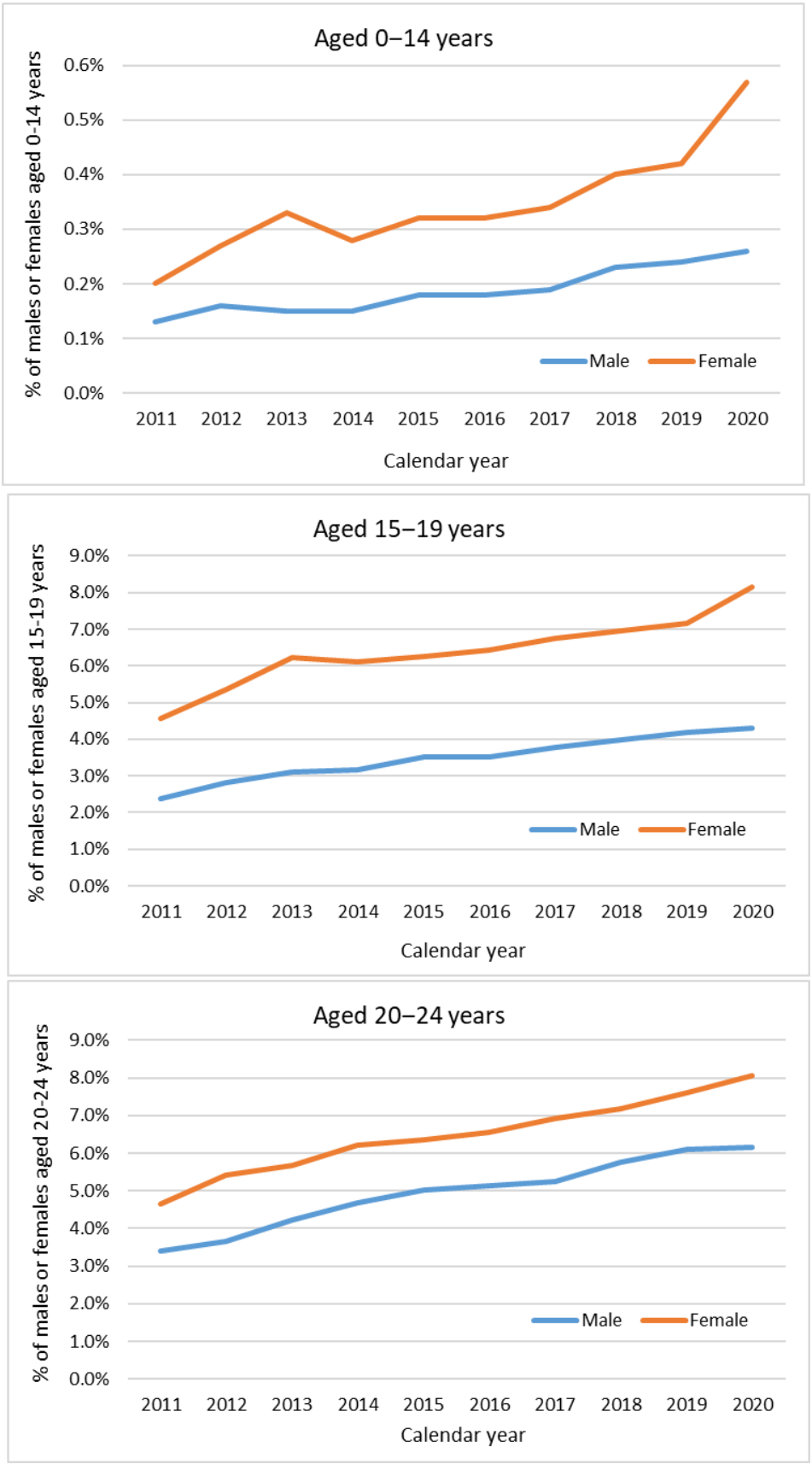
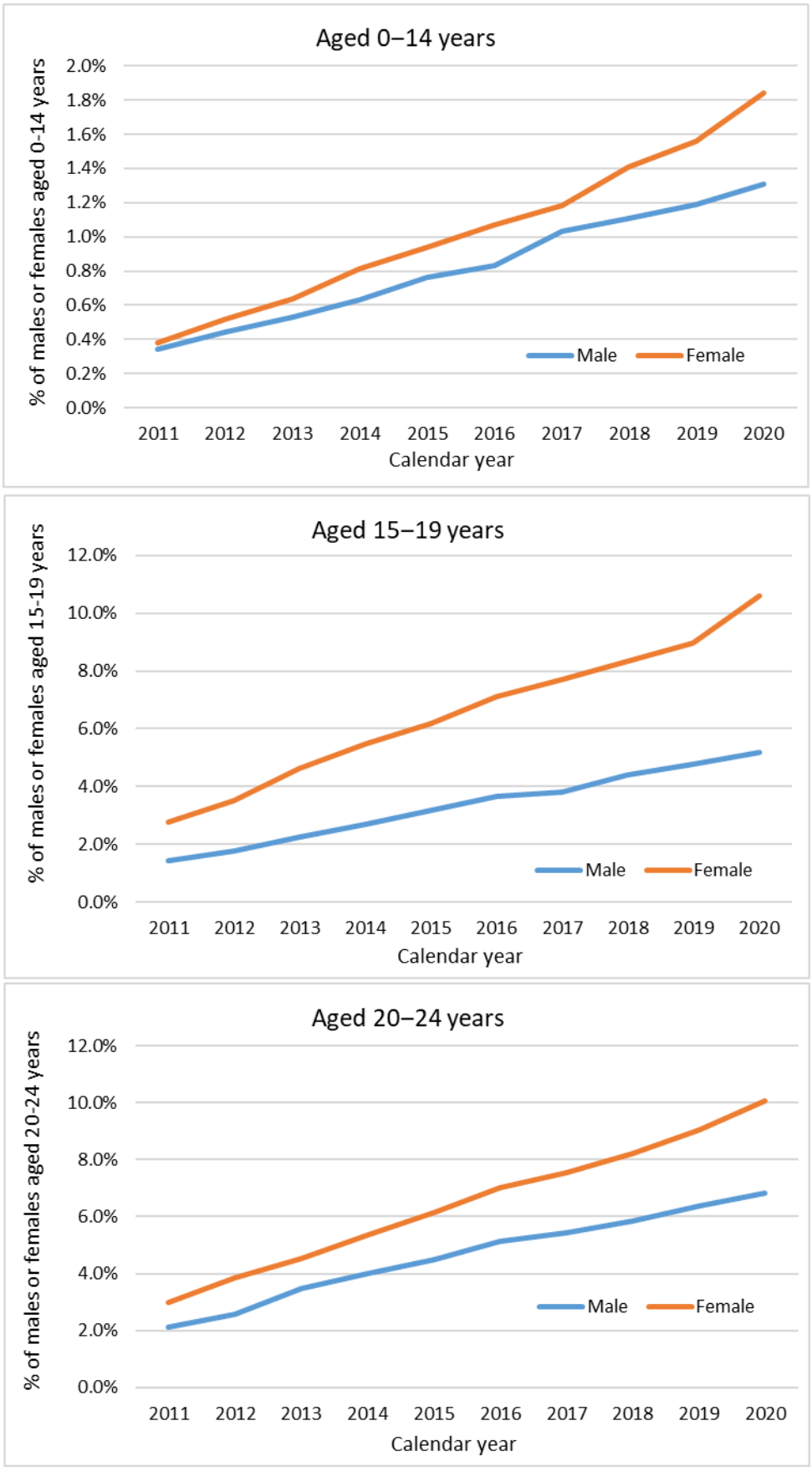


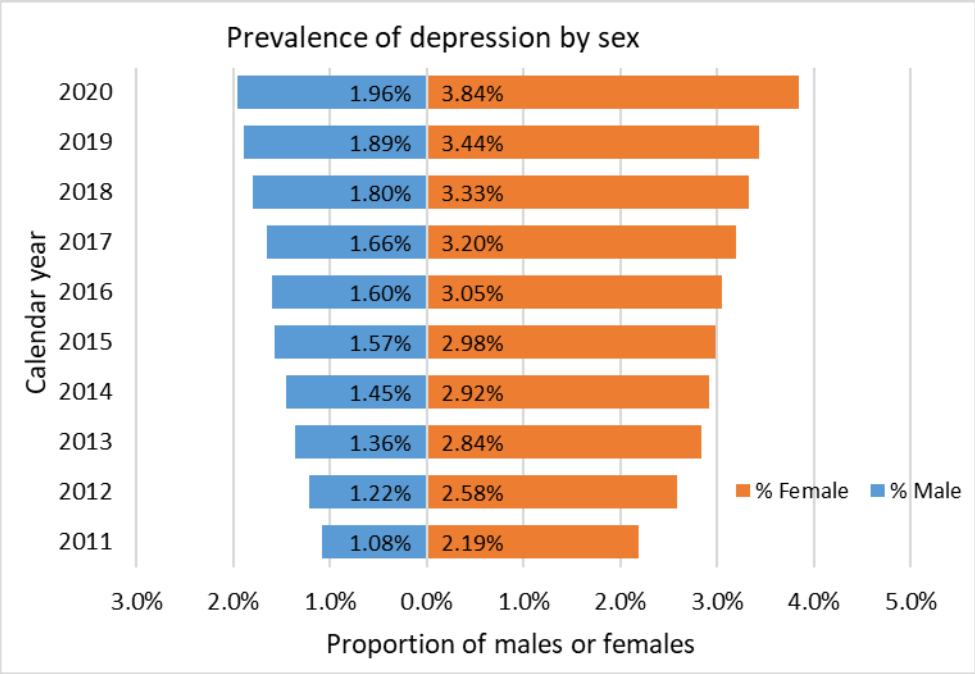
FIGURE 19. AGE-SPECIFIC ANNUAL PREVALENCE OF ANXIETY IN MALES AND FEMALES AGED <25 YEARS, 2011–2020



Consistent with previous data and other Australian literature,[2,18] females were consistently more likely than males to have depression or anxiety in each of the study years (Figure 20). The prevalence of

depression and anxiety increased in both males and females across the study period. The prevalence of depression increased from 1.08% for males and 2.19% for females in 2011 to 1.96% and 3.84% in 2020 for males and females, respectively. The prevalence of anxiety increased from 0.83% for males and 1.51% for females in 2011 to 2.92% and 5.51% in 2020 for males and females, respectively.

FIGURE 20. ANNUAL PATIENT PREVALENCE OF DEPRESSION AND ANXIETY IN PATIENTS AGED <25 YEARS BY SEX, 2011–2020



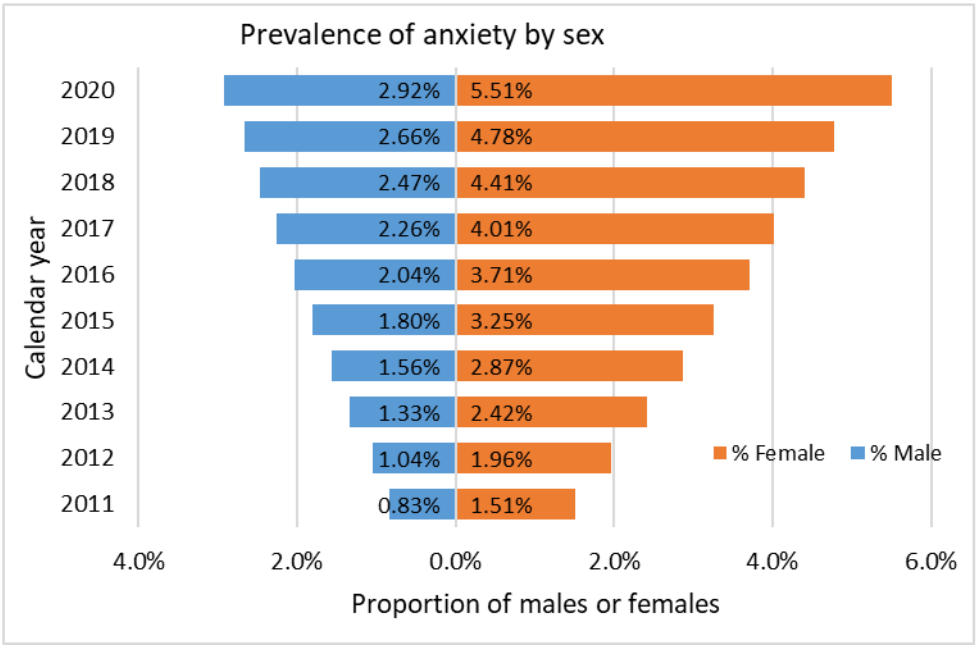


Table 24: ANNUAL PATIENT PREVALENCE (RECORDED IN EACH CALENDAR YEAR) OF MENTAL HEALTH AND RELEVANT CONDITIONS AMONG PATIENTS AGED <25 YEARS STRATIFIED BY SEX, AGE GROUP, AGE-SEX, 2011–2020

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Patient prevalence of mental health and relevant conditions recorded in each calendar year										
Depression										
Sex										
Male	2,358 (1.08%)	2,837 (1.22%)	3,341 (1.36%)	3,735 (1.45%)	4,321 (1.57%)	4,669 (1.60%)	5,103 (1.66%)	5,783 (1.80%)	6,276 (1.89%)	6,365 (1.96%)
Female	5,376 (2.19%)	6,668 (2.58%)	7,781 (2.84%)	8,357 (2.92%)	9,018 (2.98%)	9,810 (3.05%)	10,792 (3.20%)	11,699 (3.33%)	12,432 (3.44%)	13,493 (3.84%)
Age group (years)										
0–14	456 (0.16%)	625 (0.21%)	747 (0.24%)	711 (0.22%)	879 (0.25%)	926 (0.25%)	1,020 (0.26%)	1,297 (0.32%)	1,390 (0.33%)	1,698 (0.41%)
15–19	3,099 (3.62%)	3,811 (4.25%)	4,545 (4.86%)	4,682 (4.82%)	5,167 (5.04%)	5,581 (5.15%)	6,182 (5.43%)	6,632 (5.65%)	7,010 (5.84%)	7,636 (6.41%)
20–24	4,179 (4.18%)	5,071 (4.75%)	5,832 (5.13%)	6,705 (5.64%)	7,296 (5.85%)	7,976 (6.02%)	8,707 (6.27%)	9,568 (6.64%)	10,327 (7.02%)	10,547 (7.32%)
Males stratified by age group (years)										
0–14	188 (0.13%)	240 (0.16%)	247 (0.15%)	262 (0.15%)	329 (0.18%)	347 (0.18%)	378 (0.19%)	498 (0.23%)	523 (0.24%)	557 (0.26%)
15–19	888 (2.39%)	1,102 (2.82%)	1,262 (3.10%)	1,346 (3.17%)	1,572 (3.50%)	1,682 (3.52%)	1,897 (3.77%)	2,058 (3.97%)	2,240 (4.19%)	2,302 (4.29%)
20–24	1,282 (3.40%)	1,495 (3.67%)	1,832 (4.23%)	2,127 (4.69%)	2,420 (5.03%)	2,640 (5.14%)	2,828 (5.25%)	3,227 (5.77%)	3,513 (6.11%)	3,506 (6.17%)
Females stratified by age group (years)										
0–14	268 (0.20%)	385 (0.27%)	500 (0.33%)	449 (0.28%)	548 (0.32%)	579 (0.32%)	640 (0.34%)	798 (0.40%)	865 (0.42%)	1,140 (0.57%)
15–19	2,211 (4.56%)	2,707 (5.36%)	3,281 (6.22%)	3,334 (6.10%)	3,595 (6.25%)	3,898 (6.44%)	4,280 (6.74%)	4,566 (6.96%)	4,762 (7.16%)	5,323 (8.14%)
20–24	2,897 (4.66%)	3,576 (5.41%)	4,000 (5.68%)	4,574 (6.22%)	4,875 (6.36%)	5,333 (6.56%)	5,872 (6.91%)	6,335 (7.19%)	6,805 (7.61%)	7,030 (8.06%)
Anxiety										
Sex										
Male	1,821 (0.83%)	2,405 (1.04%)	3,274 (1.33%)	4,022 (1.56%)	4,945 (1.80%)	5,973 (2.04%)	6,931 (2.26%)	7,922 (2.47%)	8,839 (2.66%)	9,460 (2.92%)
Female	3,717 (1.51%)	5,065 (1.96%)	6,613 (2.42%)	8,218 (2.87%)	9,840 (3.25%)	11,934 (3.71%)	13,528 (4.01%)	15,478 (4.41%)	17,267 (4.78%)	19,358 (5.51%)
Age group (years)										
0–14	997 (0.36%)	1,412 (0.48%)	1,825 (0.59%)	2,349 (0.72%)	2,970 (0.85%)	3,523 (0.94%)	4,310 (1.10%)	5,160 (1.26%)	5,826 (1.37%)	6,462 (1.57%)
15–19	1,886 (2.20%)	2,448 (2.73%)	3,359 (3.59%)	4,131 (4.26%)	4,967 (4.85%)	6,038 (5.58%)	6,825 (5.99%)	7,757 (6.61%)	8,532 (7.11%)	9,722 (8.16%)

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
20–24	2,655 (2.66%)	3,610 (3.38%)	4,705 (4.14%)	5,766 (4.85%)	6,855 (5.49%)	8,352 (6.30%)	9,337 (6.72%)	10,500 (7.29%)	11,774 (8.01%)	12,663 (8.79%)
Males stratified by age group (years)										
0–14	486 (0.34%)	668 (0.44%)	858 (0.53%)	1,073 (0.63%)	1,374 (0.76%)	1,598 (0.83%)	2,085 (1.03%)	2,370 (1.11%)	2,626 (1.19%)	2,799 (1.31%)
15–19	536 (1.44%)	683 (1.75%)	909 (2.23%)	1,137 (2.68%)	1,419 (3.16%)	1,740 (3.64%)	1,924 (3.82%)	2,282 (4.40%)	2,544 (4.76%)	2,778 (5.18%)
20–24	799 (2.12%)	1,054 (2.58%)	1,507 (3.48%)	1,812 (4.00%)	2,152 (4.48%)	2,635 (5.13%)	2,922 (5.42%)	3,270 (5.85%)	3,669 (6.38%)	3,883 (6.83%)
Females stratified by age group (years)										
0–14	511 (0.38%)	744 (0.52%)	967 (0.64%)	1,275 (0.81%)	1,594 (0.94%)	1,924 (1.07%)	2,221 (1.18%)	2,789 (1.41%)	3,197 (1.56%)	3,661 (1.84%)
15–19	1,350 (2.78%)	1,765 (3.50%)	2,448 (4.64%)	2,992 (5.47%)	3,547 (6.17%)	4,297 (7.10%)	4,900 (7.71%)	5,465 (8.33%)	5,976 (8.98%)	6,930 (10.60%)
20–24	1,856 (2.98%)	2,556 (3.87%)	3,198 (4.54%)	3,951 (5.37%)	4,699 (6.13%)	5,713 (7.03%)	6,407 (7.53%)	7,224 (8.20%)	8,094 (9.05%)	8,767 (10.05%)
Depression and/or anxiety										
Sex										
Male	3,484 (1.59%)	4,328 (1.87%)	5,377 (2.19%)	6,247 (2.43%)	7,422 (2.70%)	8,416 (2.88%)	9,518 (3.10%)	10,755 (3.35%)	11,756 (3.54%)	12,227 (3.77%)
Female	7,418 (3.02%)	9,346 (3.62%)	11,247 (4.11%)	12,786 (4.47%)	14,444 (4.77%)	16,475 (5.12%)	18,361 (5.44%)	20,416 (5.81%)	22,057 (6.11%)	24,155 (6.88%)
Age group (years)										
0–14	1,318 (0.47%)	1,823 (0.62%)	2,274 (0.73%)	2,741 (0.84%)	3,431 (0.98%)	3,976 (1.06%)	4,808 (1.23%)	5,759 (1.40%)	6,411 (1.50%)	7,160 (1.74%)
15–19	4,069 (4.75%)	4,989 (5.57%)	6,187 (6.62%)	6,727 (6.93%)	7,737 (7.55%)	8,737 (8.07%)	9,802 (8.61%)	10,778 (9.18%)	11,465 (9.55%)	12,702 (10.67%)
20–24	5,515 (5.52%)	6,864 (6.43%)	8,166 (7.18%)	9,573 (8.05%)	10,705 (8.58%)	12,185 (9.19%)	13,288 (9.56%)	14,655 (10.17%)	15,968 (10.86%)	16,557 (11.49%)
Males stratified by age group (years)										
0–14	626 (0.43%)	832 (0.55%)	1,007 (0.62%)	1,225 (0.72%)	1,553 (0.86%)	1,782 (0.92%)	2,275 (1.12%)	2,616 (1.23%)	2,860 (1.29%)	3,033 (1.42%)
15–19	1,180 (3.17%)	1,454 (3.72%)	1,759 (4.32%)	1,958 (4.62%)	2,339 (5.20%)	2,629 (5.50%)	2,937 (5.83%)	3,344 (6.45%)	3,624 (6.78%)	3,841 (7.16%)
20–24	1,678 (4.45%)	2,042 (5.01%)	2,611 (6.02%)	3,064 (6.76%)	3,530 (7.34%)	4,005 (7.80%)	4,306 (7.99%)	4,795 (8.57%)	5,272 (9.16%)	5,353 (9.41%)
Females stratified by age group (years)										
0–14	692 (0.51%)	991 (0.70%)	1,267 (0.84%)	1,515 (0.96%)	1,876 (1.11%)	2,193 (1.22%)	2,529 (1.34%)	3,142 (1.59%)	3,548 (1.73%)	4,125 (2.08%)
15–19	2,889 (5.96%)	3,533 (7.00%)	4,425 (8.38%)	4,767 (8.72%)	5,397 (9.38%)	6,107 (10.10%)	6,860 (10.80%)	7,421 (11.32%)	7,826 (11.77%)	8,843 (13.52%)

	Number and proportion (%) of patients for each calendar year									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
20–24	3,837 (6.17%)	4,822 (7.30%)	5,555 (7.89%)	6,504 (8.84%)	7,171 (9.35%)	8,175 (10.06%)	8,972 (10.55%)	9,853 (11.18%)	10,683 (11.94%)	11,187 (12.83%)
Bipolar disorder										
Sex										
Male	143 (0.07%)	178 (0.08%)	232 (0.09%)	250 (0.10%)	275 (0.10%)	269 (0.09%)	274 (0.09%)	286 (0.09%)	261 (0.08%)	354 (0.11%)
Female	261 (0.11%)	304 (0.12%)	346 (0.13%)	398 (0.14%)	429 (0.14%)	467 (0.15%)	498 (0.15%)	509 (0.14%)	543 (0.15%)	743 (0.21%)
Age group (years)										
0–14	9 (0.00%)	10 (0.00%)	17 (0.01%)	14 (0.00%)	14 (0.00%)	13 (0.00%)	15 (0.00%)	10 (0.00%)	12 (0.00%)	27 (0.01%)
15–19	126 (0.15%)	130 (0.15%)	153 (0.16%)	176 (0.18%)	174 (0.17%)	186 (0.17%)	180 (0.16%)	183 (0.16%)	164 (0.14%)	287 (0.24%)
20–24	269 (0.27%)	342 (0.32%)	408 (0.36%)	458 (0.39%)	516 (0.41%)	537 (0.41%)	577 (0.42%)	603 (0.42%)	635 (0.43%)	787 (0.55%)
Males stratified by age group (years)										
0–14	6 (0.00%)	7 (0.00%)	<5 (0.00%)	<5 (0.00%)	6 (0.00%)	7 (0.00%)	5 (0.00%)	7 (0.00%)	<5 (0.00%)	11 (0.01%)
15–19	38 (0.10%)	39 (0.10%)	<65 (0.15%)	<65 (0.15%)	54 (0.12%)	56 (0.12%)	56 (0.11%)	60 (0.12%)	<45 (0.08%)	76 (0.14%)
20–24	99 (0.26%)	132 (0.32%)	168 (0.39%)	183 (0.40%)	215 (0.45%)	206 (0.40%)	213 (0.40%)	219 (0.39%)	215 (0.37%)	267 (0.47%)
Females stratified by age group (years)										
0–14	<5 (0.00%)	<5 (0.00%)	13 (0.01%)	9 (0.01%)	8 (0.00%)	6 (0.00%)	10 (0.01%)	<5 (0.00%)	8 (0.00%)	16 (0.01%)
15–19	<85 (0.18%)	<95 (0.18%)	93 (0.18%)	114 (0.21%)	120 (0.21%)	130 (0.21%)	124 (0.20%)	<125 (0.19%)	121 (0.18%)	210 (0.32%)
20–24	170 (0.27%)	210 (0.32%)	240 (0.34%)	275 (0.37%)	301 (0.39%)	331 (0.41%)	364 (0.43%)	383 (0.43%)	414 (0.46%)	517 (0.59%)
Schizophrenia/schizoaffective disorders										
Sex										
Male	122 (0.06%)	130 (0.06%)	147 (0.06%)	172 (0.07%)	161 (0.06%)	175 (0.06%)	196 (0.06%)	215 (0.07%)	223 (0.07%)	273 (0.08%)
Female	52 (0.02%)	69 (0.03%)	75 (0.03%)	80 (0.03%)	94 (0.03%)	98 (0.03%)	145 (0.04%)	137 (0.04%)	142 (0.04%)	228 (0.06%)
Age group (years)										
0–14	6 (0.00%)	<5 (0.00%)	8 (0.00%)	<5 (0.00%)	6 (0.00%)	5 (0.00%)	8 (0.00%)	5 (0.00%)	12 (0.00%)	14 (0.00%)
15–19	45 (0.05%)	<50 (0.05%)	58 (0.06%)	<80 (0.08%)	60 (0.06%)	72 (0.07%)	89 (0.08%)	83 (0.07%)	92 (0.08%)	135 (0.11%)
20–24	123 (0.12%)	146 (0.14%)	156 (0.14%)	174 (0.15%)	189 (0.15%)	196 (0.15%)	244 (0.18%)	264 (0.18%)	262 (0.18%)	352 (0.24%)
Males stratified by age group (years)										

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
0–14	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)
15–19	<30 (0.07%)	<35 (0.08%)	<40 (0.09%)	<50 (0.11%)	<35 (0.08%)	<45 (0.09%)	<50 (0.09%)	<40 (0.08%)	<50 (0.09%)	<70 (0.13%)
20–24	93 (0.25%)	97 (0.24%)	107 (0.25%)	124 (0.27%)	123 (0.26%)	131 (0.26%)	146 (0.27%)	173 (0.31%)	170 (0.30%)	201 (0.35%)
Females stratified by age group (years)										
0–14	<5 (0.00%)	<5 (0.00%)	5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	8 (0.00%)	11 (0.01%)
15–19	<25 (0.04%)	<20 (0.04%)	21 (0.04%)	<30 (0.05%)	<30 (0.05%)	<35 (0.05%)	<45 (0.07%)	<45 (0.07%)	42 (0.06%)	66 (0.10%)
20–24	30 (0.05%)	49 (0.07%)	49 (0.07%)	50 (0.07%)	66 (0.09%)	65 (0.08%)	98 (0.12%)	91 (0.10%)	92 (0.10%)	151 (0.17%)
ASD										
Sex										
Male	867 (0.40%)	1,098 (0.47%)	1,211 (0.49%)	1,513 (0.59%)	1,824 (0.66%)	2,022 (0.69%)	2,484 (0.81%)	2,987 (0.93%)	3,294 (0.99%)	3,462 (1.07%)
Female	193 (0.08%)	263 (0.10%)	333 (0.12%)	435 (0.15%)	496 (0.16%)	625 (0.19%)	829 (0.25%)	1,056 (0.30%)	1,262 (0.35%)	1,438 (0.41%)
Age group (years)										
0–14	843 (0.30%)	1,071 (0.36%)	1,222 (0.39%)	1,535 (0.47%)	1,817 (0.52%)	2,031 (0.54%)	2,506 (0.64%)	3,088 (0.75%)	3,382 (0.79%)	3,550 (0.86%)
15–19	148 (0.17%)	225 (0.25%)	237 (0.25%)	288 (0.30%)	352 (0.34%)	387 (0.36%)	542 (0.48%)	665 (0.57%)	800 (0.67%)	956 (0.80%)
20–24	69 (0.07%)	68 (0.06%)	86 (0.08%)	126 (0.11%)	152 (0.12%)	229 (0.17%)	266 (0.19%)	293 (0.20%)	380 (0.26%)	398 (0.28%)
Males stratified by age group (years)										
0–14	697 (0.48%)	869 (0.57%)	963 (0.60%)	1,187 (0.70%)	1,422 (0.78%)	1,556 (0.80%)	1,892 (0.93%)	2,313 (1.09%)	2,485 (1.12%)	2,545 (1.19%)
15–19	113 (0.30%)	173 (0.44%)	186 (0.46%)	226 (0.53%)	279 (0.62%)	297 (0.62%)	390 (0.77%)	462 (0.89%)	545 (1.02%)	646 (1.20%)
20–24	57 (0.15%)	56 (0.14%)	62 (0.14%)	100 (0.22%)	123 (0.26%)	169 (0.33%)	202 (0.37%)	212 (0.38%)	264 (0.46%)	271 (0.48%)
Females stratified by age group (years)										
0–14	146 (0.11%)	200 (0.14%)	259 (0.17%)	347 (0.22%)	395 (0.23%)	475 (0.26%)	614 (0.33%)	775 (0.39%)	896 (0.44%)	1,003 (0.51%)
15–19	35 (0.07%)	51 (0.10%)	50 (0.09%)	62 (0.11%)	72 (0.13%)	90 (0.15%)	151 (0.24%)	201 (0.31%)	253 (0.38%)	308 (0.47%)
20–24	12 (0.02%)	12 (0.02%)	24 (0.03%)	26 (0.04%)	29 (0.04%)	60 (0.07%)	64 (0.08%)	80 (0.09%)	113 (0.13%)	127 (0.15%)
ADHD										
Sex										
Male	1,282 (0.59%)	1,592 (0.69%)	1,879 (0.77%)	2,323 (0.90%)	2,637 (0.96%)	3,176 (1.09%)	3,971 (1.29%)	4,942 (1.54%)	5,977 (1.80%)	7,527 (2.32%)
Female	386 (0.16%)	464 (0.18%)	619 (0.23%)	680 (0.24%)	783 (0.26%)	938 (0.29%)	1,271 (0.38%)	1,668 (0.47%)	2,042 (0.57%)	2,921 (0.83%)

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Age group (years)										
0–14	1,152 (0.41%)	1,469 (0.50%)	1,726 (0.55%)	2,146 (0.65%)	2,479 (0.71%)	3,037 (0.81%)	3,824 (0.98%)	4,759 (1.16%)	5,754 (1.35%)	7,345 (1.78%)
15–19	355 (0.41%)	399 (0.45%)	494 (0.53%)	569 (0.59%)	592 (0.58%)	712 (0.66%)	961 (0.84%)	1,188 (1.01%)	1,468 (1.22%)	2,063 (1.73%)
20–24	161 (0.16%)	188 (0.18%)	278 (0.24%)	288 (0.24%)	349 (0.28%)	366 (0.28%)	458 (0.33%)	666 (0.46%)	800 (0.54%)	1,042 (0.72%)
Males stratified by age group (years)										
0–14	919 (0.64%)	1,172 (0.77%)	1,352 (0.84%)	1,731 (1.02%)	1,947 (1.07%)	2,401 (1.24%)	2,997 (1.48%)	3,709 (1.74%)	4,460 (2.02%)	5,608 (2.62%)
15–19	263 (0.71%)	295 (0.75%)	353 (0.87%)	401 (0.95%)	449 (1.00%)	521 (1.09%)	674 (1.34%)	815 (1.57%)	1,024 (1.92%)	1,341 (2.50%)
20–24	100 (0.26%)	125 (0.31%)	174 (0.40%)	191 (0.42%)	241 (0.50%)	254 (0.49%)	300 (0.56%)	418 (0.75%)	493 (0.86%)	578 (1.02%)
Females stratified by age group (years)										
0–14	233 (0.17%)	297 (0.21%)	374 (0.25%)	415 (0.26%)	532 (0.32%)	636 (0.35%)	827 (0.44%)	1,050 (0.53%)	1,293 (0.63%)	1,737 (0.88%)
15–19	92 (0.19%)	104 (0.21%)	141 (0.27%)	168 (0.31%)	143 (0.25%)	191 (0.32%)	287 (0.45%)	373 (0.57%)	444 (0.67%)	722 (1.10%)
20–24	61 (0.10%)	63 (0.10%)	104 (0.15%)	97 (0.13%)	108 (0.14%)	111 (0.14%)	157 (0.18%)	245 (0.28%)	305 (0.34%)	462 (0.53%)
Gender dysphoria										
Sex										
Male	<5 (0.00%)	<5 (0.00%)	17 (0.01%)	23 (0.01%)	42 (0.02%)	55 (0.02%)	89 (0.03%)	114 (0.04%)	147 (0.04%)	167 (0.05%)
Female	6 (0.00%)	8 (0.00%)	16 (0.01%)	20 (0.01%)	42 (0.01%)	58 (0.02%)	74 (0.02%)	121 (0.03%)	187 (0.05%)	230 (0.07%)
Age group (years)										
0–14	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	6 (0.00%)	12 (0.00%)	24 (0.01%)	27 (0.01%)	47 (0.01%)	78 (0.02%)	88 (0.02%)
15–19	<5 (0.00%)	5 (0.01%)	12 (0.01%)	19 (0.02%)	45 (0.04%)	47 (0.04%)	74 (0.06%)	113 (0.10%)	158 (0.13%)	192 (0.16%)
20–24	<5 (0.00%)	5 (0.00%)	20 (0.02%)	19 (0.02%)	33 (0.03%)	45 (0.03%)	69 (0.05%)	84 (0.06%)	115 (0.08%)	135 (0.09%)
Males stratified by age group (years)										
0–14	0 (0.00%)	<5 (0.00%)	0 (0.00%)	<5 (0.00%)	6 (0.00%)	12 (0.01%)	11 (0.01%)	13 (0.01%)	24 (0.01%)	27 (0.01%)
15–19	<5 (0.01%)	<5 (0.01%)	5 (0.01%)	9 (0.02%)	21 (0.05%)	21 (0.04%)	35 (0.07%)	52 (0.10%)	70 (0.13%)	76 (0.14%)
20–24	<5 (0.00%)	<5 (0.00%)	12 (0.03%)	12 (0.03%)	15 (0.03%)	22 (0.04%)	43 (0.08%)	49 (0.09%)	53 (0.09%)	64 (0.11%)
Females stratified by age group (years)										
0–14	1 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	5 (0.00%)	12 (0.01%)	16 (0.01%)	34 (0.02%)	51 (0.02%)	56 (0.03%)

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
15–19	<5 (0.00%)	<5 (0.01%)	7 (0.01%)	10 (0.02%)	22 (0.04%)	25 (0.04%)	36 (0.06%)	58 (0.09%)	82 (0.12%)	107 (0.16%)
20–24	<5 (0.00%)	<5 (0.01%)	7 (0.01%)	6 (0.01%)	15 (0.02%)	21 (0.03%)	22 (0.03%)	29 (0.03%)	54 (0.06%)	67 (0.08%)
Eating disorders										
Sex										
Male	56 (0.03%)	60 (0.03%)	57 (0.02%)	79 (0.03%)	76 (0.03%)	84 (0.03%)	123 (0.04%)	139 (0.04%)	164 (0.05%)	214 (0.07%)
Female	375 (0.15%)	499 (0.19%)	603 (0.22%)	659 (0.23%)	677 (0.22%)	664 (0.21%)	806 (0.24%)	1,007 (0.29%)	1,106 (0.31%)	1,742 (0.50%)
Age group (years)										
0–14	77 (0.03%)	107 (0.04%)	94 (0.03%)	129 (0.04%)	129 (0.04%)	132 (0.04%)	177 (0.05%)	242 (0.06%)	253 (0.06%)	377 (0.09%)
15–19	182 (0.21%)	256 (0.29%)	317 (0.34%)	336 (0.35%)	365 (0.36%)	332 (0.31%)	423 (0.37%)	485 (0.41%)	550 (0.46%)	899 (0.75%)
20–24	172 (0.17%)	196 (0.18%)	249 (0.22%)	274 (0.23%)	259 (0.21%)	285 (0.21%)	331 (0.24%)	420 (0.29%)	472 (0.32%)	684 (0.47%)
Males stratified by age group (years)										
0–14	29 (0.02%)	30 (0.02%)	27 (0.02%)	43 (0.03%)	41 (0.02%)	53 (0.03%)	67 (0.03%)	72 (0.03%)	82 (0.04%)	101 (0.05%)
15–19	16 (0.04%)	22 (0.06%)	20 (0.05%)	21 (0.05%)	24 (0.05%)	19 (0.04%)	27 (0.05%)	30 (0.06%)	51 (0.10%)	62 (0.12%)
20–24	11 (0.03%)	8 (0.02%)	10 (0.02%)	15 (0.03%)	11 (0.02%)	12 (0.02%)	29 (0.05%)	37 (0.07%)	31 (0.05%)	51 (0.09%)
Females stratified by age group (years)										
0–14	48 (0.04%)	77 (0.05%)	67 (0.04%)	86 (0.05%)	88 (0.05%)	79 (0.04%)	110 (0.06%)	170 (0.09%)	169 (0.08%)	275 (0.14%)
15–19	166 (0.34%)	234 (0.46%)	297 (0.56%)	315 (0.58%)	341 (0.59%)	313 (0.52%)	396 (0.62%)	455 (0.69%)	499 (0.75%)	836 (1.28%)
20–24	161 (0.26%)	188 (0.28%)	239 (0.34%)	258 (0.35%)	248 (0.32%)	272 (0.33%)	300 (0.35%)	382 (0.43%)	438 (0.49%)	631 (0.72%)
Substance abuse										
Sex										
Male	88 (0.04%)	108 (0.05%)	118 (0.05%)	112 (0.04%)	106 (0.04%)	112 (0.04%)	129 (0.04%)	154 (0.05%)	142 (0.04%)	157 (0.05%)
Female	36 (0.01%)	47 (0.02%)	65 (0.02%)	57 (0.02%)	75 (0.02%)	66 (0.02%)	72 (0.02%)	79 (0.02%)	85 (0.02%)	101 (0.03%)
Age group (years)										
0–14	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	0 (0.00%)	<5 (0.00%)	<5 (0.00%)	5 (0.00%)	<5 (0.00%)
15–19	<30 (0.03%)	<50 (0.05%)	<50 (0.05%)	<35 (0.03%)	<35 (0.03%)	24 (0.02%)	<35 (0.03%)	<50 (0.04%)	44 (0.04%)	<40 (0.03%)
20–24	96 (0.10%)	106 (0.10%)	131 (0.12%)	135 (0.11%)	145 (0.12%)	154 (0.12%)	166 (0.12%)	183 (0.13%)	178 (0.12%)	216 (0.15%)
Males stratified by age group (years)										

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
0–14	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	0 (0.00%)	0 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)
15–19	<25 (0.05%)	<30 (0.07%)	<30 (0.07%)	<25 (0.05%)	21 (0.05%)	16 (0.03%)	<20 (0.03%)	<30 (0.06%)	<25 (0.04%)	<25 (0.04%)
20–24	67 (0.18%)	79 (0.19%)	88 (0.20%)	90 (0.20%)	85 (0.18%)	96 (0.19%)	109 (0.20%)	124 (0.22%)	119 (0.21%)	130 (0.23%)
Females stratified by age group (years)										
0–14	0 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	0 (0.00%)	0 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)
15–19	7 (0.01%)	<20 (0.04%)	<20 (0.03%)	<15 (0.02%)	<15 (0.02%)	8 (0.01%)	16 (0.03%)	<20 (0.03%)	<25 (0.04%)	<15 (0.02%)
20–24	29 (0.05%)	27 (0.04%)	43 (0.06%)	45 (0.06%)	60 (0.08%)	58 (0.07%)	56 (0.07%)	59 (0.07%)	59 (0.07%)	86 (0.10%)

ADHD= attention deficit hyperactivity disorder; ASD = autism spectrum disorder. Cells with values less than five are suppressed including complementary suppression of other cells.

Annual trends in patient prevalence of other relevant conditions

The annual patient prevalence estimates (current – recorded in each calendar year of interest and ever recorded up to end of each calendar year) of selected relevant conditions in patients aged less than 25 years are presented in Table 23 and Figures 21–24.

The annual patient prevalence (ever) increased across the 10-year study period for the following conditions (Figure 22 and Figure 24):

- Ever-recorded ASD increased 2.9 times, from 0.7% in 2011 to 2.1% in 2020.
- Ever-recorded ADHD increased 2.7 times, from 1.2% in 2011 to 3.3% in 2020.
- Ever-recorded eating disorders increased 2.3 times, from 0.3% in 2011 to 0.65% in 2020.

Although remaining low (less than 0.3% in 2020), the ever prevalence of schizophrenia and bipolar disorder almost doubled while eating disorders increased by 2.3 times between 2011 and 2020.

FIGURE 21. ANNUAL PREVALENCE OF RELEVANT CONDITIONS RECORDED IN EACH CALENDAR YEAR, 2011–2020

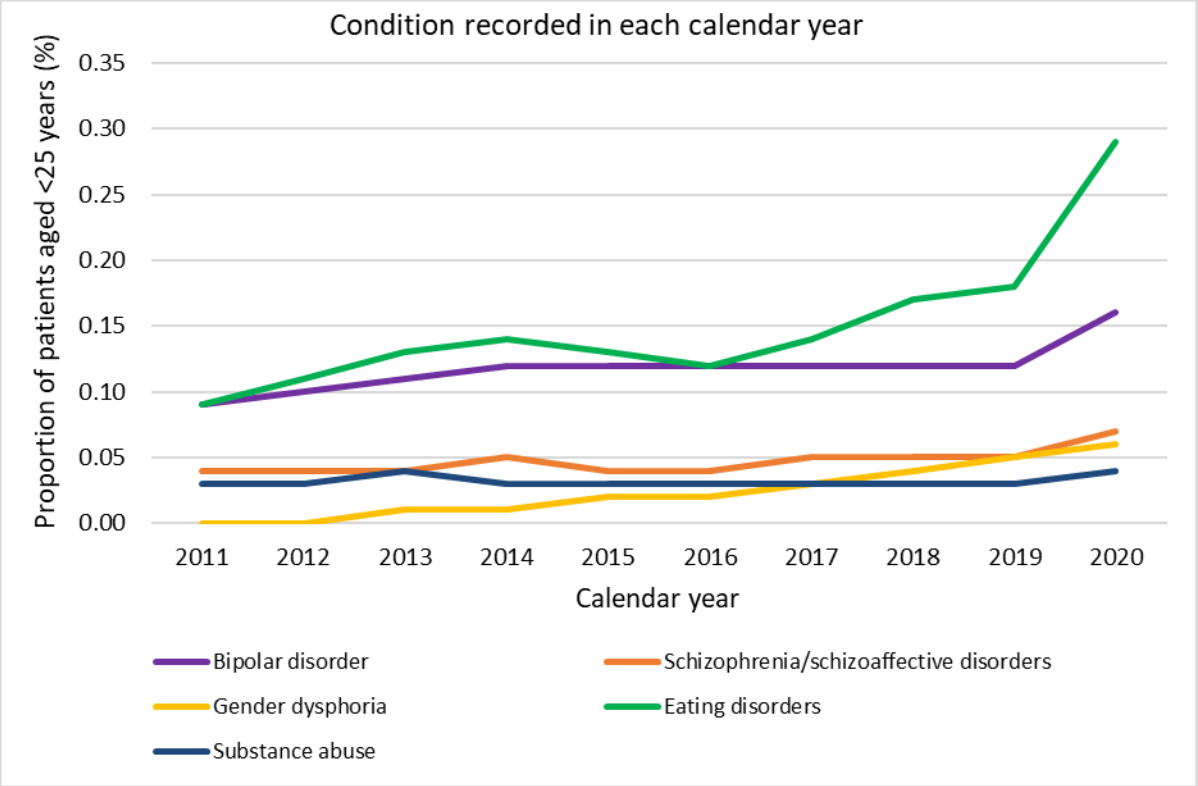


FIGURE 22. ANNUAL PREVALENCE OF RELEVANT CONDITIONS EVER RECORDED UP TO THE END OF EACH CALENDAR YEAR, 2011–2020

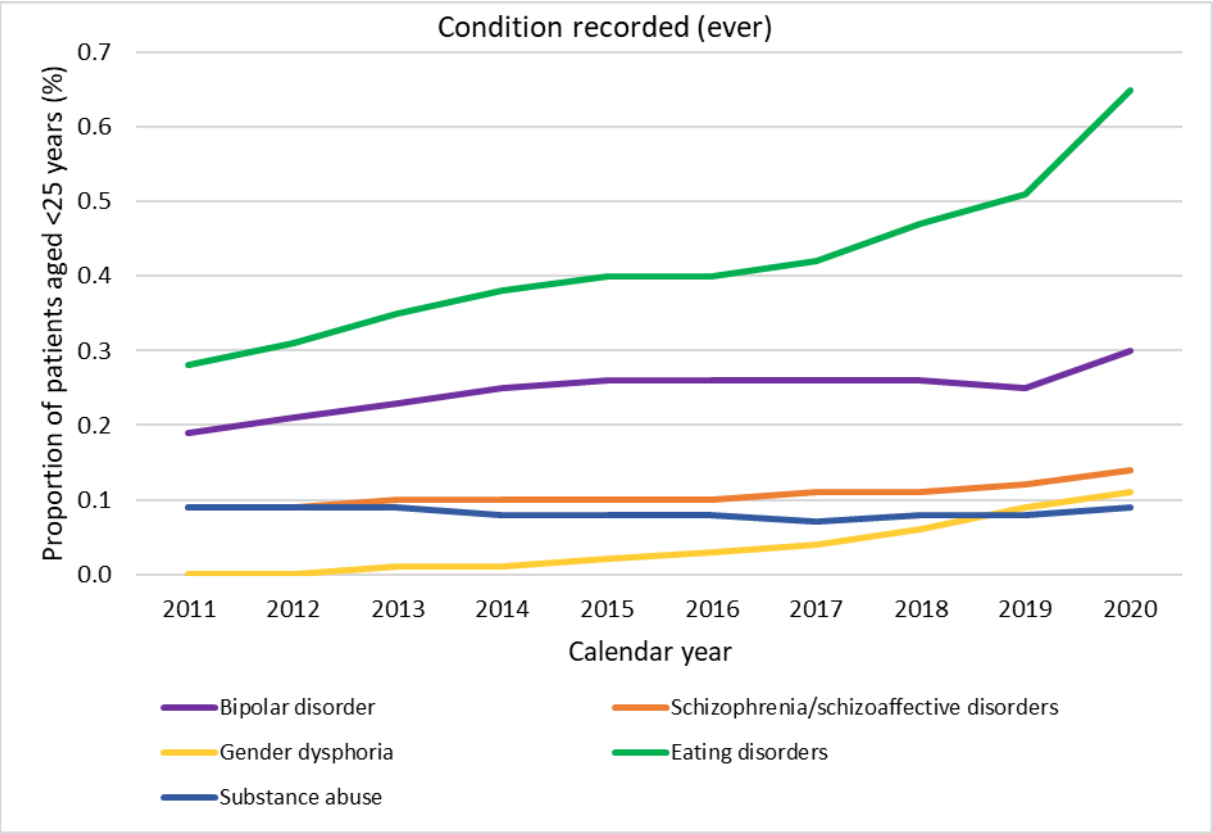
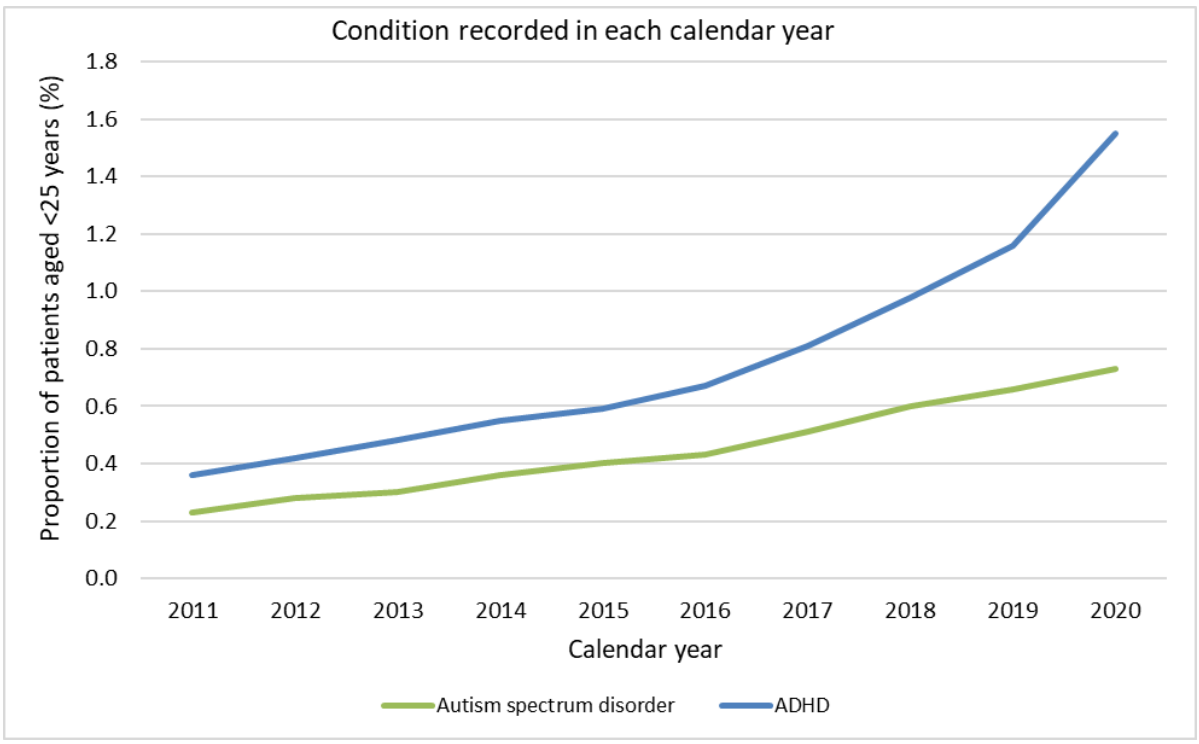
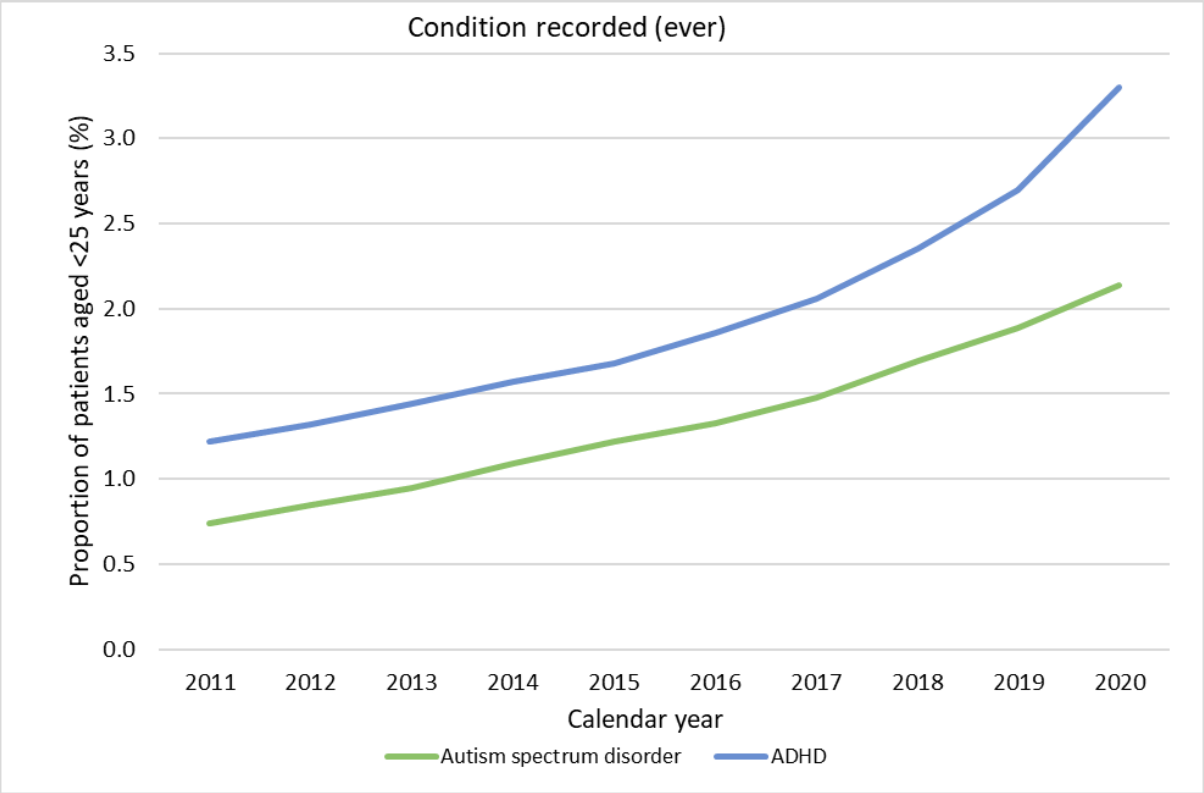


FIGURE 23. ANNUAL PREVALENCE OF ASD AND ADHD RECORDED IN PATIENTS AGED <25 YEARS BY EACH CALENDAR YEAR, 2011–2020



ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder

FIGURE 24. ANNUAL PREVALENCE OF ASD AND ADHD EVER RECORDED IN PATIENTS AGED <25 YEARS UP TO THE END OF EACH CALENDAR YEAR, 2011–2020



ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder

Annual prevalence estimates of relevant conditions stratified by demographic characteristics

The annual patient prevalence (recorded each calendar year) of other relevant conditions, including ASD, ADHD, bipolar disorder, schizophrenia/schizoaffective disorders, gender dysphoria, eating disorders and substance abuse, for patients aged less than 25 years stratified by age and sex, are presented in Table 24. Overall, the prevalence estimates for all selected relevant conditions increased across the 10-year period for specified age groups. Over the 10-year period, patient prevalence (recorded each year) estimates of the relevant conditions among patients aged less than 25 years (Figures 25–27):

- increased with age for bipolar disorder, schizophrenia/schizoaffective disorders and substance abuse
- were greater in children/adolescents aged 0–14 years compared to those aged 15–24 years for ASD and ADHD
- were greater in patients aged 15–19 years compared to other age groups for eating disorders and gender dysphoria.

These findings were consistent when males and females were assessed separately, with some differences in pattern observed for the prevalence of ADHD among females (Figures 28–30).

FIGURE 25. ANNUAL PATIENT PREVALENCE OF BIPOLAR DISORDER IN PATIENTS AGED <25 YEARS BY AGE GROUP, 2011–2020

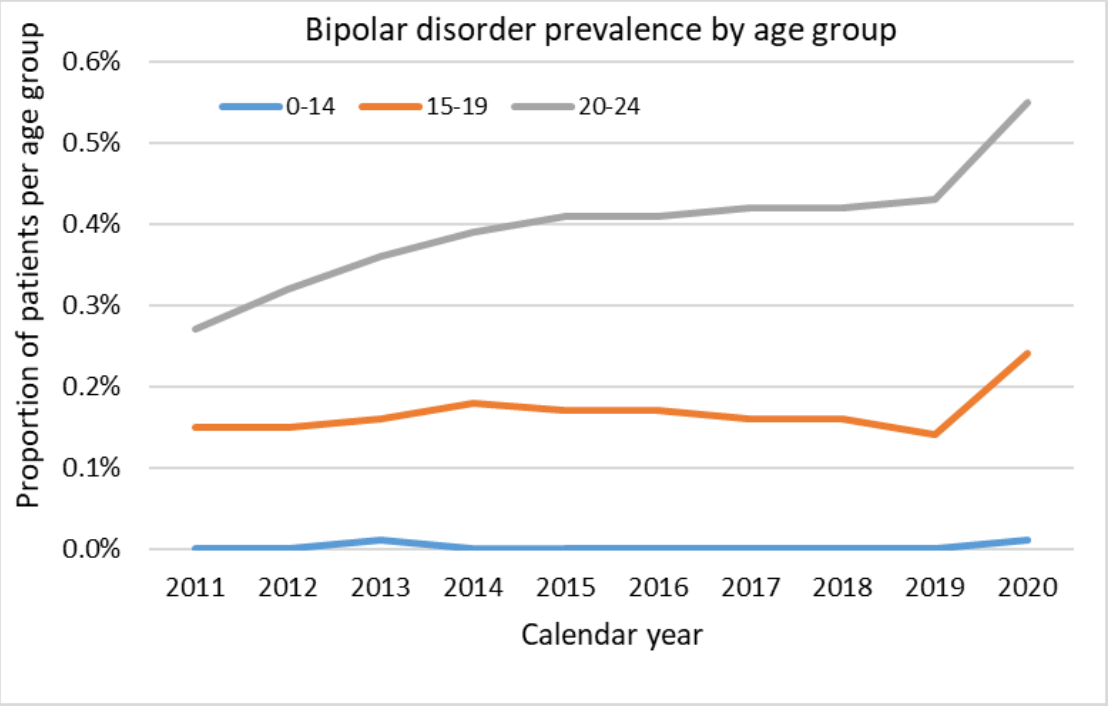
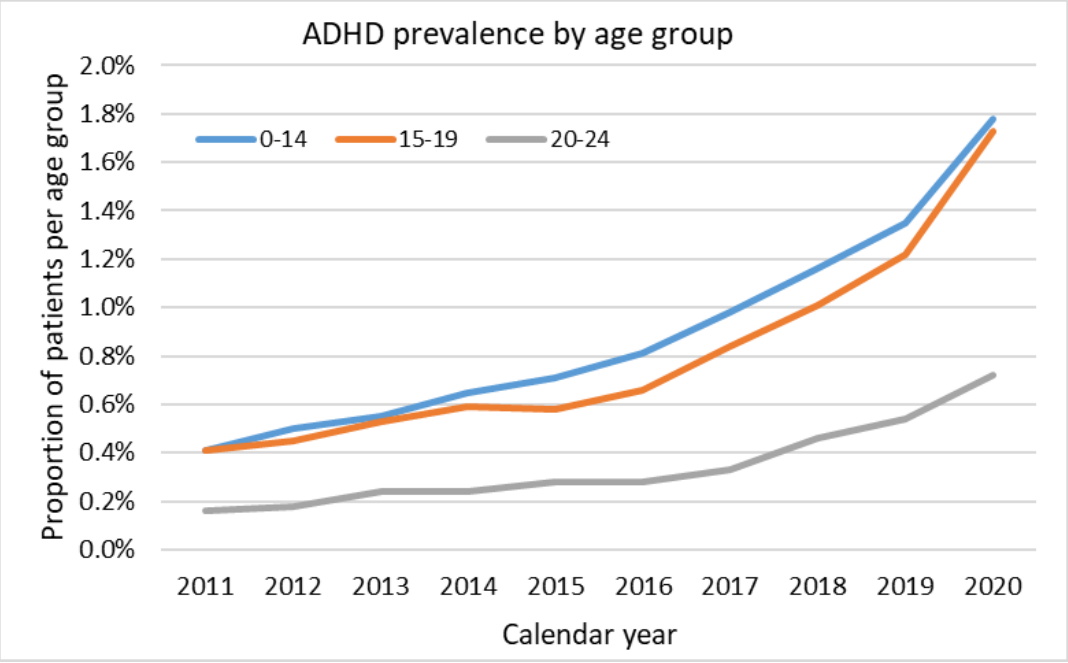


FIGURE 26. ANNUAL PATIENT PREVALENCE OF ADHD IN PATIENTS AGED <25 YEARS BY AGE GROUP, 2011–2020



ADHD = attention deficit hyperactivity disorder

FIGURE 27. ANNUAL PATIENT PREVALENCE OF GENDER DYSPHORIA IN PATIENTS AGED <25 YEARS BY AGE GROUP, 2011–2020

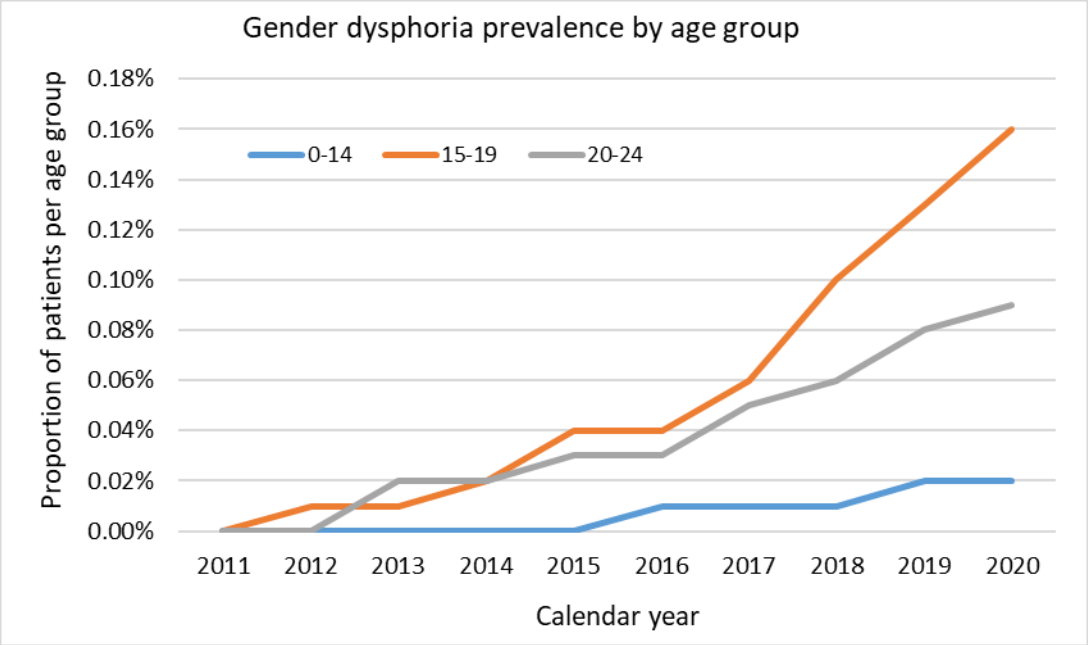
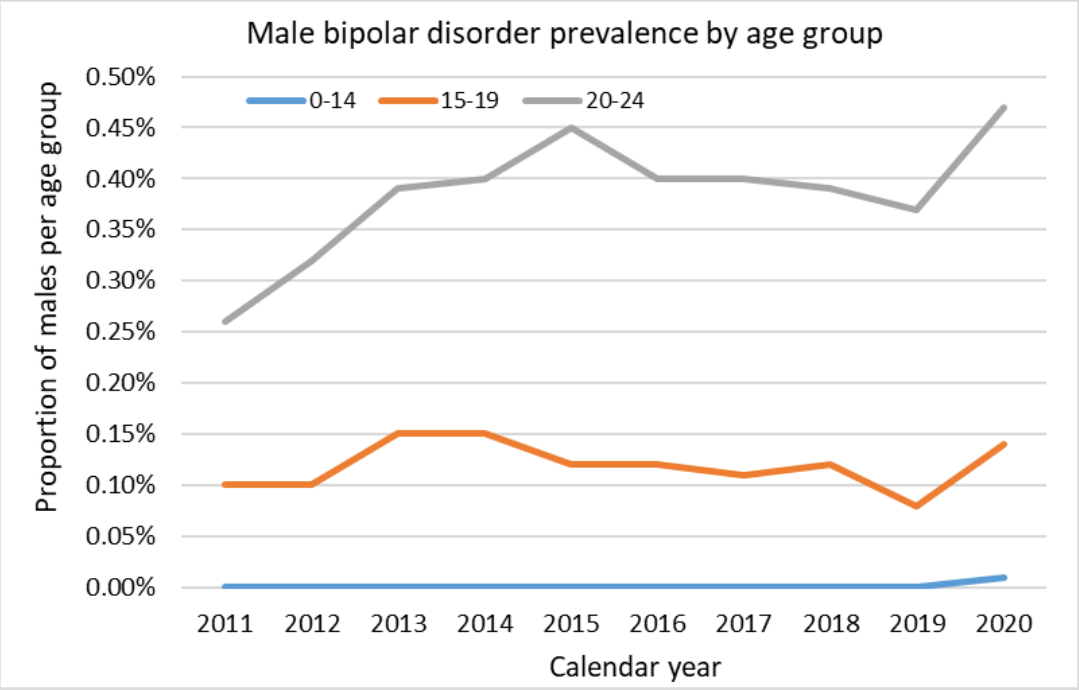


FIGURE 28. ANNUAL PREVALENCE OF BIPOLAR DISORDER IN MALES AND FEMALES AGED <25 YEARS BY AGE GROUP, 2011–2020



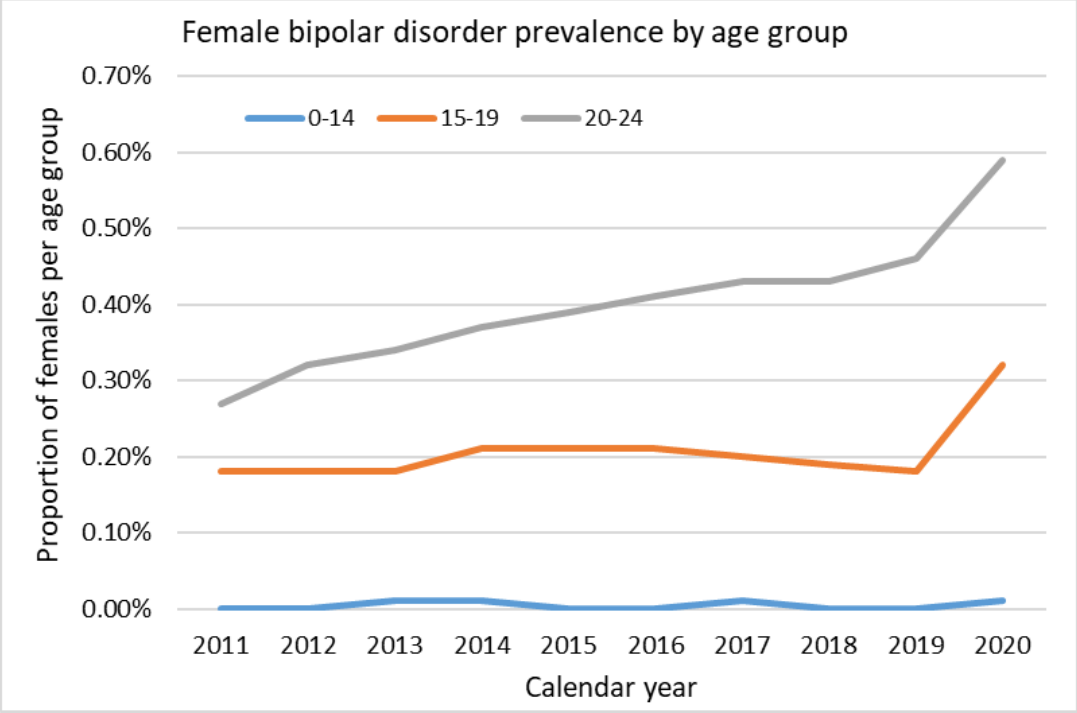
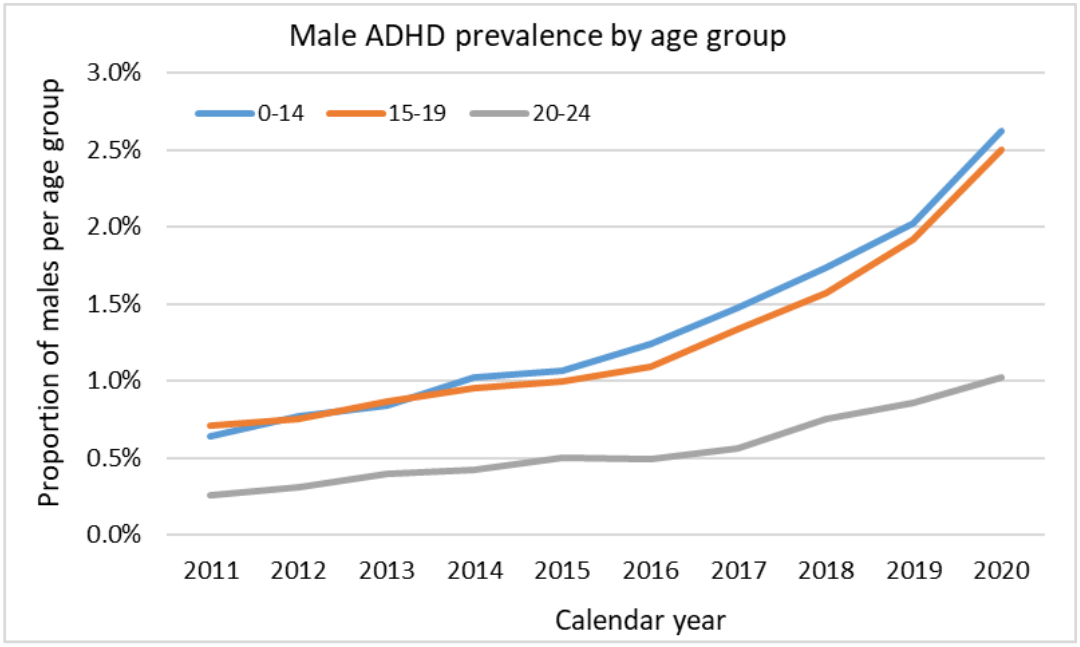
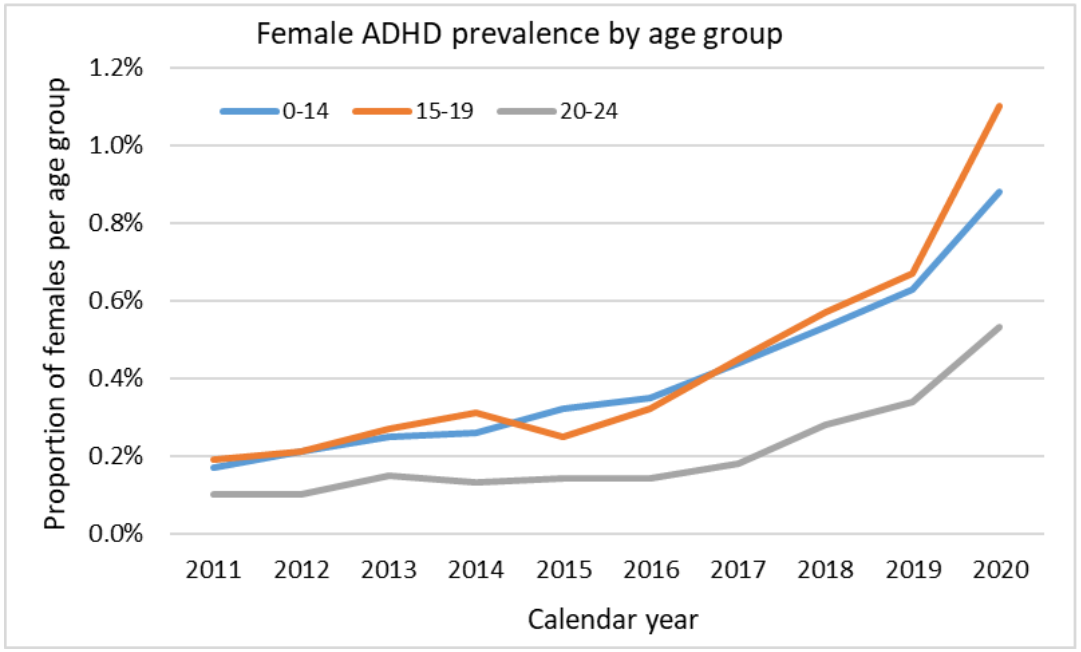


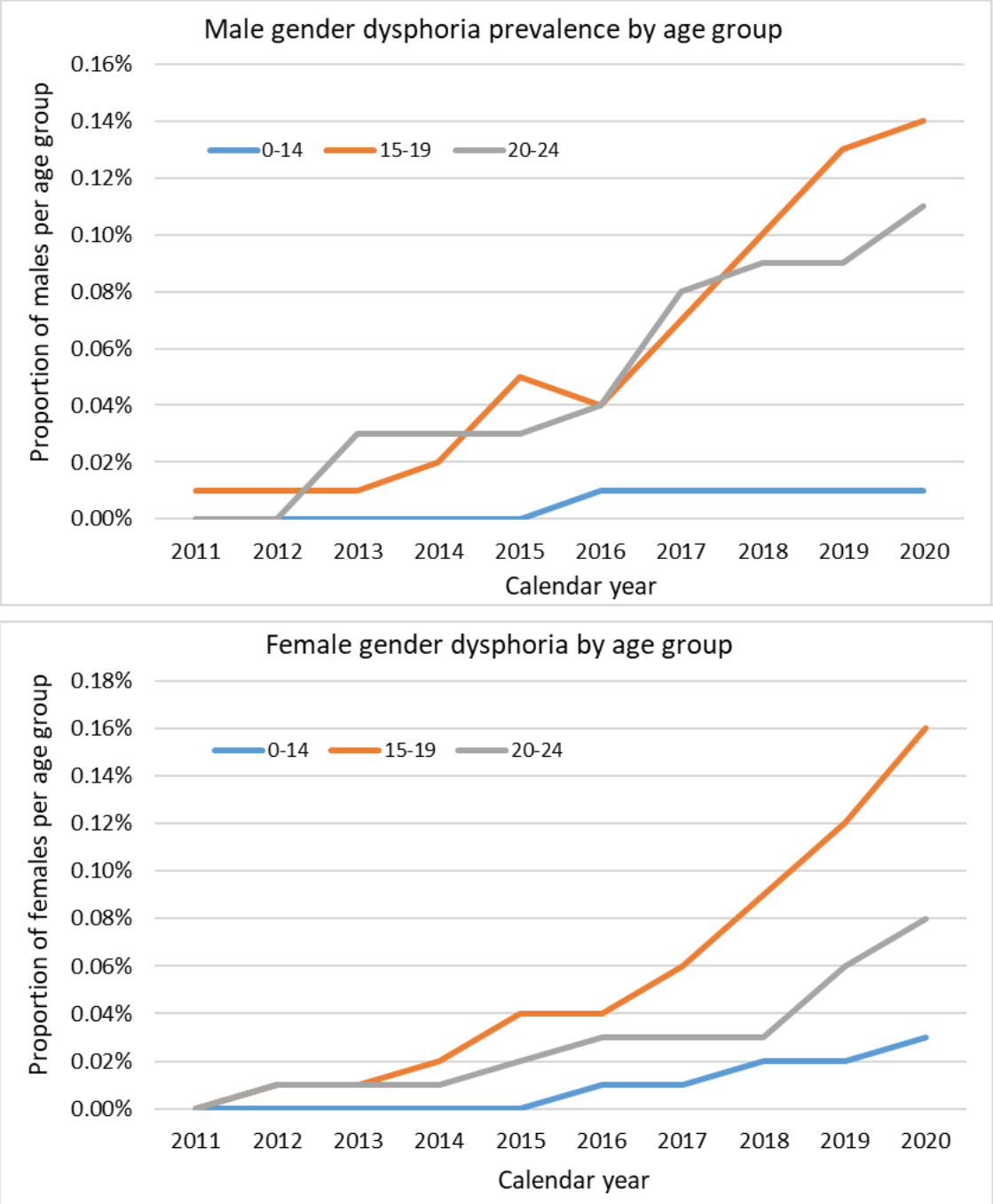
FIGURE 29. ANNUAL PREVALENCE OF ADHD IN MALES AND FEMALES AGED <25 YEARS BY AGE GROUP, 2011–2020





ADHD = attention deficit hyperactivity disorder

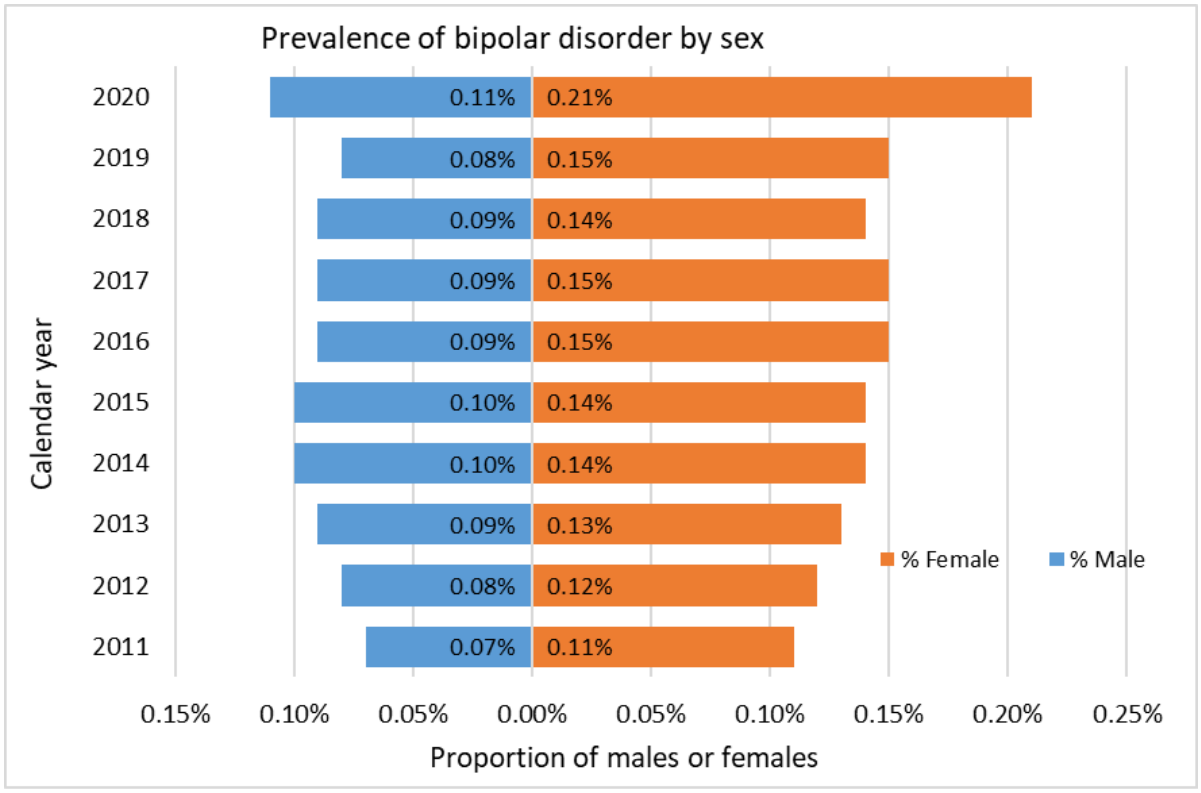
FIGURE 30. ANNUAL PREVALENCE OF GENDER DYSPHORIA IN MALES AND FEMALES AGED <25 YEARS BY AGE GROUP, 2011–2020



The prevalence of the selected relevant conditions increased in both males and females across the study period. Comparing males to females, the patient prevalence of the relevant conditions among patients aged <25 years was (Figures 31–34):

- greater among females for bipolar disorder and eating disorders
- greater among males for ASD, ADHD, schizophrenia/schizoaffective disorders and substance abuse
- similar between the two sexes for gender dysphoria.

FIGURE 31. ANNUAL PATIENT PREVALENCE OF BIPOLAR DISORDER AND EATING DISORDERS IN PATIENTS AGED <25 YEARS BY SEX, 2011–2020



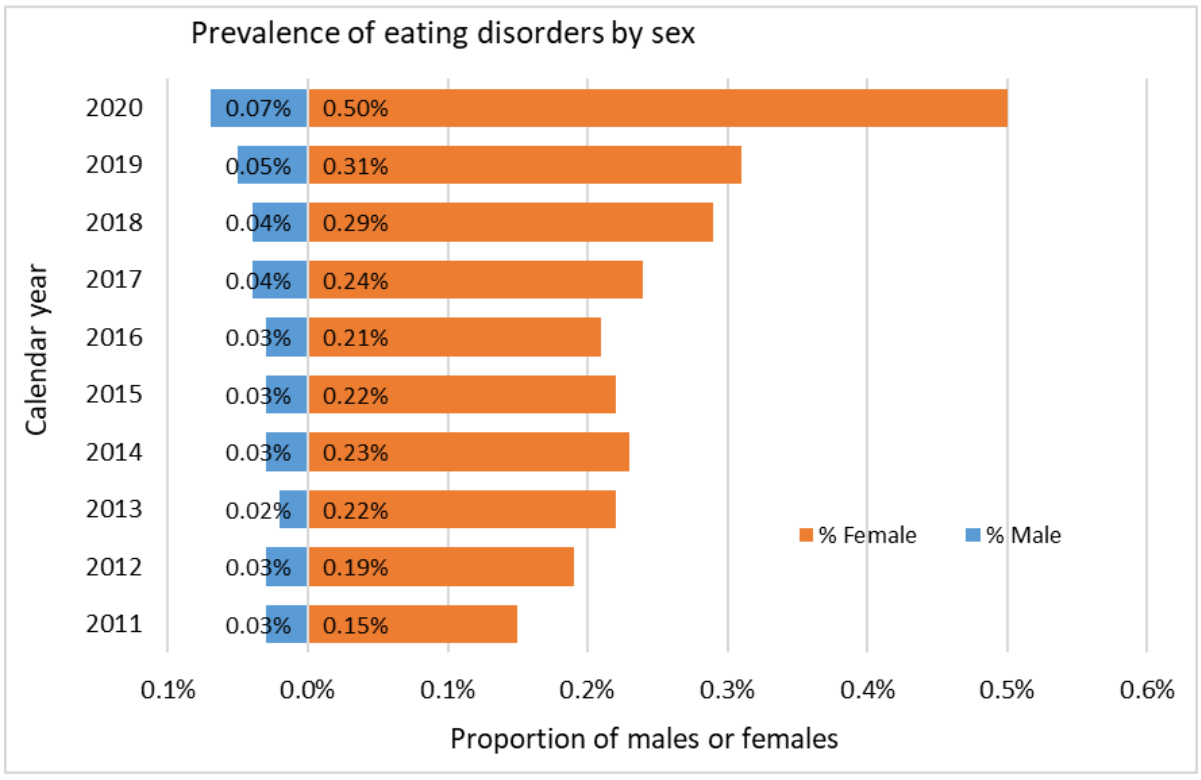
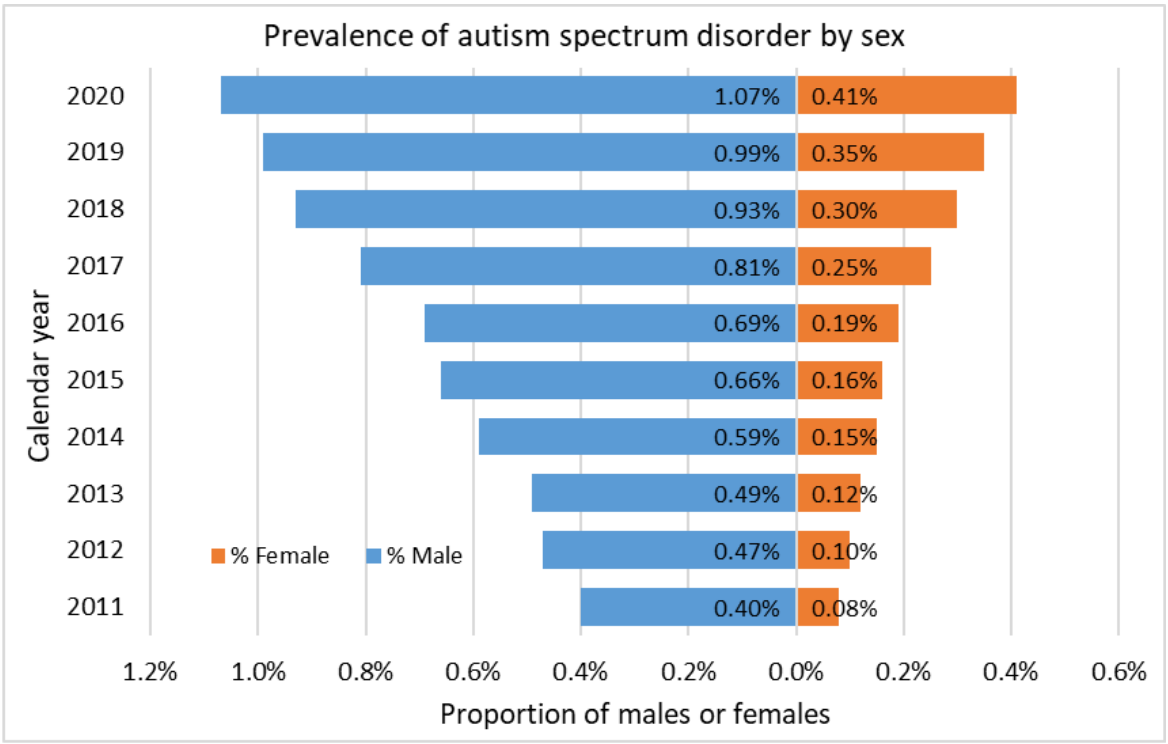
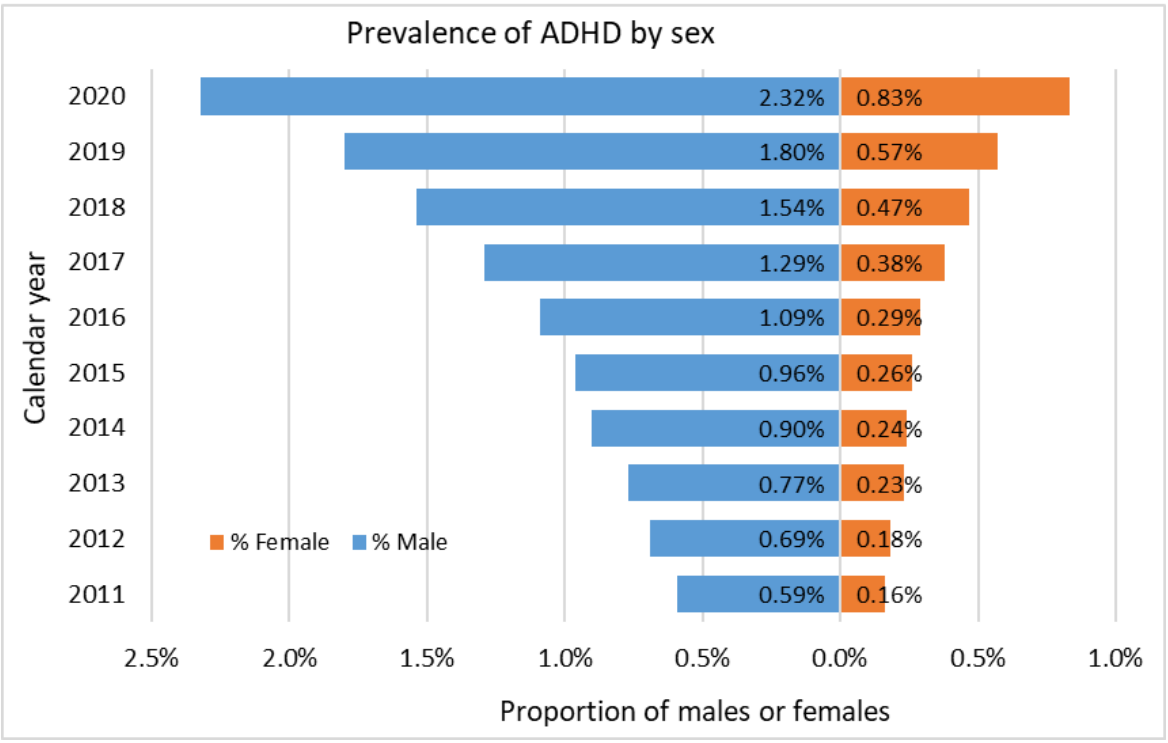


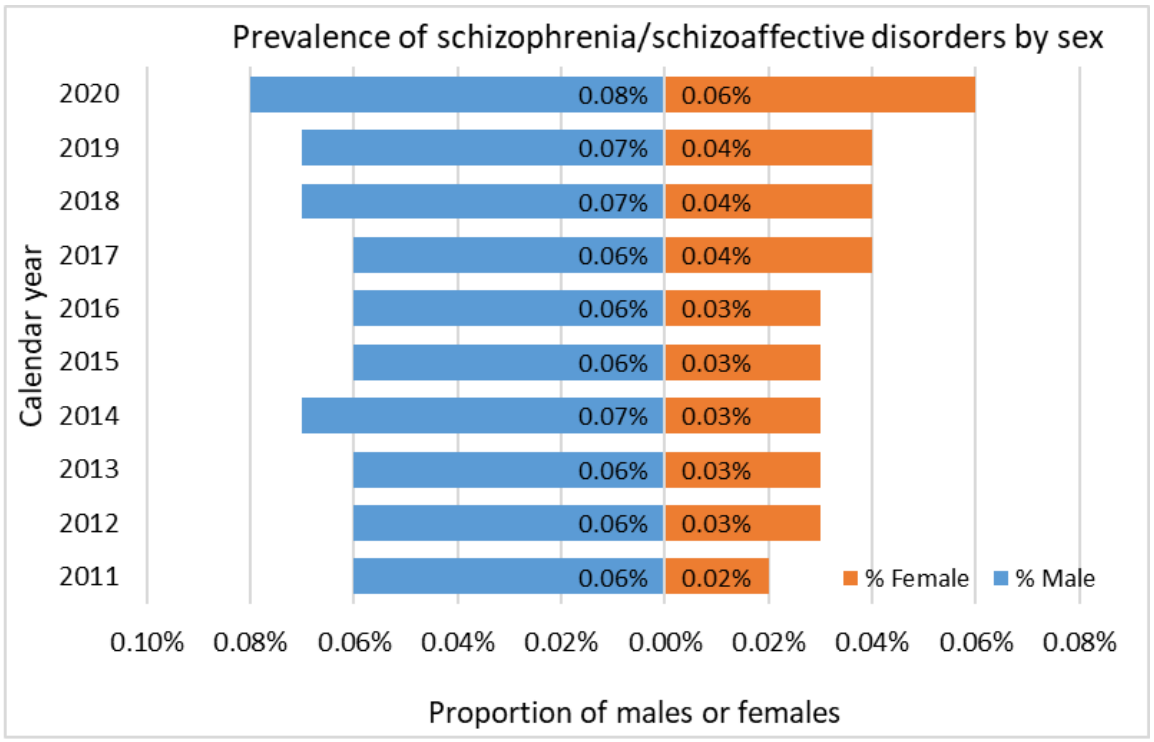
FIGURE 32. ANNUAL PATIENT PREVALENCE OF ASD AND ADHD IN PATIENTS AGED <25 YEARS BY SEX, 2011–2020





ADHD = attention deficit hyperactivity disorder; ASD = autism spectrum disorder

FIGURE 33. ANNUAL PATIENT PREVALENCE OF SCHIZOPHRENIA/SCHIZOAFFECTIVE DISORDERS AND SUBSTANCE ABUSE IN PATIENTS AGED <25 YEARS BY SEX, 2011–2020



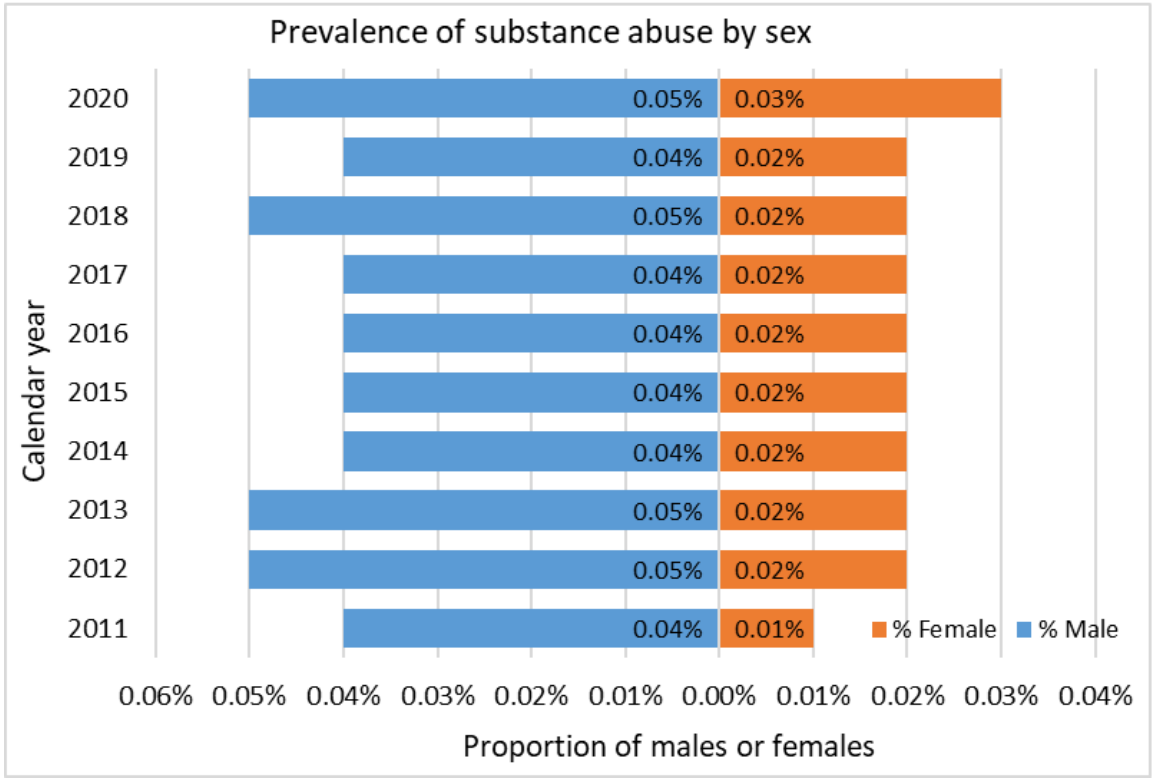
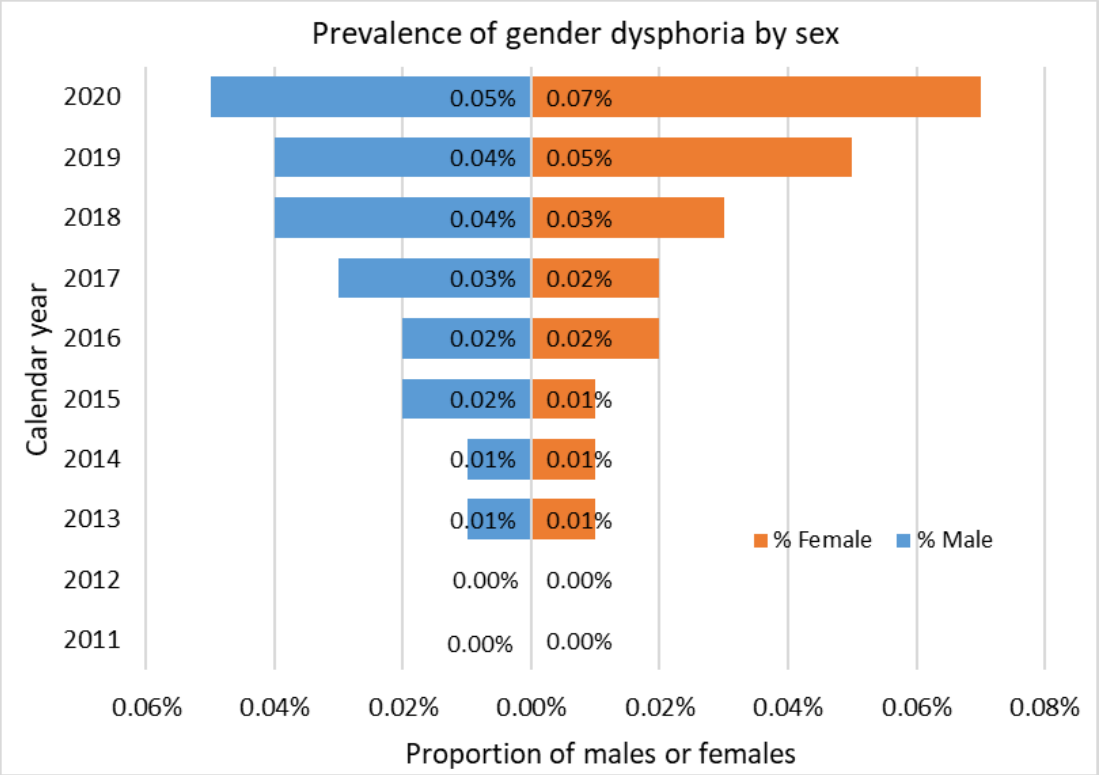


FIGURE 34. ANNUAL PATIENT PREVALENCE OF GENDER DYSPHORIA IN PATIENTS AGED <25 YEARS BY SEX, 2011–2020



Annual trends in prescribing of antidepressants

Table 25 and Figure 35 show the 10-year (2011–2020) annual trends in prescribing of antidepressants for patients aged less than 25 years. Consistent with other Australian data,[5,27] prescribing of antidepressants in young people increased over the 10-year study. The proportion of patients who had at least one antidepressant prescription increased at the same rate as the prevalence of depression, by 1.8 times, from 2.56% in 2011 to 4.67% in 2020. The prescribing rates for each class of antidepressant medicine in patients aged less than 25 years across the 10-year period were as follows:

- SSRIs doubled, from 1.78% in 2011 to 3.74% in 2020.
- NaSSAs increased 2.4 times, from 0.16% in 2011 to 0.38% in 2020.
- TCAs increased 1.3 times, from 0.24% in 2011 to 0.32% in 2020.
- Other antidepressants, including agomelatine, moclobemide, reboxetine and vortioxetine increased 6.5 times, from 0.02% in 2011 to 0.13% in 2020.
- Prescribing rates for SNRIs and MAOIs were mostly similar across the study period.

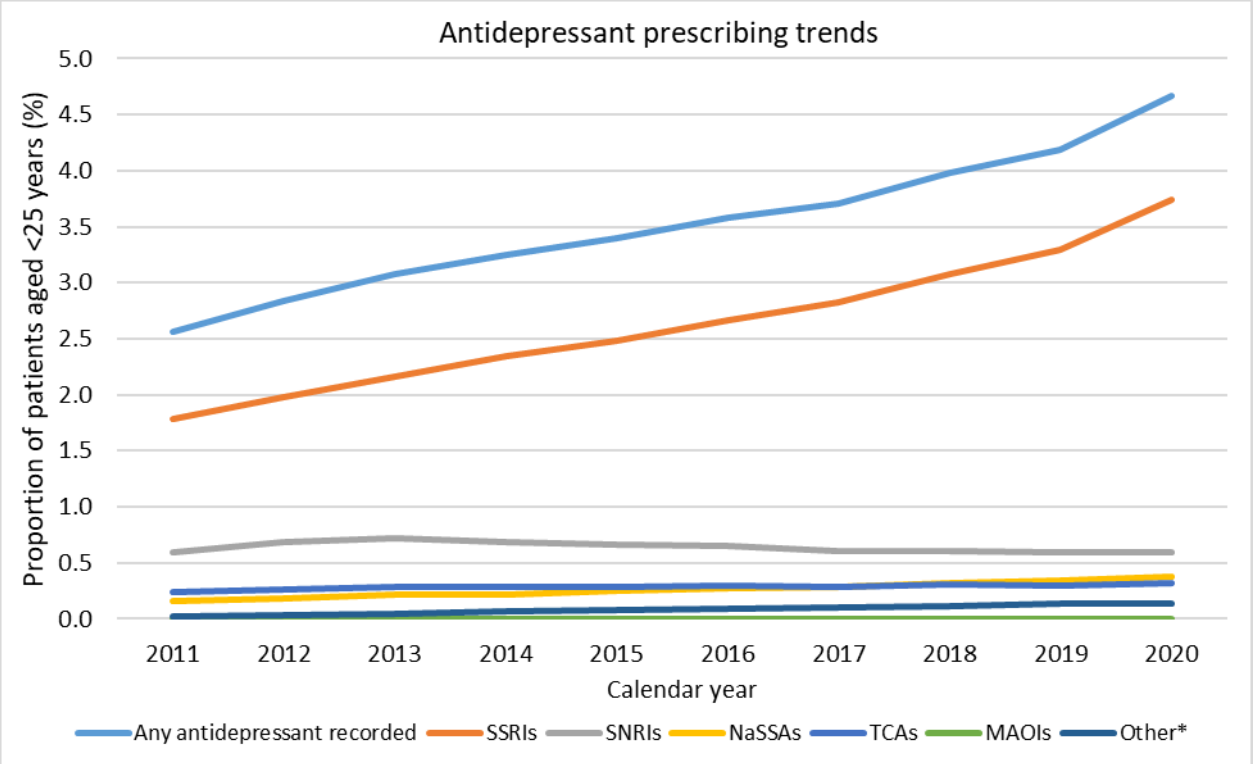
Table 25: ANNUAL ANTIDEPRESSANT PRESCRIBING RATE AMONG PATIENTS AGED <25 YEARS, 2011–2020

	Number; % (95% CI)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total (N)	464,478	490,016	518,984	543,757	577,672	614,372	644,456	671,995	693,260	675,465
Any antidepressant recorded	11,911; 2.56 (2.41–2.72)	13,912; 2.84 (2.67–3.01)	16,004; 3.08 (2.90–3.27)	17,672; 3.25 (3.06–3.44)	19,614; 3.40 (3.20–3.59)	22,023; 3.58 (3.38–3.79)	23,932; 3.71 (3.49–3.93)	26,752; 3.98 (3.74–4.22)	29,051; 4.19 (3.95–4.43)	31,534; 4.67 (4.40–4.94)
Class of antidepressant										
SSRIs	8,268; 1.78 (1.66–1.90)	9,688; 1.98 (1.85–2.11)	11,192; 2.16 (2.02–2.29)	12,719; 2.34 (2.20–2.48)	14,342; 2.48 (2.33–2.64)	16,398; 2.67 (2.51–2.83)	18,173; 2.82 (2.65–2.99)	20,708; 3.08 (2.89–3.28)	22,789; 3.29 (3.09–3.49)	25,261; 3.74 (3.51–3.97)
SNRIs	2,751; 0.59 (0.54–0.64)	3,323; 0.68 (0.62–0.73)	3,717; 0.72 (0.66–0.78)	3,748; 0.69 (0.64–0.74)	3,837; 0.66 (0.62–0.71)	3,965; 0.65 (0.60–0.69)	3,889; 0.60 (0.56–0.65)	4,024; 0.60 (0.56–0.64)	4,077; 0.59 (0.55–0.63)	3,988; 0.59 (0.55–0.63)
NaSSAs	743; 0.16 (0.14–0.18)	871; 0.18 (0.16–0.20)	1,068; 0.21 (0.18–0.23)	1,201; 0.22 (0.20–0.25)	1,452; 0.25 (0.23–0.28)	1,667; 0.27 (0.24–0.30)	1,889; 0.29 (0.26–0.32)	2,155; 0.32 (0.29–0.36)	2,380; 0.34 (0.31–0.38)	2,559; 0.38 (0.34–0.41)
TCAs	1,110; 0.24 (0.21–0.27)	1,263; 0.26 (0.23–0.28)	1,461; 0.28 (0.25–0.31)	1,526; 0.28 (0.26–0.31)	1,637; 0.28 (0.26–0.31)	1,841; 0.30 (0.27–0.33)	1,874; 0.29 (0.27–0.32)	2,109; 0.31 (0.29–0.34)	2,076; 0.30 (0.28–0.32)	2,177; 0.32 (0.29–0.35)
MAOIs	6; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	6; 0.00 (0.00–0.00)	10; 0.00 (0.00–0.00)	9; 0.00 (0.00–0.00)	10; 0.00 (0.00–0.00)	13; 0.00 (0.00–0.00)	15; 0.00 (0.00–0.00)	12; 0.00 (0.00–0.00)	7; 0.00 (0.00–0.00)
Other*	114; 0.02 (0.02–0.03)	136; 0.03 (0.02–0.03)	213; 0.04 (0.03–0.05)	358; 0.07 (0.05–0.08)	470; 0.08 (0.07–0.09)	528; 0.09 (0.07–0.10)	626; 0.10 (0.08–0.11)	721; 0.11 (0.09–0.12)	877; 0.13 (0.11–0.14)	888; 0.13 (0.11–0.15)

* Other antidepressants include agomelatine, moclobemide, reboxetine, vortioxetine. Cells with values less than five are suppressed including complementary suppression of other cells.

MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA= tricyclic antidepressant.

FIGURE 35. ANNUAL ANTIDEPRESSANT PRESCRIBING RATES FOR PATIENTS AGED <25 YEARS, 2011–2020

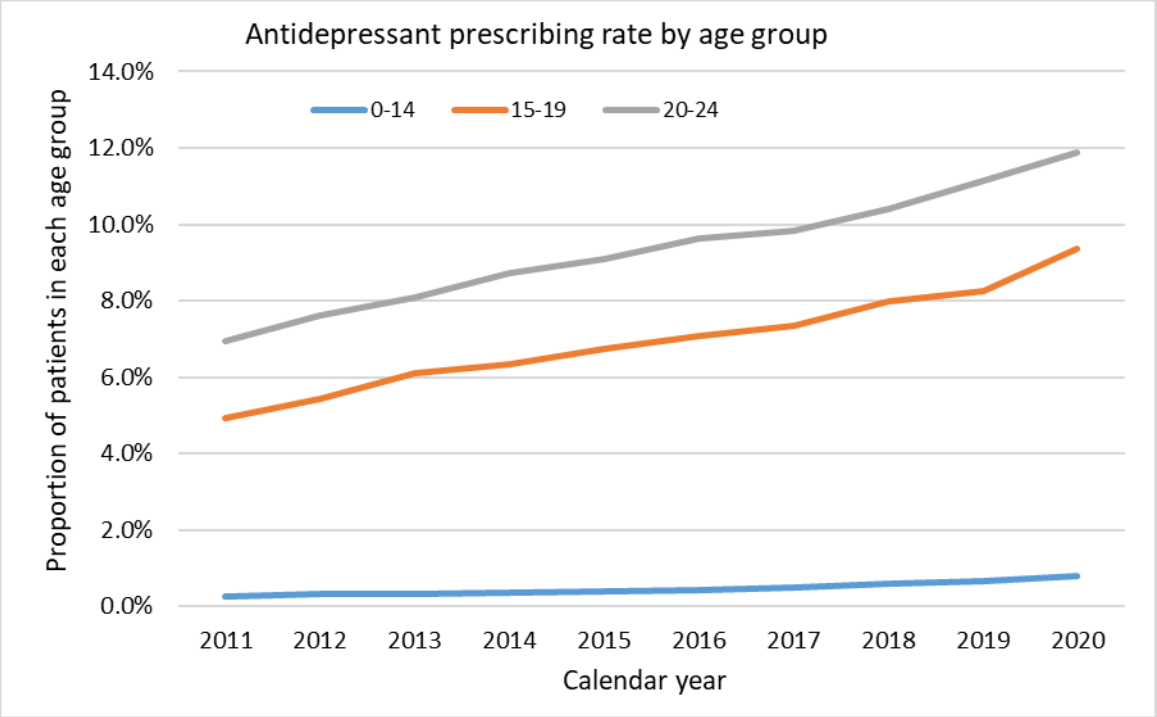


* Other antidepressants include agomelatine, moclobemide, reboxetine, vortioxetine.
MAOI = monoamine oxidase inhibitor; NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA= tricyclic antidepressant.

Annual antidepressant prescribing rates stratified by demographic characteristics

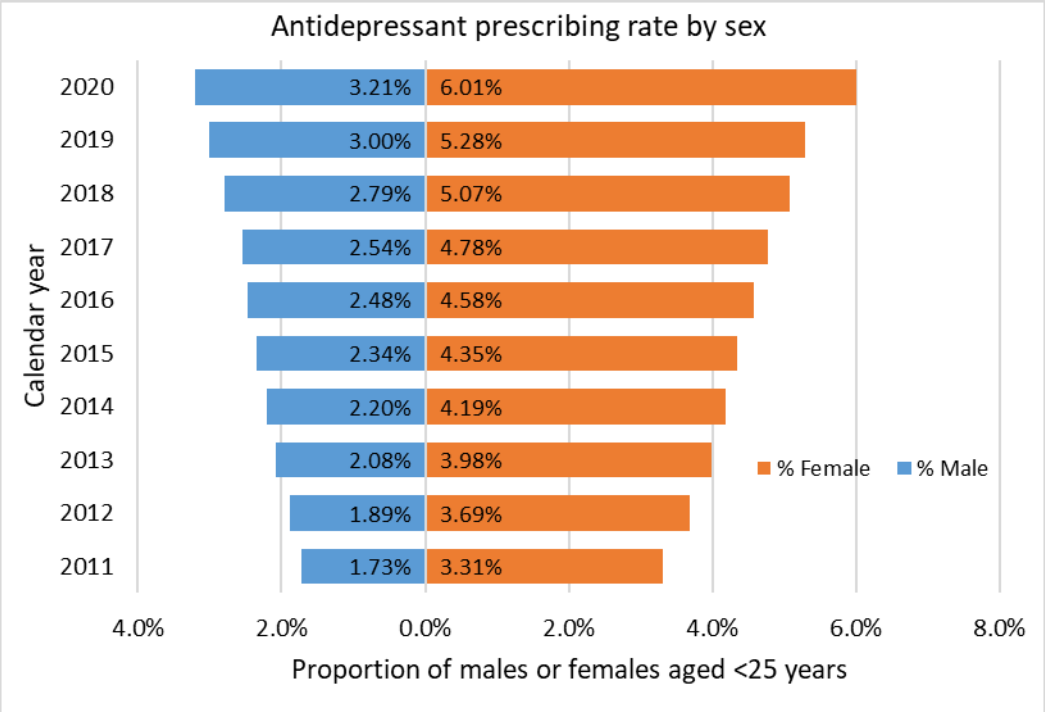
The annual prescribing rates of antidepressants for patients aged less than 25 years stratified by age and sex are presented in Table 26. Like the prevalence of depression and anxiety, the prescribing rates for antidepressants increased with age and each year during the 10-year study (Figure 36). The prescribing rate in patients aged 0–14 years increased from 0.27% in 2011 to 0.79% in 2020, and, similarly, increased for those aged 15–19 years from 4.92% to 9.37%, and from 6.96% to 11.89% among those aged 20–24 years.

FIGURE 36. ANNUAL ANTIDEPRESSANT PRESCRIBING RATES FOR PATIENTS AGED <25 YEARS BY AGE GROUP, 2011–2020



Consistent with PBS data,[5] antidepressant prescribing was greater for females than males but increased over the study period for both sexes (Figure 37). The antidepressant prescribing rate for both males and females nearly doubled across the 10-year period, rising from 1.73% and 3.31% in 2011 to 3.21% and 6.01% in 2020 for males and females, respectively.

FIGURE 37. ANNUAL ANTIDEPRESSANT PRESCRIBING RATES FOR PATIENTS AGED <25 YEARS BY SEX, 2011–2020



Age-specific prescribing rates also increased over the study period for males and females separately (Figure 38).

Similar results were observed for the most commonly prescribed class of antidepressants, SSRIs (Table 26).

FIGURE 38. AGE-SPECIFIC ANNUAL ANTIDEPRESSANT PRESCRIBING RATES FOR MALES AND FEMALES AGED <25 YEARS, 2011–2020

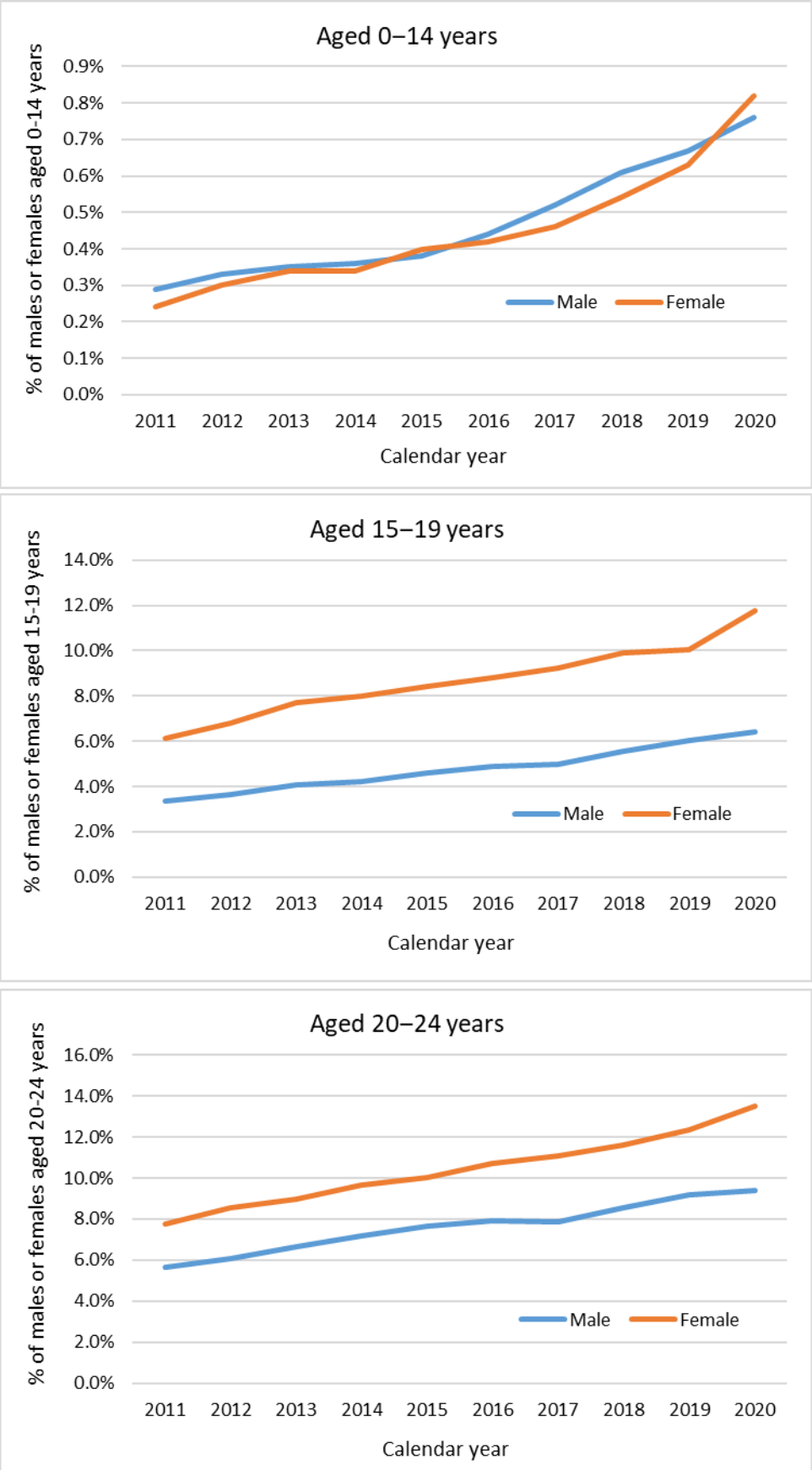


Table 26: ANNUAL ANTIDEPRESSANT PRESCRIBING RATES IN PATIENTS AGED <25 YEARS STRATIFIED BY SEX, AGE GROUP AND AGE-SEX, 2011–2020

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Patients with an antidepressant medicine recorded in each calendar year										
Any antidepressant										
Sex										
Male	3,786 (1.73%)	4,384 (1.89%)	5,102 (2.08%)	5,669 (2.20%)	6,428 (2.34%)	7,268 (2.48%)	7,798 (2.54%)	8,939 (2.79%)	9,976 (3.00%)	10,408 (3.21%)
Female	8,125 (3.31%)	9,525 (3.69%)	10,899 (3.98%)	11,999 (4.19%)	13,178 (4.35%)	14,746 (4.58%)	16,115 (4.78%)	17,793 (5.07%)	19,050 (5.28%)	21,097 (6.01%)
Age group (years)										
0–14	741 (0.27%)	918 (0.31%)	1,072 (0.34%)	1,152 (0.35%)	1,365 (0.39%)	1,607 (0.43%)	1,912 (0.49%)	2,362 (0.58%)	2,768 (0.65%)	3,237 (0.79%)
15–19	4,217 (4.92%)	4,861 (5.43%)	5,715 (6.11%)	6,149 (6.33%)	6,896 (6.73%)	7,658 (7.07%)	8,358 (7.34%)	9,373 (7.98%)	9,920 (8.27%)	11,157 (9.37%)
20–24	6,953 (6.96%)	8,133 (7.61%)	9,217 (8.10%)	10,371 (8.72%)	11,353 (9.10%)	12,758 (9.62%)	13,662 (9.83%)	15,017 (10.42%)	16,363 (11.13%)	17,140 (11.89%)
Males stratified by age group (years)										
0–14	418 (0.29%)	494 (0.33%)	561 (0.35%)	613 (0.36%)	693 (0.38%)	858 (0.44%)	1,047 (0.52%)	1,289 (0.61%)	1,475 (0.67%)	1,616 (0.76%)
15–19	1,241 (3.34%)	1,420 (3.63%)	1,651 (4.05%)	1,793 (4.23%)	2,065 (4.59%)	2,339 (4.90%)	2,500 (4.97%)	2,874 (5.55%)	3,222 (6.03%)	3,439 (6.41%)
20–24	2,127 (5.64%)	2,470 (6.06%)	2,890 (6.67%)	3,263 (7.20%)	3,670 (7.63%)	4,071 (7.93%)	4,251 (7.89%)	4,776 (8.54%)	5,279 (9.18%)	5,353 (9.41%)
Females stratified by age group (years)										
0–14	323 (0.24%)	423 (0.30%)	511 (0.34%)	539 (0.34%)	669 (0.40%)	748 (0.42%)	861 (0.46%)	1,073 (0.54%)	1,291 (0.63%)	1,619 (0.82%)
15–19	2,976 (6.14%)	3,439 (6.81%)	4,061 (7.69%)	4,355 (7.97%)	4,831 (8.40%)	5,316 (8.79%)	5,853 (9.21%)	6,488 (9.89%)	6,689 (10.06%)	7,704 (11.78%)
20–24	4,826 (7.76%)	5,663 (8.57%)	6,327 (8.99%)	7,105 (9.66%)	7,678 (10.01%)	8,682 (10.69%)	9,401 (11.06%)	10,232 (11.61%)	11,070 (12.37%)	11,774 (13.50%)
Class of antidepressant										
SSRIs										
Sex										
Male	2,578 (1.18%)	2,945 (1.27%)	3,428 (1.40%)	3,991 (1.55%)	4,596 (1.67%)	5,277 (1.80%)	5,811 (1.89%)	6,823 (2.13%)	7,686 (2.31%)	8,242 (2.54%)
Female	5,690 (2.32%)	6,741 (2.61%)	7,762 (2.84%)	8,726 (3.05%)	9,739 (3.21%)	11,115 (3.45%)	12,348 (3.66%)	13,870 (3.95%)	15,083 (4.18%)	16,998 (4.84%)
Age group (years)										
0–14	537 (0.19%)	689 (0.23%)	809 (0.26%)	905 (0.28%)	1,133 (0.32%)	1,324 (0.35%)	1,658 (0.42%)	2,100 (0.51%)	2,503 (0.59%)	2,955 (0.72%)

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
15–19	3,215 (3.75%)	3,704 (4.13%)	4,428 (4.73%)	4,865 (5.01%)	5,532 (5.40%)	6,282 (5.80%)	6,989 (6.14%)	7,889 (6.72%)	8,475 (7.06%)	9,715 (8.16%)
20–24	4,516 (4.52%)	5,295 (4.96%)	5,955 (5.24%)	6,949 (5.84%)	7,677 (6.15%)	8,792 (6.63%)	9,526 (6.86%)	10,719 (7.44%)	11,811 (8.03%)	12,591 (8.74%)
Males stratified by age group (years)										
0–14	305 (0.21%)	363 (0.24%)	426 (0.26%)	484 (0.29%)	571 (0.31%)	709 (0.37%)	896 (0.44%)	1,130 (0.53%)	1,330 (0.60%)	1,476 (0.69%)
15–19	933 (2.51%)	1,052 (2.69%)	1,233 (3.03%)	1,408 (3.32%)	1,611 (3.58%)	1,885 (3.95%)	2,047 (4.07%)	2,399 (4.63%)	2,725 (5.10%)	2,972 (5.54%)
20–24	1,340 (3.55%)	1,530 (3.75%)	1,769 (4.08%)	2,099 (4.63%)	2,414 (5.02%)	2,683 (5.23%)	2,868 (5.32%)	3,294 (5.89%)	3,631 (6.31%)	3,794 (6.67%)
Females stratified by age group (years)										
0–14	232 (0.17%)	325 (0.23%)	383 (0.25%)	421 (0.27%)	559 (0.33%)	614 (0.34%)	758 (0.40%)	970 (0.49%)	1,171 (0.57%)	1,477 (0.74%)
15–19	2,282 (4.70%)	2,651 (5.25%)	3,193 (6.05%)	3,456 (6.32%)	3,921 (6.82%)	4,395 (7.27%)	4,940 (7.78%)	5,482 (8.36%)	5,743 (8.63%)	6,733 (10.30%)
20–24	3,176 (5.11%)	3,765 (5.70%)	4,186 (5.95%)	4,849 (6.59%)	5,259 (6.86%)	6,106 (7.52%)	6,650 (7.82%)	7,418 (8.42%)	8,169 (9.13%)	8,788 (10.08%)
SNRIs										
Sex										
Male	806 (0.37%)	971 (0.42%)	1,142 (0.47%)	1,114 (0.43%)	1,188 (0.43%)	1,222 (0.42%)	1,141 (0.37%)	1,222 (0.38%)	1,329 (0.40%)	1,198 (0.37%)
Female	1,945 (0.79%)	2,351 (0.91%)	2,574 (0.94%)	2,633 (0.92%)	2,649 (0.87%)	2,741 (0.85%)	2,745 (0.81%)	2,799 (0.80%)	2,744 (0.76%)	2,784 (0.79%)
Age group (years)										
0–14	22 (0.01%)	36 (0.01%)	51 (0.02%)	35 (0.01%)	40 (0.01%)	33 (0.01%)	31 (0.01%)	24 (0.01%)	36 (0.01%)	62 (0.02%)
15–19	764 (0.89%)	926 (1.03%)	1,081 (1.16%)	977 (1.01%)	996 (0.97%)	969 (0.89%)	912 (0.80%)	991 (0.84%)	950 (0.79%)	951 (0.80%)
20–24	1,965 (1.97%)	2,361 (2.21%)	2,585 (2.27%)	2,736 (2.30%)	2,801 (2.24%)	2,963 (2.23%)	2,946 (2.12%)	3,009 (2.09%)	3,091 (2.10%)	2,975 (2.06%)
Males stratified by age group (years)										
0–14	7 (0.00%)	9 (0.01%)	19 (0.01%)	9 (0.01%)	19 (0.01%)	15 (0.01%)	11 (0.01%)	11 (0.01%)	14 (0.01%)	26 (0.01%)
15–19	206 (0.55%)	238 (0.61%)	316 (0.78%)	262 (0.62%)	278 (0.62%)	283 (0.59%)	253 (0.50%)	297 (0.57%)	312 (0.58%)	264 (0.49%)
20–24	593 (1.57%)	724 (1.78%)	807 (1.86%)	843 (1.86%)	891 (1.85%)	924 (1.80%)	877 (1.63%)	914 (1.63%)	1,003 (1.74%)	908 (1.60%)
Females stratified by age group (years)										
0–14	15 (0.01%)	27 (0.02%)	32 (0.02%)	26 (0.02%)	21 (0.01%)	18 (0.01%)	20 (0.01%)	13 (0.01%)	22 (0.01%)	36 (0.02%)
15–19	558 (1.15%)	687 (1.36%)	764 (1.45%)	715 (1.31%)	718 (1.25%)	685 (1.13%)	658 (1.04%)	692 (1.06%)	637 (0.96%)	684 (1.05%)
20–24	1,372 (2.21%)	1,637 (2.48%)	1,778 (2.53%)	1,892 (2.57%)	1,910 (2.49%)	2,038 (2.51%)	2,067 (2.43%)	2,094 (2.38%)	2,085 (2.33%)	2,064 (2.37%)

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
NaSSA										
Sex										
Male	308 (0.14%)	372 (0.16%)	483 (0.20%)	527 (0.20%)	652 (0.24%)	759 (0.26%)	830 (0.27%)	1,007 (0.31%)	1,071 (0.32%)	1,094 (0.34%)
Female	435 (0.18%)	499 (0.19%)	585 (0.21%)	672 (0.23%)	799 (0.26%)	906 (0.28%)	1,057 (0.31%)	1,146 (0.33%)	1,306 (0.36%)	1,462 (0.42%)
Age group (years)										
0–14	20 (0.01%)	16 (0.01%)	18 (0.01%)	16 (0.00%)	33 (0.01%)	33 (0.01%)	24 (0.01%)	41 (0.01%)	55 (0.01%)	70 (0.02%)
15–19	210 (0.25%)	286 (0.32%)	322 (0.34%)	368 (0.38%)	449 (0.44%)	466 (0.43%)	564 (0.50%)	619 (0.53%)	660 (0.55%)	756 (0.63%)
20–24	513 (0.51%)	569 (0.53%)	728 (0.64%)	817 (0.69%)	970 (0.78%)	1,168 (0.88%)	1,301 (0.94%)	1,495 (1.04%)	1,665 (1.13%)	1,733 (1.20%)
Males stratified by age group (years)										
0–14	7 (0.00%)	8 (0.01%)	8 (0.00%)	<5 (0.00%)	10 (0.01%)	15 (0.01%)	14 (0.01%)	18 (0.01%)	24 (0.01%)	26 (0.01%)
15–19	71 (0.19%)	117 (0.30%)	121 (0.30%)	<150 (0.34%)	187 (0.42%)	173 (0.36%)	222 (0.44%)	244 (0.47%)	252 (0.47%)	298 (0.56%)
20–24	230 (0.61%)	247 (0.61%)	354 (0.82%)	377 (0.83%)	455 (0.95%)	571 (1.11%)	594 (1.10%)	745 (1.33%)	795 (1.38%)	770 (1.35%)
Females stratified by age group (years)										
0–14	13 (0.01%)	8 (0.01%)	10 (0.01%)	12 (0.01%)	23 (0.01%)	18 (0.01%)	10 (0.01%)	23 (0.01%)	31 (0.02%)	44 (0.02%)
15–19	139 (0.29%)	169 (0.33%)	201 (0.38%)	221 (0.40%)	262 (0.46%)	292 (0.48%)	341 (0.54%)	374 (0.57%)	407 (0.61%)	458 (0.70%)
20–24	283 (0.46%)	322 (0.49%)	374 (0.53%)	439 (0.60%)	514 (0.67%)	596 (0.73%)	706 (0.83%)	749 (0.85%)	868 (0.97%)	960 (1.10%)
TCAs										
Sex										
Male	376 (0.17%)	457 (0.20%)	486 (0.20%)	503 (0.20%)	520 (0.19%)	587 (0.20%)	613 (0.20%)	642 (0.20%)	622 (0.19%)	635 (0.20%)
Female	734 (0.30%)	806 (0.31%)	975 (0.36%)	1,023 (0.36%)	1,117 (0.37%)	1,253 (0.39%)	1,260 (0.37%)	1,467 (0.42%)	1,454 (0.40%)	1,539 (0.44%)
Age group (years)										
0–14	185 (0.07%)	209 (0.07%)	238 (0.08%)	226 (0.07%)	198 (0.06%)	241 (0.06%)	222 (0.06%)	238 (0.06%)	219 (0.05%)	209 (0.05%)
15–19	365 (0.43%)	371 (0.41%)	437 (0.47%)	445 (0.46%)	502 (0.49%)	533 (0.49%)	528 (0.46%)	618 (0.53%)	530 (0.44%)	583 (0.49%)
20–24	560 (0.56%)	683 (0.64%)	786 (0.69%)	855 (0.72%)	937 (0.75%)	1,067 (0.80%)	1,124 (0.81%)	1,253 (0.87%)	1,327 (0.90%)	1,385 (0.96%)
Males stratified by age group (years)										
0–14	106 (0.07%)	126 (0.08%)	126 (0.08%)	123 (0.07%)	110 (0.06%)	131 (0.07%)	136 (0.07%)	147 (0.07%)	123 (0.06%)	110 (0.05%)
15–19	111 (0.30%)	122 (0.31%)	134 (0.33%)	116 (0.27%)	153 (0.34%)	152 (0.32%)	139 (0.28%)	170 (0.33%)	132 (0.25%)	147 (0.27%)

	Number and proportion (%) of patients for each calendar year									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
20–24	159 (0.42%)	209 (0.51%)	226 (0.52%)	264 (0.58%)	257 (0.53%)	304 (0.59%)	338 (0.63%)	325 (0.58%)	367 (0.64%)	378 (0.66%)
Females stratified by age group (years)										
0–14	79 (0.06%)	83 (0.06%)	112 (0.07%)	103 (0.07%)	88 (0.05%)	110 (0.06%)	86 (0.05%)	91 (0.05%)	96 (0.05%)	99 (0.05%)
15–19	254 (0.52%)	249 (0.49%)	303 (0.57%)	329 (0.60%)	349 (0.61%)	381 (0.63%)	389 (0.61%)	448 (0.68%)	398 (0.60%)	434 (0.66%)
20–24	401 (0.64%)	474 (0.72%)	560 (0.80%)	591 (0.80%)	680 (0.89%)	762 (0.94%)	785 (0.92%)	928 (1.05%)	960 (1.07%)	1,006 (1.15%)
Other*										
Sex										
Male	26 (0.01%)	39 (0.02%)	65 (0.03%)	111 (0.04%)	146 (0.05%)	165 (0.06%)	187 (0.06%)	220 (0.07%)	253 (0.08%)	262 (0.08%)
Female	88 (0.04%)	97 (0.04%)	148 (0.05%)	247 (0.09%)	323 (0.11%)	363 (0.11%)	437 (0.13%)	500 (0.14%)	623 (0.17%)	626 (0.18%)
Age group (years)										
0–14	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	5 (0.00%)	10 (0.00%)	7 (0.00%)	5 (0.00%)	14 (0.00%)	13 (0.00%)	15 (0.00%)
15–19	<35 (0.04%)	<45 (0.05%)	<75 (0.08%)	107 (0.11%)	138 (0.13%)	159 (0.15%)	165 (0.14%)	190 (0.16%)	207 (0.17%)	206 (0.17%)
20–24	81 (0.08%)	90 (0.08%)	137 (0.12%)	246 (0.21%)	322 (0.26%)	362 (0.27%)	456 (0.33%)	517 (0.36%)	657 (0.45%)	667 (0.46%)
Males stratified by age group (years)										
0–14	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)
15–19	<5 (0.01%)	<20 (0.04%)	<20 (0.05%)	<35 (0.07%)	<50 (0.10%)	<60 (0.12%)	<60 (0.11%)	<55 (0.10%)	<55 (0.10%)	<60 (0.11%)
20–24	21 (0.06%)	23 (0.06%)	45 (0.10%)	78 (0.17%)	98 (0.20%)	106 (0.21%)	128 (0.24%)	166 (0.30%)	198 (0.34%)	201 (0.35%)
Females stratified by age group (years)										
0–14	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	6 (0.00%)	5 (0.00%)	<5 (0.00%)	10 (0.01%)	10 (0.00%)	11 (0.01%)
15–19	<30 (0.06%)	<30 (0.06%)	<55 (0.10%)	<80 (0.14%)	93 (0.16%)	102 (0.17%)	<110 (0.17%)	139 (0.21%)	154 (0.23%)	149 (0.23%)
20–24	60 (0.10%)	67 (0.10%)	92 (0.13%)	168 (0.23%)	224 (0.29%)	256 (0.32%)	327 (0.38%)	351 (0.40%)	459 (0.51%)	466 (0.53%)

*Other antidepressants include agomelatine, moclobemide, reboxetine, vortioxetine. Data for MAOIs (monoamine oxidase inhibitors) are not included because of the very low numbers recorded.

Cells with values less than five are suppressed including complementary suppression of other cells.

NaSSA = noradrenergic and specific serotonergic antidepressant; SNRI = serotonin noradrenaline reuptake inhibitor; SSRI = selective serotonin reuptake inhibitor; TCA= tricyclic antidepressant.

Comorbidity/multimorbidity of mental health and relevant conditions

Comorbidity of mental health and related conditions was assessed among patients aged less than 25 years in the 10-year period. Patients were categorised as having none, 1, 2, 3, or ≥4 of the following specified conditions: depression, anxiety, bipolar disorder, schizophrenia/schizoaffective disorders, substance abuse, ASD, ADHD, gender dysphoria and eating disorders.

Note that patients who were identified as having none of the above listed conditions might have other mental health and related conditions not included in this analysis.

Tables 27 and 28 show the proportion of patients aged less than 25 years who had none, one and multiple (2, 3, ≥4) selected conditions recorded in each calendar year of interest or ever recorded up to the end of each calendar year of interest, over the 10-year study. Comorbidity of mental illnesses has been reported to be common. Findings from the Australian Child and Adolescent Survey of Mental Health and Wellbeing, conducted in 2013–14, indicate that 4.2% of the children or adolescents aged 4–17 years experienced two or more mental health disorders at some time in the 12 months preceding the survey.[2] The proportion of patients with multiple specified mental health and related conditions (multimorbidity) recorded each year increased over the 10-year period (Figure 39). Based on current prevalence, the proportion of patients aged less than 25 years with:

- one of the selected conditions recorded doubled from 2.39% in 2011 to 4.98% in 2020
- two of the selected conditions recorded increased 3.5 times, from 0.60% in 2011 to 2.12% in 2020
- three of the selected conditions recorded increased 8.3 times from 0.03% in 2011 to 0.25% in 2020
- at least four of the selected conditions recorded increased from 0.00% in 2011 to 0.03% in 2020.

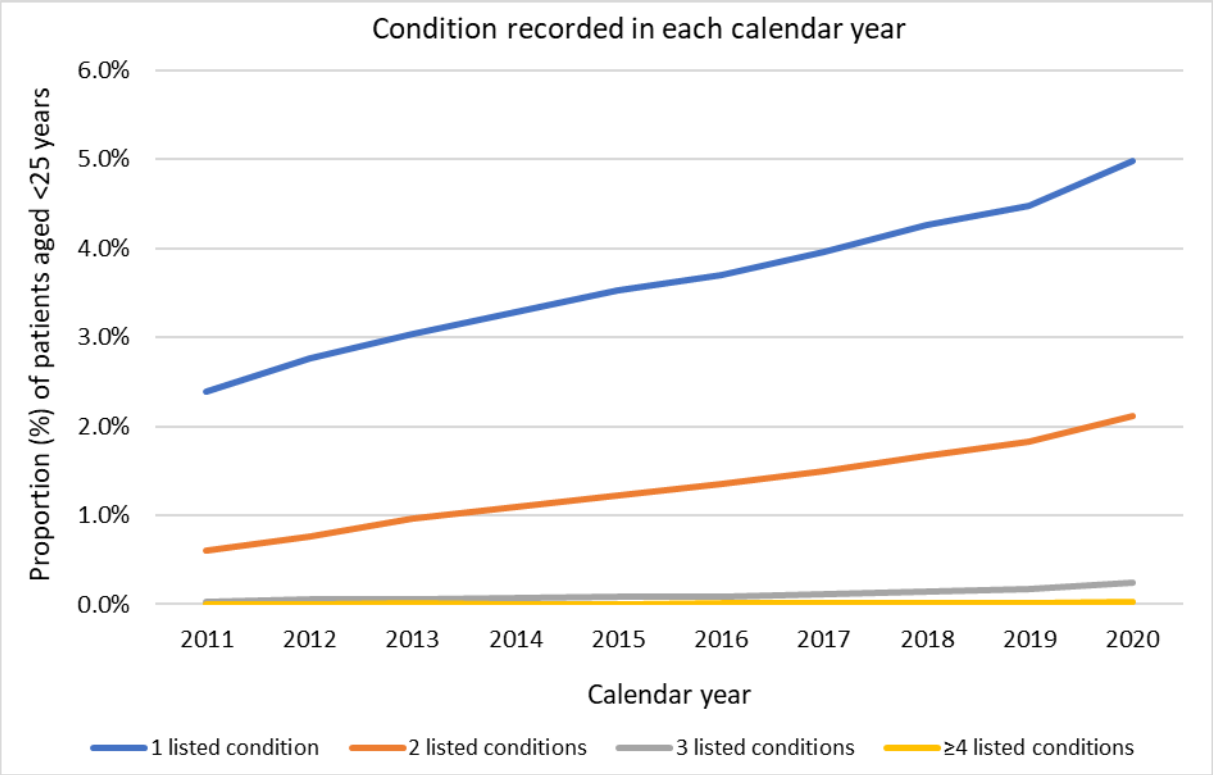
Findings were similar in analyses that were stratified by sex and age group (Table 27).

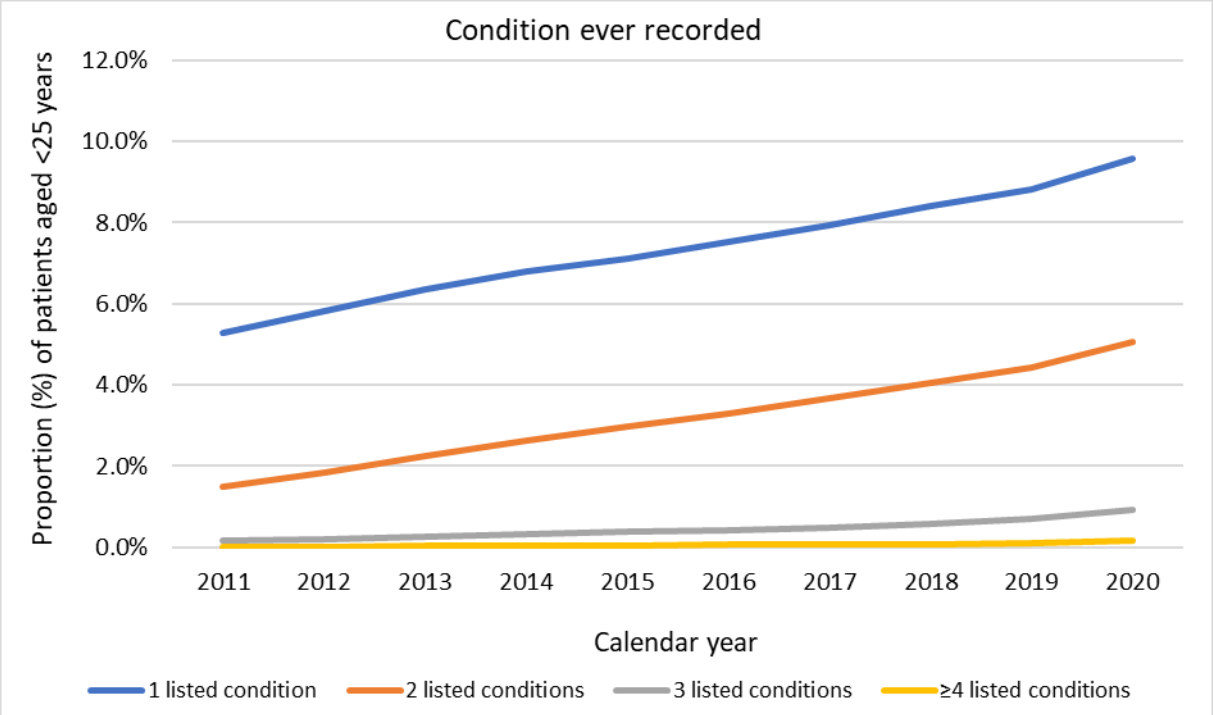
Based on ever prevalence, the proportion of patients aged <25 years with:

- one of the selected conditions ever recorded increased from 5.27% in 2011 to 9.57% in 2020
- two of the selected conditions ever recorded increased from 1.50% in 2011 to 5.06% in 2020
- three of the selected conditions ever recorded increased from 0.17% in 2011 to 0.91% in 2020
- at least four of the selected conditions ever recorded increased from 0.02% in 2011 to 0.15% in 2020.

Similar findings were observed in analyses that were stratified by sex and age group (Table 28).

FIGURE 39. PROPORTION OF PATIENTS AGED <25 YEARS WITH 1, 2, 3 AND ≥4 SELECTED CONDITIONS* RECORDED EACH CALENDAR YEAR (CURRENT) AND ANY TIME UP TO THE END OF EACH CALENDAR YEAR (EVER), 2011–2020





*Listed conditions include depression, anxiety, bipolar disorder, schizophrenia/schizoaffective disorders, substance abuse, ASD, ADHD, gender dysphoria, eating disorders

Table 27: NUMBER AND PROPORTION OF PATIENTS AGED <25 YEARS WITH 0, 1, 2, 3 AND ≥4 SELECTED CONDITIONS* RECORDED EACH CALENDAR YEAR (CURRENT), 2011–2020

	Number and proportion (%) of patients with a condition recorded in each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Patients with 0, 1, 2, 3 and at least 4 listed conditions* recorded in each calendar year										
No listed condition										
Overall	450,449 (96.98%)	472,480 (96.42%)	497,898 (95.94%)	519,482 (95.54%)	549,840 (95.18%)	582,715 (94.85%)	608,456 (94.41%)	631,083 (93.91%)	648,193 (93.50%)	625,544 (92.61%)
Sex										
Male	213,276 (97.41%)	224,593 (96.97%)	236,880 (96.57%)	247,665 (96.15%)	263,063 (95.77%)	279,332 (95.48%)	291,973 (95.05%)	303,068 (94.53%)	312,619 (94.10%)	302,920 (93.43%)
Female	237,152 (96.60%)	247,862 (95.93%)	260,995 (95.37%)	271,793 (94.98%)	286,751 (94.65%)	303,347 (94.27%)	316,452 (93.84%)	327,959 (93.36%)	335,509 (92.95%)	322,485 (91.86%)
Age group (years)										
0–14	275,657 (98.85%)	289,380 (98.56%)	306,708 (98.39%)	321,667 (98.14%)	343,042 (97.90%)	364,998 (97.72%)	381,307 (97.37%)	398,105 (96.98%)	412,111 (96.70%)	396,069 (96.08%)
15–19	80,964 (94.50%)	83,799 (93.55%)	86,427 (92.41%)	89,363 (92.05%)	93,670 (91.38%)	98,376 (90.86%)	102,626 (90.11%)	104,929 (89.37%)	106,528 (88.76%)	103,746 (87.11%)
20–24	93,828 (93.89%)	99,301 (92.95%)	104,763 (92.12%)	108,452 (91.20%)	113,128 (90.66%)	119,341 (90.01%)	124,523 (89.62%)	128,049 (88.86%)	129,554 (88.10%)	125,729 (87.23%)
Males stratified by age group (years)										
0–14	141,908 (98.52%)	149,038 (98.21%)	158,093 (98.07%)	165,979 (97.74%)	177,068 (97.48%)	188,120 (97.25%)	196,454 (96.81%)	205,231 (96.41%)	212,558 (96.09%)	203,990 (95.45%)
15–19	35,607 (95.80%)	37,170 (95.13%)	38,437 (94.37%)	39,881 (94.01%)	41,967 (93.33%)	44,434 (93.00%)	46,529 (92.41%)	47,420 (91.54%)	48,590 (90.88%)	48,295 (90.02%)
20–24	35,761 (94.76%)	38,385 (94.13%)	40,350 (93.08%)	41,805 (92.21%)	44,028 (91.56%)	46,778 (91.12%)	48,990 (90.90%)	50,417 (90.14%)	51,471 (89.46%)	50,635 (89.05%)
Females stratified by age group (years)										
0–14	133,734 (99.20%)	140,328 (98.94%)	148,601 (98.73%)	155,676 (98.57%)	165,963 (98.36%)	176,863 (98.23%)	184,838 (97.97%)	192,857 (97.61%)	199,529 (97.35%)	192,025 (96.75%)
15–19	45,352 (93.50%)	46,622 (92.33%)	47,985 (90.90%)	49,476 (90.53%)	51,697 (89.87%)	53,931 (89.17%)	56,086 (88.29%)	57,488 (87.68%)	57,921 (87.08%)	55,418 (84.75%)
20–24	58,066 (93.37%)	60,912 (92.22%)	64,409 (91.53%)	66,641 (90.59%)	69,091 (90.10%)	72,553 (89.31%)	75,528 (88.82%)	77,614 (88.06%)	78,059 (87.24%)	75,042 (86.06%)
1 listed condition (calendar year)										
Overall	11,091 (2.39%)	13,538 (2.76%)	15,795 (3.04%)	17,855 (3.28%)	20,310 (3.52%)	22,757 (3.70%)	25,545 (3.96%)	28,623 (4.26%)	31,085 (4.48%)	33,668 (4.98%)

	Number and proportion (%) of patients with a condition recorded in each calendar year									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Sex										
Male	4,676 (2.14%)	5,720 (2.47%)	6,697 (2.73%)	7,767 (3.02%)	9,079 (3.31%)	10,191 (3.48%)	11,520 (3.75%)	13,065 (4.07%)	14,469 (4.36%)	15,500 (4.78%)
Female	6,415 (2.61%)	7,813 (3.02%)	9,096 (3.32%)	10,083 (3.52%)	11,226 (3.71%)	12,559 (3.90%)	14,011 (4.15%)	15,544 (4.42%)	16,602 (4.60%)	18,139 (5.17%)
Age group (years)										
0–14	2,902 (1.04%)	3,777 (1.29%)	4,439 (1.42%)	5,359 (1.64%)	6,442 (1.84%)	7,439 (1.99%)	8,871 (2.27%)	10,402 (2.53%)	11,768 (2.76%)	13,266 (3.22%)
15–19	3,611 (4.21%)	4,288 (4.79%)	5,110 (5.46%)	5,308 (5.47%)	6,100 (5.95%)	6,659 (6.15%)	7,553 (6.63%)	8,215 (7.00%)	8,657 (7.21%)	9,552 (8.02%)
20–24	4,578 (4.58%)	5,473 (5.12%)	6,246 (5.49%)	7,188 (6.04%)	7,768 (6.23%)	8,659 (6.53%)	9,121 (6.56%)	10,006 (6.94%)	10,660 (7.25%)	10,850 (7.53%)
Males stratified by age group (years)										
0–14	1,947 (1.35%)	2,464 (1.62%)	2,804 (1.74%)	3,400 (2.00%)	4,053 (2.23%)	4,720 (2.44%)	5,618 (2.77%)	6,486 (3.05%)	7,271 (3.29%)	8,072 (3.78%)
15–19	1,245 (3.35%)	1,471 (3.76%)	1,775 (4.36%)	1,876 (4.42%)	2,201 (4.89%)	2,392 (5.01%)	2,704 (5.37%)	3,083 (5.95%)	3,357 (6.28%)	3,617 (6.74%)
20–24	1,484 (3.93%)	1,785 (4.38%)	2,118 (4.89%)	2,491 (5.49%)	2,825 (5.87%)	3,079 (6.00%)	3,198 (5.93%)	3,496 (6.25%)	3,841 (6.68%)	3,811 (6.70%)
Females stratified by age group (years)										
0–14	955 (0.71%)	1,311 (0.92%)	1,635 (1.09%)	1,957 (1.24%)	2,388 (1.42%)	2,718 (1.51%)	3,251 (1.72%)	3,916 (1.98%)	4,495 (2.19%)	5,187 (2.61%)
15–19	2,366 (4.88%)	2,814 (5.57%)	3,334 (6.32%)	3,432 (6.28%)	3,897 (6.77%)	4,266 (7.05%)	4,843 (7.62%)	5,124 (7.81%)	5,290 (7.95%)	5,927 (9.06%)
20–24	3,094 (4.98%)	3,688 (5.58%)	4,127 (5.86%)	4,694 (6.38%)	4,941 (6.44%)	5,575 (6.86%)	5,917 (6.96%)	6,504 (7.38%)	6,817 (7.62%)	7,025 (8.06%)
2 listed conditions (calendar year)										
Overall	2,771 (0.60%)	3,745 (0.76%)	4,965 (0.96%)	5,996 (1.10%)	7,045 (1.22%)	8,297 (1.35%)	9,625 (1.49%)	11,242 (1.67%)	12,693 (1.83%)	14,331 (2.12%)
Sex										
Male	934 (0.43%)	1,203 (0.52%)	1,576 (0.64%)	1,966 (0.76%)	2,351 (0.86%)	2,767 (0.95%)	3,306 (1.08%)	4,026 (1.26%)	4,561 (1.37%)	5,017 (1.55%)
Female	1,837 (0.75%)	2,542 (0.98%)	3,387 (1.24%)	4,027 (1.41%)	4,688 (1.55%)	5,528 (1.72%)	6,310 (1.87%)	7,207 (2.05%)	8,118 (2.25%)	9,295 (2.65%)
Age group (years)										
0–14	293 (0.11%)	424 (0.14%)	547 (0.18%)	682 (0.21%)	840 (0.24%)	972 (0.26%)	1,291 (0.33%)	1,737 (0.42%)	2,031 (0.48%)	2,453 (0.60%)
15–19	1,046 (1.22%)	1,400 (1.56%)	1,872 (2.00%)	2,239 (2.31%)	2,557 (2.49%)	3,021 (2.79%)	3,417 (3.00%)	3,898 (3.32%)	4,366 (3.64%)	5,091 (4.27%)
20–24	1,432 (1.43%)	1,921 (1.80%)	2,546 (2.24%)	3,075 (2.59%)	3,648 (2.92%)	4,304 (3.25%)	4,917 (3.54%)	5,607 (3.89%)	6,296 (4.28%)	6,787 (4.71%)
Males stratified by age group (years)										
0–14	175 (0.12%)	238 (0.16%)	293 (0.18%)	393 (0.23%)	474 (0.26%)	531 (0.27%)	758 (0.37%)	1,009 (0.47%)	1,194 (0.54%)	1,376 (0.64%)
15–19	295 (0.79%)	398 (1.02%)	475 (1.17%)	610 (1.44%)	733 (1.63%)	872 (1.82%)	1,005 (2.00%)	1,181 (2.28%)	1,354 (2.53%)	1,499 (2.79%)
20–24	464 (1.23%)	567 (1.39%)	808 (1.86%)	963 (2.12%)	1,144 (2.38%)	1,364 (2.66%)	1,543 (2.86%)	1,836 (3.28%)	2,013 (3.50%)	2,142 (3.77%)

	Number and proportion (%) of patients with a condition recorded in each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Females stratified by age group (years)										
0–14	118 (0.09%)	186 (0.13%)	254 (0.17%)	289 (0.18%)	364 (0.22%)	441 (0.24%)	531 (0.28%)	727 (0.37%)	836 (0.41%)	1,075 (0.54%)
15–19	751 (1.55%)	1,002 (1.98%)	1,395 (2.64%)	1,627 (2.98%)	1,823 (3.17%)	2,148 (3.55%)	2,410 (3.79%)	2,711 (4.13%)	3,008 (4.52%)	3,581 (5.48%)
20–24	968 (1.56%)	1,354 (2.05%)	1,738 (2.47%)	2,111 (2.87%)	2,501 (3.26%)	2,939 (3.62%)	3,369 (3.96%)	3,769 (4.28%)	4,274 (4.78%)	4,639 (5.32%)
3 listed conditions (calendar year)										
Overall	160 (0.03%)	238 (0.05%)	299 (0.06%)	397 (0.07%)	452 (0.08%)	555 (0.09%)	767 (0.12%)	953 (0.14%)	1,162 (0.17%)	1,719 (0.25%)
Sex										
Male	61 (0.03%)	87 (0.04%)	123 (0.05%)	156 (0.06%)	187 (0.07%)	235 (0.08%)	343 (0.11%)	413 (0.13%)	494 (0.15%)	691 (0.21%)
Female	99 (0.04%)	151 (0.06%)	176 (0.06%)	241 (0.08%)	265 (0.09%)	320 (0.10%)	423 (0.13%)	537 (0.15%)	657 (0.18%)	1,024 (0.29%)
Age group (years)										
0–14	18 (0.01%)	26 (0.01%)	35 (0.01%)	52 (0.02%)	58 (0.02%)	88 (0.02%)	139 (0.04%)	224 (0.05%)	263 (0.06%)	412 (0.10%)
15–19	55 (0.06%)	85 (0.09%)	109 (0.12%)	156 (0.16%)	163 (0.16%)	207 (0.19%)	270 (0.24%)	332 (0.28%)	425 (0.35%)	633 (0.53%)
20–24	87 (0.09%)	127 (0.12%)	155 (0.14%)	189 (0.16%)	231 (0.19%)	260 (0.20%)	358 (0.26%)	397 (0.28%)	474 (0.32%)	674 (0.47%)
Males stratified by age group (years)										
0–14	11 (0.01%)	17 (0.01%)	19 (0.01%)	37 (0.02%)	40 (0.02%)	57 (0.03%)	96 (0.05%)	150 (0.07%)	168 (0.08%)	250 (0.12%)
15–19	22 (0.06%)	30 (0.08%)	37 (0.09%)	48 (0.11%)	62 (0.14%)	76 (0.16%)	96 (0.19%)	103 (0.20%)	145 (0.27%)	208 (0.39%)
20–24	28 (0.07%)	40 (0.10%)	67 (0.15%)	71 (0.16%)	85 (0.18%)	102 (0.20%)	151 (0.28%)	160 (0.29%)	181 (0.31%)	233 (0.41%)
Females stratified by age group (years)										
0–14	7 (0.01%)	9 (0.01%)	16 (0.01%)	15 (0.01%)	18 (0.01%)	31 (0.02%)	43 (0.02%)	74 (0.04%)	94 (0.05%)	162 (0.08%)
15–19	33 (0.07%)	55 (0.11%)	72 (0.14%)	108 (0.20%)	101 (0.18%)	131 (0.22%)	174 (0.27%)	228 (0.35%)	276 (0.41%)	424 (0.65%)
20–24	59 (0.09%)	87 (0.13%)	88 (0.13%)	118 (0.16%)	146 (0.19%)	158 (0.19%)	206 (0.24%)	235 (0.27%)	287 (0.32%)	438 (0.50%)
≥4 listed conditions (calendar year)										
Overall	7 (0.00%)	15 (0.00%)	27 (0.01%)	27 (0.00%)	25 (0.00%)	48 (0.01%)	63 (0.01%)	94 (0.01%)	127 (0.02%)	203 (0.03%)
Sex										
Male	<5 (0.00%)	6 (0.00%)	14 (0.01%)	15 (0.01%)	11 (0.00%)	26 (0.01%)	34 (0.01%)	46 (0.01%)	62 (0.02%)	91 (0.03%)
Female	<5 (0.00%)	9 (0.00%)	13 (0.00%)	11 (0.00%)	14 (0.00%)	21 (0.01%)	28 (0.01%)	46 (0.01%)	63 (0.02%)	111 (0.03%)
Age group (years)										
0–14	0 (0.00%)	0 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	11 (0.00%)	5 (0.00%)	16 (0.00%)	23 (0.01%)	39 (0.01%)

	Number and proportion (%) of patients with a condition recorded in each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
15–19	<5 (0.00%)	6 (0.01%)	<15 (0.01%)	<15 (0.01%)	13 (0.01%)	14 (0.01%)	28 (0.02%)	36 (0.03%)	38 (0.03%)	72 (0.06%)
20–24	<10 (0.01%)	9 (0.01%)	15 (0.01%)	10 (0.01%)	<10 (0.01%)	23 (0.02%)	30 (0.02%)	42 (0.03%)	66 (0.04%)	92 (0.06%)
Males stratified by age group (years)										
0–14	0 (0.00%)	0 (0.00%)	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	6 (0.00%)	5 (0.00%)	8 (0.00%)	12 (0.01%)	20 (0.01%)
15–19	0 (0.00%)	<5 (0.01%)	<10 (0.01%)	<10 (0.02%)	5 (0.01%)	7 (0.01%)	16 (0.03%)	18 (0.03%)	21 (0.04%)	33 (0.06%)
20–24	<5 (0.01%)	<5 (0.00%)	6 (0.01%)	6 (0.01%)	<5 (0.01%)	13 (0.03%)	13 (0.02%)	20 (0.04%)	29 (0.05%)	38 (0.07%)
Females stratified by age group (years)										
0–14	0 (0.00%)	0 (0.00%)	0 (0.00%)	<5 (0.00%)	<5 (0.00%)	5 (0.00%)	0 (0.00%)	8 (0.00%)	10 (0.00%)	19 (0.01%)
15–19	<5 (0.00%)	<5 (0.00%)	<5 (0.01%)	6 (0.01%)	<10 (0.01%)	7 (0.01%)	12 (0.02%)	18 (0.03%)	17 (0.03%)	38 (0.06%)
20–24	<5 (0.00%)	<10 (0.01%)	<10 (0.01%)	<5 (0.00%)	5 (0.01%)	9 (0.01%)	16 (0.02%)	20 (0.02%)	36 (0.04%)	54 (0.06%)

*Listed conditions include depression, anxiety, bipolar disorder, schizophrenia/schizoaffective disorders, substance abuse, ASD, ADHD, gender dysphoria, eating disorders.
Cells with values less than five are suppressed including complementary suppression of other cells.

Table 28: NUMBER AND PROPORTION OF PATIENTS AGED <25 YEARS WITH 0, 1, 2, 3 AND ≥4 SELECTED CONDITIONS* RECORDED AT ANY TIME UP TO THE END OF EACH CALENDAR YEAR (EVER), 2011–2020

	Number and proportion (%) of patients with a condition ever recorded up to the end of each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Patients with 0, 1, 2, 3 and at least 4 listed conditions* ever recorded in each calendar year										
No listed condition (ever)										
Overall	432,184 (93.05%)	451,367 (92.11%)	472,931 (91.13%)	490,567 (90.22%)	516,962 (89.49%)	544,930 (88.70%)	566,143 (87.85%)	583,845 (86.88%)	595,728 (85.93%)	569,517 (84.31%)
Sex										
Male	204,959 (93.61%)	215,006 (92.83%)	225,762 (92.04%)	234,922 (91.21%)	248,496 (90.46%)	262,383 (89.69%)	273,075 (88.90%)	281,760 (87.88%)	288,786 (86.93%)	277,226 (85.51%)
Female	227,205 (92.55%)	236,337 (91.47%)	247,149 (90.31%)	255,623 (89.33%)	268,445 (88.61%)	282,523 (87.80%)	293,043 (86.90%)	302,047 (85.98%)	306,895 (85.02%)	292,185 (83.23%)
Age group (years)										
0–14	271,134 (97.23%)	284,175 (96.79%)	300,407 (96.37%)	314,419 (95.93%)	334,432 (95.45%)	354,695 (94.96%)	369,734 (94.41%)	384,921 (93.77%)	396,926 (93.13%)	379,700 (92.11%)
15–19	75,884 (88.57%)	77,905 (86.97%)	79,445 (84.94%)	80,985 (83.42%)	84,312 (82.25%)	87,672 (80.97%)	90,678 (79.62%)	91,424 (77.87%)	91,566 (76.30%)	88,011 (73.90%)
20–24	85,166 (85.22%)	89,287 (83.58%)	93,079 (81.85%)	95,163 (80.03%)	98,218 (78.71%)	102,563 (77.36%)	105,731 (76.09%)	107,500 (74.60%)	107,236 (72.92%)	101,806 (70.63%)

	Number and proportion (%) of patients with a condition ever recorded up to the end of each calendar year									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Males stratified by age group (years)										
0–14	138,768 (96.34%)	145,441 (95.84%)	153,813 (95.41%)	161,177 (94.92%)	171,425 (94.38%)	181,467 (93.81%)	189,052 (93.16%)	196,745 (92.42%)	202,939 (91.74%)	193,767 (90.67%)
15–19	33,351 (89.73%)	34,589 (88.52%)	35,494 (87.14%)	36,410 (85.83%)	38,122 (84.78%)	39,918 (83.54%)	41,503 (82.43%)	41,665 (80.43%)	42,097 (78.73%)	41,243 (76.87%)
20–24	32,840 (87.02%)	34,976 (85.77%)	36,455 (84.10%)	37,335 (82.35%)	38,949 (81.00%)	40,998 (79.86%)	42,520 (78.89%)	43,350 (77.51%)	43,750 (76.04%)	42,216 (74.25%)
Females stratified by age group (years)										
0–14	132,352 (98.17%)	138,721 (97.81%)	146,583 (97.39%)	153,232 (97.02%)	162,997 (96.60%)	173,216 (96.20%)	180,668 (95.76%)	188,160 (95.23%)	193,964 (94.63%)	185,880 (93.66%)
15–19	42,528 (87.68%)	43,309 (85.77%)	43,946 (83.25%)	44,569 (81.56%)	46,184 (80.28%)	47,746 (78.94%)	49,168 (77.40%)	49,744 (75.87%)	49,458 (74.36%)	46,751 (71.50%)
20–24	52,325 (84.14%)	54,307 (82.22%)	56,620 (80.46%)	57,822 (78.60%)	59,264 (77.28%)	61,561 (75.78%)	63,207 (74.33%)	64,143 (72.77%)	63,473 (70.94%)	59,554 (68.30%)
1 listed condition (ever)										
Overall	24,478 (5.27%)	28,519 (5.82%)	32,940 (6.35%)	36,925 (6.79%)	41,161 (7.13%)	46,243 (7.53%)	51,082 (7.93%)	56,420 (8.40%)	61,135 (8.82%)	64,644 (9.57%)
Sex										
Male	11,004 (5.03%)	12,848 (5.55%)	14,737 (6.01%)	16,739 (6.50%)	19,036 (6.93%)	21,612 (7.39%)	23,866 (7.77%)	26,623 (8.30%)	29,113 (8.76%)	30,777 (9.49%)
Female	13,473 (5.49%)	15,666 (6.06%)	18,198 (6.65%)	20,180 (7.05%)	22,118 (7.30%)	24,621 (7.65%)	27,203 (8.07%)	29,779 (8.48%)	32,002 (8.87%)	33,834 (9.64%)
Age group (years)										
0–14	6,782 (2.43%)	8,171 (2.78%)	9,670 (3.10%)	11,300 (3.45%)	13,373 (3.82%)	15,682 (4.20%)	17,961 (4.59%)	20,529 (5.00%)	23,150 (5.43%)	25,171 (6.11%)
15–19	7,283 (8.50%)	8,372 (9.35%)	9,763 (10.44%)	10,710 (11.03%)	11,806 (11.52%)	13,106 (12.10%)	14,437 (12.68%)	15,853 (13.50%)	16,870 (14.06%)	17,860 (15.00%)
20–24	10,413 (10.42%)	11,976 (11.21%)	13,507 (11.88%)	14,915 (12.54%)	15,982 (12.81%)	17,455 (13.16%)	18,684 (13.45%)	20,038 (13.91%)	21,115 (14.36%)	21,613 (15.00%)
Males stratified by age group (years)										
0–14	4,602 (3.19%)	5,447 (3.59%)	6,297 (3.91%)	7,259 (4.27%)	8,502 (4.68%)	9,931 (5.13%)	11,307 (5.57%)	12,831 (6.03%)	14,299 (6.46%)	15,280 (7.15%)
15–19	2,928 (7.88%)	3,365 (8.61%)	3,833 (9.41%)	4,280 (10.09%)	4,746 (10.55%)	5,321 (11.14%)	5,850 (11.62%)	6,570 (12.68%)	7,111 (13.30%)	7,576 (14.12%)

	Number and proportion (%) of patients with a condition ever recorded up to the end of each calendar year									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
20–24	3,474 (9.21%)	4,036 (9.90%)	4,607 (10.63%)	5,200 (11.47%)	5,788 (12.04%)	6,360 (12.39%)	6,709 (12.45%)	7,222 (12.91%)	7,703 (13.39%)	7,921 (13.93%)
Females stratified by age group (years)										
0–14	2,179 (1.62%)	2,721 (1.92%)	3,370 (2.24%)	4,038 (2.56%)	4,870 (2.89%)	5,749 (3.19%)	6,652 (3.53%)	7,697 (3.90%)	8,848 (4.32%)	9,884 (4.98%)
15–19	4,355 (8.98%)	5,005 (9.91%)	5,929 (11.23%)	6,430 (11.77%)	7,059 (12.27%)	7,783 (12.87%)	8,581 (13.51%)	9,277 (14.15%)	9,748 (14.66%)	10,270 (15.71%)
20–24	6,939 (11.16%)	7,940 (12.02%)	8,899 (12.65%)	9,712 (13.20%)	10,189 (13.29%)	11,089 (13.65%)	11,970 (14.08%)	12,805 (14.53%)	13,406 (14.98%)	13,680 (15.69%)
2 listed conditions (ever)										
Overall	6,944 (1.50%)	8,986 (1.83%)	11,625 (2.24%)	14,324 (2.63%)	17,120 (2.96%)	20,294 (3.30%)	23,627 (3.67%)	27,189 (4.05%)	30,799 (4.44%)	34,150 (5.06%)
Sex										
Male	2,604 (1.19%)	3,255 (1.41%)	4,116 (1.68%)	5,019 (1.95%)	6,062 (2.21%)	7,243 (2.48%)	8,605 (2.80%)	10,113 (3.15%)	11,683 (3.52%)	12,955 (4.00%)
Female	4,340 (1.77%)	5,730 (2.22%)	7,508 (2.74%)	9,301 (3.25%)	11,052 (3.65%)	13,043 (4.05%)	15,010 (4.45%)	17,058 (4.86%)	19,097 (5.29%)	21,167 (6.03%)
Age group (years)										
0–14	848 (0.30%)	1,142 (0.39%)	1,478 (0.47%)	1,804 (0.55%)	2,277 (0.65%)	2,737 (0.73%)	3,400 (0.87%)	4,248 (1.03%)	5,091 (1.19%)	5,981 (1.45%)
15–19	2,228 (2.60%)	2,935 (3.28%)	3,833 (4.10%)	4,743 (4.89%)	5,593 (5.46%)	6,549 (6.05%)	7,602 (6.67%)	8,653 (7.37%)	9,731 (8.11%)	10,808 (9.08%)
20–24	3,868 (3.87%)	4,909 (4.60%)	6,314 (5.55%)	7,777 (6.54%)	9,250 (7.41%)	11,008 (8.30%)	12,625 (9.09%)	14,288 (9.92%)	15,977 (10.87%)	17,361 (12.05%)
Males stratified by age group (years)										
0–14	588 (0.41%)	776 (0.51%)	967 (0.60%)	1,183 (0.70%)	1,482 (0.82%)	1,757 (0.91%)	2,200 (1.08%)	2,737 (1.29%)	3,252 (1.47%)	3,742 (1.75%)
15–19	766 (2.06%)	961 (2.46%)	1,197 (2.94%)	1,473 (3.47%)	1,752 (3.90%)	2,136 (4.47%)	2,500 (4.97%)	2,937 (5.67%)	3,434 (6.42%)	3,786 (7.06%)
20–24	1,250 (3.31%)	1,518 (3.72%)	1,952 (4.50%)	2,363 (5.21%)	2,828 (5.88%)	3,350 (6.53%)	3,905 (7.25%)	4,439 (7.94%)	4,997 (8.69%)	5,427 (9.54%)
Females stratified by age group (years)										
0–14	260 (0.19%)	366 (0.26%)	511 (0.34%)	620 (0.39%)	793 (0.47%)	979 (0.54%)	1,197 (0.63%)	1,510 (0.76%)	1,838 (0.90%)	2,237 (1.13%)

	Number and proportion (%) of patients with a condition ever recorded up to the end of each calendar year									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
15–19	1,462 (3.01%)	1,973 (3.91%)	2,635 (4.99%)	3,268 (5.98%)	3,839 (6.67%)	4,410 (7.29%)	5,098 (8.03%)	5,704 (8.70%)	6,290 (9.46%)	7,008 (10.72%)
20–24	2,618 (4.21%)	3,391 (5.13%)	4,362 (6.20%)	5,413 (7.36%)	6,420 (8.37%)	7,654 (9.42%)	8,715 (10.25%)	9,844 (11.17%)	10,969 (12.26%)	11,922 (13.67%)
3 listed conditions (ever)										
Overall	790 (0.17%)	1,031 (0.21%)	1,333 (0.26%)	1,729 (0.32%)	2,152 (0.37%)	2,558 (0.42%)	3,139 (0.49%)	3,994 (0.59%)	4,874 (0.70%)	6,149 (0.91%)
Sex										
Male	345 (0.16%)	445 (0.19%)	599 (0.24%)	783 (0.30%)	964 (0.35%)	1,130 (0.39%)	1,394 (0.45%)	1,839 (0.57%)	2,253 (0.68%)	2,801 (0.86%)
Female	445 (0.18%)	586 (0.23%)	733 (0.27%)	946 (0.33%)	1,186 (0.39%)	1,426 (0.44%)	1,742 (0.52%)	2,148 (0.61%)	2,607 (0.72%)	3,329 (0.95%)
Age group (years)										
0–14	98 (0.04%)	112 (0.04%)	166 (0.05%)	221 (0.07%)	279 (0.08%)	359 (0.10%)	478 (0.12%)	728 (0.18%)	939 (0.22%)	1,252 (0.30%)
15–19	266 (0.31%)	336 (0.38%)	437 (0.47%)	561 (0.58%)	696 (0.68%)	842 (0.78%)	1,039 (0.91%)	1,308 (1.11%)	1,613 (1.34%)	2,062 (1.73%)
20–24	426 (0.43%)	583 (0.55%)	730 (0.64%)	947 (0.80%)	1,177 (0.94%)	1,357 (1.02%)	1,622 (1.17%)	1,958 (1.36%)	2,322 (1.58%)	2,835 (1.97%)
Males stratified by age group (years)										
0–14	77 (0.05%)	87 (0.06%)	126 (0.08%)	177 (0.10%)	210 (0.12%)	255 (0.13%)	341 (0.17%)	535 (0.25%)	659 (0.30%)	842 (0.39%)
15–19	115 (0.31%)	141 (0.36%)	176 (0.43%)	217 (0.51%)	300 (0.67%)	346 (0.72%)	425 (0.84%)	539 (1.04%)	709 (1.33%)	896 (1.67%)
20–24	153 (0.41%)	217 (0.53%)	297 (0.69%)	389 (0.86%)	454 (0.94%)	529 (1.03%)	628 (1.17%)	765 (1.37%)	885 (1.54%)	1,063 (1.87%)
Females stratified by age group (years)										
0–14	21 (0.02%)	25 (0.02%)	40 (0.03%)	44 (0.03%)	68 (0.04%)	103 (0.06%)	137 (0.07%)	193 (0.10%)	279 (0.14%)	409 (0.21%)
15–19	151 (0.31%)	195 (0.39%)	260 (0.49%)	344 (0.63%)	396 (0.69%)	496 (0.82%)	612 (0.96%)	766 (1.17%)	899 (1.35%)	1,159 (1.77%)
20–24	273 (0.44%)	366 (0.55%)	433 (0.62%)	558 (0.76%)	722 (0.94%)	827 (1.02%)	993 (1.17%)	1,189 (1.35%)	1,429 (1.60%)	1,761 (2.02%)
≥4 listed conditions (ever)										
Overall	82 (0.02%)	113 (0.02%)	155 (0.03%)	212 (0.04%)	277 (0.05%)	347 (0.06%)	465 (0.07%)	547 (0.08%)	724 (0.10%)	1,005 (0.15%)
Sex										
Male	38 (0.02%)	55 (0.02%)	76 (0.03%)	106 (0.04%)	133 (0.05%)	183 (0.06%)	236 (0.08%)	283 (0.09%)	370 (0.11%)	460 (0.14%)
Female	44 (0.02%)	58 (0.02%)	79 (0.03%)	105 (0.04%)	143 (0.05%)	162 (0.05%)	226 (0.07%)	261 (0.07%)	348 (0.10%)	539 (0.15%)

	Number and proportion (%) of patients with a condition ever recorded up to the end of each calendar year									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Age group (years)										
0–14	8 (0.00%)	7 (0.00%)	10 (0.00%)	20 (0.01%)	24 (0.01%)	35 (0.01%)	40 (0.01%)	58 (0.01%)	90 (0.02%)	135 (0.03%)
15–19	16 (0.02%)	30 (0.03%)	50 (0.05%)	80 (0.08%)	96 (0.09%)	108 (0.10%)	138 (0.12%)	172 (0.15%)	234 (0.19%)	353 (0.30%)
20–24	58 (0.06%)	76 (0.07%)	95 (0.08%)	112 (0.09%)	157 (0.13%)	204 (0.15%)	287 (0.21%)	317 (0.22%)	400 (0.27%)	517 (0.36%)
Males stratified by age group (years)										
0–14	6 (0.00%)	6 (0.00%)	8 (0.00%)	15 (0.01%)	18 (0.01%)	24 (0.01%)	31 (0.02%)	36 (0.02%)	54 (0.02%)	77 (0.04%)
15–19	9 (0.02%)	17 (0.04%)	30 (0.07%)	42 (0.10%)	48 (0.11%)	60 (0.13%)	72 (0.14%)	94 (0.18%)	116 (0.22%)	151 (0.28%)
20–24	23 (0.06%)	32 (0.08%)	38 (0.09%)	49 (0.11%)	67 (0.14%)	99 (0.19%)	133 (0.25%)	153 (0.27%)	200 (0.35%)	232 (0.41%)
Females stratified by age group (years)										
0–14	<5 (0.00%)	<5 (0.00%)	<5 (0.00%)	5 (0.00%)	6 (0.00%)	11 (0.01%)	9 (0.00%)	22 (0.01%)	35 (0.02%)	58 (0.03%)
15–19	<10 (0.01%)	<15 (0.03%)	<25 (0.04%)	38 (0.07%)	48 (0.08%)	48 (0.08%)	66 (0.10%)	78 (0.12%)	117 (0.18%)	200 (0.31%)
20–24	35 (0.06%)	44 (0.07%)	57 (0.08%)	62 (0.08%)	89 (0.12%)	103 (0.13%)	151 (0.18%)	161 (0.18%)	196 (0.22%)	281 (0.32%)

*Listed conditions include depression, anxiety, bipolar disorder, schizophrenia/schizoaffective disorders, substance abuse, ASD, ADHD, gender dysphoria, eating disorders. Cells with values less than five are suppressed including complementary suppression of other cells.

Annual rates of recorded suicide, suicidality or self-harm

The annual rates (recorded in each calendar year of interest) of suicide, suicide attempt, suicidal ideation and self-harm in patients aged less than 25 years are presented in Table 29 and Figure 40. It is important to note that few suicides were recorded for each calendar year – fewer than 10 patients – and only 14 suicides were ever recorded as of December 2020. Consistent with findings from the second Australian Child and Adolescent Survey of Mental Health and Wellbeing,[2] suicidal ideation was more commonly recorded than suicide attempt over the study period. The proportion of patients with suicide attempt, suicidal ideation and self-harm recorded in each calendar year increased significantly across the 10-year period, as follows:

- Recorded suicide attempt increased by 3 times, from 0.01% in 2011 to 0.03% in 2020.
- Recorded suicidal ideation increased by 4.5 times, from 0.02% in 2011 to 0.09% in 2020.
- Recorded self-harm increased by 3.3 times, from 0.03% in 2011 to 0.10% in 2020.

FIGURE 40. ANNUAL RATES OF SUICIDE, SUICIDALITY OR SELF-HARM RECORDED FOR PATIENTS AGED <25 YEARS, 2011–2020

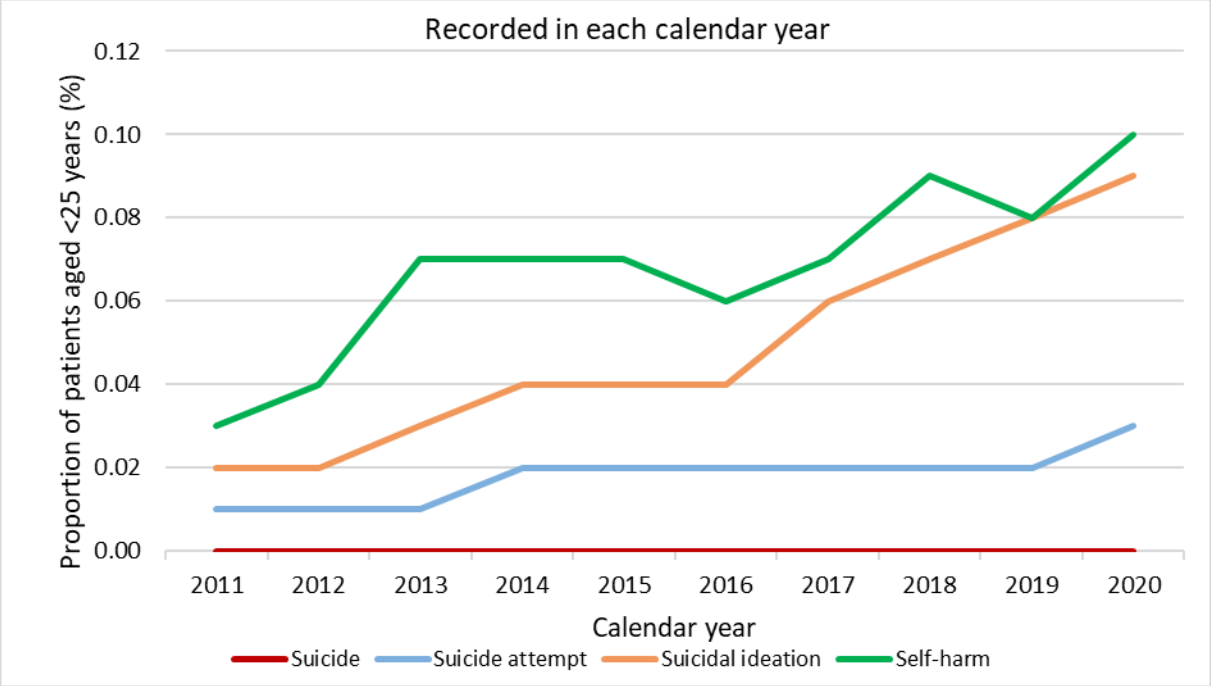


Table 29: ANNUAL RATES (EVER AND CURRENT) OF RECORDED SUICIDE, SUICIDALITY OR SELF-HARM AMONG PATIENTS AGED <25 YEARS, 2011–2020

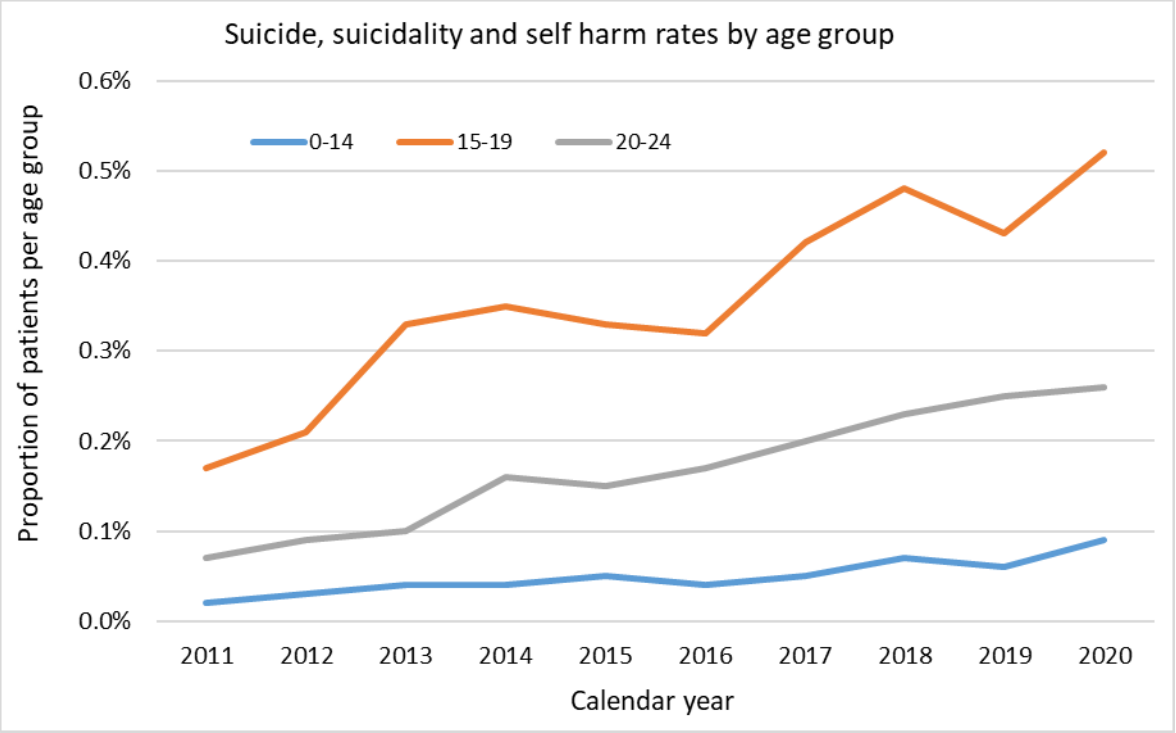
	Number; % (95% CI)									
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Total (N)	464,478	490,016	518,984	543,757	577,672	614,372	644,456	671,995	693,260	675,465
Suicide										
Recorded in calendar year	0; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	8; 0.00 (0.00–0.00)	6; 0.00 (0.00–0.00)	5; 0.00 (0.00–0.00)
Ever recorded up to end of calendar year	<5; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	6; 0.00 (0.00–0.00)	<5; 0.00 (0.00–0.00)	7; 0.00 (0.00–0.00)	7; 0.00 (0.00–0.00)	8; 0.00 (0.00–0.00)	12; 0.00 (0.00–0.00)	15; 0.00 (0.00–0.00)	14; 0.00 (0.00–0.00)
Suicide attempt										
Recorded in calendar year	47; 0.01 (0.01–0.01)	58; 0.01 (0.01–0.02)	76; 0.01 (0.01–0.02)	84; 0.02 (0.01–0.02)	97; 0.02 (0.01–0.02)	127; 0.02 (0.02–0.02)	147; 0.02 (0.02–0.03)	164; 0.02 (0.02–0.03)	154; 0.02 (0.02–0.03)	196; 0.03 (0.02–0.03)
Ever recorded up to end of calendar year	188; 0.04 (0.03–0.05)	228; 0.05 (0.04–0.05)	273; 0.05 (0.04–0.06)	327; 0.06 (0.05–0.07)	364; 0.06 (0.05–0.07)	418; 0.07 (0.06–0.08)	490; 0.08 (0.07–0.09)	572; 0.09 (0.07–0.10)	632; 0.09 (0.08–0.10)	684; 0.10 (0.09–0.11)
Suicidal ideation										
Recorded in calendar year	86; 0.02 (0.01–0.02)	115; 0.02 (0.02–0.03)	160; 0.03 (0.02–0.04)	240; 0.04 (0.04–0.05)	235; 0.04 (0.03–0.05)	271; 0.04 (0.04–0.05)	404; 0.06 (0.05–0.07)	494; 0.07 (0.06–0.08)	523; 0.08 (0.07–0.09)	637; 0.09 (0.08–0.11)
Ever recorded up to end of calendar year	211; 0.05 (0.04–0.06)	294; 0.06 (0.05–0.07)	399; 0.08 (0.07–0.09)	573; 0.11 (0.09–0.12)	698; 0.12 (0.10–0.14)	841; 0.14 (0.12–0.15)	1,073; 0.17 (0.15–0.19)	1,365; 0.20 (0.18–0.23)	1,610; 0.23 (0.21–0.26)	1,921; 0.28 (0.26–0.31)
Self-harm										
Recorded in calendar year	141; 0.03 (0.02–0.04)	216; 0.04 (0.04–0.05)	343; 0.07 (0.06–0.08)	384; 0.07 (0.06–0.08)	389; 0.07 (0.06–0.08)	385; 0.06 (0.05–0.07)	477; 0.07 (0.06–0.08)	579; 0.09 (0.08–0.10)	548; 0.08 (0.07–0.09)	650; 0.10 (0.09–0.11)
Ever recorded up to end of calendar year	361; 0.08 (0.07–0.09)	525; 0.11 (0.09–0.12)	809; 0.16 (0.14–0.17)	1,099; 0.20 (0.18–0.23)	1,304; 0.23 (0.20–0.25)	1,460; 0.24 (0.21–0.26)	1,714; 0.27 (0.24–0.29)	1,994; 0.30 (0.27–0.33)	2,245; 0.32 (0.29–0.35)	2,489; 0.37 (0.34–0.40)

Cells with values less than five are suppressed including complementary suppression of other cells.

Annual suicide, suicidality and self-harm rates stratified by demographic characteristics

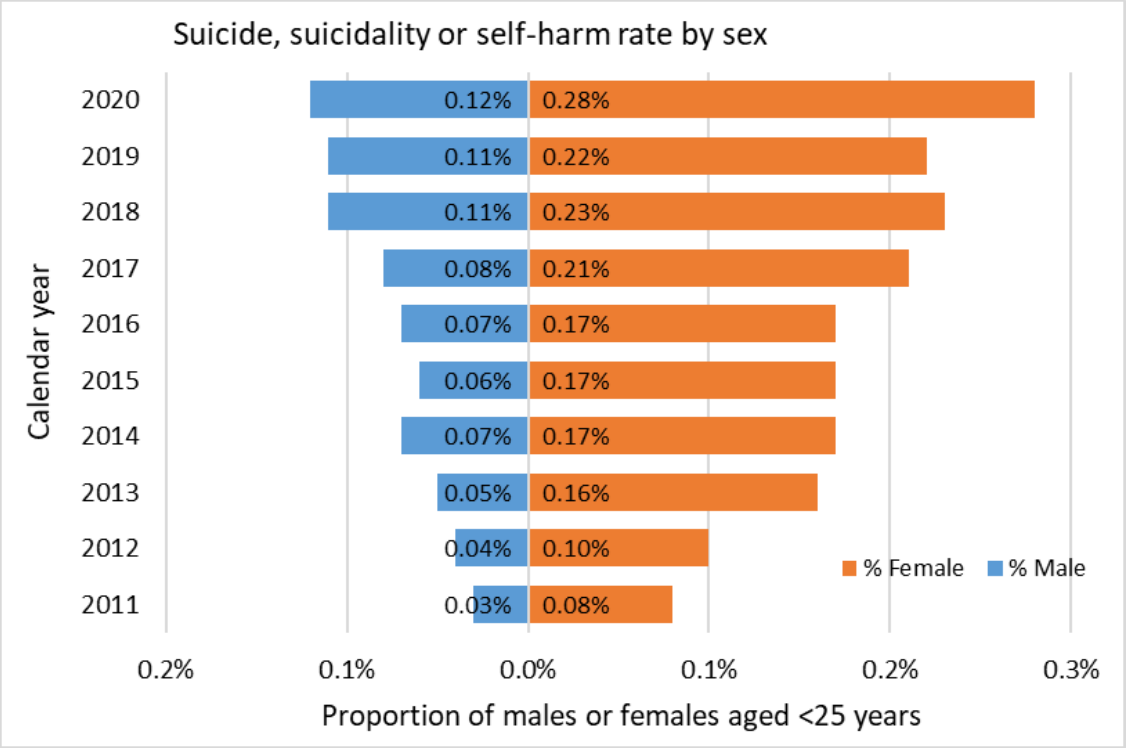
The annual estimates (recorded in each calendar year of interest) of suicide, suicide attempt, suicidal ideation and self-harm for patients aged less than 25 years stratified by age and sex are presented in Table 30. Because of the low numbers of suicide, suicidality and self-harm recorded, and to preserve the confidentiality of patients, for this analysis suicide, suicidality and self-harm were combined. These numbers are very low and findings should be interpreted with caution. The rate of suicide, suicidality and self-harm increased across the study period for all age groups. Unlike the prevalence of depression and antidepressant prescribing, which is highest in 20–24-year-olds, the rate of suicide, suicidality and self-harm appears to be greater in those aged 15–19 years compared with those aged less than 15 years or aged 20–24 years (Figure 41). The rates in patients aged 0–14 years increased from 0.02% in 2011 to 0.09% in 2020; for those aged 15–19 years, increased from 0.17% to 0.52%; and increased from 0.07% to 0.26% among those aged 20–24 years.

FIGURE 41. ANNUAL RATES OF SUICIDE, SUICIDALITY OR SELF-HARM RECORDED FOR PATIENTS AGED <25 BY AGE GROUP, 2011–2020



The suicide, suicidality and self-harm rates increased for males and females across the study period and were consistently greater in females than males across the study (Figure 42). The rate increased from 0.03% and 0.08% in 2011 to 0.12% and 0.28% in 2020 for males and females, respectively.

FIGURE 42. ANNUAL RATES OF SUICIDE, SUICIDALITY OR SELF-HARM FOR PATIENTS AGED <25 YEARS BY SEX, 2011–2020



The age-specific rates of recorded suicide, suicidality and self-harm increased across the study period for males and females separately (Figures 43 and 44).

FIGURE 43. ANNUAL RATES OF SUICIDE, SUICIDALITY OR SELF-HARM FOR MALES AND FEMALES AGED <25 YEARS BY AGE GROUP, 2011–2020

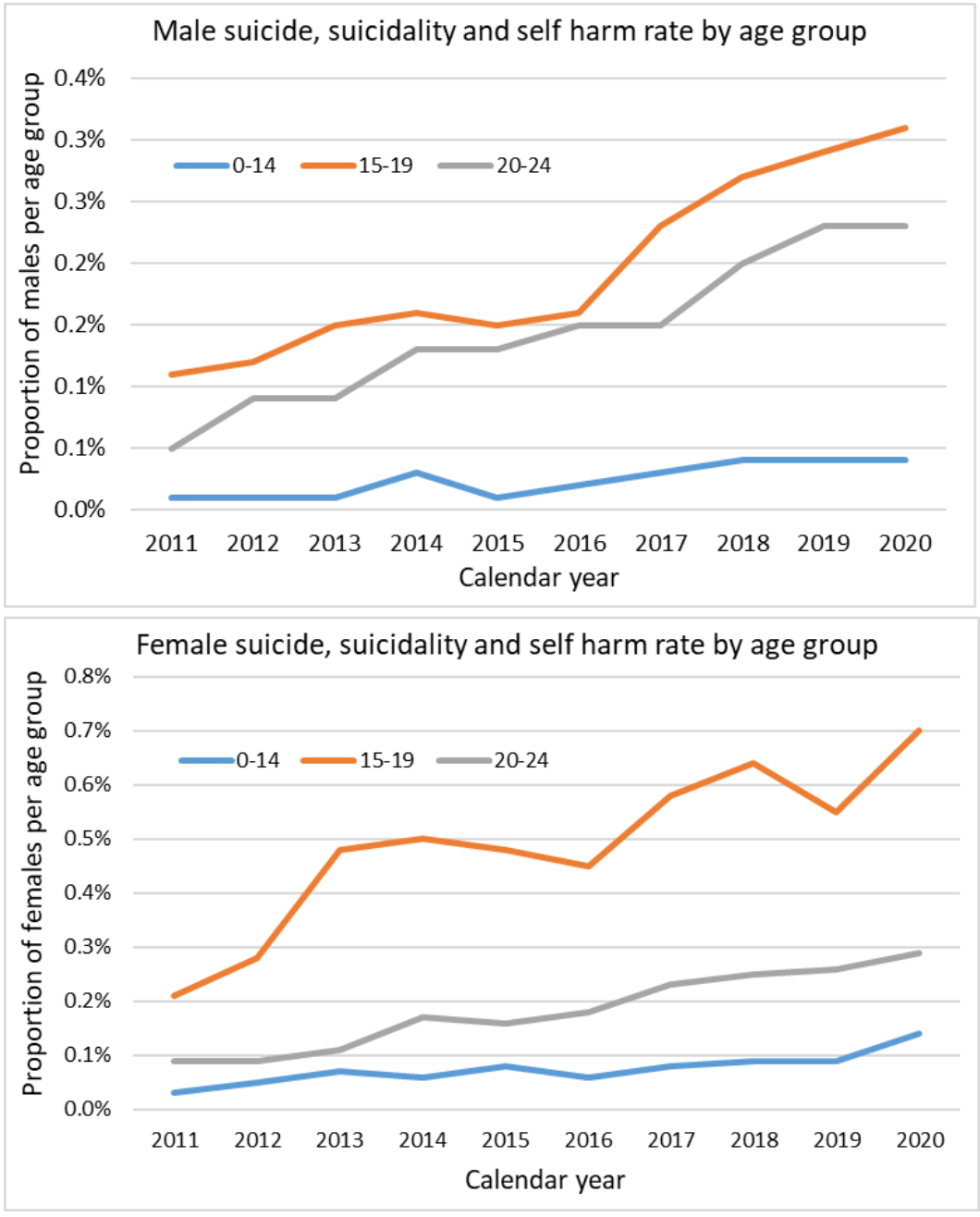
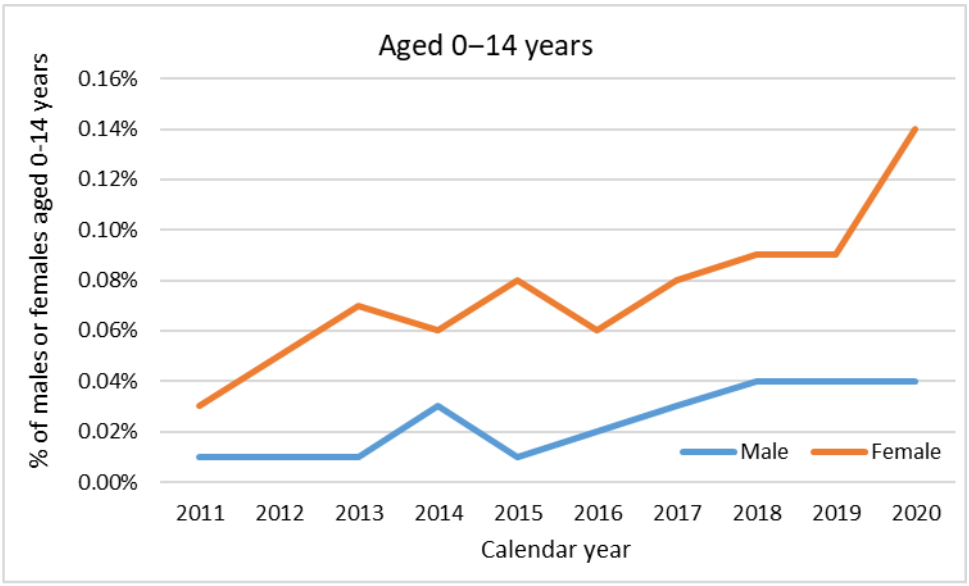
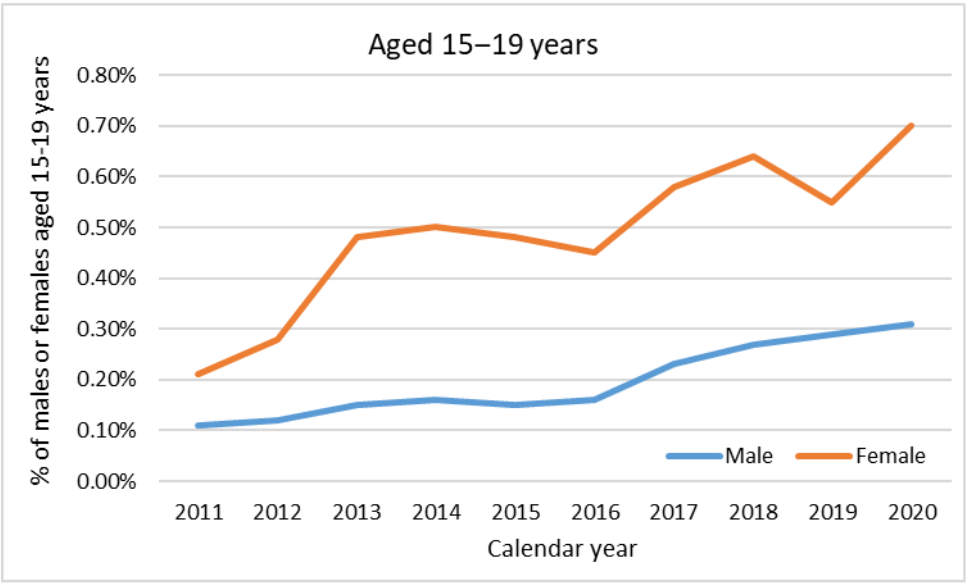


FIGURE 44. AGE-SPECIFIC ANNUAL RATES OF SUICIDE, SUICIDALITY OR SELF-HARM FOR MALES AND FEMALES AGED <25 YEARS, 2011–2020





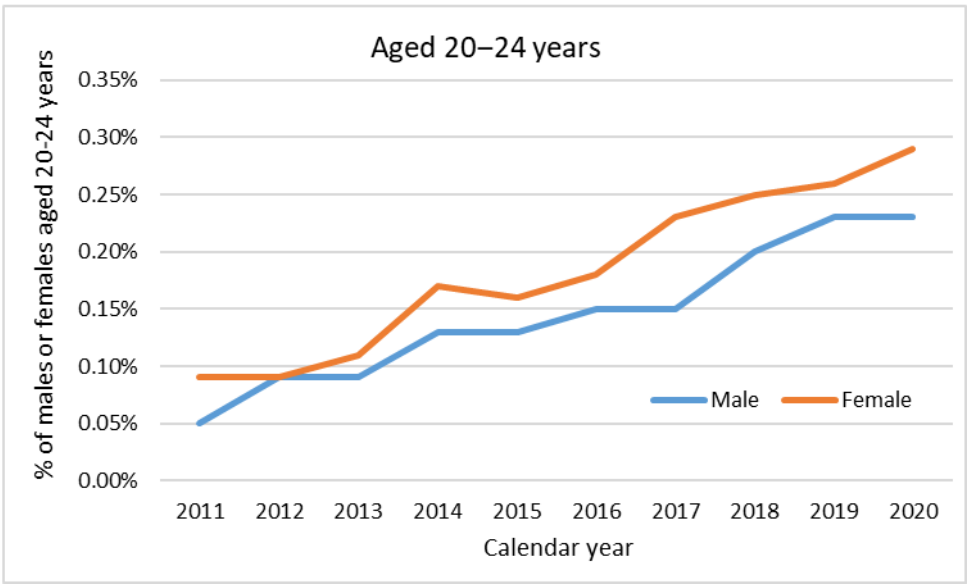


Table 30: ANNUAL RATES OF RECORDED SUICIDE, SUICIDALITY OR SELF-HARM AMONG PATIENTS AGED <25 YEARS STRATIFIED BY SEX, AGE GROUP, AGE-SEX, 2011–2020

	Number and proportion (%) of patients for each calendar year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Patients with suicide, suicidality or self-harm recorded in each calendar year										
Sex										
Male	67 (0.03%)	99 (0.04%)	122 (0.05%)	174 (0.07%)	158 (0.06%)	193 (0.07%)	253 (0.08%)	343 (0.11%)	378 (0.11%)	376 (0.12%)
Female	197 (0.08%)	270 (0.10%)	431 (0.16%)	494 (0.17%)	530 (0.17%)	536 (0.17%)	718 (0.21%)	821 (0.23%)	780 (0.22%)	992 (0.28%)
Age group (years)										
0–14	46 (0.02%)	85 (0.03%)	122 (0.04%)	140 (0.04%)	158 (0.05%)	150 (0.04%)	208 (0.05%)	275 (0.07%)	272 (0.06%)	368 (0.09%)
15–19	145 (0.17%)	186 (0.21%)	313 (0.33%)	341 (0.35%)	342 (0.33%)	350 (0.32%)	484 (0.42%)	561 (0.48%)	520 (0.43%)	622 (0.52%)
20–24	73 (0.07%)	98 (0.09%)	118 (0.10%)	188 (0.16%)	188 (0.15%)	229 (0.17%)	280 (0.20%)	332 (0.23%)	367 (0.25%)	380 (0.26%)
Males stratified by age group (years)										
0–14	9 (0.01%)	16 (0.01%)	24 (0.01%)	47 (0.03%)	27 (0.01%)	37 (0.02%)	53 (0.03%)	91 (0.04%)	88 (0.04%)	82 (0.04%)
15–19	41 (0.11%)	47 (0.12%)	60 (0.15%)	66 (0.16%)	68 (0.15%)	77 (0.16%)	117 (0.23%)	141 (0.27%)	156 (0.29%)	164 (0.31%)
20–24	17 (0.05%)	36 (0.09%)	38 (0.09%)	61 (0.13%)	63 (0.13%)	79 (0.15%)	83 (0.15%)	111 (0.20%)	134 (0.23%)	130 (0.23%)
Females stratified by age group (years)										
0–14	37 (0.03%)	69 (0.05%)	98 (0.07%)	93 (0.06%)	131 (0.08%)	113 (0.06%)	155 (0.08%)	184 (0.09%)	184 (0.09%)	286 (0.14%)
15–19	104 (0.21%)	139 (0.28%)	253 (0.48%)	275 (0.50%)	274 (0.48%)	273 (0.45%)	367 (0.58%)	419 (0.64%)	363 (0.55%)	456 (0.70%)
20–24	56 (0.09%)	62 (0.09%)	80 (0.11%)	126 (0.17%)	125 (0.16%)	150 (0.18%)	196 (0.23%)	218 (0.25%)	233 (0.26%)	250 (0.29%)

GUIDE TO INTERPRETING THE DATA

When interpreting the information presented in this report, readers should note the following caveats and/or assumptions related to the MedicineInsight data.

- MedicineInsight data are dependent on the accuracy and completeness of data recorded in, and available for extraction from, the general practice CIS.
- Identification of conditions is dependent on GPs recording these items in their CIS. Conditions may be underreported in MedicineInsight data depending on GPs' recording practices. It is possible that some GPs might be reluctant to formally diagnose young patients with mental illness in certain circumstances.
- Medicines prescribed at non-MedicineInsight practices or by specialists will not routinely be available to MedicineInsight. This may lead to an underestimate of the true history of prescribing and duration of use, and an overestimate of patients who were new to therapy.
- Information on procedures, diagnoses, prescriptions and medical tests from non-MedicineInsight practices and specialist/hospital settings are not necessarily available to MedicineInsight, depending on GPs' recording practices. Information from other settings provided to GPs in PDF format (such as discharge summaries, letters, faxes, etc) are not extracted by MedicineInsight. Therefore, conditions that are managed in specialist or hospital settings may not be fully captured in general practice datasets, potentially leading to an underestimate of the true proportion of patients with these conditions and prescriptions.
- For the 10-year trend analysis, the rates for 2020 may have been affected by the COVID-19 pandemic, with mental health problems said to have increased during this period.
- For the analysis of antidepressant therapy duration, the latest scripts were restricted to, or defined as, 31 December 2019, which might have underestimated the true duration. However, gaps between scripts were included, and full compliance assumed, which may cause overestimation of duration.
- Of note, for same-day co-prescribing of an antidepressant with one or multiple specified psychotropic or neurological medicines, if a patient was prescribed two antipsychotics on the same day as an antidepressant, this was only counted as one co-prescription. This might underestimate the co-prescribing rates. However, instances of a child or adolescent being prescribed more than one medicine from the same class is assumed to be rare.
- Calculation of the relative proportion of different indications assumes that non-recording of conditions occurs at random.
- Patient sex is as recorded in the CIS at the time of the data extract (in 2021). Changes made in the CIS to a patient's recorded sex are currently not recorded longitudinally in the MedicineInsight data. For the 10-year trend analysis, misclassification of sex in earlier years is possible for patients whose recorded sex has changed during this time. The 10-year trends in recorded diagnoses of gender dysphoria, stratified by sex, should be interpreted with caution.
- Practices were recruited to MedicineInsight using non-random sampling, and systematic sampling differences between regions cannot be ruled out. Comparisons between regions should be interpreted with caution.

- Due to confidentiality issues, we do not have access to progress notes, which may contain further information on symptoms, family history, reasons for encounters and diagnoses.
- Patients are free to visit multiple other practices. We do not have data on patients from non-MedicineInsight clinics. Currently we cannot identify patients who have attended multiple MedicineInsight practices.

ABBREVIATIONS OR ACRONYMS

Abbreviation	Definition
ATC	Anatomical Therapeutic Chemical
ABS	Australian Bureau of Statistics
ADHD	Attention-deficit/hyperactivity disorder
ASD	Autism spectrum disorder
BEACH	Bettering the Evaluation and Care of Health
CI	Confidence interval
CIS	Clinical information system
COVID-19	Coronavirus disease (SARS-CoV-2)
DOH	Department of Health
DUSC	Drug Utilisation Sub Committee
GP	General practitioner
IRSAD	ABS Index of Relative Socioeconomic Advantage and Disadvantage
MAOI	Monoamine oxidase inhibitor
MBS	Medical Benefits Schedule
MDD	Major depressive disorder
NaSSA	Noradrenergic and specific serotonergic antidepressant
NREEC	National Research and Evaluation Ethics Committee
OCD	Obsessive compulsive disorder
PBS	Pharmaceutical Benefits Scheme
PTSD	Post-traumatic stress disorder
RACGP	Royal Australian College of General Practitioners
RANZCP	Royal Australian and New Zealand College of Psychiatrists
SAS	Statistical analysis software – a statistical software package
SEIFA	ABS Socio-Economic Indexes for Areas
SNRI	Serotonin noradrenaline reuptake inhibitor
SSRI	Selective serotonin reuptake inhibitor
TCA	Tricyclic antidepressant
TGA	Therapeutic Goods Administration

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APPENDIX A: MEDICINES

TABLE A1. LIST OF MEDICINE OR MEDICINE GROUPS ASSESSED FOR CO-PRESCRIBING

Medicine/medicine group	ATC code(s)	Example(s)
Opioids	N02A	
Benzodiazepines/z-drugs	N03AE	Benzodiazepine derivatives eg, clonazepam
	N05BA	Benzodiazepine derivatives eg, alprazolam, bromazepam, diazepam, oxazepam
	N05CD	Benzodiazepine derivatives eg, flunitrazepam, midazolam, nitrazepam, temazepam
	N05CF	Benzodiazepine-related drugs (z-drugs) eg, zopiclone, zolpidem
Antipsychotics	N05A (excluding N05AN)	Phenothiazines eg, chlorpromazine, periciazine Butyrophenone derivatives eg, haloperidol Indole derivatives eg, lurasidone, ziprasidone Thioxanthene derivatives eg, flupentixol decanoate, zuclopenthixol decanoate Diazepines, oxazepines, thiazepines and oxepines eg, asenapine, clozapine, olanzapine, quetiapine Benzamides eg, amisulpride Others eg, aripiprazole, brexpiprazole, paliperidone, risperidone
Lithium	N05AN	Lithium
Melatonin	N05CH01 (active ingredient search only)	
Stimulants for ADHD	N06BA02 N06BA04	Dexamphetamine methamphetamine
Non-stimulants for ADHD	N06BA09 C02AC02 C02AC01	Atomoxetine guanfacine Clonidine
Antiepileptics	N03AF01 N03AX12 N03AX16 N03AG01 N03AX09	Carbamazepine Gabapentin Pregabalin Valproate Lamotrigine
Combined oral contraceptives (medicines that may contribute to depression)	G03AA	Progestogens and estrogens, fixed combinations
	G03AB G03AC	Progestogens and estrogens, sequential preparations Progestogens
Acne treatments (medicines that may contribute to depression)	D10BA01	isotretinoin

ATC = Anatomical Therapeutic Chemical

APPENDIX B: SOCIODEMOGRAPHICS

Table B1 shows the sociodemographic characteristics of the patient cohort for each calendar year from 2011 to 2020.

TABLE B1. SOCIODEMOGRAPHIC CHARACTERISTICS OF THE PATIENT COHORT FOR EACH CALENDAR YEAR

Characteristic	2011		2012		2013		2014		2015		2016		2017		2018		2019		2020	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Total patient count (n)	**464,478**		**490,016**		**518,984**		**543,757**		**577,672**		**614,372**		**644,456**		**671,995**		**693,260**		**675,465**	
Sex																				
Female	245,507	52.86	258,377	52.73	273,667	52.73	286,155	52.63	302,944	52.44	321,775	52.37	337,224	52.33	351,293	52.28	360,949	52.07	351,054	51.97
Male	218,950	47.14	231,609	47.27	245,290	47.26	257,569	47.37	274,691	47.55	292,551	47.62	307,176	47.66	320,618	47.71	332,205	47.92	324,219	48.00
Intersex/indeterminate	21	0.00	30	0.01	27	0.01	33	0.01	37	0.01	46	0.01	56	0.01	84	0.01	106	0.02	192	0.03
Age group (years)																				
0–14	278,870	60.04	293,607	59.92	311,731	60.07	327,764	60.28	350,385	60.65	373,508	60.80	391,613	60.77	410,484	61.08	426,196	61.48	412,239	61.03
15–19	85,677	18.45	89,578	18.28	93,528	18.02	97,079	17.85	102,503	17.74	108,277	17.62	113,894	17.67	117,410	17.47	120,014	17.31	119,094	17.63
20–24	99,931	21.51	106,831	21.80	113,725	21.91	118,914	21.87	124,784	21.60	132,587	21.58	138,949	21.56	144,101	21.44	147,050	21.21	144,132	21.34
Remoteness*																				
Major city	288,320	62.07	307,967	62.85	332,270	64.02	353,787	65.06	379,388	65.68	408,920	66.56	435,427	67.57	458,067	68.17	477,805	68.92	468,426	69.35
Inner regional	105,313	22.67	111,372	22.73	116,021	22.36	118,188	21.74	123,344	21.35	127,782	20.80	130,988	20.33	135,141	20.11	138,222	19.94	135,490	20.06
Outer regional	61,018	13.14	60,586	12.36	60,465	11.65	61,335	11.28	63,564	11.00	65,317	10.63	65,498	10.16	66,343	9.87	65,367	9.43	60,971	9.03
Remote/very remote	6,353	1.37	6,697	1.37	6,933	1.34	7,056	1.30	7,875	1.36	8,758	1.43	9,148	1.42	9,014	1.34	8,362	1.21	7,388	1.09
Missing	3,474	0.75	3,394	0.69	3,295	0.63	3,391	0.62	3,501	0.61	3,595	0.59	3,395	0.53	3,430	0.51	3,504	0.51	3,190	0.47
Indigenous status																				
Aboriginal and/or Torres Strait Islander	14,867	3.20	17,175	3.50	19,799	3.81	22,145	4.07	25,051	4.34	28,121	4.58	31,212	4.84	33,749	5.02	35,632	5.14	34,962	5.18
Other Australian	285,448	61.46	310,204	63.30	334,521	64.46	362,088	66.59	397,831	68.87	436,836	71.10	468,028	72.62	492,338	73.27	512,095	73.87	495,374	73.34
Not known	164,163	35.34	162,637	33.19	164,664	31.73	159,524	29.34	154,790	26.80	149,415	24.32	145,216	22.53	145,908	21.71	145,533	20.99	145,129	21.49
State/territory																				
ACT	10,513	2.26	10,992	2.24	11,422	2.20	11,654	2.14	13,644	2.36	16,123	2.62	18,024	2.80	19,178	2.85	20,351	2.94	21,106	3.12
NSW	181,563	39.09	190,738	38.92	203,733	39.26	213,053	39.18	222,817	38.57	233,896	38.07	246,174	38.20	256,415	38.16	267,729	38.62	263,549	39.02
NT	13,052	2.81	11,492	2.35	10,132	1.95	9,946	1.83	10,640	1.84	11,414	1.86	11,084	1.72	10,457	1.56	9,835	1.42	8,858	1.31
QLD	84,130	18.11	89,656	18.30	93,061	17.93	98,779	18.17	108,007	18.70	117,092	19.06	125,976	19.55	137,012	20.39	142,176	20.51	139,038	20.58
SA	8,706	1.87	9,348	1.91	9,888	1.91	9,911	1.82	10,274	1.78	11,386	1.85	12,269	1.90	12,724	1.89	13,772	1.99	14,128	2.09
TAS	32,110	6.91	32,276	6.59	32,506	6.26	32,730	6.02	32,501	5.63	32,417	5.28	32,462	5.04	34,939	5.20	34,776	5.02	31,388	4.65
VIC	82,378	17.74	88,200	18.00	96,079	18.51	103,604	19.05	111,618	19.32	118,757	19.33	123,332	19.14	125,170	18.63	126,268	18.21	120,978	17.91
WA	52,026	11.20	57,314	11.70	62,163	11.98	64,080	11.78	68,171	11.80	73,287	11.93	75,135	11.66	76,100	11.32	78,353	11.30	76,420	11.31

Socioeconomic status (SEIFA IRSAD quintile)*																				
1 (least advantaged)	78,371	16.87	82,224	16.78	85,233	16.42	87,220	16.04	89,661	15.52	91,828	14.95	93,721	14.54	96,841	14.41	97,283	14.03	92,684	13.72
2	76,766	16.53	81,894	16.71	88,299	17.01	91,480	16.82	95,427	16.52	99,144	16.14	101,642	15.77	104,133	15.50	107,332	15.48	104,816	15.52
3	101,131	21.77	107,734	21.99	114,783	22.12	120,456	22.15	128,126	22.18	138,697	22.58	148,725	23.08	153,903	22.90	158,767	22.90	154,887	22.93
4	90,679	19.52	96,404	19.67	104,416	20.12	114,166	21.00	125,432	21.71	136,271	22.18	145,019	22.50	154,713	23.02	161,427	23.29	157,460	23.31
5 (most advantaged)	114,063	24.56	118,371	24.16	122,959	23.69	127,042	23.36	135,520	23.46	144,833	23.57	151,954	23.58	158,976	23.66	164,944	23.79	162,425	24.05
Missing	3,468	0.75	3,389	0.69	3,294	0.63	3,393	0.62	3,506	0.61	3,599	0.59	3,395	0.53	3,429	0.51	3,507	0.51	3,193	0.47

*Patients with missing or indeterminate residential postcode were not assigned the postcode of the general practice they attend as done in the main analysis.

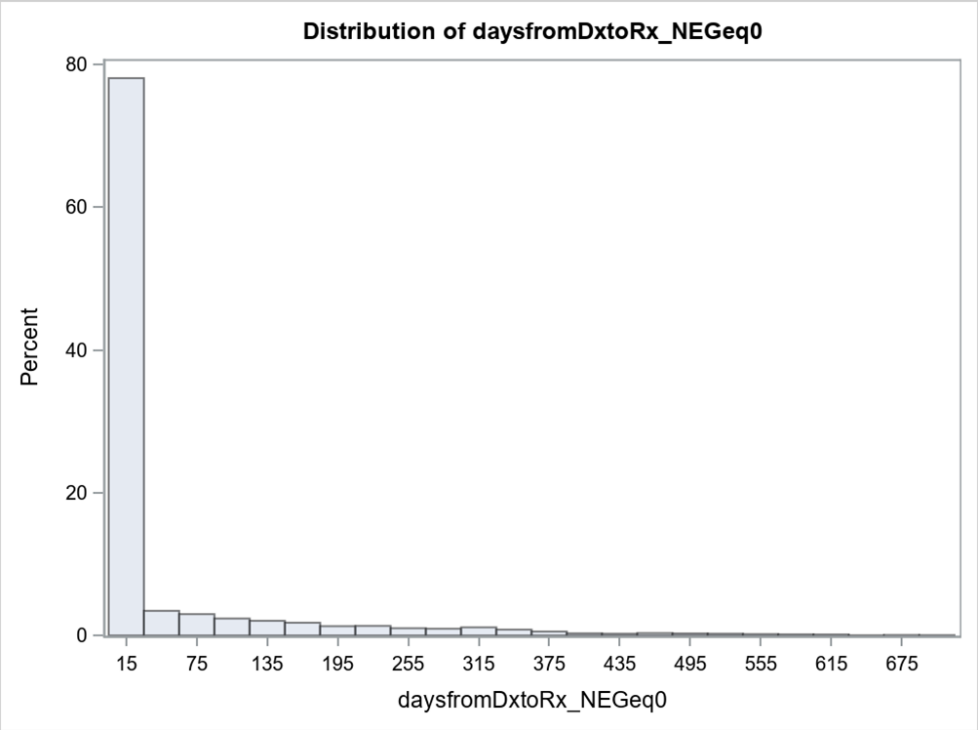
IRSAD = Index of Relative Socio-economic Advantage and Disadvantage; SEIFA = Socio-Economic Indexes for Areas

APPENDIX C: SUPPLEMENTARY RESULTS

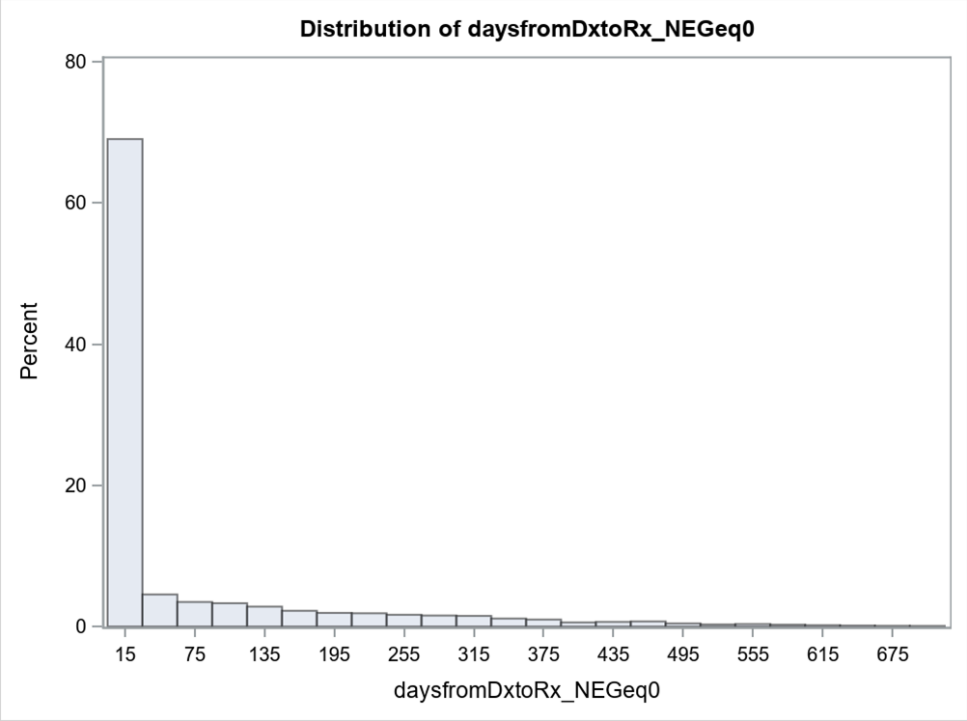
Time (days) from the first diagnosis record to first recorded antidepressant prescription or first mental health treatment referral/plan.

FIGURE C1. DISTRIBUTION OF DAYS FROM THE FIRST DIAGNOSIS RECORD TO FIRST RECORDED ANTIDEPRESSANT PRESCRIPTION IN PATIENTS AGED <25 YEARS NEWLY DIAGNOSED WITH DEPRESSION (A) OR ANXIETY (B)

A) DEPRESSION



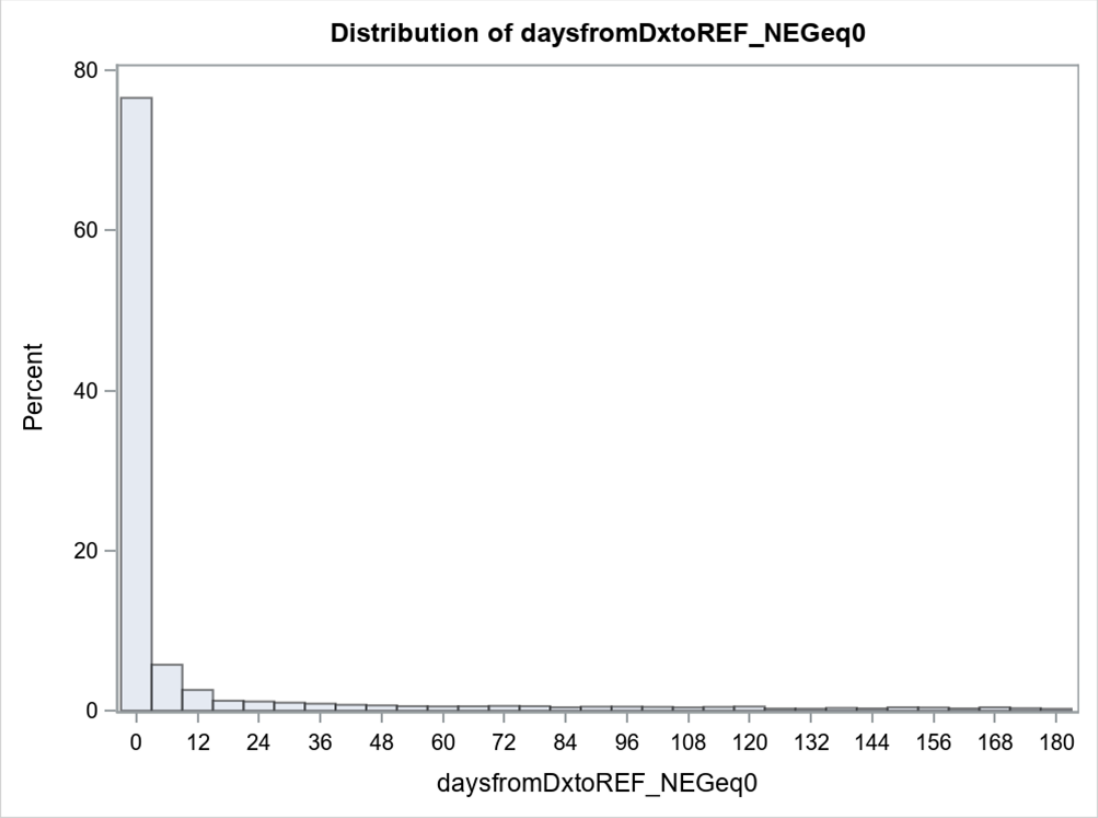
B) ANXIETY



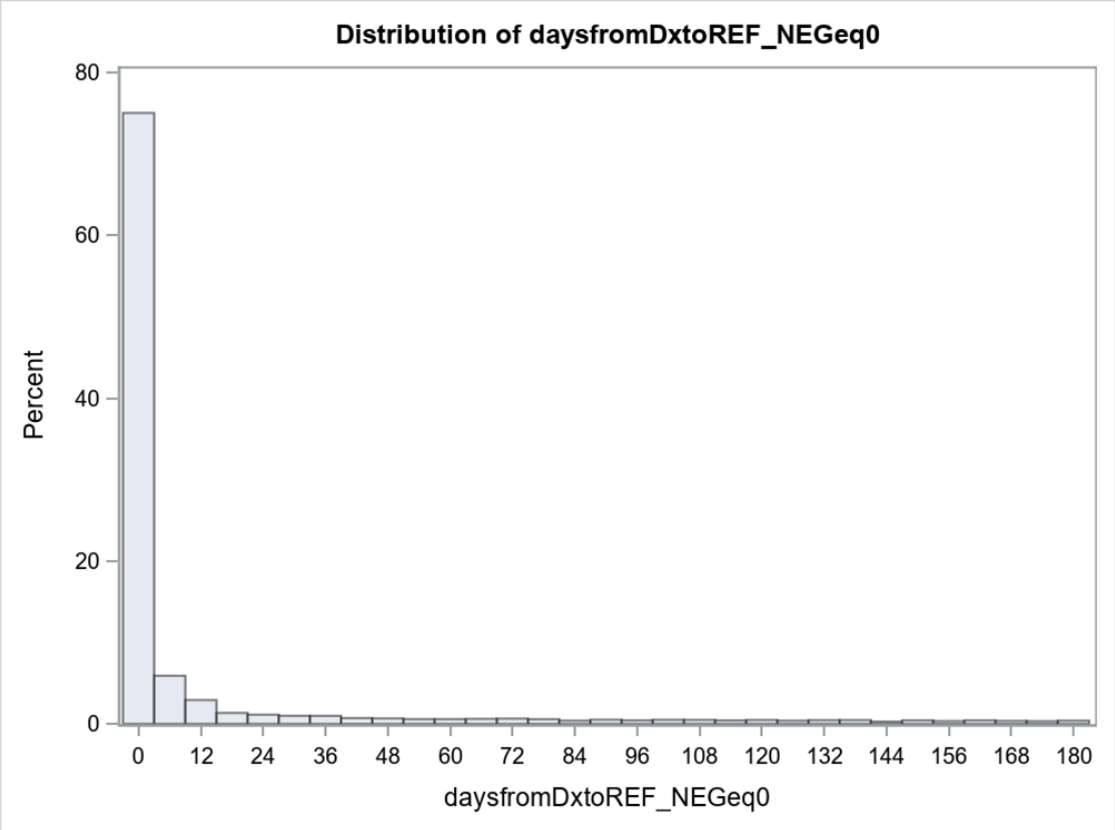
Dx = diagnosis; NEGeq0 = duration calculated from first record of diagnosis to first recorded prescription even for patients with record of a prescription prior to first diagnosis Rx = prescription;

FIGURE C2. DISTRIBUTION OF DAYS FROM THE FIRST DIAGNOSIS RECORD TO FIRST RECORDED MENTAL HEALTH TREATMENT REFERRAL/PLAN IN PATIENTS AGED <25 YEARS NEWLY DIAGNOSED WITH DEPRESSION (A) OR ANXIETY (B)

A) DEPRESSION



B) ANXIETY

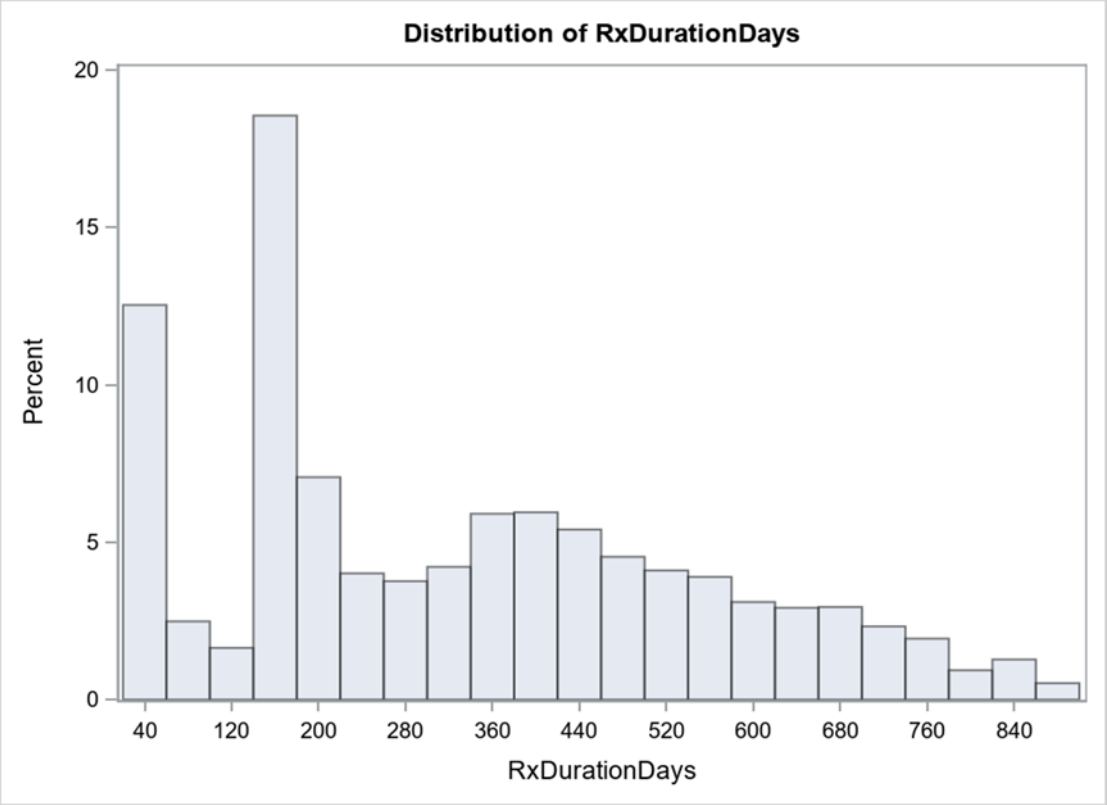


Dx = diagnosis; NEGeq0 = duration calculated from first record of diagnosis to first recorded mental health treatment plan/referral even for patients with record of a mental health treatment plan/referral prior to first diagnosis; REF = mental health treatment plan or referral to a specialist.

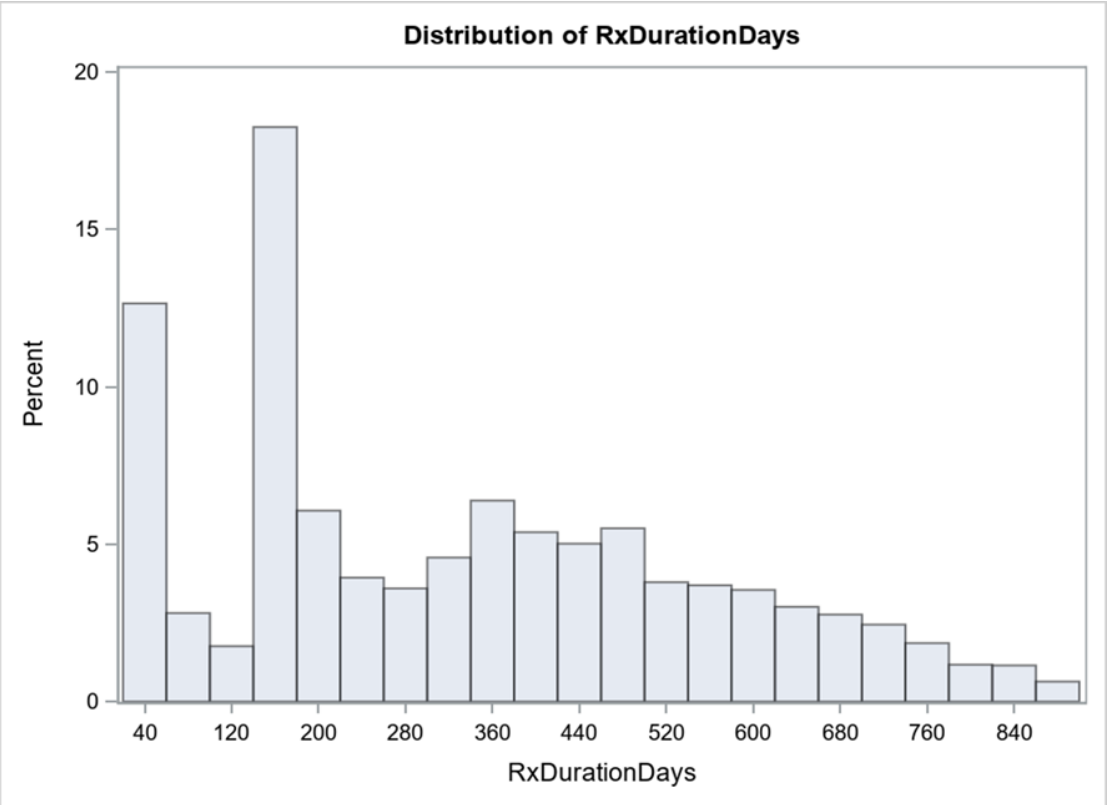
Duration of antidepressant therapy

FIGURE C3. DISTRIBUTION OF DAYS OF ANTIDEPRESSANT THERAPY IN PATIENTS AGED <25 YEARS WITH NEWLY DIAGNOSED DEPRESSION (A) OR ANXIETY (B) WHO STARTED AN ANTIDEPRESSANT BETWEEN 1 JANUARY 2018 AND 30 JUNE 2019.

A) DEPRESSION



B) ANXIETY



Rx = prescription