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# Psychotropic medication profile in a community youth mental health service in Australia

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ABSTRACT

*Aim:* There has been a rise in the use of psychotropic medication in young people, despite limited risk-benefit profile of psychotropic medication for this population. Given their side effect profile, the use of psychotropic medications should occur with caution. This study investigated psychotropic prescribing pattern in a public youth community mental health service and gives an estimate of general level of psychotropic medication use in this setting.

*Methods:* A retrospective file review was undertaken of all young people aged 12–17 who received care from the service in 2016 (N = 189) for a range of mental health problems, excluding psychosis. Files were reviewed for demographical information (age, gender), diagnosis/presenting issues, prescribed medications, indications of medications, and prescriber type (e.g. psychiatrist, general practitioners (GPs), paediatrician). The data was analysed descriptively.

*Results:* Over 60% (60.8%, n = 115) of young people were prescribed psychotropic medications. Over half of the entire sample were on antidepressants (51.32%, n = 97), nearly a quarter (n = 46, 24%) on antipsychotics, 6% on ADHD medications (6.35%, n = 12), and a fifth (19.58%, n = 37) on polypharmacy. Antidepressants and antipsychotics were mostly used off-label, prescribed by public psychiatric staff. Quetiapine was the most prescribed antipsychotic predominantly for insomnia. Fluoxetine and fluvoxamine were the most prescribed antidepressants predominantly for anxiety disorders. Girls are more likely to be prescribed psychotropic medications than boys, specifically antipsychotic medication.

*Conclusions:* A high proportion of young people were prescribed psychotropic medication, including antipsychotic medication, mostly for the treatment of anxiety and depressive disorders. There is little evidence around how psychotropic medication is used in youth mental health settings, and this study contributes to this gap.

## 1. Introduction

Around one in four young people experience symptoms of mental illness, nationally and internationally (Lawrence et al., 2015; Mission Australia, 2017; Mojtabai, Olfson, & Han, 2016; UK National Health Service, 2016). In Australia, a recent study has found almost a quarter (22.8%) of young people aged 15 to 19 show the symptoms of probable serious mental illness, and this is an increase from 18.7% five years ago (Mission Australia, 2017). Despite the magnitude of this issue, there continues to be debate and uncertainty around the best forms of treatment, in particular in relation to the use of psychotropic medications. Psychotropic medication are prescribed to children and adolescents for a variety of conditions, such as psychotic disorders, emotional disorders, eating disorders, conduct disorders, tic disorders, sleep disturbance, behavioural disturbance and agitation (De Hert et al., 2011; Karanges, Stephenson, & McGregor, 2014; Schneider, Taylor, Zalsman, Frangou, & Kyriakopoulos, 2014).

Clinical practice guidelines recommend the use of psychotropic medications for moderate to severe mental illness and/or when psychological treatment has not reduced symptoms adequately (NICE Guidelines, 2005; RANZCP, 2005, 2015; Topliss, 2004). Psychotropic medication for children and young people is not recommended as the first line of treatment, and clinical guidelines underscore the need for caution and careful consideration of the evidence, including the risks and benefits ratio (NICE Guidelines, 2005; RANZCP, 2005, 2015; Topliss, 2004). While psychotropic medications have the potential to help children and adolescents with mental illness (Hetrick, McKenzie, Cox, Simmons, & Merry, 2012; Strawn & Rynn, 2012), few clinical trials have been conducted with this population group and there is limited evidence to support their efficacy and safety (Correll & Carlson, 2006;

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Karanges et al., 2014; Thomas, Mitchell, & Batstra, 2013; Tsapakis, Soldani, Tondo, & Baldessarini, 2008).

The use of psychotropic medication in children and young people is associated with a range of negative side effects including an increased risk of suicidality, aggression, emotional blunting, sexual and interpersonal side effects (Goldsmith & Moncrieff, 2011; Henry, Kisicki, & Varley, 2012; Read, Cartwright, & Gibson, 2014). Furthermore, psychotropic medications, especially antipsychotics, are known to cause metabolic and endocrine side effects (Coates, Higgings, Woodford, & Grover, 2017; Correll & Carlson, 2006; De Hert, Correll, et al., 2011; De Hert, Detraux, Van Winkel, Yu, & Correll, 2012; De Hert, Dobbelaere, Sheridan, Cohen, & Correll, 2011; James, 2010; John, Koloth, Dragovic, & Lim, 2009; Waterreus & Laugharne, 2009), and children and adolescents are particular vulnerable to these side effects (Correll & Carlson, 2006; Schneider et al., 2014).

Despite the uncertain risk-benefit profile of psychotropic medication use for children and adolescents, prescribing of psychotropic medication, specifically antipsychotics, appears to be on the increase. With a few exceptions (Goddard et al., 2016; Kloosterboer et al., 2018), most studies report a rise in the use of psychotropic medication for children and adolescents (Chirdkiatgumchai et al., 2013; Ilyas & Moncrieff, 2012; Jureidini et al., 2004; Kalverdijk et al., 2017; Karanges et al., 2014; Stephenson, Karanges, & McGregor, 2013; Wijlaars, Nazareth, & Petersen, 2012; Zito, Burcu, Ibe, Safer, & Magder, 2013; Zuvekas & Vitiello, 2012). In Australia, a study by Karanges et al. (2014) investigating trends in the dispensing of psychotropic medications from 2009 to 2012 found that the dispensing of antidepressants, antipsychotics and attention deficit hyperactivity disorder (ADHD) medications increased by 16.1% (a 3.8% increase per year), 22.7% (a 5.2% increase per year) and 26.1% (a 6.0% increase per year) respectively during this four year period. This study found that the most significant increases in antidepressant and antipsychotic medication dispensing occurred in children aged 10–14 (35.5% and 49.1% respectively). Other studies by and large report similar trends, with some variability. A study by Kalverdijk et al. (2017) investigated trends of antipsychotic use in young people up to the age of 19 from 2005/2006 through 2012 in five Western countries (Denmark, Germany, The Netherlands, United Kingdom, United States). This study found that the annual prevalence of antipsychotic use increased in four of the five countries; in Denmark prescribing increased from 0.26 to 0.48% (83.9% relative increase), in the Germany from 0.23 to 0.32% (40.8% increase), in the Netherlands from 0.78 to 1.03% (31.7% increase), and in the UK from 0.11 to 0.14% (29.3% increase). The only cohort that decreased was the US, from 0.94 to 0.79% (− 15.6%) (Kalverdijk et al., 2017). Other research has found that psychotropic prescribing in the Netherlands (Kloosterboer et al., 2018) and US (Goddard et al., 2016) have stabilized.

While there is variability in prescribing patterns in and between countries.

(Hálfdánarson et al., 2017; Kalverdijk et al., 2017), studies investigating Australian trends report a rise in psychotropic prescribing in children and adolescents (Brett et al., 2017; Karanges et al., 2014; Stephenson et al., 2013). While this may be due, at least in part, to the increased prevalence of child and youth mental illness (Mission Australia, 2017), it is also sometimes attributed to an increase in "off label use" of psychotropic medications (Cook et al., 2017). Off-label refers to the use of any medication in the absence of explicit approval by the U.S. Federal Drug Administration (FDA) for a specific use. In Australia, the Therapeutics Goods Administration (TGA) regulates the use of therapeutic medications; however, the extent to which the TGA has commented on the use of psychotropic medications in children and adolescents is limited. As such, to inform prescribing decisions, Australian psychiatrists are also generally guided by evidence base, national and international guidelines (NICE Guidelines, 2005; RANZCP, 2015; Topliss, 2004), and the FDA (an overview of FDA approved psychotropic medications is provided by Hieber, 2013). Generally, medication is granted FDA approval when it is found to be safe and effective for a particular diagnosis, at a certain dosage, for people of a particular age range (American Academy of Child and Adolescent Psychiatry, 2012). While psychotropic medications are approved for use in children and young people for specific conditions, they are often prescribed "off-label" (Cook et al., 2017; Sohn, Moga, Blumenschein, & Talbert, 2016), in particular the use of antipsychotic medication for non-psychiatric conditions such as insomnia or behavioural disturbance (Karanges et al., 2014; Olfson, Blanco, Liu, Wang, & Correll, 2012; Olfson, Blanco, & Wang, 2014; Schneider et al., 2014; Sohn et al., 2016).

In Australia, most studies investigating trends in psychotropic medication use have used population level data (Brett et al., 2017; Karanges et al., 2014; Stephenson et al., 2013). Few studies have investigated psychotropic medication use in clinical practice, and to the best of our knowledge there are no studies that have investigated psychotropic prescribing patterns in Australian youth mental health settings. The current study addresses this gap by identifying the prevalence of psychotropic use and prescribing patterns in a public youth mental health service in New South Wales, Australia.

## 2. Methods

A retrospective file review was undertaken (Gearing, Mian, Barber, & Ickowicz, 2006; Worster & Haines, 2004). The electronical medical records (eMR) of all young people aged 12–17 who had accessed the community youth mental health service in a one year period (between January 2016 and December 2016) were reviewed (N = 189). The youth mental health service is a public service that provides community outreach to young people with moderate to severe mental health issues, excluding psychosis. Young people who had been with the service for less than four weeks were excluded from the sample; this was to ensure that the included sample was engaged with the service and receiving treatment.

Files were reviewed for demographical information (age, gender), diagnosis/presenting issues, prescribed medications, indications of medications, and prescriber type (e.g. psychiatrist, general practitioners (GPs), paediatrician). The information was collected from notes entered into eMR by the service's child and adolescent psychiatrist, as well as notes entered by other services who may have been involved in the care of the young person, such as inpatient or emergency staff. Given the data was collected in a clinical setting, there is some missing data, and, while minimal, some information relevant to prescribing decisions was missing. In addition, while some young people had received a diagnosis, for others only presenting issues were documented. No inter-rater reliability exercises were done, and the data was collected by a psychiatry trainee. Descriptive data analysis was conducted using Excel.

### 2.1. Ethics

Ethical approval was not required as the project was reviewed to be exempt from ethical review by a Human Research Ethics Committee and deemed as an Evaluation Activity as per criteria set by NSW Health (2007). The project was reviewed and authorised by the delegated representative of the organisation in line with the Health Records and Information Privacy Act (HRIP Act) (2002), Ethical Considerations in Quality Assurance and Evaluation Activities developed by the National Health and Medical Research Council (NHMRC) (2014) and the National Statement on Ethical Conduct in Research (2015). The study was conducted in accordance with the National Statement on Ethical Conduct in Research (2015).

## 3. Results

As per Table 1, young people aged 12–17 are referred to the service with a range of mental health issues, specifically anxiety, comorbid anxiety/depression, adjustment disorder, and suicidal ideation/self-