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## Adolescent depression and the treatment gap

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Adolescence is an important risk period for the development of depression, when rates of major depressive disorder (MDD) and symptoms rise markedly.<sup>1</sup> Depressive symptoms and disorder are common in adolescence and are associated with poor long-term mental health, social and educational outcomes. Adolescent MDD is often unrecognised and untreated despite evidence that duration of untreated depressive illness is a key factor in predicting recurrence in adult life.<sup>2</sup> A paper in this issue of *Lancet Psychiatry* demonstrates the beneficial effect of mental health service contact during adolescence on subsequent depressive symptomatology.<sup>3</sup> In a longitudinal community study, Neufeld and colleagues show that, among 14-year old adolescents with a DSM-IV psychiatric disorder, use of mental health services substantially reduces depressive symptomatology at 36 month follow-up. Thus, by age 17, the odds of adolescents who had a disorder but without mental health service use reporting depressive symptoms in the clinical range was seven times higher than in adolescents who did access services. Importantly, these findings were generated using

statistical methods that balance confounders across intervention and control groups (akin to what is done in randomised controlled trials).

Depression has a complex multifactorial aetiology involving both familial/genetic and social risk factors and there are multiple routes to depression.<sup>1</sup> Clinical symptoms or disorders may also act as precursors for depression. For instance, low mood, anxiety, oppositional behavior and ADHD have all individually been found to precede depression.<sup>4,5</sup> In the study by Neufeld and colleagues, mental health service contact resulted in improvement in depression symptoms in a group with a range of diagnoses. This is interesting and raises the question of how long-term beneficial effects on depressive symptoms came about for a seemingly disparate group of individuals. It would be informative to see if the beneficial effect on depressive symptoms was driven by a particular diagnostic group. Clearly, it was beyond the scope of the present paper to assess the mechanisms involved in *how* symptoms were reduced. Nonetheless, it may be worthwhile to speculate about potential mechanisms to help identify the 'active ingredients' of treatment effects.<sup>6</sup> These may differ depending on whether depressive symptoms are the primary or secondary presenting complaint. Interpersonal stress and relationships (with family, peers and teachers), self-representations and engagement in enjoyable activities are all thought to be important in the development of depressive symptomatology and functioning in these areas may also be affected by a range of disorders. For example, oppositional and neurodevelopmental problems may lead to profound social and academic failures, affecting self-representations, interpersonal relationships and vulnerability to depression.<sup>7</sup> Effectively treating a range of psychiatric difficulties could potentially result in an amelioration in depressive symptoms over time.<sup>8</sup> The pathways involved in the long-term beneficial effects on depressive symptomatology observed in the Neufeld study are not currently understood. It seems likely there will be multiple mechanisms and investigating whether mechanisms may differ for depression compared to other symptom outcomes might shed light on the active ingredients of interventions.

It is recognised that many teenagers with a psychiatric disorder do not access or receive interventions. Consistent with this, the majority (62%) of the individuals with a psychiatric disorder in the Neufeld et al study had not accessed any mental health services in the past year. Those individuals showed fewer antisocial traits and disorder, more anxiety disorders and less comorbidity than those accessing treatment. This suggests that individuals with particular diagnoses (i.e. anxiety) may be less likely to access services but is also consistent with the threshold for access to Child and Adolescent Mental Health Service (CAMHS) being high and typically involving more complex cases with high levels of comorbidity and impairment. Interestingly, the beneficial effects of mental health service contact on later depressive symptoms in the Neufeld study were restricted to those that met diagnostic criteria for a psychiatric disorder (or had high sub-threshold symptoms plus functional impairment). This finding illustrates that diagnostic status is a good proxy for how well young people respond to treatment at least as far as depressive symptoms are concerned. This suggests that children with mental health symptoms should be adequately assessed to determine access to specialist CAMHS and therapeutic intervention. Thus, training, tools and resources to support potential referrers in detecting key psychiatric symptoms and functional impairment may help increase the proportion of referrals to specialist mental health services where young people have a clear clinical need. This may also help to address the treatment gap where significant numbers of young people with a diagnosis do not access services.

In conclusion, this paper is important in empirically demonstrating the long-term beneficial effects of prompt treatment of adolescent mental health problems and provides hope that this could be achieved with interventions of relatively short duration.

## Conflict of interest

LR reports grants from the Medical Research Council during the conduct of the study. OE reports other from the Wellcome Trust during the conduct of the study. The other authors declare no conflicts of interest.

## Contributors

FR wrote the paper. All authors provided critical revision of the paper for important intellectual content.

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