



## Impact of common mental disorders during childhood and adolescence on secondary school completion

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There are few data from South Africa and other low- and middle-income countries on how mental disorders in childhood and adolescence may influence different aspects of socio-economic position, including educational attainment. We examined the association between early-onset disorders and subsequent educational achievement in a nationally representative sample of 4 351 South African adults. After adjusting for participant demographic characteristics and traumatic life events, post-traumatic stress disorder, major

depressive disorder and substance-related disorders were each associated with increased odds of failing to complete secondary education (odds ratios and 95% confidence intervals 2.3, 1.0 - 5.1; 1.7, 1.2 - 2.5, and 1.7, 1.2 - 2.5, respectively). These data point to the role that early-life mental disorders may play in educational achievement and subsequent socio-economic position over the life course.

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There is growing interest in the burden of mental disorders in South Africa and other low- and middle-income countries. One recent national survey estimated that 30% of South African adults had experienced an anxiety, a depressive or a substance-related disorder in their lifetime.<sup>1</sup> Given the high prevalence of mental disorder among adults in South Africa, it is not surprising that the mental health of young people has become a significant public health concern.<sup>2</sup>

A critical issue is the influence that the onset of mental disorders during childhood and adolescence may have on development, and in particular on educational attainment. Literature from Europe and North America demonstrates that the onset of mental disorders during childhood and adolescence contributes significantly to lower educational achievement.<sup>3</sup> Low educational attainment reduces economic opportunities, and this in turn contributes to the common

cross-sectional association between mental disorders and lower socio-economic status.<sup>4</sup>

Despite the potential importance of early-onset mental disorders on subsequent educational attainment, few population-based studies have investigated this issue in sub-Saharan Africa. We examined this association in a nationally representative sample of South African adults.

### Methods

The details of the South African Stress and Health (SASH) study, including sampling and interview methods, have been described.<sup>1</sup> In a sample of adults aged 18 and older, lifetime psychiatric diagnoses were measured using the World Health Organization Composite International Diagnostic Interview (CIDI) Version 3.0. This widely used interview guide provides psychiatric diagnoses according to the *Diagnostic and Statistical Manual*, 4th edition, and has excellent reliability within and between raters. In SASH the CIDI focused on common mental disorders (including depression, anxiety and substance-related disorders) and included the age of onset of disorders. Educational attainment was measured by asking participants about the highest level of education they had completed; we categorised this into whether or not participants had finished secondary school, based on completion of Grade 12 (Standard 10).

We examined the association between early-onset mental disorders and subsequent educational attainment using discrete-time survival analysis. Common mental disorders were examined in separate models as time-varying predictors using data on age at onset. The associations between mental disorders and failure to complete secondary education are presented as crude and adjusted odds ratios (ORs) with 95% confidence intervals (CIs). Because traumatic childhood events may confound the association between early-onset mental disorders and educational attainment, we adjusted for the presence of childhood traumas (whether the respondent was physically abused by a caregiver, raped or sexually assaulted,

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or experienced a life-threatening illness or injury). All analyses account for the complex survey design using person-level weights that incorporated sample selection, non-response and post-stratification factors.

## Results

Of the total sample of the 4 351 participants, 54% were female and 76% were black; 3 370 initiated some secondary education and were eligible for this analysis; and 51% of this sub-sample did not complete secondary schooling. Overall, 12.8% of participants were diagnosed with a common mental disorder before the age of 18 (8.8%, 3.7% and 2.2% with any anxiety, depressive or substance-related disorder, respectively); the mean age of onset for participants with a disorder before 18 years of age was 12.3 years (12.0 years, 13.0 years and 14.6 years for individuals with early-onset anxiety, depressive or substance-related disorder, respectively).

There were strong crude associations between early onset of several disorders and failure to complete secondary education. Individuals with any mental disorder, any substance-related disorder and/or major depressive disorder were more likely to fail to complete secondary education compared with those without the disorders (ORs and 95% CI 1.2, 1.0 - 1.4; 1.6, 1.1 - 2.5; and 1.6, 1.1 - 2.3, respectively). Table I shows the associations between early onset of different mental disorders and failure to complete secondary education, adjusted for participants' age, sex, race and childhood trauma. Among individual conditions, post-traumatic stress disorder and major depressive disorder were both associated with significantly increased odds of failing to complete secondary education (ORs and 95% CI 2.3, 1.0 - 5.1 and 1.7, 1.2 - 2.5, respectively).

In addition, early onset of any substance-related disorder was associated with an increased odds of failing to complete secondary education (OR 1.7; 95% CI 1.1 - 2.5), and this association was driven principally by alcohol abuse and drug dependence.

## Discussion

This analysis of the SASH survey demonstrates the high prevalence of mental disorders during childhood and adolescence, and presents the first population-based evidence from South Africa that prior mental disorders are associated with lower educational achievement. The prevalence of mental disorders in this sample, and the observed association between early-onset mental disorders and reduced educational achievement, are similar to findings from Europe, North America and Australia.<sup>5</sup>

These data are subject to limitations. This cross-sectional study of adults relied on recall to assess the age of onset of mental disorders and educational attainment. Since both of these may be subject to substantial reporting errors, this association requires investigation in prospective studies of young people. In addition, a key disorder with childhood onset and negative impact on education – attention deficit/hyperactivity disorder – was not assessed.

Given the high prevalence of mental disorders among young people in South Africa and many other countries, interventions to assist in the identification and management of affected youth are needed.<sup>2,6</sup> At a population level, these data have important implications for the way we approach public mental health. For example, policy makers should consider how mental health in early life serves as a precursor to subsequent

**Table I. Relative odds of failing to complete secondary education according to the presence of early-onset mental disorders in a nationally representative sample of South African adults, adjusted for participant age, gender, race and childhood traumas**

| Disorder                       | Odds ratio | 95% confidence interval | p-value |
|--------------------------------|------------|-------------------------|---------|
| Any mental disorder            | 1.2        | 1.0 - 1.5               | 0.045   |
| Anxiety disorders              |            |                         |         |
| Social phobia                  | 1.1        | 0.7 - 1.9               | 0.639   |
| Panic disorder or agoraphobia  | 1.1        | 0.9 - 1.5               | 0.277   |
| Post-traumatic stress disorder | 2.3        | 1.0 - 5.1               | 0.046   |
| Generalised anxiety disorder   | 0.6        | 0.3 - 1.2               | 0.133   |
| Any anxiety disorder           | 1.1        | 0.9 - 1.4               | 0.467   |
| Mood disorders                 |            |                         |         |
| Major depressive disorder      | 1.7        | 1.2 - 2.5               | 0.003   |
| Substance-related disorders    |            |                         |         |
| Alcohol abuse                  | 1.8        | 1.1 - 3.2               | 0.031   |
| Alcohol dependence             | 1.1        | 0.3 - 3.9               | 0.856   |
| Drug abuse                     | 1.2        | 0.6 - 2.5               | 0.538   |
| Drug dependence                | 2.9        | 0.9 - 10.0              | 0.083   |
| Any substance-related disorder | 1.7        | 1.1 - 2.5               | 0.019   |
| Number of disorders present    |            |                         |         |
| Exactly one disorder           | 1.1        | 0.9 - 1.4               | 0.210   |
| Exactly two disorders          | 1.4        | 0.9 - 2.2               | 0.200   |
| Three or more disorders        | 2.3        | 1.0 - 5.5               | 0.057   |



mental health problems in adulthood rather than viewing child and adolescent mental health as an isolated issue. In turn, educational and mental health services may begin to screen younger populations rather than waiting for individuals to present symptoms later in life.

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