

Prevalence of depression, anxiety, and psychotic-like experiences amongst young people in educational settings in Chennai: A cross-sectional study from South India

Vijaya Raghavan^{1,*}, Srividya N. Iyer^{2,3}, R Thara¹, Catherine Winsper⁴, Sangeetha Chandrasekaran¹, Vimala Paul¹, Ramakrishnan Pattabiraman¹, Greeshma Mohan¹, Jothilakshmi Durairaj¹, Graeme Currie⁵, Richard Lilford⁶, Vivek Furtado⁴, Jason Madan⁷, Maximilian Birchwood⁷, Caroline Meyer⁸, Mamta Sood⁹, Rakesh Chadda⁹, Mohapradeep Mohan⁴, Jai Shah^{2,3}, Sujit John¹, R Padmavati¹, , Swaran P Singh^{4,10} on behalf of the WIC Consortium

¹Schizophrenia Research Foundation, R/7A, North Main Road, Anna Nagar West Extension, Chennai, India

²Prevention and Early Intervention Program for Psychosis, Douglas Mental Health University Institute, McGill University, Montreal, Canada

³Department of Psychiatry, McGill University, Montreal, Quebec, Canada

⁴Division of Mental Health and Wellbeing, Warwick Medical School, University of Warwick, Coventry, UK

⁵Warwick Business School, University of Warwick, Coventry, UK

⁶Institute of Applied Health Research, University of Birmingham, Birmingham, UK

⁷Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, Coventry, UK

⁸WMG and Warwick Medical School, University of Warwick, Coventry, UK

⁹Department of Psychiatry, All India Institute of Medical Sciences, New Delhi, India

¹⁰Coventry and Warwickshire Partnership Trust, Coventry, UK

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Summary

Background: Mental health problems are common in young people. Epidemiological studies from India report wide variations in prevalence, which are partly attributable to

methodological limitations like small sample sizes reducing precision. This study aimed to determine the prevalence of depression, anxiety, and psychotic-like experiences in a large youth sample attending educational settings in Chennai, South India. We also explored potential risk pathways to inform early intervention strategies.

Methods: We recruited young people from four schools (11-18 years) and five colleges (18-24 years) in Chennai. Depression, anxiety, and psychotic-like experiences were assessed using the Patient Health Questionnaire-9 (PHQ-9), the Generalized Anxiety Disorder Scale-7 (GAD-7) and the Community Assessment of Psychic Experiences – Positive Scale (CAPE-15). We collected demographic data on age, gender, living status, siblings, and history of absence from school.

Findings: A total of 13,362 young people (mean age: 16.5 ± 2.4) completed self-assessment measures. The point prevalence of moderate-to-severe depression was 30.8% (95% CI: 30.1-31.6) and anxiety was 21.7% (95%CI: 21.0-22.4). Prevalence of severe depression and anxiety was 10.2% and 5.8%. A total of 29.6% of youths reported at least one psychotic experience. In path analysis (controlling for associations between risk factors and symptoms), older age and identifying as female and non-binary rather than male were significantly associated with risk of severe depression. Non-binary gender was indirectly associated with depression via living alone or in a hostel (rather than with family) and school discontinuation. Associations between risk factors and anxiety and psychotic-like symptoms were weaker.

Interpretation: Prevalence of depression, anxiety and psychotic-like experiences is high amongst youth in educational settings in Southern India. Youth who identify as female, non-binary, and live away from family are especially at risk. Interventions should ensure coverage of these at-risk groups to help prevent absence from school, and the development of mental health problems.

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Research in context.

Evidence before this study

We searched PubMed (titles and abstracts) with no language restrictions from inception to 9th April 2024. We used the search terms "depression" OR "depressive symptoms" OR

"anxiety" OR "psychosis" OR "psychotic symptoms" AND "India" AND "prevalen*" OR "incidence" OR "rate" OR "frequency" OR "percentage" OR "epidemiolog.*" In 2019, a review of Indian studies, reported a range of depression prevalence from 3-68% in school-going children and adolescents.¹ Likely reasons for wide variations in prevalence figures included age, gender, rural/urban locations and methodological factors, e.g. small sample sizes limiting precision.² A recent systematic review and meta-analysis examined the prevalence of anxiety disorders in adolescents in India.³ The authors reported a pooled prevalence of 41% (95% CIs: 14-96%); with lower pooled prevalence rates in studies deemed to be at low risk of bias: 29% (95% CIs: 11-46%). The most recent epidemiological study published in 2023,⁴ assessed clinically relevant depression and anxiety symptoms in 1, 213 Indian adolescents: 37% reported depressive symptoms and 30·6% reported anxiety symptoms. Females and older students reported the highest rates.

Studies assessing psychotic-like experiences (PLEs) in non-clinical youth are rare in low-and middle-income countries (LMICs). Reports suggest that PLEs might be more pronounced in LMICs due to a greater cultural acceptance towards such phenomena.⁵ Of 9,564 youths (15-25 years) assessed in Kenya,⁶ 72% reported at least one *infrequent* PLE over the past year; 35·2% reported moderate levels and 4·6% high levels. In a large study from China, 25·5% of males and 27·0% of females reported experiencing at least one PLE "often or nearly always."⁷ A study from Chile examined how PLEs related to psychological processes in adolescents and concluded that PLEs exist within a broad context of other domains of psychopathology, and should be considered during the assessment of mental health risk.⁸ We did not identify any studies assessing PLEs in youths attending educational settings in India.

Added value of this study

The current study is the largest (>13,000 youths) to assess the prevalence of depression and anxiety in young people in India, and the first to assess psychotic-like experiences and their relationship to anxiety and depression in India. Our prevalence figures demonstrated high precision and were slightly lower than previously reported depression and anxiety figures in India. Rates of PLEs were comparable to those reported in other LMICs, and there was a high degree of co-morbidity between depression, anxiety, and psychotic-like symptoms. We found that identifying as non-binary gender was strongly associated with severe depression both directly and indirectly through potential risk pathways including living away from family, and a history of discontinuation from school.

Implications of all the available evidence

Comparison of our findings with the existing literature indicate a prevalence of approximately 30% for moderate depression and 10% for severe depression in youth attending educational settings in India.⁴ Levels of anxiety might be slightly lower than previously reported⁴ at 21·7% for moderate anxiety and 5·8% for severe anxiety. PLEs are common in youths in LMICs, and strongly associated with depression and anxiety. Findings from this study emphasise the importance of early interventions for mental health problems and highlight at-risk groups including youths identifying as non-binary and those who leave the family home or have a history of absence from school.

Introduction

The period of growth from adolescence to young adulthood includes many important transitions, such as marked physical, psychological and cognitive developments.⁹ Thus, it is not surprising that young people are at heightened risk of developing mental health problems.¹⁰ Understanding the prevalence and correlates of youth mental health problems is

especially warranted in India as young people account for approximately 30% of India's total population.¹¹

Reliable estimates of prevalence in low-and middle-income countries (LMICs) have been difficult to obtain due to limited resources⁴ and small sample sizes, which can lead to imprecise estimates.² Further, there is a dearth of Indian studies examining psychotic-like experiences and their relationship to other mental health problems, which is problematic considering growing evidence that psychotic-like experiences in youth reflect a vulnerability to a range of adverse mental health outcomes.⁶

The current large scale multi-site study was designed to address some of the limitations in the evidence base by 1) providing a robust measure of prevalence of depression, anxiety, and psychotic-like experiences in youth attending educational institutions in Chennai, South India; and 2) exploring potential risk pathways to these disorders. Specifically, we addressed the following research questions:

- (1) What is the prevalence (moderate-to-severe and severe) of depression, anxiety, and psychotic-like experiences (at least one experienced often)?
- (2) What is the strength of the associations between depression, anxiety and psychotic-like symptoms?
- (3) What are the potential risk pathways (direct and indirect) to depression, anxiety, and psychotic-like experiences?

Methods

Context

This study is a part of the work of the National Institute of Health Research (NIHR) Global Health Research Group (GHRG) on Psychosis Outcomes: the Warwick-India-Canada (WIC) network, with overall goals of better understanding first-episode psychosis in LMICs and improving youth mental health.¹²

Sites

Study sites included four schools (age range: 11-18 years; 1 state-run school and 3 private schools) and five colleges (age range: 18-24 years; 2 state-run colleges; 3 private colleges). All institutions were located within the Chennai city limit. Chennai is an urban metropolis situated on the south-eastern coast of India, in the state of Tamil Nadu, with a population exceeding 10 million. It comprises a diverse socio-economic landscape. Known for numerous educational institutions, Chennai attracts a diverse population of students from across the country. Appropriate approvals were obtained, and a memorandum of understanding (MOU) was signed with each educational institution as an expression of agreement to proceed with the study. The study was conducted between June 2018 and October 2019.

Participants

Inclusion criteria included: (1) being aged between 11 and 24 years; (2) currently studying in a school or college; and (3) willingness to be part of the study and ability/capacity to provide informed consent.

Measures

Sociodemographic characteristics

We developed an online self-report tool to capture sociodemographic characteristics based on previously reported risk factors including gender,^{4,13} age,⁴ number of siblings,¹⁴ history of absence from school,¹⁵ and living away from family.¹⁶ Gender was coded as: 0=male; 1=female; and 2=non-binary; age was included as a continuous and categorical variable:

"10-14" (middle school), "15-17" (high school) and "18-24" (college); number of siblings was included as a continuous variable; history of discontinuation from school (for one month or more) was coded as 0=yes; 1=no; and living status was coded as 0=living with family; 1=living in a hostel; 2=living alone.

Depression

The Patient Health Questionnaire-9 (PHQ-9)¹⁷ is an established tool which has been validated with young people in India.¹⁸ Participants rate each of 9 items (e.g. "Poor appetite or overeating;" "Little interest of pleasure in doing things") over the past two weeks from 0 ("not at all") to 3 ("nearly every day") making a total possible score of 27. Based on previous research,^{4,19} we used the following cut-points: scores of 0-9 = no or mild depression; scores of 10+ = presence of moderate-to-severe depression; scores of 15+ = severe depression. Cronbach's alpha in the present sample was 0.77.

Anxiety

The Generalized Anxiety Disorder scale-7 (GAD-7) is a validated scale,²⁰ which has been used with students in India.²¹ Participants are asked to rate the frequency of seven items (e.g. "Feeling nervous, anxious or on edge;" "Becoming easily annoyed or irritable") over the past two weeks from 0 ("not at all") to 3 ("nearly every day") making a total possible score of 21. Consistent with previous studies,^{4,20} we used the following cut-points: score of 0-9 =no or mild anxiety; 10+ = presence of moderate-to-severe anxiety; 15+ = presence of severe anxiety. Cronbach's alpha in the present study was 0.80.

Psychotic-like experiences (PLE)

We used the widely-used Community Assessment of Psychic Experiences – Positive scale (CAPE-P15) to assess the prevalence of psychotic-like experiences (PLE) over lifetime.²² The CAPE-P15 is a 15-item tool used in non-clinical populations, which has been validated in Asian countries.²³ The CAPE-15 has three sub-scales: persecutory ideation (e.g. "Felt as if there was a conspiracy against you"), bizarre experiences (e.g. "Felt as if thoughts in your head were being taken away from you") and perceptual abnormalities (e.g. "Heard voices when you are alone"). Each item is scored on a 4-point Likert scale from 0 = "never;" 1 = "sometimes;" 2 = "often" and 3 = "nearly always" making a total score of 45. Participants were categorized as : (1) having at least one PLE "often/nearly always" and (2) having at least one PLE "nearly always." ²⁴ Cronbach's alpha in the present study was 0.85.

Translation of assessment tools

The CAPE-P15 has been translated into Tamil (i.e. the local language), using the standard forward and back translation methodology. The Tamil version was pilot tested with 15 young people and necessary modifications were made before administering to the larger population. The PHQ-9 and GAD-7 (Tamil version) have previously been used in Indian studies.^{25,26}

Procedure

All assessment tools were administered through a bespoke online application called the SCARF-TrustCircle online app portal (<https://scarf.trustcircle.co/>). The app provided English and Tamil versions of each tool. Trained mental health professionals visited educational institutions to introduce the study and explain the process of completing the assessments on mobile phone or app. Data collection took place in the classroom enabling student queries to be answered. Results of the assessment were fed back to the participants through the app, including guidance on help seeking if scores indicated the need.

Data analysis

We conducted statistical analysis in SPSS version 29.0 (logistic regressions) and Mplus version 7.11 (path analysis). The analysis comprised the following steps:

- 1) Determination of the prevalence of moderate and severe levels of depression and anxiety, and of psychotic-like experiences. Prevalence rates and 95% confidence intervals (CIs) were calculated using the one sample proportion function in SPSS.
- 2) Assessment of the strength of associations between depression, anxiety and psychotic-like experiences using the cross-tabulation function in SPSS. Results are reported in Odds Ratios with 95% Confidence Intervals.
- 3) Assessment of the associations between pre-defined demographic risk factors and severe depression, anxiety, and psychotic-like experiences using binomial logistic regression analysis. Results are reported in Odds Ratios with 95% Confidence Intervals.
- 4) Assessment of the associations between demographic risk factors using binomial logistic regressions. Results are reported in Odds Ratios with 95% Confidence Intervals.
- 5) Path analysis to determine potential risk pathways to depression, anxiety, and psychotic-like experiences using Mplus. We controlled for multiple associations between demographic risk factors and depression, anxiety, and psychotic-like experiences to examine direct and indirect (i.e. mediational) pathways. We modelled pathways based on results from our binomial logistic regressions. Although the data is cross-sectional, we modelled potential pathways based on logical assumptions (e.g. a reported history of discontinuation from school preceded currently reported depression). Therefore, we cannot claim causality of pathways or be certain of the direction of associations. We used probit estimation as the path model included categorical and continuous variables. Results are reported in unstandardised probit coefficients with standard errors. Associations are considered statistically significant at $p < .05$.

Ethical considerations

This study has been approved by the University of Warwick's Biomedical and Scientific Research Ethics Committee (reference: REGO-2018-2208), Coventry, United Kingdom. Local ethical approval for the study was obtained from the Institutional Ethics Committee of SCARF (Ethics approval number: SRF/WIC-12/NOV-2017). Study participants 18 years and above provided written informed consent. Both assent from participants and consent from their parents/guardians were obtained for participants between 15-18 years. Written informed consent was obtained from parents/guardians for participants aged between 11 and 14 years.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

Results

14,783 participants were recruited into the study. Complete data were available for 13,362 participants (87.4%).

Socio-demographic characteristics of the study participants

The mean age of the participants was 16.4 (SD $\pm$ 2.4) ranging from 11 to 24 years of age. 6746 (50.5%) identified as male, 6178 (46.2%) identified as female, and 438 (3.3%) as non-binary. Most (74%) participants spoke the regional language of Tamil, other participants spoke languages of other states in India, including Malayalam (9.1%), Telugu (6.4%), and

Hindi (5.8%). Most participants were living with their parents (90.9%), 6.5% were living in hostels, and 2.6% alone. A total of 2.6% of students had experienced a discontinuation of their studies before re-joining school or college.

Prevalence of depression, anxiety, and psychotic-like experiences

A total of 30.8% (95% CI: 30.1, 31.6%) of participants scored above the cut-point for moderate-to-severe depression, and 21.7% (95% CI: 21.0, 22.4%) scored above the cut-point for moderate-to-severe anxiety. A total of 55.8% (95% CI: 55.0, 56.7%) of students reported at least one psychotic-like experience "often or nearly always." Severe depression was reported by 10.2% (95% CI: 9.7, 10.7%) of students, and severe anxiety was reported by 5.8% (95% CI: 5.4, 6.2%) of students. A total of 29.6% (95% CI: 28.8, 30.3%) of students reported at least one psychotic-like experience "nearly always." Three percent of students reported co-morbid severe depression, anxiety, and psychotic-like experiences (3.0%; 95% CI: 2.8, 3.3%) and 3.7% (95% CI: 3.4, 4.0%) reported co-morbid severe depression and anxiety symptoms.

Risk factors associated with depression, anxiety, and psychotic-like experiences

Table 1 presents the associations between demographic risk factors and depression (severe), anxiety (severe), and psychotic-like (at least one nearly always) experiences. Older age was significantly associated with higher prevalence of severe depression and anxiety, and psychotic-like experiences (at least one nearly always), with the strongest association in the highest age group (18-24 years). Those identifying as female were significantly more likely to be depressed than males, as were those identifying as non-binary, where there was an especially strong association. History of discontinuation from school was significantly associated with depression and psychotic-like experiences. Living status (i.e. living alone or in a hostel, rather than with family) and having a greater number of siblings were significantly associated with depression, anxiety, and psychotic-like symptoms.

[Insert Table 1 about here]

Associations between depression, anxiety, and psychotic-like experiences

Anxiety and depression were very strongly associated (Odds Ratio: 23.25; 95% CI: 19.8, 27.3), as were anxiety and psychotic-like experiences (OR: 9.15; 95% CI: 7.70, 10.87) and depression and psychotic-like experiences (OR: 7.07; 95% CI: 6.25, 8.00).

Associations between demographic risk factors

Several demographic risk factors were significantly associated with adverse outcomes (Table 2). Non-binary gender, older age and greater number of siblings were significantly associated with history of absence from school and living alone or in a hostel. Living in a hostel (OR=6.69; 95% CI=5.05, 8.86) or alone (OR=29; 95% CI=21.9, 38.3) were strongly associated with absence from school.

[Insert Table 2 about here]

Potential risk pathways to the development of depression, anxiety, and psychotic-like experiences

Our path model demonstrated a good fit to the data: CFI=0.965; RMSEA=0.067 (90% CI=0.061, 0.073). Main direct and indirect associations are reported in Table 3. Controlling for all significant associations simultaneously, identifying as female and non-binary gender,

age, living alone, and discontinuation from school remained significantly associated with severe depression.

[Insert Table 3 about here]

Females, youths of non-binary gender and youths with a greater number of siblings were more likely to live in a hostel. Females were significantly less likely to live alone (than males), whilst those identifying as non-binary were significantly more likely to live alone. Living in a hostel or alone (in comparison to living with family) were significantly associated with history of discontinuation from school. Depression symptoms were significantly associated with anxiety and psychotic-like experiences and anxiety was significantly associated with psychotic-like experiences. The association between non-binary gender and severe depression was significantly mediated by history of discontinuation from school. The association between living in a hostel or alone and depression symptoms was significantly mediated by history of discontinuation of school. Further, a four variable pathway indicated that the association between non-binary gender and depression manifested through living in a hostel or alone and history of discontinuation from school. Age was significantly associated with severe anxiety symptoms and psychotic-like experiences. Having a greater number of siblings was significantly associated with anxiety symptoms. There were no indirect associations between age and number of siblings and anxiety or psychotic-like experiences in the path model.

Discussion

To the best of our knowledge this is the largest epidemiological study to assess depression, anxiety, and for the first time, psychotic-like experiences in youths attending educational facilities in India. We found that a large proportion of youths reported depression and anxiety symptoms in the clinically relevant, moderate range.⁴ Our prevalence figures demonstrated high precision (i.e. rates between 30.1% and 31.6% for moderate depression and between 21.0% and 22.4% for moderate anxiety). Rates of severe depression ranged from 9.7% to 10.7% and severe anxiety from 5.4% to 6.2%. These figures are largely comparable to a recent study from central, eastern India which reported rates of 37% and 30.6% for moderate symptoms and 11.1% and 8.9% for severe symptoms.⁴ The reasons for our slightly lower prevalence figures are not clear. Our sample was older on average (which has been linked to higher symptoms) and comprised solely urban students. Previous work indicates that students from rural areas might suffer higher rates of depression and anxiety than their urban counterparts.⁴ with respect to psychotic-like experiences, rates ranged from 28.8% to 30.3% for “nearly always” present and from 55% to 56.7% for “often” present. We do not have any Indian studies to compare these rates to; however, rates are largely comparable to other studies from LMICs^{6,7} and indicate relatively high rates of PLEs in LMICs.

Non-binary gender, living alone, and a history of discontinuation from school were significantly associated with severe depression, and these associations remained significant once all confounders were controlled for in the path analysis. Youths identifying as non-binary were more likely to live away from home and have a history of discontinuation from school. Indeed, unadjusted associations between non-binary gender and living alone and discontinuation from school were very strong (i.e. Odds Ratios from 20 to 30). Our path analysis demonstrated significant indirect pathways from non-binary gender to depression via living in a hostel or alone and history of discontinuation from school. This suggests that living status and history of absence from school could partially mediate (or be a marker for) heightened risk of depression in non-binary youths. The mechanisms underpinning these pathways remain unclear. It could be that non-binary youth have family difficulties causing

them to leave home, and are subject to victimisation at school increasing risk of absenteeism and subsequent depression.¹³ It should be noted; however, that depression could precede these factors or there could be bi-directional relationships.²⁷ Regardless of the direction of associations, living alone and absence from school were potent indicators of depression (across genders), and could be used to target assessment and early intervention,¹⁵ e.g. school policies and educational programmes to reduce stigma and victimisation,²⁸ and working with families.²⁹ In path analysis controlling for all associations simultaneously, non-binary gender remained a significant predictor of depression indicating that additional approaches might be needed such as affirmative psychological interventions³⁰ and peer support networks in communities.³¹

In unadjusted analysis, we found that older age, female gender, and greater number of siblings were significantly associated with depression, anxiety, and psychotic-like experiences. In path analysis controlling for all associations simultaneously age remained a significant predictor of all three disorders, whilst female gender remained a significant predictor of depression. Female gender and older age have previously been highlighted as risk factors for depression and anxiety in youths in India⁴ and should be considered when designing targeted interventions.

Major strengths of our study include the considerable sample size, which increases the precision of our prevalence estimates. The inclusion of young people between 11-25 years of age, the use of validated instruments to assess depression, anxiety and psychotic-like experiences, and path analysis methodology to help disentangle potential risk pathways to mental health problems in youth. Our study also has limitations. First, as the data is cross-sectional, we cannot ascertain the direction of associations between potential risk factors and mental health symptoms. In our path model, we mapped out potential risk pathways based on logical assumptions (e.g. a history of discontinuation from school preceded currently reported depression); however, it is possible that mental health symptoms preceded some risk factors (e.g. mental health problems might have caused youths to leave the family home). Nevertheless, our analysis enabled us to identify important risk factors or markers for targeted interventions to help prevent the development of serious mental health problems. Second, we did not include all potential risk factors in our models. For example, trauma and poverty could have played an important role in risk pathways (e.g. by increasing the risk of leaving home and subsequent mental health problems). Finally, we relied on self-report for measures of anxiety, depression, and psychotic-like symptoms. This could have potentially inflated our prevalence rates,² but was the only practical option for our considerable sample size.

In conclusion, our large-scale study indicates a high prevalence of depression, anxiety, and psychotic-like experiences amongst young people in the educational settings in urban South India. Youths who are non-binary, have a history of discontinuation from school and live alone are especially at risk and require additional supports.

Contributors

SPS, RT, and SI conceived the study. VR, SC, VP, RP, and GM collected the data. VR, JD, RT, SI and SPS analysed the data. VR, RT, SI and SPS wrote the report with contributions from all other authors. SI and SPS accessed and verified the underlying data. All authors contributed to writing (review and editing), had access to the data, and were responsible for the final decision to submit for publication.

Declaration of interests

The authors declare no competing interests.

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Table 1. Binomial logistic regression analyses to determine the associations between socio-demographic risk factors and severe depression, anxiety and psychotic-like experiences						
	Severe depression		Severe anxiety		Psychotic experiences	
Age	10-14	[reference]	10-14	[reference]	10-14	[reference]
	15-17	1.45 (1.25, 1.70)	15-17	1.42 (1.16, 1.74)	15-17	1.18 (1.07, 1.30)
	18-24	1.66 (1.44, 1.92)	18-24	1.83 (1.51, 2.20)	18-24	1.37 (1.25, 1.50)
Gender	Male	[reference]	Male	[reference]	Male	[reference]
	Female	1.39 (1.23, 1.56)	Female	0.80 (0.54, 1.20)	Female	0.93 (0.86, 1.01)
	Non-binary	3.00 (2.35, 3.83)	Other	1.07 (0.71, 1.60)	Other	1.47 (1.20, 1.79)
Discontinuation from school	No	[reference]	No	[reference]	No	[reference]
	Yes	2.45 (1.88, 3.20)	Yes	1.01 (0.64, 1.61)	Yes	1.40 (1.12, 1.75)
Living status	Family	[reference]	Family	[reference]	Family	[reference]
	Hostel	1.48 (1.21, 1.81)	Hostel	1.29 (0.99, 1.70)	Hostel	1.35 (1.17, 1.56)
	Alone	2.50 (1.92, 3.30)	Alone	1.51 (1.02, 2.24)	Alone	1.62 (1.30, 2.02)
Number of siblings	Continuous measure	1.13 (1.05, 1.22)	Continuous measure	1.11 (1.01, 1.23)	Continuous measure	1.17 (1.11, 1.23)
Severe depression = 15+ on the Patient Health Questionnaire-9; Severe anxiety = 15+ Generalized Anxiety Disorder scale-7; Psychotic experiences = one or more psychotic symptom experienced nearly always; significant associations shown in bold type face						

Table 2. Binomial logistic regressions to determine associations between early risk factors and living status and discontinuation from school

	Living status	History of discontinuation from school
Age	Hostel: 1.24 (1.20, 1.27)	N/A
Age	Alone: 1.23 (1.18, 1.29)	1.08 (1.03, 1.13)
Gender	[reference group]	
Female	Hostel: 2.74 (2.34, 3.20)	N/A
	Alone: 0.71 (0.55, 0.94)	0.73 (0.54, 0.98)
Non-binary	Hostel: 9.54 (7.20, 12.65)	N/A
	Alone: 22.71 (17.19, 30.0)	32.77 (25.0, 42.9)
Number of siblings	Hostel: 1.22 (1.12, 1.34)	N/A
	Alone: 1.37 (1.19, 1.57)	1.24 (1.07, 1.43)
Significant associations in bold type face; age and number of siblings continuous variables; gender: male is reference category		

Table 3. Path analysis to determine risk pathways to depression, anxiety and psychotic-like symptoms; direct and indirect (mediational) associations						
	Depression		Anxiety		Psychotic-like experiences	
Risk factors	Direct effects	Indirect effects via discontinuation from school	Direct effects	Indirect effects via discontinuation from school	Direct effects	Indirect effects via discontinuation from school
Age	0.034 (0.007)	0.001 (0.002)	0.053 (0.007)	-	0.031 (0.005)	0.000 (0.001)
Gender [male reference]	[male reference]					-
Female	0.158 (0.032)	-0.021 (0.010)	-	-	-	
Non-binary	0.313 (0.098)	0.162 (0.061)	-	-	0.071 (0.085)	0.070 (0.049)
Number of siblings	0.035 (0.021)	0.004 (0.003)	0.033 (0.026)	-	0.084 (0.016)	0.002 (0.002)
Living status [family reference]						-
Hostel	0.007 (0.061)	0.064 (0.026)	-	-	0.090 (0.049)	0.028 (0.020)
Alone	0.093 (0.045)	0.057 (0.022)	0.063 (0.053)	-	0.059 (0.038)	0.025 (0.017)
History of discontinuation from school	0.112 (0.042)	-	-	-	0.048 (0.034)	-
Pathways modelled based on significant findings in binomial logistic regressions; Model fit: CFI=0.965; RMSEA=0.067 (90% CI=0.061, 0.073); results reported in co-efficients with standard errors; significant associations highlighted in bold						