

Supplementary Material I

**Table S1.** Correlates of interest and how they were captured in the Young Minds Matter (YMM) survey

Category	Correlate of interest	YMM item/s	Coding/recoding and further explanation of the variables
Sociodemographics	Age	Age - Age at time of parent interview	Age was measured as the age of the participant at the time of the interview. Participants aged 14–15 years were compared to those aged 16–17 years.
	Sex	Sex	-
	School attendance status	yed1 – Do you go to school? Yes or no	-
Mental disorders/problems	12-month major depressive disorder	ymdyim - Youth - Major Depressive Disorder - Last year - Diagnosis (with impairment criterion)	Measured using the Youth Self-Report Diagnostic Interview for Children (DISC-IV) (Shaffer et al., 2000).
	12-month disordered eating behaviour	<p><b>lwed - low weight problem eating behaviour group:</b>                      Body Mass Index (BMI) in the underweight range (17 or less; Cole et al., 2007) and young person dieted, fasted, vomited or used laxatives to lose weight or regularly exercised when they were supposed to be doing other things. Specific survey items are outlined below.</p> <p>One of the following ALSPAC items needed to be endorsed (in addition to an underweight BMI) for lwed classification:                      YRB49. During the past 12 months, did you go on a diet to lose weight or keep from gaining weight?                      YRB50. During the past 12 months, was there a time when you regularly exercised instead of doing other things that you were supposed to be doing, or while you were injured, in order to lose weight or avoid gaining any weight?                      YRB51. During the past 12 months, how often did you fast (not eat for at least a day) to lose weight or avoid gaining weight?</p>	<p>The YMM survey sought to identify eating behaviours that may be on the pathway to eating disorders. The ‘binge eating and purging eating behaviour group’ and ‘low weight problem eating group’ were determined by the YMM survey team according to self-report responses to questions from the Avon Longitudinal Study of Parents and Children (ALSPAC; Golding et al., 2001), together with self-reported BMIs. Any participants endorsing either group (lwed or beped) were classified into the ‘disordered eating behaviour group’ used in this study.</p> <p>116 or 5.8% of adolescent participants did not respond to the weight or height questions (response of ‘don’t know’), and therefore their BMI could not be calculated. We applied the Low Weight Eating Disorder algorithm to the participants with missing BMI assuming they had a low weight BMI and the Binge Eating and Purging Disorders algorithm to the same participants assuming they had a normal weight BMI. Of the 116, 96 would not meet the criteria for either disorder regardless of their actual weight, so we could safely impute No for both eating disorder variables for these participants. None of the remaining 20 participants met the criteria for a binge eating and purging problem behaviour even if they had been of normal weight, so it was safe to impute ‘No’ for binge eating and purging behaviour for all the participants with a missing BMI.</p> <p>As there were only 20 adolescent participants with a missing BMI who could possibly have a low weight eating disorder, we did not think it was worth</p>

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		<p>YRB52. During the past 12 months, how often did you make yourself throw up (vomit) to lose weight or avoid gaining any weight?</p> <p>YRB53. During the past 12 months, did you take laxatives or other tablets or medicines (diet pills or water tablets) to lose weight or avoid gaining weight?</p> <p><b>beped - binge eating and purging problem eating behaviour group:</b> Both binge eating and either vomiting or taking laxatives to control weight in adolescents with a BMI that was not in the underweight range (&gt;17). Specific survey items are outlined below.</p> <p>Participants had to endorse the following ALSPAC items (in addition to a BMI not in the underweight range) for beped classification: YRB54. During the past 12 months, how often did you go on an eating binge?</p> <p>AND either endorsement of YRB52 (vomiting) or YRB53 (taking laxatives).</p> <p>For lwed and beped, BMI was calculated from self-reported heights and weights, as is standard practice in the literature (Shiely et al., 2010).</p>	<p>performing a multiple imputation. Instead, we imputed 'Yes' for low weight eating disorder for participants 1818 and 2657 where the parent had reported their child had been diagnosed with an eating disorder and the child reported dieting and fasting. We also imputed 'Yes' for participant 4167 who reported dieting, exercising and regularly using laxatives to control weight, and No for the remainder.</p>
Substance use	Lifetime substance use	<p>yrb16 - Have you ever tried cannabis/marijuana?</p> <p>yrb20 - Have you ever used illegal drugs, or sniffed petrol, glue, aerosol, paints, solvents or nitrous?</p>	<p>Self-reported lifetime use of cannabis or other illegal drugs (including sniffed petrol glue, aerosol, paints or nitrous). This variable does not include lifetime alcohol use.</p>
Environmental factors	12-month bullying	<p>yrb61 - In the last 12 months, how often were you bullied or cyber bullied?</p>	<p>Self-reported bullying or cyber bullying in the past 12 months: (1) I was not bullied; (2) once or twice; (3) I was bullied every few months; (4) I was</p>

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			bullied every few weeks; (5) I was bullied about once a week; (6) I was bullied most days. Recoded into I was not bullied vs. I was bullied in the past 12 months.
	Social isolation composite score	<p>ypf11 - About how many friends do you have who you either hang out with, talk to on the phone, regularly send messages to, either through text or online, or get together with socially?</p> <p>yfi4 - Each week how often do you see relatives who don't live with you and/or friends [outside of school hours/outside of work hours] face to face?</p> <p>yfi5 - Each week how often do you keep in touch with relatives and/or friends either on the phone or over the internet by email, or social networking or something else like Skype?</p> <p>yfi3 - Each week, [apart from compulsory school activities], how often do you participate in clubs, groups or activities outside of school hours, for example in a youth group, acting, dancing, musical group (such as a band or choir) or playing sport?</p> <p>ypf12 - How much can you rely on your friends for help if you have a serious problem?</p>	<p>Self-reported number of friends (recoded into zero=1 vs. one or more=0); frequency per week of face-to-face contact with friends or non-co-resident relatives (recoded into &lt;once a week=1 vs. ≥once a week= 0); frequency per week of online contact with friends or relatives (recoded into &lt;once a week=1 vs. ≥once a week=0); level of involvement per week in extracurricular activity (recoded into &lt;once a week=1 vs. ≥once a week=0); and perceived ability to rely on friends (recoded into cannot rely on friends=1 vs. can rely on friends a little, some or a lot=0). Ratings to each question were summed to produce a social isolation score ranging from 0 to 5, with a higher score indicating greater social isolation.</p> <p>Continuous scores were recoded into a binary variable. Participants with a social isolation score of less than 3 were compared to those who scored 3 or above.</p>
Psychological factors	Psychological distress in the past four weeks	k10score - Kessler 10 (K10) Scale (range: 0–40)	Self-reported psychological distress experienced in the past four weeks (K10 psychological distress scale), recoded into below vs. equal to or above clinical cut-off of 19 (Andrews and Slade, 2001). Andrew and Slade (2001) investigated the sensitivity and specificity for the K10 at various scoring levels in identifying people who met CIDI criteria for any current anxiety or affective disorder. The authors found a cut-off score of 19 results in a sensitivity of 71% and specificity of 90%. A cut-off score of 20 results in a lower sensitivity (66%) and slightly higher specificity (92%).

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	Self-esteem	Sum of yse1 – yse13 items (range: 0–48) on the Adolescent Self-Esteem Questionnaire (ASQ; Hafekost et al., 2017), except for yse4	ASQ total score was recoded into above (healthy self-esteem) vs. equal to or below cut-off of 17 (low self-esteem) (Hafekost et al., 2017). The ASQ was developed for the purpose of measuring self-esteem in the YMM Survey. The survey authors validated the ASQ (Hafekost et al., 2017) with the existing gold standard measure of self-esteem, the Rosenberg Self-Esteem Scale (RSES). An ASQ score of 17 corresponded with a predicted probability of approximately 0.5 for DISC-IV classification of major depression. Low self-esteem, as defined by scores equal to or below 17, was associated with increased odds of poor functioning, including major depression, self-harm and experiencing bullying (Hafekost et al., 2017). Item yse4 was dropped because Hafekost et al. (2017) identified it was a poor fit in their factor analysis of the ASQ.
	Insufficient sleep (measured by usual hours of sleep per night)	<p>ypf17 - How many hours of sleep do you usually get on [a school night/a night when you have work the next day]?</p> <p>ypf21 - How many hours of sleep do you usually get? This was answered by respondents who weren't attending school or going to work (n=100)</p>	<p>Variables ypf17 and ypf21 were combined into one 'hours of sleep' variable, so there was no missing data. This variable was then recoded into below (insufficient sleep) versus equal to or above eight hours of sleep per night (sufficient sleep). National guidelines have defined insufficient sleep hours for adolescents to be less than eight hours per night (Owens et al., 2014). Adolescents sleeping less than eight hours have an increased risk of a broad range of health and other complications, including poor academic performance, obesity, and increased risk of suicidality (Milewski et al., 2014; Ming et al., 2011; Snell et al., 2007; Sarchiapone et al., 2014; Choquet and Menke, 1989; Lui, 2004).</p> <p>Considering a significant U-shaped association has been reported between sleep duration and several morbidities (obesity, diabetes or cardiovascular disease) (Léger et al., 2014), we also examined whether excessive sleep (equal to or greater than 11 hours per night; Snell et al., 2007) was associated with PEs. There were no significant associations with any PE, as well as each subtype (auditory and visual hallucinatory experiences, thoughts read, special messages, spied upon). We also examined a lower hours of sleep cut-off (6 hours per night), yielding similar findings to what is presented in the current study.</p>
Intervention factors	Mental health service use in the past 12 months	suy1.2 - Have you used services for emotional or behavioural problems in the past 12 months? Yes or No	<p>Self-reported mental health service use in the past 12 months.</p> <p>Prior to item suy1.2, there were two primer items which provided context to the question of interest:</p>

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			<p>suy1. In the past 12 months, that is since [CURRENT MONTH] of last year, do you think that you have had any of the following emotional or behavioural problems? Feeling anxious or stressed, feeling depressed, having problems concentrating, being aggressive, being hyperactive, other. <i>As you can see, the term ‘emotional and behavioural problems’ was used to capture a broader range of problems than just diagnosed mental disorders.</i></p> <p>suy1.1 Have you ever used any services for emotional or behavioural problems? This includes services received at school, in a community clinic, from a doctor or in a hospital.</p>
Family history/genetic factors	Parental mental illness	<p>pfi19b_1 - PFI19B_10</p> <p>Have you ever been told by a doctor or mental health professional that you have ____? Ten different mental or substance use disorders listed.</p>	<p>Parental mental illness as reported in the parent or carer interview (‘Have you ever been told by a doctor or mental health professional that you have any of these problems? panic attacks, PTSD, OCD, other anxiety problems, depression, ADD/ADHD, schizophrenia, bipolar or other psychosis, alcohol or drug dependence). Youth and parent YMM datasets were merged using the survey household ID.</p>

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