



Change in symptoms of depression and eating disorders in adolescents with obesity participating in a clinical trial

H. Jebeile^{1,2}, C. Kwok¹, E.T. House^{1,2}, M. Inkster^{3,4}, K. Day⁴, S. Lang⁴, A. Grunseit⁵, M.L. Gow¹, N.B. Liseter^{1,2} and on behalf of the Fast Track to Health Study Team

¹Children's Hospital Westmead Clinical School, The University of Sydney, Westmead, 2145, Australia

²Institute of Endocrinology and Diabetes, The Children's Hospital at Westmead, Westmead, 2145, Australia

³Department of Paediatric Endocrinology and Diabetes, Monash Children's Hospital, Clayton, 3168, Australia

⁴Nutrition, Dietetics & Food, Monash University, Melbourne, 3800, Australia

⁵Department of Nutrition and Dietetics, The Children's Hospital at Westmead, Westmead, 2145, Australia

Depression and eating disorder (ED) risk are heightened during adolescence⁽¹⁾ and both were exacerbated during COVID-19 lockdowns. This analysis reports changes in self-reported symptoms of depression and eating disorders throughout the Fast Track to Health trial. Fast Track to Health was a 52-week multi-site randomised-controlled trial, conducted 2018-2023, comparing intermittent (IER) and continuous energy restriction (CER) in adolescents with obesity and ≥ 1 associated comorbidity⁽²⁾. The Centre for Epidemiologic Studies Depression Scale-revised 10-item version for adolescents (CESDR) was used to assess symptoms of depression (no symptoms, sub-threshold, or possible, probable, major depressive episode). Eating Disorder Examination Questionnaire (EDE-Q) was used to assess ED risk; defined as global score ≥ 2.7 , ≥ 2 episodes of binge eating with/without loss of control, or ≥ 1 episode of purging within the last 28-days. The Binge Eating Scale (BES) assessed severity of binge eating (no binge eating, mild/moderate, severe). Adolescents were monitored for disordered eating during dietetic consults. Linear mixed models, retaining all data consistent with intention-to-treat analysis, were used to estimate the change in outcomes from baseline to week-52. Descriptive statistics were used to describe the number of participants meeting screening criteria at baseline and week-52. One hundred and forty one adolescents were enrolled and 97 completed the trial, with median (IQR) EDE-Q score 2.28 (1.43 to 3.14), CESDR 9.00 (4.0 to 14.5) and BES 11.0 (5.0 to 17.0) at baseline. EDE-Q (change in estimated marginal means [SE]), IER -0.63 [0.18], CER -0.56 [0.17]) and CESDR (IER -2.70 [1.15], CER -3.87 [1.07]) scores reduced between baseline and week-52 in both groups ($p < 0.05$) with no difference between groups. There was a between group difference ($p = 0.019$) in change in BES. The IER group had a reduction between baseline and week-52 (-3.72 [1.27]) and the CER group had no change. At baseline, 31 (22%) adolescents were classified as having a possible/probable/major depressive episode, 110 (78%) met ≥ 1 ED criteria and 28 (21%) as mild/moderate or severe binge eating, reducing to 8 (9%), 56 (61%) and 15 (16%) respectively at week-52. A small sub-group of adolescents required additional support for disordered eating. Overall, treatment-seeking adolescents with obesity have symptoms of depression and ED. Although symptoms reduce for most, some required additional support. Screening and monitoring for depression and ED are important to ensure early intervention.

Keywords: obesity; diet intervention; disordered eating; depression

Ethics Declaration

Yes

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References

1. Jebeile H, Cardel MI, Kyle TK, & Jastreboff AM, (2021) *Obesity* 29(9), 1413–1422.
2. Lister NB, Jebeile H, Truby H *et al.* (2020) *Obes Res Clin Pract* 14(1), 80–90.