internalizing problems (Health-related 0.08, 0.04–0.12; Poverty/discord 0.08, 0.01–0.16; Multiple 0.24, 0.15–0.34). Adding childcare and interactions with adversity yielded negative interaction terms for High Centre x Poverty/discord on the externalizing intercept (-1.83, -3.18 to -0.47); and for High Combined x Poverty/discord on the externalizing intercept (-1.70, -3.23 to -0.15), internalizing intercept (-1.52, -2.44 to -0.60), and internalizing linear slope (-0.23, -0.44 to -0.02). Corresponding interaction terms for Health-related adversity were generally small and negative, but for Multiple adversity were larger and all positive: for both these adversity subtypes, confidence intervals spanned zero. Sensitivity analyses incorporating teacher- and child-reported 122/152-month outcomes confirmed main findings.

Conclusion Centre-based care, especially when combined with individual non-parental care, buffered children’s mental health from family adversity characterised by poverty and interparental discord. Limitations include low statistical power for small subgroups and lack of childcare quality information. Findings indicate childcare may be protective against some, but not all, patterns of family adversity.

After the baseline assessment, participants were randomised into one of four groups (high, moderate, low dose exercise, or the sedentary control group). Exercise was administered over 3 sessions/week based on individual fitness and group. Monthly fitness and psychometric assessments were performed throughout to monitor change across the 12-week exercise programme. Data analyses were performed using SPSS.

Results As expect, participants showed a positive increase in fitness and performance with an increase in maximal oxygen uptake (F(1,28)=14.62, p=0.001, ηp2=0.343) after 12-weeks exercise training, accompanied by an increased relative peak power output (rPPO) (F(1,28)=16.93, p=0.000, ηp2=0.377) and an increased time to exhaustion (T2Ex) (F(1,28)=31.07, p=0.000, ηp2=0.526). Post hoc paired T-tests revealed that the most pronounced effects on rPPO and T2Ex occurred in the moderate or high intensity groups. There was a reduction in scores on the Beck Depression Inventory (BDI) (F(1,28)=6.50, p=0.017, ηp2=0.189) and the Perceived Stress Scale (PSS) (F(1,28)=4.09, p=0.053, ηp2=0.127) scores after 12 weeks of exercise.

Conclusion In summary, these results confirm that exercise training beneficially influences measures of stress and depression. Further work is required to understand the role of exercise-induced alterations in tryptophan metabolism in mediating these effects.