Child maltreatment increases risk of adult obesity

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Children who have suffered maltreatment are 36% more likely to be obese in adulthood compared to non-maltreated children, according to a new study by King's College London. The authors estimate that the prevention or effective treatment of 7 cases of child maltreatment could avoid 1 case of adult obesity.

The findings come from the combined analysis of data from 190,285 individuals from 41 studies worldwide, published this week in *Molecular Psychiatry*.

Severe childhood maltreatment (physical, sexual or emotional abuse or neglect) affects approximately 1 in 5 children (under 18) in the UK. In addition to the long-term mental health consequences of maltreatment, there is increasing evidence that child maltreatment may affect physical health.

Dr Andrea Danese, child and adolescent psychiatrist from King's College London's Institute of Psychiatry and lead author of the study says: "We found that being maltreated as a child significantly increased the risk of obesity in adult life. Prevention of child maltreatment remains paramount and our findings highlight the serious long-term health effects of these experiences."

Although experimental studies in animal models have previously suggested that early life stress is associated with an increased risk of obesity, evidence from population studies has been inconsistent. This

new study comprehensively assessed the evidence from all existing population studies to explore the potential sources of inconsistency.

In their meta-analysis, the authors were able to rule out specific factors which might explain the link – they found that childhood maltreatment was associated with adult obesity independently of the measures or definitions used for maltreatment or obesity, childhood or adult socio-economic status, current smoking, alcohol intake, or physical activity. Additionally, childhood maltreatment was not linked to obesity in children and adolescents, making it unlikely that the link was explained by reverse causality (i.e. children are maltreated because they were obese).

However, the analysis showed that when current depression was taken into account, the link between childhood maltreatment and adult obesity was no longer significant, suggesting that depression might help explain why some maltreated individuals become obese.

Previous studies offer possible biological explanations for this link. Maltreated individuals may eat more because of the effects of early life stress on areas of the developing brain linked to inhibition of feeding, or on hormones regulating appetite. Alternatively, maltreated individuals may burn fewer calories because of the effects of early life stress on the immune system leading to fatigue and reduced activity. The authors add that these hypotheses will need to be directly tested in future studies.

Dr Danese adds: "If the association is causal as suggested by animal studies, childhood maltreatment could be seen as a potentially modifiable risk factor for obesity - a health concern affecting one third of the population and often resistant to interventions.

He concludes: "Additional research is needed to clarify if and how the effects of child maltreatment on obesity could be alleviated through

interventions after maltreatment has occurred. Our next step will be to explore the mechanisms behind this link."

More information: Danese A & Tan M. 'Childhood maltreatment and obesity: systematic review and meta-analysis' *Molecular Psychiatry* (in press)

Provided by King's College London