Poor self-esteem and body image increase weight and poor mental health in teens

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Promoting positive body image and self-esteem among children could help reduce poor mental health associated with being higher weight in adolescence.

These are the findings of a study of more than 12,000 children in the UK in which researchers from Imperial College London explored the impacts of psychological and social factors on the relationship between mental health and body mass index (BMI) throughout adolescence.

The link between children having a higher weight and being more likely to have poor mental health outcomes is well established. The proportion of young people with obesity with emotional difficulties, such as depression and anxiety, is around twice that observed for young people with a healthy BMI (19% vs. 10%).

But in the latest study, researchers found that increasing children's satisfaction with their appearance and self-esteem from early adolescence could help to protect against the negative impacts of having higher weight on their mental health.

Using data collected when young people were 11, 14 and 17 years old, they measured a range of factors including how adolescents felt about their appearance, self-esteem, experience of bullying and dieting, along with BMI and mental health difficulties.

They found that at a population level, children's happiness with their appearance and their self-esteem had the greatest influence on the relationship between BMI and mental health, further compounding poor mental health into their late teens.

The study found that 11-year-old children at higher weight were more likely to have poor body image and lower self-esteem as they entered their teens, than those with average weight.

Subsequently, both boys and girls unhappy with their appearance and with low self-esteem at age 14 were more likely to have mental health difficulties at age 17, such as anxiety, depressive symptoms, aggression,

and impulsivity and were also likely to have a higher BMI than those with a more positive self-image.

According to the authors, their study published in the journal *eClinicalMedicine* is the largest of its kind and provides the most representative snapshot of these population-level trends of psychosocial factors in UK children.

They say prevention strategies in the national curriculum, industry and on social media platforms to destigmatize weight and encourage healthy body image in children are needed to help alleviate a range of negative social and emotional problems in later years.

Dr. Hanna Creese, from the School of Public Health at Imperial College London, and first author of the study, said, "The links between mental and physical health are well established, and we know that children who are overweight or obese are much more likely to suffer social and emotional problems, such as depression and anxiety. But unpicking the different factors driving these outcomes is challenging—such as the complex two-way relationship between mental health and BMI.

"It's important for children to maintain a healthy weight, but our study highlights that this shouldn't be achieved at the expense of children's long-term mental health or by stigmatizing their weight and driving poor body image and low self-esteem, as this can have damaging and long-lasting impacts."

In the analysis, researchers analyzed data from the Millennium Cohort Study, a nationally representative dataset capturing information on almost 19,000 children born in England, Scotland, Wales and Northern Ireland between 2000 and 2002. They included data on 12,450 children, from the age of 11 years up to and including the age of 17 (in 2018). Data included measures of BMI (kg/m^2) standardized by sex and age

(BMI Z score), parent reported scores from a validated questionnaire on young peoples' mental health and dieting behavior, happiness with appearance, self-esteem, and experience of being bullied reported by young people themselves at age 14 years.

Body image and self-esteem

The analysis revealed children's happiness with their appearance and self-esteem go some way to explain the impact of being higher weight on risk of mental health difficulties. Each increase in BMI Z score at 11 years old was associated with an increase in scores of unhappiness with appearance (0.12 for boys, 0.19 for girls) and an increase in odds of low self-esteem (16% for boys, 22% for girls) at age 14. At age 14, both girls and boys who were unhappy with their appearance and had lower self-esteem were more likely to have emotional and social symptoms at age 17, such as anxiety, depressive symptoms, aggression, and impulsivity.

Obesity, dieting and bullying

The study showed the association between increased BMI and mental health. Obese children had a greater prevalence of emotional problems at age 11 compared to healthy weight children (18.9% vs. 10.3% for boys; 18.7% vs. 10.8% for girls).

Being a higher weight is a well-established common reason for childhood bullying, and the analysis showed children who reported frequent bullying were more likely to have poor mental health outcomes over adolescence than those who were not bullied. But there was no significant link between being a higher weight and frequent bullying, or being bullied impacting later weight status. The analysis also found that dieting behaviors were associated with higher BMI, but not with worse mental health outcomes.

Measures to destigmatize weight

According to the authors, there are a range of established interventions to reduce obesity and improve mental health among young people—such as campaigns to promote healthy eating at home and in school, as well as apps and phonelines to encourage children to access mental health support.

However, the promotion of positive body image and self-esteem among young people in education and the media would benefit both physical and mental health in the UK population. For example, limiting children's access to social media encouraging unrealistic or unhealthy body image, and lessons on positive body image at school.

Dr. Dougal Hargreaves, from Imperial College London's School of Public Health and senior author of the study, said, "Adolescence is an important stage when the foundations of lifelong patterns of mental health and weight are laid, investing in the right support for young people during this critical window of development can lead to lifelong health and economic benefits. This study suggests that reducing weight stigma during adolescence could be one important step to improving long term outcomes.

"It's important to remember children today are not growing up in the same world as their grandparents, or even their parents, and face new, and increased social pressures. If we really want the best for our children, we need to put our money where our mouth is and promote healthy behaviors and attitudes at the societal level."

Dr. Dasha Nicholls, child psychiatrist and eating disorders expert, from Imperial College London's Department of Brain Sciences, said, "Children at higher weight are at greater risk of mental health problems including eating disorders, for which poor body satisfaction and dieting

are well established risk factors. This study adds to the evidence that supporting young adolescents to have a positive body image and developing confidence and self-esteem is important for both their mental and physical health in the longer term."

The authors highlight that the trends seen in the analysis are broadly applicable to the population level but cannot be used to predict outcomes for individual children. They also stress that this study did not focus on the direct impact of social media on body image or self-esteem but acknowledges its strong influence. As the cut off for the data collection was 2018, it does not account for increased social media use among children and teens in recent years or during the COVID-19 pandemic.

More information: Hanna Creese et al, The role of dieting, happiness with appearance, self-esteem, and bullying in the relationship between mental health and body-mass index among UK adolescents: a longitudinal analysis of the Millennium Cohort Study, *eClinicalMedicine* (2023). DOI: 10.1016/j.eclinm.2023.101992

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