

Childhood obesity and depression: 2020–2022

Abstract

As obesity continues to remain an immense challenge to mitigate effectively, efforts to untangle its determinants continue, especially those that may exacerbate or impact childhood obesity, and its predictable and well established negative health impacts. Studied for many years in various spheres, the role played by depression has been discussed for some time in this regard, especially in light of COVID-19 pandemic imperatives and their long term mental health effects on youth. This mini review discusses some of these current ideas and related observations regarding, and whether more emphasis on fostering mental health among youth is indicated in efforts to effectively attenuate the onset and spread of childhood obesity into adulthood. Extracted from current literature, it is concluded that this is a topic of significance, but one requiring more acceptance and recognition, plus dedicated sustainable collaborative goals and supportive efforts.

Keywords: childhood obesity, depression, mental health, intervention, stress

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Overview

Childhood obesity continues to be a highly prevalent and increasing worldwide intractable problem. In particular, it is safe to say that contrary to prior decades a high proportion of children as young as 2 years of age, as well as older children and adolescents attending school in 2022 may already be deemed to be overweight, and this recent rise in childhood overweight incidence rates, may not only increase over time, but may persist into adulthood with dire repercussions. In addition to being a risk factor for severe childhood COVID-19 illness,¹ the post COVID-18 consequences of social isolation has clearly left many youth far worse off and vulnerable to obesity than pre pandemic times, as well as impacting their mental health negatively.^{2,3} As well as the long-term and short term physical and mental health challenges incurred by the overweight or obese youngster,⁴ there are multiple obvious adverse impacts of childhood obesity, including its negative impact on academic outcomes, as well as social and possible economic health outcomes and correlates.⁵ Considered to be one of the most serious public health challenges of the 21st century, the dire predictions concerning rates of obesity among children,⁵ and that clearly underpins the continuing demonstrated decline in their mental health status among youth,⁶ warrants urgent attention. At the same time, even though Moradi et al.,⁷ found childhood obesity did not induce depression, overweight children who are likely to suffer from low body satisfaction and self-esteem must be considered at risk for this emotional disturbance as well as multiple psychiatric challenges at some point, especially if bullied or teased more often than healthy weight children.^{5,8} Obese youth displaying signs of depression may do so because they are stigmatized more often than healthy weight youth,⁵ and may also be less alert and/or mindful as far as modifying their behaviors goes, as well as unable or less able to concentrate optimally, and thus less able to learn or attend school regularly. They may have multiple challenges at home, and are unable to effectively discuss any distressful feelings with teachers or peers if they have experienced adverse home based events. They may also be less able to partake in physical activities due to their weight, thus feel unattractive, unconfident and unhealthy, sad or perpetually depressed or anxious.⁹

Indeed, since there is no lack of data showing youth and adults who are overweight are at higher risk for all forms of chronic illness, such as depression, as well as COVID-19 mortality, it would vital to identify any modifiable feature that otherwise appear to persist in

contributing to the onset and progression of obesity in the pediatric population and its adverse life threatening cycle of probable lifelong events.

These aforementioned findings remain serious and are not spurious as indicated by a recent systematic review of 11 studies involving multiple almost 70,000 youth conducted by Rao et al.⁹ As such, and implied by Rao et al.,¹⁰ those at risk for depression, as well as those found to be depressed need careful ongoing attention. Alternately, as outlined by Zeller et al.,¹¹ obesity in childhood and adolescence will surely tend to remain a global health challenge of immense proportion and increasing poor health outcomes if timely efforts to address this issue continue to focus largely on eating and physical activity practices to the exclusion of the role of the contribution of multiple mental health attributes on the emergence of obesity and overall future wellbeing of the overweight child.¹²

Objective

This brief was designed to examine the strength of the case for the idea that more emphasis on doing all that is possible to prevent and treat childhood depression as well as obesity is more imperative than ever.

Methods

To achieve the aims of this review, PUBMED believed to house salient current topical peer reviewed articles of current interest was specifically employed. Sought were articles that were listed when applying the key terms: *childhood obesity and depression*. No limitations were placed on document type of publication and while some articles may have been overlooked, an effort to select the most salient published articles on this topic was made. The ultimate goal was to examine all pertinent data published between 2020–2022 or the post pandemic period. Those articles deemed relevant were scanned and if relevant are described in narrative form.

The term depression adopted here refers to any psychological symptom or condition of sadness and altered mood and levels of anger, distress, lack of motivation, limited physical activity participation, sleep disturbances, and decreased efforts towards socialization.

Results

In addition to the aforementioned points concerning childhood obesity reiterated in numerous articles for more than 50 years, there

are currently 279 articles as of June 22, 2022 that are listed reflecting on childhood obesity and depression as of 2020.

Among these reports a recent article by Smith et al.,¹³ reiterate the need for concerted efforts to avert childhood obesity due to its known impacts on multiple health attributes, including depression. Rao et al.,¹⁰ who carried out a detailed wide ranging literature review of data published up to April 2019, concluded that obese children have a high risk of incurring depressive symptoms compared to healthy children and advocated for depression screening in vulnerable children. This conclusion was comparable to that of Quek et al.,¹⁴ in 2017 who observed obese children and adolescents are more likely to suffer from depression and depressive symptoms than not, with women and non-Western youth being at high risk. Ruiz et al.,¹⁵ note that among the diverse implications for health of depression that accompanies childhood obesity, obese adolescents may experience heightened stress levels, as well as depressive symptoms, and reduced resilience. Indeed, in addition to depression being a common psychological outcome of childhood obesity,¹⁶ chronic maternal depression presence in its own right may lead to a situation for fostering childhood overweight,¹⁷ and possible depression thereafter even if the child initially has few health challenges as discussed by Puder et al.,¹⁶ and Sagar et al.¹⁸

Lindberg et al.,¹⁹ support the view that obesity in children is a significant factor for both anxiety as well as depression, as well as having a small risk for depression across the lifespan.²⁰ It is also a risk factor for sleep disturbances in overweight children, and both obesity and depression are associated with the presence of high inflammatory impacts.^{21,22} It is also shown that children who are obese may also have multiple psychosocial challenges,¹² may be subject to weight-based cyber victimization that potentially provokes depression,²³ plus poor academic as well as coping skills that can duly impact their overall mental and physical health significantly and adversely.²⁴ They may also be at risk for excess overweight status due to excess or poor eating practices as a result of being cared for by depressed caregivers,¹⁷ and that could that well foster signs of negative psychological outcomes such as depression, low self-esteem, and life quality among these youth in their own right.²⁵

Alsalem et al.,²⁶ similarly found a group of Saudi Arabian youth considered obese to be more likely than healthy youth to be depressed and in need of intervention to offset this, as did Wang et al.,²⁷ with respect to Chinese youth who were recently assessed that might extend into adulthood, especially among overweight or obese females.²⁸ Fox et al.,²⁹ found the odds of having severe obesity versus obesity were 3.5 times higher for patients with depression compared with those without, that was not related to emotional eating. Blanco et al.,³⁰ further show that some of the depression suffered by obese youth may be due to weight-related teasing, thus stressing the need to intervene early to avoid decrements in overall well being among this group, especially those exhibiting severe obesity.³¹ Mannan et al.,³² further suggest there is a bi-directional association between depression and obesity that tends to be stronger for female adolescents, and that underscores the importance of early detection and treatment strategies directed towards preventing the development of these reciprocal disorders as outlined in Figure 1.

Summary and discussion

A review of the current literature clearly shows obesity is not just a state of being overweight for one's height, but a profound metabolic disorder with enormous health and economic repercussions that is extremely challenging to mitigate. A health condition that is found

to be escalating nationally and globally, obesity is intricately linked numerous chronic diseases, impairments in physical function and poor life quality, plus immense societal costs. Commonly attributed to the accumulation of excess dietary calories and their transformation into visceral fat along with the release of high concentrations of free fatty acids into various vital body organs, as well as muscles, a role for mental health correlates in this process is often neglected if compared to the importance given to physical health correlates.

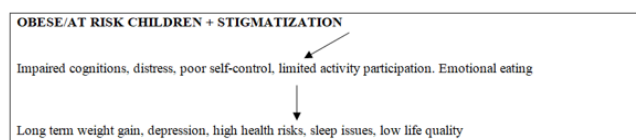


Figure 1 Schematic representation of possible adverse effects of depression on youth at high risk for obesity due in part to poor food choices and food associated behaviors, parental depression, adverse childhood events, plus online and social bullying.

Representing an enormous global challenge of increasing proportion, obesity in general, and childhood obesity in particular, which may predate adult obesity, and which is on the rise, may predictably and progressively induce multiple adverse health impacts, including depression and poor mental health, even among very young children^{34,35} and especially if it persists unabated into adolescence.^{36,37} As well, even though mental health attributes of childhood obesity have been discussed for some time, the failure to detect or resolve mental health problems or mitigate these early on may be expected to have marked adverse life long effects. Moreover, even if therapy prevails, this can be impeded in the presence of undetected or untreated parental depression that may not be a treatment focus.^{38,39} As well, some attention to the allied role of persistent or distressing stressful life events in childhood or even before the child is born,⁴⁰ as well as apparent increases in parental and teacher depression post COVID,⁴¹ may need to be acknowledged to a higher degree in the future to avert any increasingly marked feelings of distress and their negative consequences, including stigmatization and emotional eating among vulnerable youth and their mothers.⁴²

Unfortunately, although childhood obesity or overweight has been identified as a significant attribute for more than a decade,^{33,34} and the COVID-19 pandemic clearly compounded the overall health opportunities for youth, it is clear a much more concerted effort in multiple spheres is imperative in order to successfully avert both the onset of childhood obesity, as well as depression, and their bi-directional association, that could provoke life-long incurable health and social challenges.

In particular, more insightful research, including qualitative research approaches, plus support for concerted clinical efforts to identify and assess those at risk as early as possible, as well as delivering innovative multi pronged tailored counter strategies are strongly indicated, including some form of asset based developmental intervention,²⁵ and possibly parental intervention, rather than a sole focus on dietary and physical activity recommendations in isolation. The role of depressed caregivers, as well as adverse exposures to abuse by young children also deserves very intense rather than superficial study and recognition. Finally, how social media influences affect and perpetuates and exacerbates both these conditions in vulnerable youth requires urgent attention.

Conclusion

As of June 2022 there is no doubt childhood obesity rates, continue to rise in all age groups. Often accompanied by or preceded by

depression counter efforts are clearly needed in this regard to avert a probable tsunami of lifelong suffering for untold millions of youth.

It is further concluded that raising the idea that mental health is interwoven with physical health from the earliest points in time may open the way forwards to a high quality life rather than a life of emotional and physical suffering.

As such, a society that arguably does little to foster youth's mental health and well being, especially those subject to adverse life events and parents who are already depressed will surely bear the costs in ways other than human costs.

Although future research is desirable and strongly encouraged, action rather than observation is imperative to avert childhood overweight and obesity costs and suffering.

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Conflicts of interest

None.

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