Perspective

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Journal of Obesity & Eating Disorders
ISSN 2471-8203

2023
Vol.9 No.1:135

Bodyweight and Human Capital Development

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Received date: December 13, 2022, Manuscript No. IPJOED-23-15912; **Editor assigned date:** December 15, 2022, PreQC No. IPJOED-23-15912 (PQ); **Reviewed date:** December 27, 2022, QC No. IPJOED-23-15912; **Revised date:** January 10, 2023, Manuscript No. IPJOED-23-15912 (R); **Published date:** January 17, 2023, DOI: 10.36648/2471-8203.9.1.135

Citation: George S (2023) Bodyweight and human capital development. J Obes Eat Disord Vol.9 No.1:135

Description

The number of overweight or obese children aged 0–5 years increased from 32 million to 41 million worldwide, making it one of the most serious public health problems of the last three decades and the new epidemic in the modern era. These figures are worrisome not only because obesity has a direct impact on health outcomes, which in turn increases costs in the public health sector, but also because of the unintended and long-lasting consequences in human capital accumulation. For example, childhood obesity is associated with lower academic performance and cognitive development. The negative association between childhood obesity and human capital is concerning for at least three reasons. First, the theory of skill formation developed by Heckman and his colleagues states that gaps in both cognitive and non-cognitive skills between individuals and across socioeconomic groups open up at early ages. Thus, human capital investments in early childhood might produce greater returns than investments at later ages. Second, it has also been documented that a third of obese preschool children and half of obese school-age children are likely to be obese adults. Third, there is a vast literature showing that obese adults have lower wages is less likely to be promoted and face greater problems finding job. One possible mechanism by which obesity may affect economic success is through the acquisition of cognitive and non-cognitive skills during childhood. Under this reasoning, effective interventions for childhood obesity may not only generate positive impacts on children's health, but also a large payoff in terms of future human capital accumulation and hence improve labor outcomes during adulthood.

Human Capital Development

In this context, we add to the literature on child bodyweight and human capital development in three ways. First, we focus on the socio-emotional development, which is considered an important non-cognitive skill. Early cognitive and non-cognitive developments are crucial for long-term outcomes in children. For example, both skills are important predictors for labor market outcomes, education and social behavior. However, some recent findings indicate that non-cognitive skills are as important as, or even more important than, cognitive skills. For example, the empirical evidence suggests that a potential remediation for the lack of skill of disadvantaged adolescent is fostering non-cognitive rather than cognitive skills. This recommendation is supported by research indicating that non-cognitive skills are more important than test scores or schooling in securing employment for youth who dropped out of school. There is also evidence that non-cognitive skills are more malleable than cognitive skills, which suggests that there may be greater scope for policy interventions in early childhood. Second, most of what is currently known about the relationship between obesity and non-cognitive skills among children come from studies from developed countries. Most of the empirical studies in the US show that obese children (especially girls) have more socio-emotional problems, less self-esteem and less development of social skills. Similar results have been found using data from children in the UK, Germany and Australia. We fill this gap by providing evidence of the effect of body weight on socioemotional development using a Chilean national representative sample of children at ages between two and 12. Chile is a developing country with high levels of childhood obesity. According to JUNAEB, 64 percent of the children in fifth grade were overweight or obese, whereas 12 and 11 percent of children in pre-kindergarten and kindergarten, respectively, had severe obesity in 2020.

Obesity in Chilean Adults

Moreover, the trend is on the rise despite all the public policies that have been carried out by the Chilean government to reverse this situation. In addition, Chileans tend to associate slimness with the ideal body size as in western societies. For example, some qualitative findings reveal a high degree of stigmatization of the fat body by young Chileans and adult women. Quantitative studies have also shown the detrimental effect of obesity in Chilean adults. Sarrias and Iturra find that women in Chile are penalized for being obese in the labor market: an obese woman earns on average ten percent less than a similar qualified but more healthy-weight woman. Similarly, Sarrias, find that bodyweight and mental health are causally and negatively related when considering a representative Chilean sample. Third, previous research studying the effect of obesity on children's non-cognitive development was relied mostly on ordinary least squared and fixed effect estimators. While FE estimation adjust for unobserved time invariant child's characteristics, it is unable to control for time variant unobserved factors determining both the stock of socio-

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emotional skills and children's body weight or to address reverse causality To disentangle the effect of bodyweight on children's socio-emotional development we use the instrumental variables estimator. We instrument the endogenous children's weight variables with the lagged BMI of their biological mother. Since the validity of this instrument has been questioned, we further explore the robustness of the results assuming that our instrument is imperfect and violate key assumptions such as independence and exclusion restriction. To this end, we use approach which allows us to provide bounds of the weight penalty in the presence of imperfect instrument, making assumption about the sign and the maximum strength of the correlation of the instruments with the error term. To the best of our knowledge, we are the first using these procedures to analyze the sensitivity of weight penalty to violations of the IV assumptions. The remainder of the article is organized as follows. The next section presents the survey and the main variables used in this study. Section 3 presents our empirical framework. The results are presented in Section 4. Section 5 contextualizes our results in the literature. Finally, Section 6 concludes.