

Hidden Obesity

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Abstract

This communication proposes the term “hidden obesity” to describe normal weight obesity, or increased adiposity without a corresponding increase in body mass index. It uses the concept of hidden hunger to craft semantics which will generate greater attention to this condition from all stake-holders, including policymakers and planners. The article describes simple tools which can be used to suspect and confirm the diagnosis of hidden obesity. This phenotype is very commonly seen in the south Asian population.

Keywords: Barophenotypic characterization, normal weight obesity, obesity, overweight, hidden hunger

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Introduction

Hidden hunger is the term used to describe micronutrient deficiency occurring without associated macronutrient deficiency or protein-energy malnutrition. This includes vitamin and mineral deficiency, and it has been suggested that fluid and electrolyte deficiency be added to this form of malnutrition.

A similar situation exists in obesity. Obesity is conventionally defined according to body mass index (BMI), and ethno-specific cut-offs for overweight and obesity have been standardized. There do exist, however, a significant number of people with high levels of adiposity, or fat mass percentage, who cannot be identified by BMI measurement.¹ This is because adiposity can occur with normal weight as well. Termed as normal weight obesity, this condition is important to identify and manage, as it is associated with adverse cardiovascular parameters and outcomes.² In a recent study from South India, it was found that about 30 percent of the study population was found to have normal weight obesity and they were associated with a significantly higher cardiometabolic disorders.³

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Furthermore, after a two year lifestyle intervention, this phenotype has shown to be more resistant to change and showed only a mild improvement in blood pressure and the lipid profile.⁴

Hidden Obesity

The term normal weight obesity, unfortunately, tends to “normalize” or trivialize the disease, and reduces its impact on policymakers and planners. This leads to neglect of an otherwise important public health and clinical problem. One way of overcoming this lack of attention is to use the phrase “hidden obesity” to describe normal weight obesity. Hidden obesity is similar to hidden hunger, and creates a sense of “intrigue” and interest in the mind of the readers. This, in turn, enhances discussion and debate on the various barophenotypes of obesity.⁵ It encourages proactive intervention to “find” and treat “hidden” or normal weight causes of obesity.

Screening and Diagnosis

We need, however, to match words with action. It is not enough to just coin a new term and not suggest its evaluation. Hidden obesity can be diagnosed by investigations such as bioelectrical impedance analysis (BIA) and dual-energy Xray absorptiometry (DXA). These modalities are limited by lack of availability and affordability. Simple anthropometric measurements may be used to suspect hidden obesity or normal weight obesity.⁶ These include waist circumference, and waist hip circumference. Another way of suspecting hidden obesity is in persons with sarcopenia, which can be diagnosed by the impairment of 2 out of the following 3 conditions: muscle function, muscle strength and muscle mass.⁷ A family history of normal weight obesity, and a personal or family history of premature atherosclerotic cardio vascular disease (ASCVD), diabetes and other metabolic diseases may increase the suspicion of normal weight obesity or hidden obesity.

Furthermore, simple fat estimation can be done by using simple clinical and biochemical parameters. One such tool validated in the Indian population is METS-VF.⁸ This is akin to the estimation of GFR, which in clinical practice is only estimated using formulae rather than actual measurement. Similarly METS-VF is a method used to estimate visceral adipose tissue.

The Way Forward

We request obesity care professionals to highlight the term 'hidden obesity' and to suspect and screen for the condition in high-risk patients. Once the diagnosis is made, efforts must be made to optimize body composition and improve overall metabolic health.

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