

Obesity is a communicable disease

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Abstract

Obesity has multiple causes and correlates. Usually studied as a metabolic and endocrine disease, with mechanical and musculoskeletal comorbidities, obesity also has a communicable angle to it. Obesity can be considered a communicable disease from the conventional point of view, as it is associated with viral etiology in animal and human models. It is also associated with increased prevalence and worse prognosis of infectious diseases. Not only that, obesity is a 'socially communicable' disease, as it 'spreads' amongst people living in similar environments.

Keywords: Communicable disease, infectious disease, obesity, overweight, public health.

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Definition

Obesity is thought to be a chronic non-communicable disease, characterised by various metabolic, musculoskeletal and other complications and comorbidities. The Kathmandu Declaration of the South Asian Federation of Endocrine Societies (SAFES) defines obesity as a chronic, relapsing multifaceted, multisystemic endocrine disease, which needs timely, and sustained, attention at a clinical as well as public health level.¹ This is complementary to the definition proposed by Wilding et al, who define obesity as a chronic, relapsing progressive disease defined by excessive adiposity that may impair health.²

Epidemiology

Obesity and overweight are most prevalent pandemic today. It is expected that every second adult (51%) will be living with overweight or obesity by the year 2030. The prevalence of obesity is rising faster in children than in adults.³ This suggests that the peak of the pandemic is yet

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to hit us. The increasing trends in obesity prevalence suggest that there may be a 'communicable' angle to obesity.⁴

Facets of communicability

Obesity is a multifactorial and multifaceted syndrome.^{1,5} In this communication we discuss the infectious (and/or communicable) aspects of obesity causation and clinical presentation. We also explore how obesity prevention and management can be integrated with national health care programmes that focus on infectious or communicable diseases.

Table 1 lists the various ways in which obesity may be considered as a communicable disease. This table is based on various reviews and reports.⁶⁻⁹

Table-1: Obesity as a communicable disease.

BIOMEDICAL ETIOLOGY

- Viruses such as canine distemper virus, Rous-associated virus type 7, Borna disease virus, scrapie agent and SMAM-1, can lead to obesity
- Covid -19 infection is associated with development of sarcopenia and sarcopenic obesity
- Obesity may reduce the ability for self-care, by reducing physical dexterity and compromising the ability to access all parts of the body, and promote skin/soft tissue infection

CLINICAL FEATURES

- Obesity is associated with an increased risk of infectious diseases, including
 - Respiratory infections
 - Skin and soft tissue infections
 - Gall bladder infections
 - Post operative infections
- Obesity is associated with poorer prognosis of infections such as Covid-19
- Persons living with obesity require prolonged rehabilitation to recover from comorbid infectious illnesses

ENVIRONMENTAL ETIOLOGY

- Obesity occurs more frequently in persons sharing the same unfavourable, physical, and social environment
- Environmental pollution is linked with an increased prevalence of obesity

SOCIAL ETIOLOGY

- Obesity occurs more frequently in persons sharing the same, unhealthy, behavioural and culinary traits
- Unhealthy habits that promote obesity spread fast among persons exposed to

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them.

- Marketing of unhealthy behaviours and choices encourages following of such behaviours and promotes obesity amongst individuals and families that are close to each other

PHARMACOLOGICAL ETIOLOGY

- Some drugs used in the management of infectious disease, e.g., HAART and corticosteroids, may lead to obesity
- Anti-obesity drugs, such as orlistat, liraglutide and semaglutide, may alter the gut microbiome
- Drug used in the management of diabetes, that are known to reduce weight, or prevent weight gain, such as GLP1RA and alpha-glucosidase inhibitors, may alter the gut microbiome.
- Drugs used in the management of diabetes, which are known to reduce weight, such as SGLT2i, may increase the risk of genital tract infections.

HEALTH CARE DELIVERY AND MANAGEMENT

- Obesity can be managed by faecal transplantation of 'healthy' microbiome.
- Weight optimization can be incorporated in national programmes that focus on communicable disease that are associated with metabolic dysfunction, e.g., HIV/AIDS, hepatitis, sexually transmitted diseases.
- 'Miasma' or 'infectious complications' should be added to the list of complications of obesity such as metabolic, musculo-skeletal, mood-related, mitogenic (malignancy-related) and monetary ones.

FUTURE FEARS

- Time-travelling pathogens', i.e., viruses and bacteria being 'unfrozen' from the Arctic permafrost may be associated with metabolic dysfunction.

KEY: GLP1RA – glucagon like peptide 1 receptor agonists, HAART – Highly active antiretroviral therapy, HIV/AIDS – Human immunodeficiency virus/Acquired immunodeficiency syndrome, SGLT2i – sodium glucose cotransporter 2 inhibitors

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