



DEBATE

Is obesity a disease?

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BACKGROUND: There is disagreement about whether obesity should be considered a disease, as can be seen by inconsistent usage and the advocacy of conflicting views in popular and scholarly articles. However, neither writers who refer to obesity as a disease nor those who question whether it is a disease have generally provided a definition of disease and then offered evidence that obesity does or does not fit the definition.

METHOD: The characteristics of obesity were examined to determine whether they fit the common and recurring elements of definitions of disease taken from a sample of authoritative English language dictionaries.

FINDINGS AND INTERPRETATIONS: Obesity, defined as a body mass index (BMI, kg/m²) or percentage body fat in excess of some cut-off value, though clearly a threat to health and longevity, lacks a universal concomitant group of symptoms or signs and the impairment of function which characterize disease according to traditional definitions. While it might nevertheless be possible to achieve a social consensus that it is a disease despite its failure to fit traditional models of disease, the merits of such a goal are questionable. Labeling obesity a disease may be expedient but it is not a necessary step in a campaign to combat obesity and it may be interpreted as self-serving advocacy without a sound scientific basis.

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Obesity has been called a disease in many public forums including mass media news pieces,^{1,2} pharmaceutical company press releases,³ educational materials for health professionals and the general public,^{4,5} and editorials and articles in scholarly journals.^{6–8} In contrast, other sources including newspaper articles,⁹ and editorialists and authors in other scholarly journals^{10–13} question whether obesity is indeed appropriately called a disease.

Interestingly, neither writers who refer to obesity as a disease nor those who question whether it is a disease have generally provided a definition of disease and then offered evidence that obesity does or does not fit this definition. Even the statement issued following the Consensus Development Conference on Obesity convened by the National Institutes of Health in 1985, which twice referred to obesity as a disease, at no point in the published conference

proceedings discussed the appropriateness of the word 'disease'.¹⁴

The World Health Organization (WHO) and their extensive codification of 'diseases' in the International Classification of Diseases (*ICD-9*, 9th edition), contains two entries for obesity: 278.00 (obesity NOS), and 278.01 (morbid obesity).¹⁵ This seems to suggest that the WHO considers obesity to be a disease. However, it is noteworthy that the full name of *ICD-10*, the 10th edition, is the International Statistical Classification of Diseases *and Related Health Problems* (emphasis added) and it includes conditions and situations which are not diseases but represent risk factors to health.¹⁶ The report of a WHO Consultation on Obesity¹⁷ and the report of a committee of the Institute of Medicine of the National Academy of Sciences¹⁸ both refer to obesity as a disease but, again, there is no discussion of the appropriateness of the term.

An explicit rationale for labeling obesity a disease was found in only three instances. In two of these,^{6,19} the rationale presented is that obesity is a disease in the same sense that condition X (hypertension, hypercholesterolemia) is a disease — each is a risk factor for other diseases. However, this appeal to analogy is, at best, illustrative and not demonstrative. It begs the question of whether condition X is a

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disease, returning us again to the need to consider the definition of disease. Moreover, being a risk factor for other diseases is not an accepted definition of disease. In the third instance, the author provided a definition and then asserted that obesity 'is a definite, morbid process with characteristic symptoms and affects the entire body; and has a known pathology and prognosis'.²⁰ As we argue in this paper, one may question whether obesity meets this, or other definitions of disease.

The issue warrants closer examination. If language is to function as an effective means of communication words must have a shared meaning and the repository of accepted, shared meanings is the dictionary. We began by examining definitions of disease found in a sample of authoritative English language general and medical dictionaries.^{21–30} We ignored terms such as *morbid* and *pathological* in the definitions since these refer to a diseased state and therefore are circular. We also ignore terms and definitions which define disease as the absence of health since these require a prior definition of health, an even more daunting task.

Typical definitions included the following:

- 'Condition of the body, or of some part or organ of the body, in which its functions are disturbed or deranged; a morbid physical condition; a departure from the state of health, especially when caused by a structural change.' (*Oxford English Dictionary*²¹)
- 'A condition in which bodily health is seriously attacked, deranged, or impaired. Pathologically, disease is an alteration of state of the human body...or of some of its organs or parts interrupting or disturbing the performance of the vital functions; any departure from the state of health presenting marked symptoms; ... various forms of disease may be caused by parasites, filterable viruses, and nutritional, environmental or inherent deficiencies.' (*Webster's Third New International Dictionary*²²)
- 'An interruption, cessation or disorder of body functions, systems or organs.' (*Stedman's Medical Dictionary*²³)

From these and other definitions we identified the following common and recurring components:

- (a) a condition of the body, its parts, organs, or systems, or an alteration thereof;
- (b) resulting from infection, parasites, nutritional, dietary, environmental, genetic, or other causes;
- (c) having a characteristic, identifiable, marked, group of symptoms or signs;
- (d) deviation from normal structure or function (variously described as abnormal structure or function; incorrect function; impairment of normal state; interruption, disturbance, cessation, disorder, derangement of bodily or organ functions).

How well does obesity fit the definition of disease? For the purpose of the following discussion we adopt Webster's definition of obesity as an excess accumulation of fat,²² with excess defined by criteria of >25% body fat for men

and >32% body fat for women¹⁹ or a body mass index (BMI; kg/m²) >30.³¹ Based on reviews of the evidence, we take as demonstrated that obesity is statistically associated with and contributes to increasing death rate and risk for hypertension, coronary heart disease, non-insulin-dependent diabetes mellitus, dyslipidemia, cancer and cholelithiasis.^{32–34}

There should be little disagreement that obesity satisfies conditions (a) and (b) above. That is, (a) an excess accumulation of fat can certainly be thought of as a condition of the body, and as for (b), the list of potential causes is so extensive that the causes of obesity must surely be found there.

Condition (c) poses a problem. Indeed, obesity can be diagnosed visually from physical proportions, or with the help of height and weight measurements. In cases of doubt, body composition methodologies offer numerous methods to measure body fat to the required degree of precision.³⁵ However, there are no signs that inevitably characterize the condition other than the excess adiposity, which is the definition of obesity. The causes of obesity are numerous and diverse, ranging from and including combinations of environmental, behavioral and genetic aspects of energy intake, partitioning and expenditure. Its common accompaniments—impaired glucose tolerance, dyslipidemia, hypertension—are not inevitably present. Thus, condition (c) is met, but only in a circular or tautological sense: the only characteristic (pathonomic), identifiable sign of obesity is also the characteristic which defines obesity, ie fatness.

Condition (d) is even more problematic. The deviations specified range from simple deviation from normality, to impairment, interruption or cessation of vital functions. Moreover, what is meant by deviation from normality is not clear—it can imply undesirable variation or simple statistical rarity.

Evidence for impaired physical and social functioning in severe obesity (eg BMI >40) clearly exists.³⁶ In these cases, excess fat is *usually* accompanied by various signs of impairment and it can be argued that severe or extreme obesity would *usually* meet condition (d) for most definitions of disease, including those which specify impairment of function. However, impairment is not inevitable or even usual in most persons who meet the present BMI or percentage fat criteria for obesity. In contrast to severe obesity, mild obesity only 'threatens' eventual impairment inasmuch as a risk factor, by definition, confers a greater probability of some future adverse event. Yet its association with these events is, at our present state of understanding, probabilistic. We cannot foretell who will develop an obesity-related health problem. In fact, some persons who meet the criteria for obesity will live long lives free of any of the morbidities known to be influenced by obesity. We are therefore placed in the conceptually awkward position of declaring a disease which, for some of its victims, entails no affliction.

Many obese persons are competent, functioning members of society. Nor do these persons necessarily subjectively consider themselves impaired, except perhaps insofar as they feel themselves victims of social discrimination.³⁷

They might fail to meet some arbitrary standard of physical fitness (eg climbing stairs, running) but such a standard would also exceed the capability of many non-obese but sedentary individuals. While physical fitness is desirable, its absence has not generally been considered an impairment. It would be possible to set an arbitrary standard of fitness which many obese and non-obese people would fail to meet, and to consider this as evidence of impairment; however the present criteria for obesity do not do so.

A further conceptual problem arises when obesity occurs in a disease such as Cushing's Syndrome. Obesity is one of the components or signs of that syndrome. Is the obesity which is a sign of Cushing's disease, itself a separate disease?

In sum, to call obesity defined solely on the basis of a BMI or percentage body fat in excess of some threshold a disease leads immediately to the following problems:

- the only sign or symptom may be the excess fat which is also the only defining feature of the condition—there are no other inevitable clinical or subclinical signs;
- many obese persons suffer no impairment as a consequence of their obesity;
- it ignores the probabilistic nature of the relation between obesity and consequent adverse events which is accurately conveyed by the term risk factor;
- it poses conceptual problems, eg is the obesity which is a sign of a disease, itself a disease?

Granted all the foregoing, one might still choose to argue that although milder forms of obesity only constitute 'deviations from normal', this is sufficient to make obesity a disease according to some definitions. For example:

'Any abnormality of bodily structure or function, other than those arising directly from physical injury.' (*Black's Medical Dictionary*³⁰)

At this point we must confront an additional dimension of this issue—when is an abnormality which is not an impairment a disease? Some philosophers of medicine have argued that there is no longer an agreed definition of disease.^{38–41} The traditional 'germ' or 'lesion' models have been found inadequate for modern concepts of disease which may include conditions such as mental illness, substance abuse, addiction and malnutrition. In these instances, what constitutes impairment, and which departures from normality are meaningful are, largely, socially defined. Before a condition is accepted as a disease, however, there must be a social consensus that it is a significant abnormality. That is, what shall be called a disease is negotiated among subjects, physicians and interested social parties.

Needless to say, the interests of these various parties do not always coincide. The concept of disease involves a role in which the patient is excused from responsibility for his/her condition and from certain obligations.³⁸ Other, new obligations toward the patient may be created, such as an obligation for treatment. In the case of obesity, among the voices heard in the debate are those who maintain that it is, in part,

a self-inflicted condition brought about by behavioral choice,¹¹ or 'willful' overeating,¹⁰ and that sufferers should not be relieved of responsibility for their condition. Undoubtedly there is some potential for abuse of the victim role. Furthermore, if a disease entails an obligation for treatment, who will consent to pay the costs? Thus, the present inconsistent usage of the disease label for obesity may reflect, not disputes about evidence, but advocacy in social negotiations.

This path to the disease label, via social consensus, although also concerned with symptoms, causes and impairment (or lack of it), allows other factors to come into play—the existence of organized lobbies and interest groups, the potential for and cost of intervention, the humane motives of advocates. This path, via social consensus, is one where asserting something often enough may indeed help to make it so. To quote Szasz,

'... science—in the sense of a 'disinterested' taxonomic description or catalogue of 'facts'—has virtually nothing to do with the matter. In practice, the question of what counts as disease is basically consequential. People agitate for or against enlarging the category of illness—for example, for or against counting masturbation, unwanted pregnancy, smoking, rape or murder as disease—because they desire or detest the consequences.'⁴²

In these negotiations the scientist, and the physician-scientist, are placed in an awkward position. Scientists, as citizens, are entitled to their opinions, values, vested interests—their voice and vote in a democratic society. However, among individual citizens who are also scientists, there is a temptation to enter a negotiation in such a way that implicitly or explicitly suggests that one's voice should be given somewhat greater weight than that of the ordinary citizen because one is equipped with special knowledge and expertise.

Clearly, it seems inappropriate for the individual who happens to be a scientist but is acting as an advocate to take advantage of special status that merits more weight being given to his or her voice. Compounding this problem is the potential for scientists' advocacy in these discussions to be mistaken by an audience as an attempt at scientific affirmation that obesity is a disease in the traditional evidence-based sense. If the evidential basis is then found wanting, there is the risk that such advocacy may be perceived as self-serving misrepresentation and may undermine credibility in areas where the scientist does have special expertise.

None of the foregoing is meant to argue that obesity is not a public health problem of the first magnitude. However, it would be a mistake to attempt to label it a disease in the traditional sense in order to emphasize its importance if it does not meet reasonable criteria for such diseases. Conceptual clarity is a cardinal virtue in science and philosophy and it should not be sacrificed to expediency.

Finally, it seems neither logically necessary nor tactically essential to have obesity labeled a disease in order for it to be taken seriously. Public health measures and preventive medicine often receive generous funding (eg annual physical examinations, immunization programs, smoking cessation campaigns, promotion of exercise and active lifestyles). Whether and how our institutions and organizations pay for obesity treatment should ultimately depend on what health outcomes we value, how much we value them, and the cost of achieving them, not on whether obesity is labeled a disease.⁴³

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