



Standards and classification: A perspective on the ‘obesity epidemic’

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ABSTRACT

In this paper I critique the increasing standardization of obesity. Specifically, I consider two ‘definitional turns’: the way language has been standardized to such an extent that it obscures uncertainty and variation, and the appearance of objectivity through quantification and standardized measurement. These, I suggest, have fostered a simplified picture of obesity, promoting the classification of weight and thereby facilitating the emergence of the ‘obesity epidemic’. These definitional turns fail to acknowledge the distinctions between fat and mass and intraclass variation within weight categories. A consequence of this process of simplification has been the erroneous application of population level information to individuals in a clinical context, with potentially harmful results.

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“ -But let us not forget this either: it is enough to create new names and estimations and probabilities in order to create in the long run new ‘things.’”(Nietzsche, 1974 122, aphorism 58)

Introduction

There are now a multitude of studies reporting dramatically increasing levels of obesity over the last twenty to thirty years (Ahrens, Moreno, & Pigeot, 2011; Manios & Costarelli, 2011). These studies not only indicate that the number of obese individuals is increasing, and is as high as 33% in some countries (Flegal, Carroll, Ogden, & Curtin, 2011), but that average weight is also increasing (Finucane et al., 2011). A global analysis of data estimated that in 2008 over 205 million men and 297 million women over the age of 20 were obese (Finucane et al., 2011). Moreover, this includes increasing numbers of ‘morbidly obese’ individuals, skewing the distribution of weights towards the upper extreme (Yanovski & Yanovski, 2011).

The increase in obesity would not be so concerning if it were not for the increasing number of adverse health effects associated with it. To date studies have indicated relationships between obesity and a range of conditions including type 2 diabetes mellitus, fatty liver disease, endocrine and orthopaedic disorders and most of the major cardiovascular risk factors (Lobstein & Baur, 2005; Manios & Costarelli, 2011; Reilly et al., 2003). The increasing prevalence of obesity together with the indicated negative health effects have led

some authors to define the current situation as an ‘obesity epidemic’ (Flegal, 2006).

Epidemiological data is often presented to underwrite these claims. Much of the data on which the estimates are based comes from national surveys using the Body Mass Index (BMI). The BMI derives from “Quetelet’s index” (Smalley, Knerr, Kendrick, Colliver, & Owen, 1990) which was developed in the 1800’s to chart the range of heights and weights of army conscripts (Oliver, 2006). In this original conception Quetelet noted a Gaussian (normal) distribution of weight to height ratios within the population, allowing for the description of the *statistically* average man (Oliver, 2006). Today the BMI calculated as weight (in kg)/height (in metres squared), is used to provide an estimate of body composition. Leaving aside the self-reported nature of much of the available survey data (Manson et al., 1995; Strauss, 1999; Yanovski & Yanovski, 2011), a question remains regarding the interpretation of changes in BMI. What does an increase of one BMI represent? Is there a linear trend with increasing weight, or is it a more complicated relationship such as a normal distribution or U-shaped relationship? Does each BMI increase of one have the same effect size on the specified outcome?

Continuous traits, such as weight or BMI, are not amenable to straightforward assessments in the same way as grouped data. Far easier is the assignment of risk to discrete classes or categories. Sex-based risk, for example, has an altogether simpler interpretation; a man may have one risk, a woman another. The creation and use of categories for underweight, normal weight, overweight, and obese have been central to the analysis and presentation of risk estimates, and indeed goes to the very core of data purporting that an obesity epidemic has emerged.

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To date, while there has been much said of the shortcomings of the BMI, there has been little discussion of the way in which the BMI has been applied nor the processes through which the BMI has become the dominant tool on which obesity prevalence and risk have been determined. In this paper, I consider both the standardization and classification of obesity and the roles these have played within the 'obesity epidemic'. In doing so I engage with the hitherto under explored processes that have reified the BMI as the measure of obesity. Specifically I argue that the language of obesity has been standardized to such an extent that it obscures uncertainty and variation in the assessment of obesity, and the quantification and standardized measurement of obesity has furthered this simplification and has facilitated the perception of an obesity epidemic, obscuring the nuances of the data collected. This, I contend, has important, and potentially harmful, effects when it is misapplied within the clinical context.

Classification: making up obese people

But what does it mean to talk of classification? Indeed what do we mean by classification? To answer these questions I draw on Bowker and Starr (1999) who define a classification system as:

“a set of boxes (metaphorical or literal) into which things can be put to then do some kind of work – bureaucratic or knowledge production.” (Bowker & Starr, 1999, p.10)

In order for classification to occur the categories must be consistent, mutually exclusive, and complete – that is, no object from the same population may exist outside of the proposed categories.

The role of classification

By classifying, we group items based on some characteristics and in some way that we identify them as similar. Equally, we identify others as dissimilar in some other important or functional way. While there may be no single aim to the classification of things – and authors have postulated a range of possibilities (Caplan, 1997; Dupré, 2006; Jutel, 2006, 2011; Zerubavel, 1996) – I will follow Hacking (1988) by emphasizing two main purposes: cognitive and bureaucratic functioning.

From a cognitive perspective one role for classification is to simplify the world, to reduce disorder to order (Jutel, 2011). In classifying things, we are able to streamline our perceptions and memories. We are also able to facilitate the production and determination of relationships between objects or actors, to develop explanations or model interactions in order to create predictions (Hacking, 1988; Jutel, 2011).

Yet classification can also serve (but is not limited to) functional or bureaucratic purposes. One of these purposes is the ability to count. We may count in order to find out how many there are of something. More likely, as Jutel notes, counting is undertaken to assist in the answering of questions (Jutel, 2011). In the context of healthcare, we may want to know how many people are sick so that we can inform treatment protocols, health service planning, or budgeting (Jutel, 2009).

The effect of classification

As suggested, the process of classification requires one to group items based on characteristics that identify them as similar. A consequence of this is that the differences between individuals within a category or class – *intra*class differences – are downplayed, while the differences between groups – the *inter*class differences – are overstated (Tajfel, 1981; Zerubavel, 1996). Put

differently, the effect of classifying individuals into groups is that grouped items are perceived as being more similar than items that exist outside of the group. Zerubavel gives the example of boxing weight categories:

“[...] we perceive the metrically negligible “distances” between 119-pound (“bantamweight”) and 120-pound (“featherweight”) boxers [...] as greater than those between 120-pound and 125-pound (both “featherweight”) boxers...” (Zerubavel, 1996, p.425)

To the same extent that weight is manifest as discrete boxing categories, BMI is categorized into discrete classes of underweight, normal weight, overweight or obese. This serves to minimize the differences within these weight categories and introduce perceptions of significant differences between classes. This is despite the fact that the difference between normal weight and overweight is potentially the difference between a BMI of 24.9 and 25.0 while the within group variation of normal weight can be as much as the difference between a BMI of 18.0 and 24.9. To put this more starkly, for an individual who is 1.75 m tall the variation within the “normal” range constitutes 20 kg (Mascie-Taylor & Goto, 2007), while the between group variation between normal weight and overweight can be as little as 0.1 kg. It is, therefore, naïve to treat all those within a category as a homogeneous group when there may be substantial differences within a group, and minimal differences between groups at the boundaries.

Grouping does not just classify weight, it classifies people. An often neglected effect of classification is that it can affect how we see those so classified in ways that are more substantial. For example, the classification of people as being of normal or ill health often affects how we respond to them, both in terms of resource allocation (as mentioned above in the pre-emptive role of classification), but also in a personal sense; it may affect whether we wish to associate with the individual or how we do so. This latter sense may be an outcome of stereotypes which, themselves, involve a process of classification: population level generalizations are applied to individuals, removing the complexity of variation and neglecting individual differences within groups (Tajfel, 1981).

In this way, the classification of individuals as normal weight or obese may affect our assessment of the individual before us. For instance, studies have found that moralistic terms such as ‘lazy’ and ‘gluttonous’ are used to describe individuals perceived as obese, purely on the basis of their weight (Puhl & Latner, 2007; Schwartz & Puhl, 2003; Tiggeman & Wilson-Barrett, 1998). Ominously, studies indicate that these negative attributions are also held by those in a position to help obese individuals. In a French study of General Practitioners, 30% of those surveyed agreed to some degree that ‘Obese people are lazier and more self-indulgent than normal weight people’, with 28% indicating the same attitude for overweight people (Bocquier et al., 2005). The potential clinical implications are highlighted in a study by Hebl & Xu (2001) in which physicians who reviewed case studies for average weight, overweight, and obese individuals, indicated they would spend less time with obese individuals, would have less patience with them, and had significantly less desire to help the patient. These assessments paper over, if they even acknowledge, the in-group variation as well as illustrating the way in which stereotypes bring with them additional characteristics, in this instance perceptions of moral character.

The effect of classifying individuals based on their BMI may serve to propagate such stereotypes by ‘revealing’ an individual to be overweight or obese when they physically appear ‘normal’. In a study of a school based weighing and measurement programme it was noted that while the majority of children did not express concerns, a minority disliked or hated the process, with negative

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