Commentary: Obesity is not a newly recognized public health problem—a commentary of Breslow’s 1952 paper on ‘public health aspects of weight control’

Rebecca K Simmons and Nicholas J Wareham*

The size and rapidity of the recent increase in the prevalence of obesity is paralleled only by the massive media interest in the causes and implications of these changes and the myriad number of proposed solutions. The availability of information on obesity is overwhelming, but there seems to be common consensus on three points; that obesity is an important public health problem, that the problem is getting worse and that the solution is simple: eat less and exercise more. And yet, although the changing prevalence is a recent phenomenon, obesity itself is not a new public health issue. In the classic paper reprinted in this edition of the journal, Breslow1 noted in 1952 that a substantial proportion of Americans were overweight and that weight control was a ‘major public health problem’. Despite recognition of the increasing levels of obesity, and the knowledge that it is caused by excess energy intake and decreasing levels of physical activity, obesity remains a poorly understood phenomenon. There are profound gaps in our knowledge about the pathophysiological pathways underlying weight gain and in the effectiveness of approaches to tackle the rising prevalence. Breslow’s1 paper provides a platform for discussing some of these contemporary issues.

References

Obesity, weight loss, and mortality

It is clear that being overweight or obese is bad for your health. Excess body weight is associated with increased risk of cardiovascular disease, type 2 diabetes and several cancers, as well as all-cause mortality. The obesity prevalence estimates in Breslow’s paper are dwarfed by current figures showing that 65% of US adults are now classed as overweight or obese. As numbers have risen to epidemic proportions in many developed countries, overweight constitutes one of the most critical public health challenges of the 21st century because of the scale of the obesity-related morbidity and mortality that is likely to follow. Although one would not seriously question this prediction it is dependent upon risk estimates for obesity that are particular to the specific time period in which historical cohort studies were conducted. Whether such risk estimates can be applied to today’s population of obese people is limited by the assumption that there is no secular change in the risks associated with being obese. There is some early evidence that this assumption may not be correct as the risks of obesity may have changed over time, an issue that is of clear relevance to predicting the public health burden of obesity.

Breslow notes that ‘the greater the degree of overweight, the greater the mortality from all causes and especially from organic heart diseases, nephritis, cerebral haemorrhage, and diabetes’. He then makes the reasonable assumption that ‘avoiding overweight will diminish one’s chances of dying prematurely from cardiovascular-renal disease and diabetes’. Thus, if being overweight increases your risk of mortality, avoiding overweight must do the reverse. While this statement is likely to be true, we have little empirical evidence of the benefits of avoiding weight gain or of the effectiveness of approaches to prevent weight gain. Instead much more attention has focussed on the possible benefits of weight loss. However, there is a logic leap here since avoidance of weight gain is not synonymous with weight loss. Indeed, although there is a vast literature on the benefits of weight loss on proxy outcomes, there is limited evidence of the magnitude of the impact on hard clinical outcomes. Assessing this in observational data is fraught with methodological difficulties and inferences from these data need to be treated with caution. The uncertainty is demonstrated by studies such as that by Sorensen et al. showing that deliberate weight loss in overweight individuals without known comorbidities is associated with increased long-term mortality compared with those maintaining weight and those with unintended weight loss. However, although randomization is the only solution to these issues, there is to date no trial data on the efficacy of weight loss on hard clinical outcome. The US Look-AHEAD trial is studying the long-term consequences of intentional weight loss in overweight or obese subjects with type 2 diabetes but it will be several years before results on a possible reduction in cardiovascular disease events will be available.

What can we do about the obesity epidemic?

Since Breslow’s observation that ‘one out of six “well people” . . . were 20% or more overweight’ in America in 1952, obesity has now become a global public health issue. In the 53 years since the paper was published, much successful research has been completed on developing weight loss treatments, including behavioural modification, pharmacotherapy, and gastric surgery. It is also becoming clear which factors are important in maintaining weight loss and preventing weight regain. By contrast, there are very few strategies that address the prevention of weight gain in healthy individuals. Those approaches that have been tried typically focus on attempting to educate individuals. As obesity has become the norm rather than the exception, it is clear we need a shift in focus from individualistic to population-level prevention strategies. Indeed, one of Breslow’s suggestions for improving weight control was the ‘mass approach, namely, popularizing the ideal of optimum weight’. Again, however, our understanding of population-level strategies to prevent weight gain is poorly developed. The type of nutrition and physical activity that is most likely to be beneficial to long-term risk and the amount required to have a health benefit remains unresolved. More research is also needed to understand the collective determinants of physical activity and dietary behaviour operating both in the social and physical environments. Finally, to comprehensively tackle the obesity epidemic, collaboration between different academic, government, industry, and health care sectors will be necessary. The impact of diverse factors such as food supply, transport policy, advertising, and labelling have not been systematically evaluated, and we will have to take advantage of natural experiments in the community to monitor the importance of these factors.

In addition to efforts to resolve these research uncertainties, there is a need for a mind shift away from placing responsibility for weight gain solely in the hands of the individual.

Conclusion

At the end of his article, Breslow notes that in addition to developing control measures, ‘it is important to define more precisely the relationship between overweight and excessive mortality. There is need for better measures of overweight itself; investigation of the significance of specific nutritional elements; long-term observation of individuals who gain, maintain, or lose substantial amounts of weight at different periods of life, and many other studies.’ Unfortunately, most of these recommendations still need addressing today. The relationship between overweight and excessive mortality remains unclear and while the measurement of overweight has improved, the exposures that contribute to obesity, namely physical activity and diet, continue to be poorly measured in most studies. Long-term observational studies of the causes and consequences of weight loss and gain continue to show conflicting results, and the underlying pathophysiology of weight loss, weight regain, and avoidance of weight gain is not well understood. Breslow was correct in stating that ‘weight control is a major public health problem today’. This was as true in 1952 as it is in 2005. Let us hope that progress in understanding the causes of this problem and in devising public health solutions does not take a further 50 years.

Conflict of Interest

The authors have declared no conflicts of interest.

References

Commentary: What’s past is prologue

Chris Bain

It is news no longer that we have a waxing size and shape problem, which is beginning to offset health gains of recent decades.¹ Need it have come to this? Knowledge of the problem of weight has been with us since Hippocrates time (who is reputed beyond a single citation in 1955.⁴ Nonetheless, although Breslow later, seems to be the first alert to a reasonably wide mainstream awareness of weight, weight changes, and 18-y mortality in overweight individuals without co-morbidities. PLoS Med 2005;2:171.

The featured paper by Lester Breslow,³ published 10 years later, seems to be the first alert to a reasonably wide mainstream public health audience, although it had no direct reverberations beyond a single citation in 1955.⁴ Nonetheless, although Breslow never cited it himself, it seems a likely source—along with his own findings from the Alameda County study⁵ —of his ongoing advocacy of the benefits of maintaining proper weight. As more data emerged from the 1960s on, professional concern spread, and in 1985 an NIH Consensus Conference⁶ concluded that the evidence for obesogenic harm was overwhelming, but gave no clairvoyant action. Even had this been given then, the US was already well into its growth spurt, accelerating from the late 1970s onwards towards having >20% of adults obese by the late 1980s, and topping 30% by 2000.⁷ Public health eyes were distracted from the notional window of opportunity that Breslow provided by a much hotter agenda. Breslow’s own 1954 paper⁸ on cigarette smoking and lung cancer garnered 113 citations, a fair indicator of where the action was. He was also at the forefront of the contemporary frame-shift away from accepting such age-related diseases as senescent, adding philosophical appeal to the stark public health import of the cigarette story. So the ‘new’ public health of that era can be forgiven for seeming a bit sleepy in its response to the early obesity data. We are now fully awake to the expanding problem, and also alerted to the difficulties ahead by the chequered history of smoking control, nicely encapsulated in a reflective paper by Breslow⁹: despite the telling data on smoking hazards published in the 1950s and early 1960s, vocal critics kept the issue open until the 1964 Surgeon General’s Report provided a cogent causal logic that swayed the ‘new’ public health of that era can be forgiven for seeming a bit sleepy in its response to the early obesity data. We are now fully awake to the expanding problem, and also alerted to the difficulties ahead by the chequered history of smoking control, nicely encapsulated in a reflective paper by Breslow⁹: despite the telling data on smoking hazards published in the 1950s and early 1960s, vocal critics kept the issue open until the 1964 Surgeon General’s Report provided a cogent causal logic that swayed the