Diseases of comfort: primary cause of death in the 22nd century

Bernard C K Choi, David J Hunter, Walter Tsou, Peter Sainsbury

Context: The world has started to feel the impact of a global chronic disease epidemic, which is putting pressure on our health care systems. If uncurbed, a new generation of “diseases of comfort” (such as those chronic diseases caused by obesity and physical inactivity) will become a major public health problem in this and the next century.

Objective: To describe the concept, causes, and prevention and control strategies of diseases of comfort.

Methods: Brokered by a senior research scientist specialised in knowledge translation, a chair, a president, and a past president of national public health associations contributed their views on the subject.

Results: Diseases of comfort have emerged as a price of living in a modern society. It is inevitable that these diseases will become more common and more disabling if human “progress” and civilisation continue toward better (more comfortable) living, without necessarily considering their effects on health. Modern technology must be combined with education, legislation, intersectoral action, and community involvement to create built and social environments that encourage, and make easy, walking, physical activity, and nutritious food choices, to reduce the health damaging effects of modern society for all citizens and not only the few.

Conclusions: Public health needs to be more passionate about the health issues caused by human progress and adopt a health promotion stance, challenging the assumptions behind the notion of social “progress” that is giving rise to the burden of chronic disease and developing the skills to create more health promoting societies in which individual health thrives.
There is no reason to assume that we have reached the zenith of domestic illuminatory inactivity. In the future, there may be brain wave detection devices so that people simply lie on their couch, and think ‘give me light’. And the light goes on.

**THE PILL**

Comfort (which includes convenience and instant gratification) is hard to resist, and is both a benefit and an inevitable price of living in a modern society. One response to diseases of comfort lies in education and in raising individuals’ health literacy (table 2). Through awareness and knowledge transfer activities, people may come to realise that comfort has a dark side. For example, enlightened car users may prefer walking instead of driving between stores that are within the same block in an open air shopping centre. Smart diners may, on their own initiative, learn to enjoy eating salad without salad dressing. Public health’s role is to promote appropriate use of modern technology to create a built and social environment that encourages walking, exercise, and nutritious food choices.

Health education has an essential role in raising awareness about healthier lifestyle choices among people. But we have to acknowledge the limits of health education. In the USA, a study of national data has shown that only 3% of Americans followed all four of the recommended health rules, namely, don’t smoke, maintain a normal weight, eat fruit and vegetables, and get some exercise. The effect of following these lifestyle changes is greater than anything else medicine has to offer but the challenge for the public, policymakers, and public health practitioners is how to achieve these changes. A considerable investment in public health and social marketing should be undertaken to combat the commercialisation of comfort. Other public policy measures are required, too, to give priority to healthy public policy interventions.

Public funds need to be invested in building an environment that provides the comfort of modern living, but also makes healthier lifestyles a desirable and an easy choice. Some examples—none of them new but lamentably absent, ineffective, or poorly implemented—include: encouraging mass transit as a cheaper alternative to driving; clustering worksite and residential homes near public transportation facilities; making bicycle racks a priority feature at building

---

**Table 1** Causes of diseases of comfort

<table>
<thead>
<tr>
<th>Level</th>
<th>Mechanism</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Diseases of comfort</td>
<td>problem</td>
<td>Global chronic disease epidemic of heart diseases, cancers, respiratory diseases, mental disorders, diabetes, musculoskeletal disorders, etc</td>
</tr>
<tr>
<td>(2) Immediate causes</td>
<td>↑</td>
<td>Obesity, high blood pressure, high blood cholesterol, stress</td>
</tr>
<tr>
<td>(3) Underlying causes</td>
<td>↑</td>
<td>Physical inactivity, imbalanced diet, smoking, excessive alcohol</td>
</tr>
<tr>
<td>(4) Technological advance</td>
<td>↑</td>
<td>Electricity, machines, automation, energy dense food, poor urban planning, modern life, globalised economy</td>
</tr>
<tr>
<td>(5) Civilization</td>
<td>↑</td>
<td>Human progress towards “perfection” (comfort, convenience and pleasure)</td>
</tr>
</tbody>
</table>

**Table 2** Prevention and control strategies of diseases of comfort

<table>
<thead>
<tr>
<th>Level</th>
<th>Mechanism</th>
<th>Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Diseases of comfort</td>
<td>↓</td>
<td>Global chronic disease epidemic of heart diseases, cancers, respiratory diseases, mental disorders, diabetes, musculoskeletal disorders, etc</td>
</tr>
<tr>
<td>(B) Interventions</td>
<td>↓</td>
<td>Education (health literacy), legislation, participative democracy, intersectional action, community involvement, healthy technology, built environment, recreational choices</td>
</tr>
<tr>
<td>(C) Continuous civilisation</td>
<td>solution</td>
<td>Comfort choices are healthy choices for all</td>
</tr>
</tbody>
</table>
entrees; creating neighbourhood business within walking distances of residential homes; and having green space and parks for people and groups to enjoy. Health marketing strategies, such as prompting, product sample, price reduction and store coupons, may be used in the supermarket to increase consumer purchases of healthier foods. In other words, there is a need for modern urban planning and health marketing to create an enabling environment to encourage healthier lifestyles.

If education fails or is simply not seen as sufficient or appropriate to the nature or scale of the problem—and the evidence is not encouraging—then the answer may lie in legislative action (table 2). Just as seat belt regulations have saved lives, is there a need for fast or junk food regulations? For example, should all salad dressings be calorie reduced? Should all shopping areas be designed to require comfortable walking from store to store? Instead of, or in addition to, coffee or snack breaks, how about physical exercise breaks at work and school?

Public health needs to promote a balance between education and legislation. Some public health practitioners may not feel philosophically prepared to embrace public health legislation, for example, fast food legislation, unless we have already done everything we can to educate the public. On the other hand, it may not be possible for public health practitioners to do all we can to educate people about food before we support government action to regulate the availability of certain foods or the amount of sugar and salt they contain, because there isn’t time given the rapid rise of comfort related and other lifestyle diseases especially among young people. Public health needs to act now to tackle the problem through the support of a combination of education and legislation. For example, it makes no sense to give children messages about healthy eating at school when the vending machines in those same schools are stuffed with junk food snacks and fizzy drinks. Where is the logic in that? Commercial pressures are the reason but both education and legislation are required to regulate such activities so that consistent messages are given to the public. Confronting the powerful vested interests that shape our lives cannot be left to individuals. Only participative, democratic governments, whether national, regional or local, through concerted efforts with other sectors and the community, can be relied on to act on behalf of individuals. For example, it is welcome news that several provinces in Canada have now banned calorie laden junk foods from elementary school vending machines—crackers and milk are in; donuts and soft drinks are out.

Health care costs are on the rise because of the modern epidemic of diseases of comfort. Costs are not (yet) spiralling out of control but they may soon be. The Wanless report for the UK Treasury looked at the pressures on health care funding over a 20 year period from 2002 to 2022, and concluded that by 2022 if a grip was not achieved in respect of upstream public health measures then the demand pressures on the NHS would become unsustainable for a publicly funded system of health care. New drugs just about to hit the marketplace threaten to distress nationally funded health systems unless we adopt a different approach to our health—the notion of a “pill for every ill” and an “ill for every pill” has to be confronted. People will generally go for the easy quick fix rather than the preventive approach that may require personal sacrifices and lifestyle changes that seem less palatable. But with more than one billion adults worldwide overweight and at least 300 million clinically obese, and a global average of 41% of adults having insufficient physical activity, medical treatment of chronic diseases on a case by case basis will soon be out of the question, and mass prevention and control strategies (such as education and legislation) will be key. Public health has now reached a point where we need some more concrete suggestions, even if in fairly general terms, about what people, industries, governments, non-profit organisations and society can and must do to tackle lifestyle diseases that threaten the longevity of current and future generations.

THE THRILL

There are public health examples of success in changing population behaviours. Smoking is a strong preventable factor that health promotion activities have targeted and obtained some results in some parts of the world. For example, increased tobacco excise taxes and a comprehensive tobacco programme have been shown to be appropriate public health approaches to reduce population smoking prevalence, reducing smoking to 18% in California. Despite a general deterioration of diet, nutrition has provided a few success stories. Population cholesterol levels were found to be reduced by subsidising berry farming in North Karelia, Finland; and by introducing soybean oil alongside an intensive public health education in Mauritius. The same technology developed to bring us comfort, convenience, and pleasure of living can also be designed to bring us healthy living. There is today ample evidence supporting the association between longevity and food intake patterns. The European prospective envestigation into cancer and nutrition (EPIC) study confirmed the association between diet, nutritional status, various lifestyle and environmental factors, and the incidence of different forms of cancer and other chronic diseases. These and many other studies can be used to design better health promotion and chronic disease prevention and control strategies.

A single daily pill, or a “Polypill”, that contains six ingredients— aspirin, a statin, three blood pressure lowering agents, and folic acid—has been proposed for all people over...
55 years regardless of their risk status to target major cardiovascular risk factors, as a more efficient strategy than promoting healthy life style.24 The proposal was based on a review of over 750 trials with 400,000 participants.25 A “Polymeal” that is based on a healthy diet of seven food components—wine, fish, chocolate, fruits, vegetables, garlic, and nuts—has also been recommended as a safer and tastier alternative than the Polypill to reduce cardiovascular disease.26 Although critics, including ourselves, may consider the Polypill to be too much like “Polyfilla” (a crack filler) in terms of papering over the visible problem and disguising the root causes, the Polymeal could use modern technology and knowledge to promote public health by changing unhealthy behaviours.

CONCLUSIONS

The needs of the collective are not the same as the sum of individual preferences. The principal role of stewardship and governance is the protection of the population’s health. This is an essential role for government but it must include intersectoral collaboration with the private sector and non-government organisations and community involvement in decision-making and action. Collective responsibility and action should not be abandoned in favour of a focus on individual choice and consumer models of health promotion and prevention in which it is all a matter of giving people information and advice to allow them to exercise informed choice. The growing marketisation of public policy threatens and weakens the legitimate stewardship role of government as the ties between individuals as citizens and the state become looser to be replaced by individuals acting as consumers in a marketplace. In countries with more developed economies, we take safe water for granted so why not safe food that has reduced levels of fat, sugar, and salt in line with international healthy guidelines?27

There is a need for a more vigorous critique of the notion of human “progress”, particularly one that is economically driven and adheres to a particular conception of progress and economic development. Public health needs to be more passionate about health issues associated with human progress and adopt a health promotion stance. Its practitioners can no longer merely be dispassionate bystanders. Many people are helpless when faced with largely unhealthy choices. Public health should be leading the way, pointing out that diseases of comfort are an outcome of human “progress” and civilisation, and ensuring that, through health promoting education, built and social environments and legislation, comfort choices are healthy choices for all and not merely the few. For this to happen, the public health workforce needs to be equipped with the necessary skills and critical perspectives to tackle the issues identified in this paper.

We believe our message is a clear one. It may not be new but bears repeating. Public health has to become more assertive and politically aware and a powerful advocate for political and social change. In recent times, public health has failed to display these qualities and attributes. Public health leaders need to become more visible and vocal and to challenge the dogma surrounding concepts like “progress” and “modernisation” when it comes to promoting health. By restating the facts that are known to many, this paper by an international authorship is a call for global action to spread and act on the message—before it is too late.

ACKNOWLEDGEMENTS

The authors acknowledge the helpful suggestions and support of Dr Christina Mills, past president of the Canadian Public Health Association, and the assistance of Professor Theodore Binema, associate professor of history, University of Northern British Colombia, Canada in the interpretation of the Whiggish view of history.

AUTHOR CONTRIBUTIONS

Study concept and design: Choi. Acquisition of data: Choi, Hunter, Tsou, Sainsbury. Analysis and interpretation of data: Choi, Hunter, Tsou, Sainsbury. Drafting of the manuscript: Choi. Critical revision of the manuscript for important intellectual content: Choi, Hunter, Tsou, Sainsbury. Final approval of the version to be published: Choi, Hunter, Tsou, Sainsbury

Authors’ affiliations

B C K Choi, Public Health Agency of Canada (PHAC); Department of Public Health Sciences, University of Toronto; Department of Epidemiology and Community Medicine, University of Ottawa, Canada

D J Hunter, UK Public Health Association (UKPHA); School for Health, Wollson Research Institute, University of Durham, Durham, UK

W Tsou, American Public Health Association (APHA); Tsou Consulting, Philadelphia, Pennsylvania, USA

P Sainsbury, Public Health Association of Australia (PHAA); Division of Population Health, Sydney South West Area Health Service—Eastern zone; School of Public Health, University of Sydney, Camperdown, NSW, Australia

Funding: none.

Conflicts of interest: none declared.

Views expressed are those of the authors and cannot be attributed to any associations, universities, or organisations.

REFERENCES


THE JECH GALLERY ..............................................

From steam engines to Sunny Delight

The St Rollox works in Springburn (top left image—in 1955) was the last surviving locomotive works in Scotland. At the height of production during the first world war the St Rollox complex covered over 190 acres and provided work for about 5000 men. In 1965 the works underwent major renovations at a cost of £1.5 million (top right). By the early 1980s however the works had failed to make the transition from steam technology to modern diesel and electric engines. As a result thousands of jobs were lost when the works closed. In 1987 the site was described as a scene of “urban desolation” with poor quality high rise housing (middle left) and the area suffered from severe decline (middle right). Policymakers have suggested that the development of food superstores in deprived communities can improve the diet and health of residents, and stimulate the local economy.

Opening supermarkets in deprived communities may not be the single most effective approach to improve local diets. Commercial reality is such that all supermarkets provide opportunities to consume both healthy and unhealthy products. The image (bottom right) illustrates this point: the large tins of unhealthy products. The image (bottom left) illustrates the point: the large tins of unhealthy products.

ACKNOWLEDGEMENTS

Digital images (photos 1–4) used in this article are from the Springburn Virtual Museum, part of the Glasgow Digital Library. For more information please go to http://gdld.cdlr.strath.ac.uk/springburn/ and http://gdld.cdlr.strath.ac.uk/. The authors prepared this paper while funded by a grant from the Department of Health Reducing Health Inequalities Initiative (ref 121/7492). The views expressed here are those of the authors and not necessarily those of the Department of Health.

REFERENCES

Diseases of comfort: primary cause of death in the 22nd century

Bernard C K Choi, David J Hunter, Walter Tsou and Peter Sainsbury

*J Epidemiol Community Health* 2005 59: 1030-1034
doi: 10.1136/jech.2005.032805

Updated information and services can be found at:
http://jech.bmj.com/content/59/12/1030

These include:

**Supplementary Material**
Supplementary material can be found at:
http://jech.bmj.com/content/suppl/2006/07/10/59.12.1030.DC1

**References**
This article cites 19 articles, 10 of which you can access for free at:
http://jech.bmj.com/content/59/12/1030#BIBL

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Topic Collections**
Articles on similar topics can be found in the following collections

- Sociology (974)
- Health promotion (1711)
- Health education (1537)
- Obesity (public health) (542)

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/