Tackling childhood obesity: the importance of understanding the context

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ABSTRACT

Background Recommendations to tackle major health problems such as childhood obesity may not be appropriate if they fail to take account of the prevailing socio-political, cultural and economic context. We describe the development and application of a qualitative risk analysis approach to identify non-scientific considerations framing the policy response to obesity in Denmark and Latvia.

Methods Interviews conducted with key stakeholders in Denmark and Latvia, undertaken following a review of relevant literature on obesity and national policies. A qualitative risk analysis model was developed to help explain the findings in the light of national context.

Results Non-scientific considerations that appeared to influence the response to obesity include the perceived relative importance of childhood obesity; the nature of stakeholder relations and its impact on decision-making; the place of obesity on the policy agenda; the legitimacy of the state to act for population health and views on alliances between public and private sectors.

Conclusion Better recognition of the exogenous factors affecting policy-making may lead to a more adequate policy response. The development and use of a qualitative risk analysis model enabled a better understanding of the contextual factors and processes influencing the response to childhood obesity in each country.

Keywords Obesity, models, public health

Introduction

Development of recommendations to tackle major health problems faces a number of challenges. First, the scientific underpinning of evidence on its determinants may be contested. But, as importantly, recommendations may not be accepted or indeed useful if they fail to take account of the prevailing socio-political, cultural and economic context.

This is apparent in relation to obesity, where, beyond the consensus that it arises because of energy imbalance, there is still some debate within the research community about how to address it (e.g. behavioural versus pharmacological interventions), the complexity of its determinants (subsumed within the general heading of a modern lifestyle), and the barriers to long-term, sustainable changes to obesogenic environments. Approaches to tackling obesity have to date proven generally insufficient, as demonstrated by the persistently high prevalence of obesity (despite some signs of levelling off) and considerable socioeconomic inequalities in obesity although prediction of future trends is made difficult by the very limited comparable data on pre-school children.

We describe the development and application of a qualitative risk analysis model to help identify some of the non-scientific considerations framing the policy response to obesity in Denmark and Latvia.

Risk analysis is defined as ‘a procedure to identify threats and vulnerabilities, analyse them to ascertain the exposures and highlight how the impact can be eliminated or reduced’. It encompasses risk assessment, risk management and risk communication. It draws on perspectives from many sectors, such as environmental protection, business...
and engineering and is increasingly employed in the health sector in areas such as health impact assessment and patient safety. The rather mechanistic methods used initially have, over recent years, been complemented by a much wider range of disciplinary perspectives, recognizing challenges such as decision-making in the face of uncertainty and the importance of context.

Qualitative risk analysis builds on the traditional risk analysis model and extends it to include socioeconomic, political and other non-scientific factors or ‘framing assumptions’. The concept of framing assumptions has its roots in intellectual traditions, which have sought to understand the association between science and governance. It recognizes the complex inter-relationship between science and policy, taking account of uncertainties and subjective perceptions that are often poorly reflected in a positivist approach. Thus, policy analysis and response should factor in social, economic, cultural, (geo)political, systemic, psychological, business, sectoral and other ‘messy’ non-scientific considerations in a methodical and thorough way. The aim of risk management includes establishing the significance of the estimated risk, the costs and benefits gained in doing so, and carrying out the political and institutional process of reducing the risk. The risk management phase may also be described as answering the questions: Having assessed the risk, does anything need to be done about it? If so, what can and should be done? At the stage of risk management, the information identified and analysed is reflected on and the conclusions inform the choice of policy options and optimal ways of communicating the risk. Risk communication takes place throughout the entire process, by means of an interactive process of responsive consultation with all interested parties including government, industry, academia, media and consumers. This will often incorporate the precautionary principle, which recognizes scientific uncertainty and prioritizes the rights of those who are most likely to be adversely affected, focusing energies on risk avoidance rather than simply risk toleration.

This was part of a larger research project to assess the views of stakeholders on sugar-sweetened soft drinks as a risk factor for childhood obesity. The research specifically sought to identify framing assumptions—broadly considered to include non-scientific considerations such as physical, economic, policy, socio-cultural factors—which should be considered formally when seeking appropriate policy options in each country. The countries were selected as examples from eastern and western Europe, with very different post-war histories that might have influenced contemporary policies and responses.

In 2004, as Latvia joined the European Union, childhood obesity in the country was starting to be recognized as an issue of increasing importance, though remaining a lesser priority than substance abuse amongst young people which, at that time, was emerging as a significant concern. Rates of childhood obesity rates were low compared with other European countries, with 6–12% of 11-, 13- and 15 year olds reported in 2005–06 as being either overweight or obese. However, some nutrition experts and endocrinologists warned that this would soon increase, given evidence of an increase in unhealthy eating habits including regular consumption of sugar-sweetened soft drinks by young people. In 2005–06, 10–16% of young people in Latvia reported consuming soft drinks on a daily basis. Leading endocrinologists in Latvia warned that obesity in children was rapidly becoming a problem and, as a consequence, serious metabolic disorders were rapidly increasing, with a rise in type 2 diabetes among teenagers.

In Denmark, the leading international brands of soft drinks have been established in Denmark for decades. Dietary survey data on sugar-sweetened soft drink consumption in Denmark have followed the direction of sales over the past decades, translating to a 40% increase of sugar-sweetened soft drinks in children from the mid-1990s to early 2000s. In 2005 the Danish Nutrition Council estimated that that every fifth Danish child was overweight, about 15–20%.

**Methods**

The primary data source was a series of interviews conducted in October 2004 and February 2005 with key stakeholders in Denmark and Latvia, and informed by reviews of literature on obesity and its determinants and on the policy environment in the two countries. The studies were conducted separately in the two countries but using a common methodology. Four major groups of stakeholders were interviewed: government and its agencies, including local government; non-governmental organizations (including consumer and parents organizations); industry and its representatives and academic and research institutions. Analysis was undertaken using the established principles of stakeholder analysis to assess the position and influence of the stakeholders on consumption of soft drink consumption within broader efforts to curb obesity in children. The results of the stakeholder analysis are described elsewhere (paper submitted).

The qualitative risk analysis model used is depicted in Figure 1.
The first vertical slice captures the iterative relationships between identification of framing assumptions, assessment and management of risk and development of policy options, based on previous work on this subject. These take place within a conceptual framework based on the work by Egger et al. which applies the classic epidemiological triad of host, vector and environment (more often used in relation to vector-borne infectious diseases) to obesity. In this variant, Egger and Swinburn propose that the host refers to biology, behaviour and medical interventions, the agent is energy density and its vectors are sugar-sweetened soft drinks, large portion sizes, etc; and the environments refer to physical, economic, policy socio-cultural and other factors.

Both the environment and the vectors (their design, production and marketing) as well as certain host factors (e.g. health beliefs) are shaped by powerful actors including government, the food and drink and advertising industries, and by others that traditionally have less influence, such as the public health and food policy community. Thus, applying the epidemiological triad to ‘diagnose’ scientific (risk assessment) and non-scientific considerations (framing assumptions) can help to conceptualize the positions and influence of key actors and their stance on various policy options, and can help devise appropriate policy strategies.

The third vertical slice considers the practical implications of each stage of qualitative risk analysis. Literature reviews and interviews with key stakeholders can give a sense of the factors framing and informing the science, and help understand the scientific evidence itself. Once these elements are elucidated, host- vector- and environment-based strategies can be devised.

Results
Twenty interviews were conducted with stakeholders in both Denmark and Latvia. The stakeholder analysis is reported elsewhere; however, here we present some of the key findings of the research in terms of the qualitative risk analysis model described above.

Identification of framing assumptions
Non-scientific considerations that appeared to influence the response to obesity were highlighted by interviewees in both Denmark and Latvia. Latvian policy-makers and health professionals identified the need to tackle other issues affecting child health, such as the rapid growth of intravenous drug use, high rates of smoking and violence, all of which were considered more urgent than childhood obesity. Few saw soft drinks as a major risk factor for weight gain. However, there were health concerns about soft drinks but they focus on the risk from additives. In contrast, 

Fig. 1 Conceptual framework to guide qualitative risk analysis.
Denmark, there was an acceptance of the risks posed by soft drinks by virtue of their sugar content. These differences need to be understood before launching preventive strategies, even though the science is quite clear.

Other framing assumptions related to the nature and culture of stakeholder relations. For example, in Denmark there is a tradition of cooperative problem-solving across sectors, as described by the Danish political scientist Henning Jørgensen in his work on policy-making his country, where 'socially embedded norms, traditions for finding common solutions, and institutional consensus building are historically founded pillars for the Danish political-administrative system.' This was identified as an important element of Danish decision-making by several interviewees.

Some framing assumptions influenced the ability to place a health issue on the policy agenda. In Latvia, interviewees suggested that neither soft drinks nor childhood obesity had been picked up by the media to any great extent, as they assumed other health issues were more urgent. A Danish stakeholder was of the opinion that in his country there had been some resistance to addressing obesity because of the acceptance of views promulgated by a strong agricultural sector, particularly in relation to milk production, where 'for many years milk was regarded as a universally nutritious substance and if you had milk you could survive. [...] How then could it be considered as bad for health [because of the fat content]?'

Another issue discussed was the legitimacy of state action. Where does the realm of 'individual freedom' or 'individual responsibility' end and that of state responsibility begin? Related to this were perceptions of the norms underlying alliances with the private sector, especially in relation to the independence of research and public organizations, and uncovering the formal contracts and informal agreements made in each country and the reasons behind them. In Latvia for example there was much discussion of the lack of funding for public health and basic health promotion campaigns, leaving open an opportunity for financing of health programmes by food or drink industries. Other framing assumptions included the perception of soft drinks in the school environment, and the perceived role and effectiveness of a soft drink tax in both countries.

**Risk assessment**

The risk assessment phase analyses the relevant scientific evidence. Thus this section outlined the health, economic and social burden of obesity and its risk factors, analysing the situation in Denmark and Latvia in the European context. Here the science on the health impact of excessive intake of sugar-sweetened soft drinks was discussed, mirrored by any existing information on consumption patterns in Denmark and Latvia. These facts were put into context, and the tactics and marketing strategies of soft drinks producers were analysed.

The risk assessment phase confirmed that sugar-sweetened soft drink consumption is a risk factor for weight gain, based on a series of systematic reviews. There is enough information about sugar-sweetened soft drinks as a risk factor for childhood obesity to justify action to prevent weight gain in European children.

**Risk management**

The risk management phase is when policy options are proposed in light of scientific evidence from the risk assessment and non-scientific framing assumptions.

For example, one of the most consistent recommendations in reports on childhood obesity prevention is the need for cross-sectoral collaboration. In Denmark there is a long-established assumption that stakeholders will communicate with each other. Stakeholder relations were less openly mentioned in Latvia; this does not imply a lack of communication between different sectors. However, countries have different norms and traditions, influencing which sectors collaborate and how. For example, in both Denmark and Latvia, the multitude of alliances between private companies such as soft drink companies and health-related associations can reduce the credibility and perceived independence of the latter, while boosting the trustworthiness of the company in question in the eyes of the consumer. A public health campaign may be viewed by consumers as insincere if the organization or agency issuing the campaign is financially associated with the food and drinks industry.

Finally the discussion on school food and drink provision helped elucidate the general characteristics of the school environment and to understand better the decision-making processes. This information is important when thinking through school policy development in each country as well as Europe-wide initiatives such as marketing codes and vending machine legislation: these need to take account of differences between countries.

**Discussion**

**Main findings of this study**

The framing assumptions revealed by qualitative risk analysis included a range of socio-cultural and political considerations. The framing assumptions informed the identification of considerations appropriate to strategies to fight childhood obesity in the different settings. This made it
possible to raise key issues that may have been overlooked in more traditional approaches to data collection and which shape the paradigms inhabited by each stakeholder. Nevertheless, it is essential to note that the framing assumptions we identified may not exhaust all those that could be relevant to policies on childhood obesity; other factors may have emerged in other settings and with other interest groups.

These findings could then be applied to the scientific findings emerging from another element of the risk assessment process that confirmed the role of sugar-sweetened soft drink consumption in weight gain. It is likely that strategies to combat obesity will be more likely to work if they are appropriate to the national context.

Specifically, this approach made it possible to contrast formally the actual prevalence of obesity in children with the perceived importance of obesity as a public health problem in each country. We found substantial discrepancies between fact and perception, emphasizing the importance of (1) understanding and factoring in stakeholder perceptions and (2) effectively communicating the issue of obesity and its risks.

This model provided a structured approach to a complex problem. Throwing a relatively large net to identify possible framing assumptions that may shape scientific deliberations and the choice of strategies for obesity prevention, can only be useful if there is a structure within which the findings can fall and be sorted. The qualitative risk analysis model provided such a structure, yet remained sufficiently flexible to redefine categories of framing assumptions and re-evaluate their importance in light of new data. We believe that this approach can be useful in contextualizing potential responses to obesity and other complex problems in different settings.

The application of the model also elucidated some of the underlying issues facing policy transfer. Richard Rose, who has written extensively on this issue, warns that ‘to recommend that one country emulate or catch up with another’s success simply by copying or transferring a programme wholesale is naïve, because it ignores the way in which national contexts influence how a programme can operate and whether it may be effective’. 28 Experiences from Latvia could have been applicable to Denmark and vice versa, but it was necessary to understand the framing assumptions in each country to ascertain whether approaches that might work in one country would work in the other.

Finally this approach lends itself to integrating learning from other public health arenas. For example, though beyond the scope of this article, there are several areas where we can learn from the public health response to the tobacco industry. These include the (positive and negative) impact of foreign direct investment, the interpretation and use of the ‘free choice’ argument (e.g. ‘smoking/obesity is simply the result of the consumers’ free choice’), 29 the interpretation and use of the basic science on the health impact of smoking and how it influences public response, and the debates on statutory regulation versus voluntary codes. 30 – 32 This model allowed for the inclusion of such information as supporting and making more in-depth the risk assessment, and thus integrating the lessons learned into the process of risk management.

What is already known on this topic
Risk analysis encompasses risk assessment, risk management and risk communication and sets out to identify threats and vulnerabilities, ascertain the exposures and address how to overcome barriers. It builds upon perspectives from many sectors and is increasingly employed in the health sector. The concept of framing assumptions is grounded in work on the association between science and governance. Arguments have been put forth for a more relevant approach to risk analysis where science and policy should be more explicitly and effectively interrelated. 10 – 11

What this study adds
Using a systematic approach such as qualitative risk analysis to disentangle important socioeconomic, political, and other non-scientific factors and understand how they influence the policy response to obesity may contribute to the global effort to curb this epidemic. What has been termed ‘qualitative risk analysis’ in this research by no means excludes the scientific evidence nor does it undermine its importance; qualitative risk analysis acknowledges science as the backbone of risk management decisions but suggests that for cases such as childhood obesity, there is a need for action where much evidence already exists, thus further risk assessment should not take priority. Better acknowledgment of the exogenous factors affecting policy-making may lead to a more adequate policy response.

Limitations of this study
The limitations of this study include the occasional difficulty in estimating the relative importance of some results and their actual meaning. Moreover, a quantitative analysis of one or more of the factors examined would have provided an added dimension to the results, even though the experience of allowing ‘framing assumptions’ to emerge from the interviews in an inductive way allowed for an openness to and richness of information that may not otherwise have occurred.
References


