Obesity

Reflections on expert consensus: a case study of the social trends contributing to obesity

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Background: In Australia, as elsewhere in the developed world, researchers and policy makers have expressed concern about rising rates of obesity. Explanations for the increasing weight of the Australian population have focused on both declining levels of physical activity and changes in food consumption patterns. Methods: The primary aim of our study was to determine the views of obesity, dietary and physical activity experts, about the most important social trends that have contributed to Australia’s obesogenic environment over the last 50 years. We used a modified Delphi technique to successfully contact 50 such experts to obtain their views on this topic. The process involved a semi-structured interview with each expert to identify the trends and then a round of ranking of the trends by these experts. A second aim was to comment on the utility of expert opinion in public policy. Results: The experts identified the most important social trends as ‘escalating car reliance’, ‘increasing “busy-ness” and lack of time’ and ‘rising use of convenience and pre-prepared food’. Because we asked experts to explain their responses, a diversity of opinion emerged on both the aetiology of these trends and how the environment is embodied to produce rising levels of obesity. Conclusion: We reflect on the implications of this dissensus for the utility of expert opinion in public policy and argue that one way through the smorgasbord of competing expert explanations for health differentials, including obesity levels, is practice-based evidence gathered through community level action research.

Keywords: Australia, Delphi study, evidence-based public health policy, obesity, social trends contributing to the obesogenic environment

A ustralia, like many countries, is experiencing a growth in the collective weight of its population. The Australian Institute of Health and Welfare has recently predicted that 60% of adult Australians will be overweight or obese by 2010, while scientists have issued warnings about costs to the health of Australians in the future if this trend continues.

In explaining the increasing rates of obesity in the Australian population, Egger and Swinburn* have noted the importance of genetic, behavioural and environmental factors. Their ecological model of obesity describes two primary ‘behaviours’ that contribute to obesity: (i) food consumption, which is a proxy for energy intake; and (ii) physical activity, which is a proxy for energy expenditure. These behaviours interact to produce an energy balance, which is moderated by the genetic predisposition of the individual. In explaining why Australia is undergoing rapid increases in obesity rates they emphasise the fundamental importance of changes in the physical, economic and socio-cultural aspects of our obesogenic environment in shaping our physical activity and food consumption patterns. Targeting the obesogenic environment has become a pertinent concern for public health researchers and Australian federal and state governments.

Given the current emphasis of evidence-based medicine and public policy more generally, the role of experts is worthy of exploration. There has been no academic account of experts’ views on the aetiology of obesity and the advice they provide to governments. In this study, we aimed to determine the views of obesity, dietary and physical activity experts, including those sitting on the National Obesity Taskforce, about the important features of Australia’s obesogenic environment and to comment on the utility of expert opinion in public policy.

Methods

In exploring the role of the obesogenic environment, researchers have undertaken cross-sectional snapshots of the major environmental factors thought to be responsible for altering a population’s energy balance, but have not examined them from an historical viewpoint. To assist us in identifying the most important trends we modified a Delphi study which is a research method commonly employed to ‘obtain the most reliable consensus of a group of experts’. We began by identifying a range of arenas relevant to physical activity and food consumption (see table 1). Individuals who were publishing in relevant academic journals were selected for interview. They were also asked to recommend other experts, including practitioners, policy makers and other researchers, who should be included in the study. If not already identified, the person or someone else from an equivalent area or organisation, was contacted. Once the suggestions became repetitive (reached saturation), we stopped.

Delphi research typically involves sequential rankings of responses to a questionnaire. Our modified Delphi truncated the ranking component, and involved one round of nominating trends and then one ranking of the collated responses. We also departed from conventional Delphi procedure by commencing with a semi-structured, in-depth interview to provide a more detailed description of the trends and how they operate.

The experts were either telephoned or emailed to seek their involvement. Before the interview an information sheet was emailed to participants outlining the two main interview questions which had already been piloted on six people. These were: ‘What, in your opinion, are the major social trends which have led to Australia-wide changes in (a) physical activity and (b) food consumption over the last 50 years?’ Of the 60 experts...
contacted, 50 agreed to participate. They were interviewed by telephone at pre-arranged times while the interviewer took notes which were expanded upon later. The interviews were expected to last about 20 minutes but often were longer.

All authors consensually coded the experts’ observations into major trends by seeking common key words and phrases, but not necessarily common historical trajectories, linking the trend to the rise in obesity. Because the experts had a range of understandings of how the trends were manifested and how they influenced individual level food consumption and physical activity, the syntheses of each trend are not necessarily internally consistent.

Brief explanations of the trends were compiled and returned to the participants. They were then asked to select the six most important trends for physical activity and food consumption, and rank them from 1 to 6 in order of importance (1 being most important). Thirty-eight Delphi participants participated in the ranking exercise.

Results

The trends identified by the experts are presented in tables 2 and 3, along with the frequency with which the trends were ranked as ‘most important’ (ranking = 1). Almost two-thirds of participants considered ‘escalating car-reliance’ and ‘increasing ‘busy-ness’ and lack of time’ as the most important physical activity trends.

They showed less agreement about the most important food consumption trends. The two most nominated trends were ‘increasing “busy-ness” and lack of time’ and ‘rising use of convenience and pre-prepared food’. Increasing “busy-ness” and lack of time was chosen as important for both food consumption and physical activity.

Figure 1 pictorially represents the trends’ ranking on importance, using the descriptive measure ‘the proportion of times each trend was ranked in the top 6’, and its ‘average rank’
Importance of trends contributing to physical activity and food consumption

**Figure 1** Importance of trends contributing to physical activity and food consumption

<table>
<thead>
<tr>
<th>Physical activity</th>
<th>Food consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Escalating car reliance</td>
<td>L Increasing busy-ness and lack of time</td>
</tr>
<tr>
<td>B Increasing busy-ness and lack of time</td>
<td>M Aggressive marketing of food</td>
</tr>
<tr>
<td>C Sedentarisation of leisure activities</td>
<td>N Rising use of convenience and pre-prepared foods</td>
</tr>
<tr>
<td>D Changing knowledge… exercise and physical activity</td>
<td>O Changes in families</td>
</tr>
<tr>
<td>E Reduced emphasis on physical activity in schools</td>
<td>P Changing patterns of food consumption</td>
</tr>
<tr>
<td>F Substitution of physical activity by machines</td>
<td>Q Growing availability of, and access to, food</td>
</tr>
<tr>
<td>G Changing psycho-social factors</td>
<td>R Decline in cooking</td>
</tr>
<tr>
<td>H Growing wealth and inequality</td>
<td>S Confusing information about food and nutrition</td>
</tr>
<tr>
<td>I Growth of work</td>
<td>T Growing wealth and inequality</td>
</tr>
<tr>
<td>J Mounting concerns about public safety</td>
<td>U Increasing variety of food</td>
</tr>
<tr>
<td>K Urbanisation</td>
<td>V Population level metabolic trends</td>
</tr>
<tr>
<td>L The impact of government policy</td>
<td>W The impact of government policy</td>
</tr>
</tbody>
</table>

when it was placed in the top 6 (note: 1 is highest rank). The trends located in the lower right quadrant are most frequently ranked in the top 6 and also ranked highest. Similarly, the trends in the upper left were least frequently ranked in the top 6 and also ranked the lowest. A clustering of the trends within the upper left and lower right quadrants suggests some consistency amongst respondents on ranking.

Despite this general numerical consensus on the trends’ importance, the interview data reveal a more nuanced, complex and sometimes contradictory picture about the reasons for the trends, their inter-relationships and influence on food consumption and physical activity. We will illustrate this complexity for the three most important trends:

- Escalating car-reliance
- Increasing ‘busy-ness’ and lack of time
- Rising use of convenience foods

Note that the following trend descriptions are not necessarily the authors’ views.

**Escalating car-reliance**

Participants described an increase in the ownership and use of cars among the general population and a decrease in more active forms of transport such as public transport, pushbikes and walking. They observed a growing number of cars per family unit and that car use is integrated into everyday life for shopping, transporting children, work and leisure activities. The car, which is now more affordable and accessible than ever, has become a symbol of convenience and status, while other forms of transport, such as walking and public transport, have been devalued accordingly.

Strong government investment in the car industry and inadequate government activity promoting mass transport systems have contributed to, and been driven by, an increasing reliance on the car. Planners and developers have not only responded to the dominance of the car but they also reinforce it. New housing developments are situated on major car, rather than public transport routes, while new development approvals are based on adequate car parking provisions rather than provision of walking or cycling facilities.

Experts noted that car-reliance impacts on obesity because it displaces active with sedentary transport. An historical perspective revealed the essential role of the car in suburbanisation, (including land planning, housing design and the urban environment), which contributes to reduced outdoor playing space for children. This environment discourages walking because of pollution and noise. Because of traffic, fewer children walk to school which may contribute to spontaneous play being replaced with organised sport and increased time being chauffeured around. Suburbanisation has also contributed to women’s negative mental health and body image issues.
Increasing ‘busy-ness’ and lack of time

This imposes a major restriction on people’s physical activity. Some participants thought that lack of time was a perception while others noted the pressure on people to do more with their time, related to a need to achieve success, to comply with work demands, and to be a good parent by setting aside time for children’s activities. Changing family structures mean that some people care for elderly parents as well as children. Accompanying this is the sense that lives are more complicated and require sophisticated feats of organisation to be manageable.

Some experts observed that there is a changing perception of the value of time that is associated with this increase in time pressure. Considerable social pressure forces people to use their time efficiently and to adopt modern conveniences to save time. Associated with time pressure is a tendency to differentially value time spent on various activities. For example, some experts noted that people consider that waiting for public transport is time wasted, whereas time spent in the car during a traffic jam is more invisible or acceptable.

Parents no longer have time to play with children, or to model active behaviour for them. Children’s extended TV viewing, poor diets and low levels of unstructured and incidental play were partly attributed to lack of parental time, due mainly to working hours.

Lack of time contributes to a decline in physical leisure pursuits, which are replaced by more sedentary activities. One expert noted that people ‘have to do more, in less time, so they have less time to move... we have to prioritise to fit activity into the day’. Some participants suggested that people don’t consider exercise a priority, or don’t want to do it, and so spend little or no time on it.

Another way ‘busy-ness’ has affected physical activity is that people feel weary at the end of the day and would prefer not to exercise. One expert suggested, ‘given a choice between doing nothing and exercise, people feel they need time out to relax’. Thus, people opt for more sedentary leisure pursuits.

 Australians’ ‘busy-ness’ and increased pace of life is also considered important in influencing food consumption patterns. An expert commented on ‘the illusion that we don’t have enough time to make a sandwich at home, but we do have time to buy some rubbish on the way’. Less time is spent on cooking and greater use is made of pre-prepared and take-away foods. When given a choice between spending time with their family, and spending time in the kitchen, parents would rather have family time and purchase a pre-prepared meal.

Rising use of convenience and pre-prepared foods

Participants observed the increasing dominance of convenience or pre-prepared foods in food consumption patterns. This includes food eaten away from home, fast food and take-away food, and pre-prepared foods assembled and eaten in the home. The term convenience is applied to these foods because they are considered quick and easy to obtain and consume. Some participants remarked that their attraction results from consumer reluctance to expend mental or physical energy on food preparation.

The trend towards these foods is driven by social and economic factors such as the cost effectiveness of fast food, increased disposable income, the marketing power of advertising companies, their wide availability and accessibility especially by car, and the growth in technologies such as microwave ovens that facilitate their consumption. It is now commonplace and ‘normal’ for people to consume these foods frequently. Indeed, they are often the first food people eat when they are hungry. While food prepared and eaten at home is as healthy, or even healthier, than in the past, there is an increasing amount of convenience food being consumed away from, and in, the home.

The trend towards convenience foods is important for obesity for several reasons. It contributes to people’s lack of control over their diet. The manufacturer or restaurant determines portion sizes and/or the composition of what is considered a ‘meal’. In addition, consumers hand over control of the ingredients and cooking processes and thus it is becoming increasingly difficult for consumers to know the micronutrient content of their food, because the fat and sugar content is manipulated during processing. Participants stated that convenience food is a major contributor to an overall increase in dietary fat and sugar intake. It may also promote hunger because it is high in salts and sugars and increases blood sugar and insulin levels.

Discussion

This Delphi study raises methodological issues and has implications for evidence-based policy. A Delphi process aims to achieve consensus among experts. Figure 1 illustrates that there was some consistency in experts’ views of the relative importance of each trend behind the rising rates of obesity. However, by asking the experts to explain their responses, a diversity of opinion emerged on both aetiology and how the environment is embodied to produce rising levels of obesity.

A similar finding has been identified in health inequalities research, with Kreiger noting that ‘[s]hared observations of disparities in health do not necessarily translate to common understandings of cause’. Kreiger identifies three competing bodies of theory—psychosocial, political economy and ecosocial—which are implicitly adopted by social epidemiologists, with consequences for how they interpret their findings. They were variably used by our respondents.

As with health inequalities, the intricacy of the pathways and linkages between social trends has implications for responses to the rising levels of obesity in Australia. Most of the top trends identified by the experts are complex and widespread, for which simplistic and individualistic solutions are unlikely to be effective in the long term. By synthesising the different Delphi participant’s views to build a picture of the social trend of car reliance, for example, we have generated numerous potential pathways by which this trend influences obesity. A depiction of the way in which population level practices interact and compound one another indicates that interventions need to be multi-level and systemic. This is not a conclusion that might follow from a Delphi exercise that simply solicits consensus around broad themes, because any apparent consensus is likely to render a superficial account of the situation. While the Delphi approach of successive rankings is designed to remove ambiguity from what is being ranked, it is not a suitable instrument for eliciting social consensus of the broad correlates linking social environmental factors and behaviours.

The increasing recognition that expert evidence is framed by values in the same way as lay and policy knowledge has implications for how evidence is applied in policy development. From our research, we are concerned that consultations with a range of experts on emerging and complex public health problems is likely to yield contrary advice, whereas confining advice to experts from one field will result in idiosyncratic and partial insights.

Expert dissensus has repercussions for both public health policy and individual behaviour change. Recently, MacDougall reported that lay knowledge builds upon expert knowledge to provide the basis for new health-promoting practices which are often disseminated through the media. Thus, expert pronouncements may influence the general population while bypassing policy makers. This is illustrated by the widespread adoption across many countries of the Atkins Diet.
While at odds with evidence-based government dietary guidelines, Dr Atkins, a medical expert, popularised an approach to weight loss that was adopted by hundreds of thousands.

Furthermore, media portrayals of expert disagreement offers people an excuse to ignore expert advice altogether. In previous research, we noted that consumer cynicism of experts provides fertile ground for market-based actors, including food corporations, to become authority figures on public health matters.15

Multiple sources of advice raise the challenge of reaching agreement, or minimising disagreement between experts. We are aware of two forms of response. One is the efforts being made to formulate syntheses of evidence through novel dialogic forums such as executive sessions.16 Even if these technologies can succeed in overcoming the ‘competing rationalities’ of policy makers and researchers,6 the reality remains that the epistemologic positions adopted by experts will inevitably produce a smorgasbord of explanations for what determines health and illness.

The second derives from MacDougall,13 who concludes that one way forward in the evidence-action impasse is to encourage community participation in defining and evaluating influences on health. Maybe it is time to turn evidence-based policy making on its head and to pursue practice-based evidence. Evidence-based policy is the outcome of considering the best available evidence of the effectiveness of interventions, however, ‘if many public health issues, evidence about interventions is lacking, or the available evidence is incomplete or of poor quality’.17 If lay people are to be involved in overcoming the scourge of obesity, then broadly accessible and intelligible practice-based evidence is needed. Gathering insights about what works to prevent obesity through action-research methods, built into intervention sentinel sites, may offer communities more immediate, relevant guidance than waiting for experts to agree with one another and to have an influence on policy making. Two examples are the North Karelia program15 and the Dutch government’s support for action research projects aimed at reducing health inequalities.19 These provide precedents for trialling innovative, community-based public health approaches without expert consensus on aetiology and cure or the transfer of knowledge from the research to the policy-making community.

Conclusion

We explored expert opinion in depth to reveal a detailed picture of Australia’s obesogenic environment. The ranking exercise that lies at the heart of the conventional Delphi approach tends to disguise and simplify things that are multi-dimensional when you talk to people about everyday phrases, such as ‘busy-ness’ or ‘convenience’. Our modified Delphi revealed the complexities.

While our multi-method approach yielded broad agreement about the overall trends contributing to changes in physical activity and food consumption, it highlighted lack of agreement about how the trends operate. This finding of expert dissensus raises questions about the role of experts in evidence-based policy-making in multi-faceted areas. We believe that innovative efforts being made to synthesise evidence and to pursue practice-based evidence, may have much to offer complex social issues such as obesity.

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Key points

- What are the views of dietary and physical activity experts about the main social trends contributing to Australia’s obesogenic environment?
- The main social trends identified were “escalating car reliance”, “increasing ‘busyness’ and lack of time” and “rising use of convenience and pre-prepared food”.
- A finding of expert dissensus regarding causal pathways raises questions about the role of experts in promulgating evidence-based policy making.
- If lay people are to be involved in overcoming the scourge of obesity then broadly accessible and intelligible practice-based evidence is needed.

References


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