

Too little and too much: exploring the paradox of food insecurity and obesity in disadvantaged populations

Research highlights

About this research

Food insecurity is defined as the 'limited or uncertain availability of nutritionally adequate and safe foods, or the limited ability to acquire foods in socially acceptable ways' (American Dietetics Association 1998, p. 337). While socioeconomic disadvantage is a key contributor to food insecurity, disadvantaged populations also have a higher incidence of obesity (Turrel et al. 2006). To explain this apparent paradox, it has been suggested that in developed countries food insecurity may lead to greater consumption of inexpensive, energy-dense and nutrient-poor foods, or that low-income households may live in areas with poor access to affordable, healthy food. However, the potential links between food insecurity and obesity are complex and unclear (Burns 2004; Burns, Cook & Mavoia 2013).

This research helps to clarify these links by exploring some of the sociocultural and environmental factors that may affect food choices for Australians experiencing food insecurity (particularly due to socioeconomic disadvantage). Using techniques including surveys, interviews and geographic and demographic data mapping, it contributes to our understanding of the complex decision-making processes that determine food purchases in disadvantaged households and informs the development of interventions to address relevant individual health-related factors, daily living conditions and the socioeconomic, political and cultural context.

The potential links between food insecurity and obesity are complex.

In this report

- Disadvantage and health in Australia
- Food insecurity and obesity in disadvantaged populations
- Making choices in food-insecure households
- Physical and environmental factors influencing choices in food insecure households
- Conclusions
- Recommendations

Disadvantage and health in Australia

While definition and measurement of concepts such as poverty, disadvantage and deprivation are complex (CEDA 2015), estimates suggest that:

- In 2009, more than one in 10 Australians were living in relative income poverty¹ (AIHW 2013)
- 2.5 million Australians, including more than 600,000 children, were considered to be living in poverty in 2011–12 when housing costs were taken into account (CEDA 2015)
- Four to six per cent of Australians experience chronic deprivation (CEDA 2015).

Social and economic factors including income, employment, education and housing are all known to contribute to a person's health: economic disadvantage is associated with an increased risk of illness and disability and shorter lifespan compared with more advantaged members of the community (AIHW 2011). Disadvantage is also associated with poorer risk factor profiles and negative health-related behaviours such as smoking and insufficient physical activity: overall, the health burden associated with socioeconomic disadvantage is large (Turrel et al. 2006). Consistent with this are findings that diet quality and associated health outcomes also follow a social gradient in Australia (Backholer et al. 2015; Friel et al. 2015).

There is a social gradient in the quality of Australian diets and related health outcomes.

Food insecurity and obesity in disadvantaged populations

Food security, as defined by the World Health Organization (WHO), requires 'constant access to sufficient, safe, nutritious food to maintain a healthy and active life' (WHO 2015): it includes concepts of both quantity and quality. The flip side of food security, food insecurity (as described earlier), is a key concern in Australia, with around four per cent of the population living in a food-insecure household (ABS 2015).²

Food insecurity is a complex phenomenon, with effects ranging from anxiety about having enough to eat to running out of food with no money to buy more (Klein 1996). Those with lower incomes have been found to be more susceptible to food insecurity, and more vulnerable groups include younger people, single men and women and single-parent families (compared with households made up of two adults with children), those in lower education attainment categories and the unemployed (Burns et al. 2011).

While it cannot be assumed that all socioeconomically disadvantaged individuals experience food insecurity – or that those not classified as disadvantaged do not – most people living in poverty are, at least, at risk (Burns 2004). It is unsurprising that those experiencing food insecurity may be more likely than others to be underweight, but there is also increasing evidence from the US, Europe and Australia suggesting a less intuitive connection between food insecurity and obesity (Burns 2004; Burns, Cook & Mavoia 2013; Franklin et al. 2012).

Making choices in food-insecure households

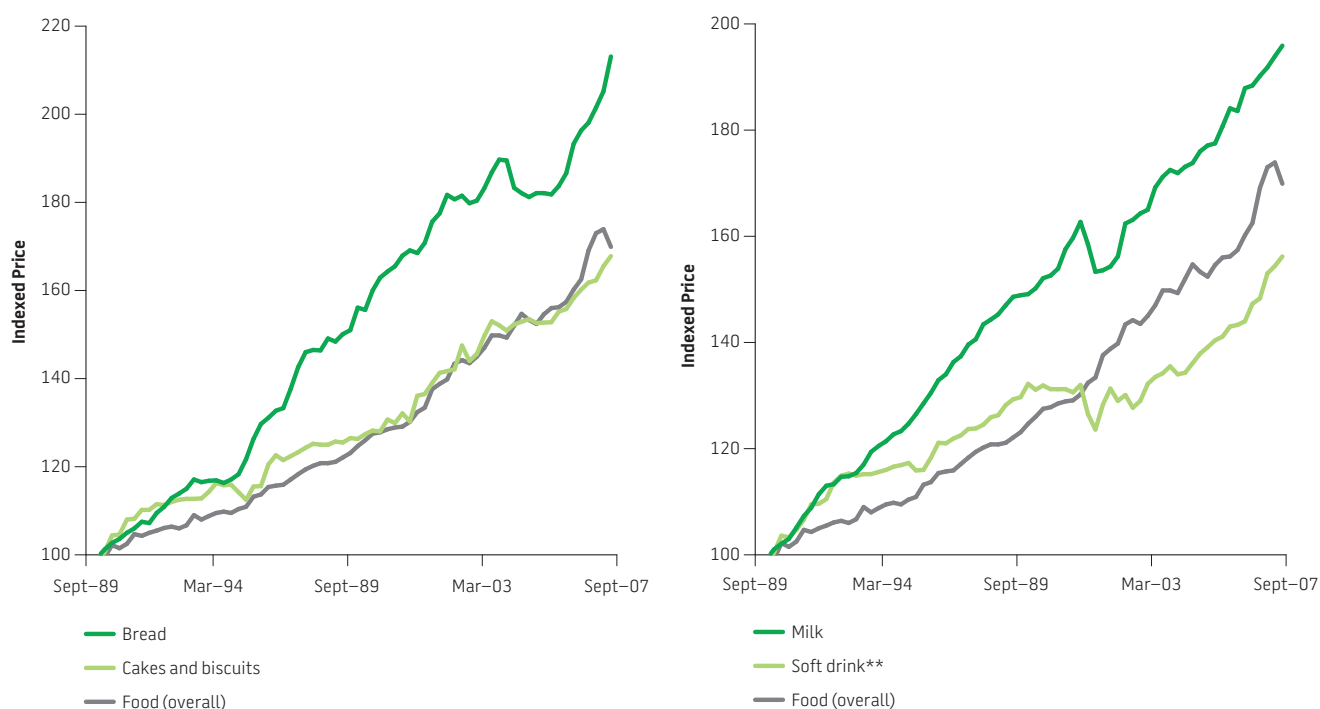
Low-income households may spend 40 per cent of their income on food (compared with the population average of 12 per cent), and, in this setting, food may become a discretionary expense when compared with other 'necessities' such as housing and education costs (Burns, Jones & Frongillo 2010; Friel, Hattersley & Ford 2015). In this context, decisions must be made regarding what foods to buy with the limited money available. It has been proposed that the cost of healthy (nutrient-rich) foods relative to nutrient-poor foods may be a key driver of the link between poverty and obesity: over recent years, differential changes in the cost of healthy and unhealthy foods have been apparent (Drewnowski & Spector 2004). In Australia between 1989 and 2007, the cost of healthy staples such as bread and milk rose 20 per cent above the Consumer Price Index (CPI) for food overall, as shown in Figure 1 (Burns, Sacks & Gold 2008).

The cost of healthy (nutrient-rich) foods relative to nutrient-poor foods may be a key driver of the link between poverty and obesity.

¹ Relative income poverty is defined as having an annual disposable household income of less than \$19,967, after adjusting for household size (AIHW 2013).

² Defined as having run out of food and not been able to afford to buy more in the 12 months prior to the survey (ABS 2015).

Figure 1: Change in Australian CPI for selected 'core' and 'non-core' foods, 1989–2007* (Burns, Sacks & Gold 2008)



* Note: based on weighted average of eight capital cities, base 1990. Redrawn with permission.

** We have used the ABS category as a proxy for (or estimate of) the price of soft drinks.

Food costs and the availability of household funds are key considerations determining food choices for disadvantaged households (Burns, Cook & Mavoia 2013). However, food choices are complex, and are likely to be moderated by a number of interrelating factors that, together, may help to explain the relationship between food insecurity and obesity. To explore these decision-making processes, Burns et al. conducted a qualitative interview study of Australians living in low-income households that included at least one child under the age of 15. All participants reported food insecurity, defined as having run out of food, and not having money to buy more, at least once in the previous 12 months. These discussions, aided by photographs of common 'healthy' and 'unhealthy' foods, were analysed to determine participants' key food purchase priorities. As described in Table 1, these priorities were:

- satiety ('basic' foods valued for 'filling up')
- having desired foods ('treats')
- having sufficient food when money runs out ('emergency supplies')
- compensating for the social and psychological effects of disadvantage ('comfort foods') (Burns, Cook & Mavoia 2013).

Table 1: How food purchase priorities are fulfilled in food-insecure households (Burns, Cook & Mavoia 2013)

| Priority | Food group | Attributes | Examples | Quotes from participants |
|--|---------------------------|---|---|---|
| Satiety | Basics | <ul style="list-style-type: none"> Essential items for preparing a meal Must fill up the plate, and the stomach May include healthy food groups | Potatoes, rice, onions, eggs, breakfast cereals, bread, dairy foods | <p>'I don't have the money to buy something that doesn't fill you up.'</p> <p>'We buy a little bit more [potatoes] because it's cheap and it fills the plate really well. But ... I don't consider it a particularly good health choice.'</p> |
| Having desired foods | Treats | <ul style="list-style-type: none"> Only purchased if extra money is available (after basics) 'Special occasion' or 'something extra' foods Valued for convenience (e.g. takeaway food) Important for managing relationships and fulfilling social roles (e.g. entertaining) | <p>Mostly energy-dense foods (e.g. chocolate, special cheeses, pâté, soft drink)</p> <p>Sometimes the preferred brand of a basic food</p> <p>Sometimes healthy foods, where cost is generally prohibitive</p> | <p>'Kids have learnt that these [sweet biscuits] are only for special occasions – if you do not have the money, you do not even go down that [supermarket] aisle.'</p> <p>'Basically they are just there if someone comes [to visit] ... so I have got something to offer them.'</p> <p>'To buy a whole lettuce, it is a bit of a treat. The whole salad roll thing is a real treat.'</p> |
| Having sufficient food when money runs out | Emergency supplies | <ul style="list-style-type: none"> Typically non-perishables Often sourced from emergency food relief centres | Tinned products, bread, milk, eggs | 'There is always soup in the cupboard and tinned fruit.' |
| Seeking comfort | Comfort foods | <ul style="list-style-type: none"> Spontaneous purchases often not budgeted for Bought to 'feel good', escape or alleviate the stress of poverty Commonly energy-dense, nutrient-poor foods | Biscuits, chocolate, soft drink, potato chips | 'Tim Tams, chips, something nice when you have nothing. When you've had a gut full and feel like a splurge you always want something sweet.' |

In the accounts of these participants, food purchase decisions to achieve satiety, to have desired foods and to access emergency supplies were primarily fulfilled through a decision-making process that took into account whether funds were available, and a perception or judgement of 'value for money'. However, the 'comfort foods', bought to compensate for the social and psychological stress associated with poverty, were often purchased outside of this model, using money that was not necessarily available for this purpose.

These findings are consistent with other studies showing that food choices can be moderated not only by cost but also by sociocultural factors including perceived social obligations, the stress of poverty, and the values placed on food skills and knowledge. Food was reported to play an important role in facilitating social relationships and establishing social identity, but the food choices necessitated by a lack of money could also act as a negative social marker of poverty. Importantly, participants talked about valuing healthy foods, and the skills that allowed a satisfying family meal to be prepared on a limited budget (Burns, Cook & Mavoia 2013).

Physical and environmental factors influencing choices in food-insecure households

Household income and the relative cost of food are clearly important contributors to food insecurity in disadvantaged populations, but other characteristics of individuals' lives and the communities in which they live also play a role. For example, physical barriers to food access such as disability or lack of transport, can also contribute to food insecurity. These barriers may be more prevalent among disadvantaged populations (Burns et al. 2011), exacerbating inequities of food security in Australian society.

In a Melbourne-based study, the primary food purchaser in households falling within the most, middle and least disadvantaged areas, as determined by household income, were surveyed and compared to explore associations between socioeconomic factors and restricted food access. This research found that those in the lowest income bracket were almost six times more likely to report restricted access to food due to difficulty carrying groceries, and households in more disadvantaged areas were less likely to have access to a car for food shopping (Burns et al. 2011).

Experiencing difficulty in getting groceries home from the shops is six times more common among low income households in Melbourne than those that are well off.

Although international literature has suggested that disadvantaged households may face higher food prices in their local area, Australia's large rural and remote population means that poor access to food is more often related to a household's distance from a major regional centre (Burns 2004). However, even in urban areas, differential access to healthy and unhealthy foods has the potential to affect food choices. A mapping study of a Melbourne local government area used access to a major supermarket and access to fast food outlets as measures of a community's access to healthy, nutritionally adequate and affordable food³ and unhealthy foods respectively (Burns & Inglis 2007). While the research found that more than 80 per cent of the population studied lived within a short (8–10 minute) drive of a major supermarket, more advantaged areas within the community had closer access to the healthy food choices available at such outlets. Conversely, areas characterised by lower levels of socioeconomic advantage had closer access to fast food outlets. As there is a known relationship between fast food consumption and

obesity, findings such as this may provide another link between socioeconomic disadvantage, food insecurity and obesity (Burns & Inglis 2007).

In one Melbourne local government area, more advantaged parts of the community had closer access to healthy foods while more disadvantaged areas had closer access to fast food outlets.

Conclusions

While the interactions are complex, recent research highlights key factors in food purchase decisions for those living with disadvantage and food insecurity, and enables the development of a conceptual framework for the link between socioeconomic disadvantage and obesity (Figure 2).

While household income and the relative cost of different foods have clear roles in determining purchase decisions for disadvantaged households, sociocultural factors such as social roles and identity, stress and food skills – as well as environmental factors such as physical access to various food choices – may act as moderators of these decisions.

These findings have implications for policy makers, public health professionals and researchers, urban planners and others concerned with obesity and social and health inequities. Improving the economic, social and cultural environment for disadvantaged populations has the potential to decrease the prevalence of obesity, and the related health burden, for these groups.

In food-insecure households, decisions about what to buy were reported to be influenced by cost, basic needs and a sense of fullness, and individually and socially desirable qualities such as treats and comforts.

³ Research indicates that these are the most likely outlets to provide the range and price of food required for a nutritionally adequate and affordable diet (Burns & Inglis 2007).

Figure 2: Determinants of obesity in disadvantaged populations

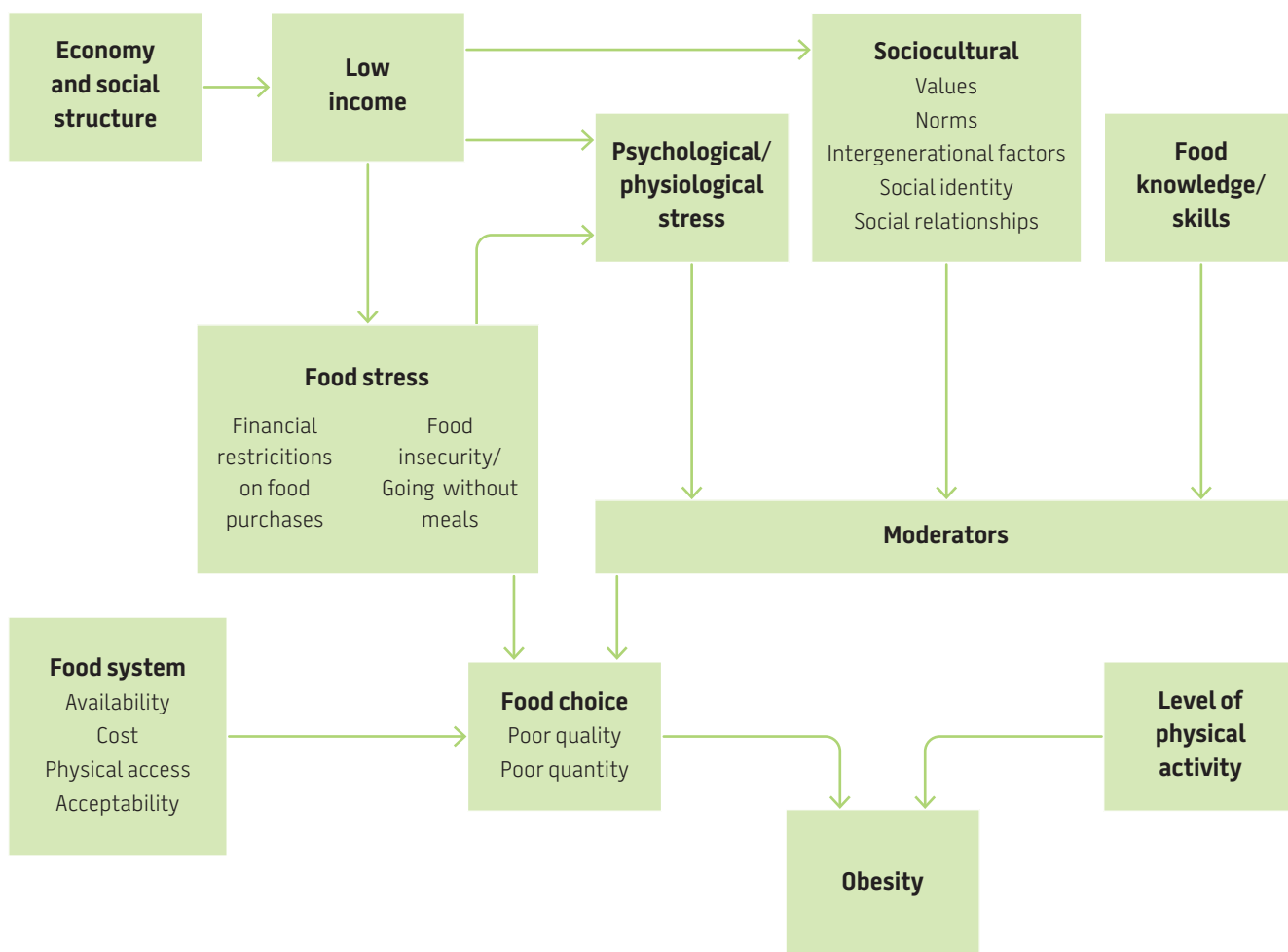


Diagram prepared for this report by Burns C, Sacks G & Swinburn B, WHO Collaborating Centre for Obesity Research, Deakin University.

Recommendations

Existing recommendations for addressing disadvantage and obesity in general, and food insecurity across all sectors of the population, clearly have potential to reduce the obesity-related burden in disadvantaged populations experiencing food insecurity (Friel, Hattersley & Ford 2015; VicHealth 2010). Collaboration across a range of sectors and stakeholders is required to make healthy foods physically, socially, culturally and financially the easier, more desirable choice relative to less healthy foods, and community involvement in planning and implementation of interventions is of great importance (Friel, Hattersley & Ford 2015).

In particular, these research findings support approaches that are consistent with VicHealth's Fair Foundations framework for health equity in that action is required to address individual health-related factors, daily living conditions and the broader socioeconomic, political and cultural contexts to reduce the inequalities related to food insecurity and obesity (VicHealth 2015).

Individual health-related factors

- Promote knowledge and skills that assist people experiencing socioeconomic disadvantage in preparing satisfying (satiating), nutritious meals.
- Consider education programs that encourage all Australian children across the social spectrum to develop skills that will enable them to grow, prepare and enjoy healthy foods.

Daily living conditions

- Increase the availability and accessibility of nutritious, affordable foods, and decrease the availability and accessibility of non-nutritious foods, in particular by:
 - considering communities' public and active transport access to nutritious, affordable food
 - investigating the potential impact and feasibility of reducing the density of fast food outlets in disadvantaged communities.

The socioeconomic, political and cultural context

- Optimise disadvantaged households' healthy foods purchasing power, for example by:
 - advocating for income support mechanisms to take into account the cost of a healthy diet when determining levels of support
 - prioritising policies that increase the amount of discretionary income available for healthy foods among disadvantaged populations (e.g. increasing the availability of affordable housing).
- Further the evidence base through research into disadvantage, food insecurity and obesity, including:
 - standardised national annual monitoring of the cost of a healthy diet to inform income support benefits and other targeted strategies and interventions
 - evaluation and/or modelling of the impact and cost-effectiveness of alternative support mechanisms that may improve food choices in disadvantaged families (e.g. food vouchers, taxes levied on unhealthy foods and subsidies for healthy food options).

This summary is based on the work of Associate Professor Cate Burns, whose research centres around the social, economic and cultural determinants of obesity. Associate Professor Burns received a VicHealth Public Health Research Fellowship from 2006 to 2011, during which time she explored the environmental and sociocultural factors that might contribute to obesity among those experiencing food insecurity.

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