Original Research

Adelaide Healthy Food Basket: A survey on food cost, availability and affordability in five local government areas in metropolitan Adelaide, South Australia

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Abstract

Aim: There is evidence that some people in Australia do not have access to affordable, healthy foods. Information on food accessibility and affordability is essential in public health nutrition to assist in policy making and determining areas of intervention. The aim of the present study assess and compare the cost, availability and affordability of a standardised healthy food basket (HFB) in five local government areas (LGAs) in metropolitan Adelaide.

Methods: Five LGAs in metropolitan Adelaide were selected based on ranges of socioeconomic status (SES). A reference family was used as the basis for the costing a HFB. Prices of food items were collected in selected suburbs in May, August and September in 2005. Cost of the Adelaide HFB was compared with welfare payment and average weekly earnings (AWE).

Results: Average weekly cost of Adelaide HFB was $245.63 for the 11 suburbs: lowest in Coolabah, in low SES City of Fordlow ($224.17), and highest in Banksia, in high SES City of Sidehigh ($271.87). The proportion of AWE taken up by the average HFB was 35%, while that of the welfare payments was 31%.

Conclusion: The study showed that the cost of HFB was lower in low-SES suburbs. Items in the HFB were found in most supermarkets surveyed; therefore, availability of healthy food at this geographical level is not a concern. However, the study highlighted the proportionately high costs of a healthy diet for families on welfare or on a single income based on AWE, which needs to be considered in programs encouraging healthy food choices.

Key words: food cost, food security, socioeconomic status, welfare payment.

INTRODUCTION

 Provision of sufficient, safe and nutritious food is essential for maintaining a healthy and active life. Knowledge of the availability of a healthy food supply is crucially important for the work of dietitians and nutritionists, because people who have ready access to an affordable, nutritious, safe, culturally appropriate diet are better able to maximise nutritional health. Evidence exists, however, that even in a food-secure country like Australia, some people have limited access to a healthy diet,1 and a number of barriers to achieving a secure

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costs that could be used on a regular basis to identify trends in affordability.14 As the survey prices food in areas of different SES, the results help shed light on cost differentials between high- and low-income suburbs. The IHFB survey did not attempt to include all food retail possibilities—for example, stores in urban centres were selected while local corner shops were excluded. However, the kind of shops surveyed—supermarkets, green grocers and butchers—probably typify those retail outlets where most South Australian households shop for food; thus the IHFB survey can therefore provide useful information about food cost comparisons. The IHFB survey found that while food costs had risen during 2000–2003, the cost of the defined basket of food remained relatively stable in relation to income. The survey also showed that generally lower prices were found in low-income areas.

The aim of the current study was to investigate whether there are differences in cost, availability and affordability of a healthy food basket in suburbs of different SES in Adelaide. It was carried out as part of a larger project on urban location, disadvantage, social capital and health which sought to contrast the contextual characteristics of selected high- and low-income Adelaide suburbs.

METHODS

This cross-sectional survey employed the definition of a healthy food basket developed by the IHFB study undertaken by Williams et al.11,14 and used in Wollongong, New South Wales. The basket consists of 44 core foods and 13 extra foods according to the Australian Guide to Healthy Eating (AGHE) classification, making a total of 57 food items. The details of how it was developed are given elsewhere2 but in brief; it was designed for a reference family of five for one week to meet the recommended nutrient requirements according to AGHE and Dietary Guidelines.15–17 The choice of the items was informed by data from the 1995 National Nutrition Survey and sales data from supermarkets.5

Table 1 Composition of welfare payment received by the reference family in 2005

<table>
<thead>
<tr>
<th>Welfare payment type</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newstart (partnered basic)</td>
<td>365.00pf</td>
</tr>
<tr>
<td>Parenting payment (partnered)</td>
<td>365.00pf</td>
</tr>
<tr>
<td>Age pension benefits (single basic)</td>
<td>488.90pf</td>
</tr>
<tr>
<td>Family tax benefit</td>
<td>351.40pf</td>
</tr>
<tr>
<td>Total per week</td>
<td>785.15pf</td>
</tr>
</tbody>
</table>

(a) Family benefit payments per week for the reference family pf = per fortnight.

Reference family

The reference family consists of 39-year-old male, 39-year-old female, 65-year-old female, 15-year-old female and 5-year-old male. Two ways of estimating income for the reference family were used. The first was based on welfare payments, assuming that: none of the family members was employed; the 65-year-old female was single; child support and unemployment allowance were paid; and no rental assistance was provided. The welfare payments entitled to the different family members include: Newstart allowance, parenting allowance, family tax allowance and the aged pension18 (Table 1). The second method used average weekly earnings (AWE) from the Australian Bureau of Statistics information on total earnings of all South Australian employees during May 2005.19

Choice of locations* and type of food outlets

The present study was part of a larger project examining location, health and social disadvantage. Postcodes in four local government areas (LGAs)—two inner locations, two outer locations—with contrasting SES in terms of household income, employment, education and home ownership were identified. These were derived from a combination of the Australian Bureau of Statistics information on Socio-economic Indexes for Areas (SEIFA) data, the 2001 Census,20,21 a survey on health and social capital, and discussions with policy and planning experts.22 In addition, data were collected from another postcode of inner Adelaide (Port Side-Fieldhigh) noted for low-income areas as part of another project on access to food in Adelaide. The areas chosen were:

- City of Sidehigh (high SES, inner location)
- City of Paringalow (mixed SES, outer location)
- City of Rosphigh (mixed SES, inner location)
- City of Fordlow (low SES, outer location)
- Port Side-FieldhighCouncil (low SES, inner location)

Data were collected in three different periods in 2005. Data from the postcodes of Coolabah and Melaleuca in the City of Fordlow, and Acacia and Wattle in the City of Sidehigh, were collected in May. Port Side and Callistemon in Port Side-Fieldhigh Council, and Grevillea and Eucalyptus in the City of Paringalow data collections were completed in August. Melaleuca Park in the City of Fordlow, Banksia in the City of Sidehigh, and Rosphigh in the City of Rosphigh, data collections were completed in September. In all, 11 shopping centres were surveyed.

Shopping centres were selected based on the presence of a supermarket, a butcher and green grocer within same shopping precinct. When more than one supermarket was available, the largest supermarket (according to estimated floor

In accordance with a publication policy for the project NHMRC (project ID 229913) (Urban locational disadvantage and health: compositional and contextual determinants), the names of the suburbs and the shopping centres have been given pseudonyms.
area) was chosen including at least one of the four leading supermarkets found in South Australia: Woolworths, Coles, Foodlands and Bi-lo. The green grocer and the butcher were also selected based on their size, choosing the largest in each case.

Conducting the survey
A letter of introduction was presented to each shop owner (green grocery and butcher shop) and the shop manager (supermarket) to obtain consent before conducting the survey. The letter also specified that no food store would be identified in the final report. For one chain of supermarket stores, a separate letter was written to the State central office to allow data collection from individual stores. All data were recorded on a data collection sheet developed in the IHFB survey.

Product selection
Product selection criteria were adapted from The Illawarra Healthy Food Price Index. In accordance with the IHFB survey, some food items were chosen based on brand names, for example Vegemite and Milo, and for others, the cheapest brand name available on the day was selected. No generic products were included. Other criteria were as follows:

• If the specific package size was not available, a smaller package was chosen if amount required is less than the specific package size, and vice versa.
• Standard shelf price but not the discount price was recorded.
• For any item sold in bulk (meat, fruit and vegetables), the price was recorded as price per kilogram.
• For any fresh product that was priced in units, an average cost of three items was calculated as price per kilogram.

These criteria were consistent with the IHFB survey.

Data for accessibility
Throughout the survey, any products on the IHFB pricing list that could not be purchased were noted. Where there were gaps in food availability from stores, a similar product was selected and priced accordingly.

Data for assessing affordability
Affordability was calculated as a proportion of the reference family income, based on welfare allowances (Table 1) and AWE for South Australia.

Data analysis
Calculating the cost of the Adelaide Healthy Food Basket
The cost of each food item was calculated as price per kilogram and then adjusted for the price per weight as specified in the Illawarra Healthy Food Price pricing guide. The prices of meat, fruit and vegetables were calculated by taking the average of the prices from supermarket, green grocer and butcher.

Type of shop
For each suburb, the cost of shopping in a supermarket only was compared with the cost of shopping in independent stores, such as green grocers and butchers as well as a supermarket.

Affordability
As in the IHFB survey, the cost of the food basket was compared with the total welfare payment available to members of the reference family and also with AWE for all employees in South Australia. In May 2005, welfare payments for the reference family were $785.15 per week, and the AWE was $697.10.

RESULTS
Cost of the healthy food basket in different suburbs
Table 2 compares the cost of a healthy food basket across the 11 suburbs in the five LGAs. It shows a tendency for prices to be higher in high-SES suburbs and lower in low-SES suburbs. The average cost of HFB is highest at the three high-SES suburbs ($259.01), followed by the three mixed-SES suburbs ($249.15), and is lowest with the five low-SES suburbs ($235.50). All the prices in the low-SES suburbs tended to be below the overall average. However, variations existed within the trend. For example, in LGAs of high SES, suburbs such as Banksia had a relatively expensive healthy food basket, while other high-SES suburbs, such as Acacia and Wattle, did not. Therefore, a clear pattern or relationship between SES of an area and cost of a healthy food basket cannot be fully established.

Type of shop and price of food groups
The cost of the healthy food basket in the supermarkets alone against the average cost of all foods purchased from butchers and green grocers is shown in Table 2. In some suburbs, the price of the items sold in butchers and green grocers was lower than that in supermarkets, thus reducing the cost of HFB after averaged with supermarket prices. Port Side was a good example of this. On the other hand, the prices of fresh meat, eggs, fruit and vegetable items from the independent butcher and green grocer in other suburbs, such as Grevillea, Eucalyptus, Banksia and Ros high, were higher than the supermarket equivalents, and this increased the cost of the healthy food basket in these suburbs. The cost that each food group contributes to the HFB is illustrated in
Availability of items

All the food items listed in the IHFB were available at most outlets. A few items, such as sultana bran cereal, peanut butter and wholemeal bread, could not be found in the specified quantities and were substituted with other sizes or quantities and adjusted accordingly. Frozen chicken could not be found in certain suburbs and was substituted with the fresh chicken. The chicken sizes were also different from those specified, and the sizes found were noted as well as weight and price. In Wattle, as white hamburger buns, cake and whole frozen chicken were not available at the time of the survey, the prices of these items or their replacement were collected at a later date.

Affordability

With the average cost of a healthy food basket across the 11 suburbs at $245.63, just over one-third (35%) of the AWE at May 2005 is spent on food. The cost of a healthy food basket would account for 31% of the weekly $785.15 welfare payment received by the reference family.

DISCUSSION

The present study was carried out as part of a larger project examining location, disadvantage and health in selected areas of Adelaide. The project is based on the well-recognised relationship between health status and SES, and focuses on the role and content of location, neighbourhood and civic life as reflections of social class position. The extent to which a location or neighbourhood is accessible to retail facilities that support a healthy diet is an essential part of this picture. There is a common perception within Australia and internationally that healthy food is more expensive in low-income areas. If so, this pattern might help explain apparent differences in the diets of people from high- and low-income areas. However, in Australia the data available on differences in cost of healthy food between high- and low-income metropolitan suburbs are not extensive. Most work appears to have been carried out in rural-remote settings. The importance of a national system whereby prices and availability of healthy food are monitored regularly has been emphasised.23

The present study was carried out to examine the cost and availability of healthy food in suburbs with different SES in Adelaide, and found that the average cost of the HFB was $245.63, with variations from $224.17 to $271.87 at different LGAs with different SES. The differences may reflect a number of factors. One of these is the different types of supermarkets surveyed in different suburbs. Supermarket pricing policy varies depending on ownership. For example,
Coles supermarkets set their prices centrally and maintain the same prices throughout the State. Individually owned stores, such as Foodland, do not benefit from economies of scale and have to incorporate overhead costs associated with transport and trucking into food prices.24

Another factor is seasonal change and price of food. The Adelaide Healthy Food Basket survey was carried out in different suburbs over the period May–September 2005. It is important to note that consumer price index of the second quarter (March–June) of 2005 indicated a 10.5% fall in price of fruit, owing to favourable growing conditions producing abundant supplies of apples and bananas.25 Whether these low prices were sustained during the third quarter when the present study took place is currently unknown, but may have affected food costs.

### Availability of items in the healthy food basket

The items in the healthy food basket were found in most of the supermarkets in the suburbs surveyed, and so the availability of healthy food at this geographical level is not a concern. Studies carried out in rural and remote areas of Australia have shown a different picture. The South-West Victoria study26, for example, indicated that the complete food basket was significantly less likely to be available in an

### Table 3 Cost of the components of the healthy food basket in each suburb

<table>
<thead>
<tr>
<th>Food group</th>
<th>Price ($)</th>
<th>Food group</th>
<th>Price ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breads and cereals</td>
<td></td>
<td>Vegetables</td>
<td></td>
</tr>
<tr>
<td>Callistemon (L)</td>
<td>44.7</td>
<td>Banksia (H)</td>
<td>49.2</td>
</tr>
<tr>
<td>Grevillea (M)</td>
<td>42.6</td>
<td>Grevillea (M)</td>
<td>47.6</td>
</tr>
<tr>
<td>Port Side (L)</td>
<td>42.5</td>
<td>Eucalyptus (M)</td>
<td>44.5</td>
</tr>
<tr>
<td>Eucalyptus (M)</td>
<td>41.1</td>
<td>Melaleuca park (L)</td>
<td>44.1</td>
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<tr>
<td>Wattle (H)</td>
<td>40.7</td>
<td>Wattle (H)</td>
<td>43.2</td>
</tr>
<tr>
<td>Rosphys (M)</td>
<td>35.8</td>
<td>Acacia (H)</td>
<td>43.0</td>
</tr>
<tr>
<td>Melaleuca park (L)</td>
<td>35.1</td>
<td>Callistemon (L)</td>
<td>41.9</td>
</tr>
<tr>
<td>Banksia (H)</td>
<td>34.9</td>
<td>Port Side (L)</td>
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<tr>
<td>Acacia (H)</td>
<td>34.8</td>
<td>Coolabah (L)</td>
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<tr>
<td>Melaleuca (L)</td>
<td>34.5</td>
<td>Rosphys (M)</td>
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<tr>
<td>Average price</td>
<td>38.3</td>
<td>Average price</td>
<td>42.4</td>
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<tr>
<td>Dairy</td>
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<td>Fruits</td>
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<tr>
<td>Wattle (H)</td>
<td>&gt;44.5</td>
<td>Banksia (H)</td>
<td>51.5</td>
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<td>Melaleuca (L)</td>
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</tr>
<tr>
<td>Average price</td>
<td>38.1</td>
<td>Average price</td>
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<tr>
<td>Extra foods</td>
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<td>Meats and eggs</td>
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<tr>
<td>Grevillea (M)</td>
<td>27.9</td>
<td>Banksia (H)</td>
<td>65.9</td>
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<td>Wattle (H)</td>
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<td>62.2</td>
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<td>26.4</td>
<td>Eucalyptus (M)</td>
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<tr>
<td>Average price</td>
<td>25.1</td>
<td>Average price</td>
<td>59.1</td>
</tr>
</tbody>
</table>

H = high; L = low; M = mixed.

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independently owned store in a town with only one shop. Other studies reported that many isolated community stores carry very limited stocks of fresh foods because of freight costs, infrequent deliveries, lack of cool storage, etc.27 These problems are not apparent in large food retail stores in Adelaide metropolitan areas.

Affordability of the healthy food basket

The affordability of the Adelaide healthy food basket relative to AWE and relative to welfare payments is comparable. However, while the data show that income from family welfare payments is more than the AWE, the AWE applies to only one earner. In reality, there may be two income earners per household (part-time or full-time), thus increasing household income.

Affordability in the present survey is similar to that of the IHFB survey in 2003 in Wollongong, New South Wales, where relative to AWE and welfare payments, food costs were 29.2% and 31.30%, respectively.14 These data are comparable with other surveys. For example, the Market Basket Survey of Rural and Remote Community stores in Northern Territory April–June 2003 indicates that a family in Darwin spent 27% of income on food, while a family in remote communities spent 35% on food.20 The Food Supply in Rural South Australia study indicated that while a family in Adelaide spent 22% of income on food, low-income residents of some remote areas would spend 36%.23

While in the present study our reference family had to spend 31% of total income from welfare and 35% of AWE on the weekly food bill, in reality households are usually smaller in size and may spend a different proportion of the household income on food. In the household expenditure survey of 2003–2004, food and non-alcoholic beverages accounted for an average of 17% of total household expenditure on goods and services, with those in the highest income quintile spending 16% and those in the lowest income quintile spending 20%.29 Although household expenditure data are a different index to household income, the high cost to families of a healthy diet (about 30% of household income) cannot be overlooked. Indeed, some researchers have raised concerns about the feasibility and futility of promoting healthy diets to low-income groups given the overall affordability of healthy food.30,31 While our survey demonstrates that healthy food baskets are comparable in cost and availability in low-income and high-income suburbs, left unanswered are the questions of priorities and economic realities of life for low-income families.

Limitations of the study

Apart from the limitations mentioned earlier, findings in the present study have also been limited by other factors. First, we assumed that households buy food from a supermarket, green grocers and butchers. While clearly there are many other food purchasing options outside these shops—for example, corner stores, farmers markets and other food markets—for the majority of metropolitan households, the range of shops sampled probably represent those most commonly used for food shopping.

Second, as pointed out in the IHFB survey, using the required brands of certain products for costing may have introduced some bias.2,14 While brands for some food items were specified, others were chosen on the basis of the cheapest brands that were available. Different studies have used different methods of selecting the food package sizes and brands for pricing. One method involves choosing the cheapest brand items while excluding the generic supermarket label products.2,6,32 Another method involves choosing the sizes and brands most commonly bought by consumers,26,27 using information from research companies or leading retailers.33 A third method is pricing the cheapest product regardless of whether it was a generic or branded product. This last method does not reflect people’s normal purchasing decisions and does not account for differences in product quality.18 The current study, like the IHFB survey, used a mixture of branded and unbranded foods and arguably more closely reflects shopping habits.

Third, as pointed out in the IHFB study, the present study estimates the exact amount of food required to fulfill nutritional requirements of family members and does not take account of any wastage in the home. Lastly, the present study was conducted over a five-month time period and the seasonal costs of food, especially fresh foods, may have created price variations.

CONCLUSION

The present study examined the cost of the Adelaide Healthy Food Basket and its availability in 11 suburbs from five LGAs with different SES. It found there to be a tendency for the cost of the HFB to be higher in high-SES suburbs and lower in low-SES suburbs. It also illustrated the proportionately high costs of a healthy food basket for a family receiving welfare and a family with one employed spouse on AWE. As part of a project examining location, disadvantage and health in selected areas of Adelaide, the present study provided valuable data about the cost of a healthy diet at different regions in Adelaide. The study demonstrated the usefulness of the HFB survey in assessing the cost, availability and affordability of a healthy diet for a family. An estimation of the affordability of the food basket based on income in specific suburbs would be a useful development and a better estimate of cost of a healthy diet. AWE is, by definition, an average estimate and masks local differentials in household income.

ACKNOWLEDGEMENTS

Thank for all managers/proprietors of supermarkets, butchers and green grocers participated in the present study. The present study was funded by the NHMRC project ID 229913 (Urban locational disadvantage and health: compositional and contextual determinants) and Health Promotion SA, South Australian Department of Health. Thanks also to
Associate Professor Peter Williams, School of Health Sciences, University of Wollongong, NSW for advice on methodology.

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