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Cost and availability of healthy food choices in a London health district

Cathy Mooney*
Department of Nutrition and Dietetics, Royal Free Hospital, Pond Street, London NW3 2PN, UK

To assess whether the foods and diet being promoted by the local Food Health Policy are affordable by and available to all sections of the community, cost and availability of a wide range of foods was recorded in the main supermarkets in Hampstead, an Inner London Health District. It was found that the recommended foods and diet were more expensive and less available than alternatives, particularly in deprived areas. This is a constraint to changing over to a healthier diet, particularly for people on very low levels of income i.e. those on pensions and benefits. Healthy eating programmes should take these constraints into consideration and efforts to increase the availability of cheap, healthy food should be a priority at national and local level. Higher pensions and benefit levels would also create more equitable access to healthy diets.
Key words: food health policy, food choice, food prices, food availability, socio-economic group.

Introduction

Since publication of the NACNE (1983) and COMA (DHSS, 1984) reports, most Health Authorities in Britain have been implementing their own Food Health Policies (Gibson, 1987). Initial activities were centred mainly in the large acute hospitals, focusing on both patients and staff. This has been followed by activities in local communities. Alongside this work are government anti-heart disease programmes, Heartbeat Wales and Look After Your Heart (DHSS+HEC, 1986), which have a nutrition component. Most of these programmes have been educational, aiming to increase awareness of the need to change dietary habits for health reasons (DHSS+HEC, 1986).

There is evidence that many people are conscious of the link between diet and health and are aware of the healthy eating message (Lang *et al.*, 1984; Anderson *et al.*, 1988). Lack of money or poor access to or availability of the recommended foods have been cited as some of the continuing obstacles to improving diet by Cole-Hamilton & Lang (1986). Strenuous promotion of dietary changes, focusing on individual choice, will ultimately fail if people do not have genuine access to the recommended foods.

The aim of this study is to assess the availability and affordability in Hampstead's supermarkets of the foods being promoted by the local Food Health Policy. Hampstead is an inner London Health District with a population of approximately 100000. As the district contains relatively few supermarkets this must be considered a qualitative rather than quantitative survey. Hampstead comprises areas of extreme affluence, alongside others of considerable deprivation. The deprived areas are those within the district with the greatest need for health services.

*Correspondence to: Department Applied Chemistry and Life Services, Polytechnic of North London, Holloway Road, London N7, UK.

Table 1. Shopping Baskets used for costings (all weights 500 g)

Shopping Basket A	Shopping Basket B
Recommended foods in a healthy diet	Foods to be reduced in a healthy diet
Cottage Cheese	Cheese Spread
Edam Cheese	Cheddar Cheese
Semi-Skimmed Milk	Whole Milk
Polyunsaturated Margarine	Soft Margarine
Polyunsaturated Vegetable Oil	Ordinary Vegetable Oil
Wholemeal Bread	White Bread
Weetabix	Cornflakes
Brown Rice	White Rice
Wholemeal Spaghetti	White Spaghetti
Wholemeal Flour	White Flour
Tinned Beans, Low Sugar	Tinned Beans, Added Sugar
Tinned Peaches, No Added Sucrose	Tinned Peaches, Added Sucrose
Low Fat Burgers	Ordinary Burgers
Low Fat Mince Meat	Ordinary Mince Meat
Low Fat Sausages	Ordinary Sausages

They have been clearly mapped out on this basis by Donaldson *et al.* (1985).

Method

The survey was carried out in the nine largest supermarkets—2 500 sq. ft or larger—both in and adjacent to the Hampstead Health district. The supermarkets were called by the first nine letters of the alphabet, supermarkets A–D inclusive being in the affluent areas and supermarkets E–I in the deprived areas.

A Shopping Basket and a diet which comply with the Food Health Policy Guidelines were devised and termed Shopping Basket A (Table 1) and Diet A (Table 2). These were compared in terms of cost and availability with alternatives—Shopping Basket B (Table 1) and Diet B (Table 2)—which do not meet the recommendations. In general, people are being asked to select the foods in Basket A and Diet A and to reduce their intake of the foods in Basket B and Diet B. The policy, however recognizes that the very old and very young have special nutritional needs, and advice is modified for these age groups. For example they would not be advised to reduce their intake of whole milk.

Each of the foods in both Baskets A and B was priced in large, standard and small packet sizes. For large and small packets the prices of the largest and smallest sizes available on the day of survey were recorded. The price of the standard packets was represented by the price of the commonest unit size on sale e.g. 250 g butter or margarine, 1 pint milk. If more than one variety of any item was available, the cost of the cheapest type was taken. All prices were recorded in the winter months of 1987/1988.

The number of varieties of each of the foods on sale on the day of survey was also recorded i.e. varieties of flavour, brand and composition e.g. two compositional varieties would be recorded, if natural cottage cheese and cottage cheese with pineapple were available.

In addition, a note was taken of any food which was unavailable for sale.

The recommended diet, Diet A was based on the foods eaten by a group of people who achieved the long term NACNE Guidelines, (Cole-Hamilton *et al.*, 1986). In this instance, the list of foods in

Table 2. Lists of foods contained in Diet A (NACNE diet) and Diet B (NFS low-income diet)

Food	Diet A	Diet B
	Recommended diet type (g/week)	Diet type not recommended (g/week)
Oatmeal	—	11
All-Bran	37	—
Cornflakes	123	82
Muesli	153	—
Pasta, Brown	384	—
Pasta, White	—	142
Wholemeal Bread	751	26
White Bread	171	958
Biscuits, Sweets	119	69
Chocolate Biscuits	29	69
Cakes and Buns	99	100
Pastries	32	—
Puddings	69	—
Whole Milk	778	2330
Skimmed Milk	1140	—
Cream	11	6
Low Fat Cheese	129	—
Medium Fat Cheese	62	82
Cheese Dishes	49	—
Cheese Spread	—	7
Egg	91	106
Yogurt	191	—
Ice cream	49	—
Milk Pudding	79	—
Bacon/Ham	46	120
Beef/Medium	234	80
Beef/Cheap	—	80
Lamb/Medium	31	97
Pork	38	101
Poultry	204	171
Offal, Lamb	29	6
Corned Beef	39	100
Sausages	411	100
Pies	421	96
White Fish/Cod	100	42
Fatty Fish	109	49
Fish Fingers	14	43
Potatoes	675	1435
Root Vegetables	154	377
Green Vegetables	126	293
Salad Vegetables	654	—
Tinned Corn	100	—
Frozen Peas	121	100
Other Vegetables	483	—
Pulses	100	—
Baked Beans	100	427
Citrus Fruit	116	365
Other Fruit	1379	—
Canned Fruit	—	143
Fruit Juice	212	—
Dried Fruit	44	—
Nuts and Seeds	48	—
Sugar	91	333
Jam	—	48
Hard Margarine	84	20
Spreading Margarine	8	83
Polyunsaturated Margarine	81	20
Low Fat Spread	69	—
Butter	16	82
Vegetable Oil, Blended	12	34
Vegetable Oil, Polyunsaturated	25	—
Hard Cooking Fat	16	60
Flour	—	174

Table 3. Comparison of nutritional composition of Diets A and B with NACNE and Hampstead Health Authority guidelines

	Diet A* (g)		Diet B* (g)		NACNE short term guidelines	Hampstead Health Authority guidelines
Protein	82	16%	72	13%	11%	12%
Fat	79	34%	96	39%	34%	37%
Carbohydrate	265	51%	261	48%	50%	50%
Fibre	33	N/A†	21	N/A†	25 g	20 g
Energy Kcals	2099		2196		N/G‡	N/G‡
mJ	8.7		9.2			

*Diets A and B do not include alcohol, sweets, chocolates, crisps or foods eaten out of the home, whereas the NACNE and HHA Guidelines refer to the total diet. All percentages refer to % dietary energy.

†N/A=Not Applicable.

‡N/G=Not Given.

Table 4. Comparison of the mean cost of Shopping Baskets A and B (standard packet size) in the entire district, in the deprived areas and in affluent areas

	No. Shops	Basket A Cost SD	Basket B Cost SD	Difference (%)
Entire District	9	£11.51 ± 91 p	£9.72 ± 118 p	18**
Deprived Areas	5	£11.13 ± 43 p	£9.23 ± 40 p	21***
Affluent Areas	4	£11.98 ± 111 p	£10.32 ± 150 p	17

**P<0.01.

***P<0.001.

Diet A represents the mean of the intake of the men and women who took part in the Cole-Hamilton study (Table 2). The diet met the NACNE short term and the Hampstead dietary guidelines for protein, fat, carbohydrate and fibre (Table 3). The less 'healthy' diet, Diet B, was based on the diet of income group D (low income) in the National Food Survey (NFS) (MAFF, 1985). The list of foods in Diet B represents the amount of food eaten per week (Table 2). It does not meet the NACNE or local dietary guidelines (Table 3). Neither of the diets includes alcohol, sweets, chocolates, crisps or such foods as are eaten out of the home. Energy and nutrient contents of the two diets were calculated using McCance & Widdowson's *Tables of Food Composition* (Paul & Southgate, 1978).

All costings were collected on weekdays between 10.00 h and 17.00 h GMT.

Results

Cost

Basket A: the foods being promoted cost considerably more than Basket B throughout the district. In the deprived areas, it was found that whilst both Baskets were cheaper than in the rest of the district, the largest price difference between Baskets A and B was recorded; 21% compared to 17% in affluent areas (Table 4).

Eleven of the items in Basket A were more expensive than the alternatives in Basket B (Table 5). Two items; semi-skimmed milk and low sugar beans, cost

Table 5. Average price in Hampstead supermarkets of 500 g of each item in Shopping Baskets A and B from standard packet sizes

Food item (500 g)	Price (£)
Cottage Cheese	1.30
Cheese Spread	1.80
Edam Cheese	1.35
Cheddar Cheese	1.25
Semi-Skimmed Milk	0.20
Whole Milk	0.20
Polyunsaturated Margarine	0.50
Soft Margarine	0.35
Polyunsaturated Vegetable Oil	0.50
Vegetable Oil	0.40
Wholemeal Bread	0.30
White Bread	0.25
Weetabix	0.65
Cornflakes	0.70
Brown Rice	0.50
White Rice	0.45
Wholemeal Spaghetti	0.50
White Spaghetti	0.35
Wholemeal Flour	0.20
White Flour	0.15
Tinned Beans, Low Sugar	0.30
Tinned Beans, Added Sugar	0.30
Tinned Peaches, No Added Sucrose	0.50
Tinned Peaches, Added Sucrose	0.35
Low Fat Burgers	1.85
Ordinary Burgers	1.20
Low Fat Mince Meat	1.70
Ordinary Mince Meat	1.15
Low Fat Sausages	1.25
Ordinary Sausages	1.00

the same as the alternatives. The only items in Basket B which were cheaper than their counterparts in Basket A were cheese spread and Cornflakes (Table 5).

The recommended food choices in Basket A were unavailable in some shops (Table 6). Supermarket G, a large, much-frequented shop in the deprived area, had only ten of the 15 items in Shopping Basket A available.

All the items in Shopping Basket B were available in all shops.

In addition there was less variety of the recommended food choices on offer (Table 7). On average, there were only two choices of the recommended Basket A items available, whereas there were three choices of the Basket B, less 'healthy' options available. There appeared to be no choice of the 'healthy' items in the deprived areas, where there was an average of only one type of each of the Basket A foods on sale. In these areas there were on average three choices of the less 'healthy' Basket B foods.

Scale

It is often said that buying food in small packets is relatively expensive. For people living alone, who wish to eat healthily, there could be two extra premiums on their food budget; (i) that of small unit size, and (ii) that of choosing the healthy option. In Table 8, it can be seen that Basket B foods cost £9.23, in standard packets, and

Table 6. Healthy food choices from Basket A which were unavailable on day of survey*

Supermarkets	Foods not available
In affluent areas	
A	Low Fat Sausages
B	Wholemeal Flour
	Low Fat Mince Meat
C	Semi-Skimmed Milk
	Wholemeal Spaghetti
D	N/A†
In deprived areas	
E	Semi-Skimmed Milk
F	Wholemeal Flour
	Low Fat Mince Meat
G	Wholemeal Pasta
	Tinned Beans,
	No Added Sucrose,
	Low Sugar Tinned Peaches,
	Low Fat Burgers,
	Low Fat Mince Meat
H	N/A†
I	N/A†

*All other recommended items in Basket A except those listed, were available.

†N/A Not applicable i.e. all items in Basket A were available.

17% more if purchased in small packets at £10.85. To buy similar foods in the recommended Basket A form in small packets costs almost 10% more again at £11.89.

Weekly Diet

Both Diet A, the healthy diet, and Diet B, the less healthy diet, were more expensive in the affluent areas than in the deprived areas (Table 9). In each area, Diet A was more expensive than Diet B. The price difference was greatest in the deprived areas: 73% compared to 63% in the affluent areas.

Discussion

Two Shopping Baskets and two diets have been compared for price and availability. The Shopping Baskets are reasonably comparable in that they contain equal weights of similar foods, one Basket with those recommended and the other with similar alternatives which are not recommended.

Table 7. Average number of varieties of Basket A and Basket B foods in Hampstead supermarkets

	Basket A	Basket B
	Recommended Foods	Foods not recommended
Supermarkets	Average no. varieties	Average no. varieties
In Affluent Areas		
A	1	3
B	2	3
C	2	3
D	3	4
In Deprived Areas		
E	1	3
F	1	3
G	1	1
H	2	3
I	2	5
All Supermarkets in District	2	3
Supermarkets in Deprived Areas	1	3
Supermarkets in Affluent Areas	2	3

Table 8. Mean cost of Shopping Baskets B and A in Hampstead District in standard and small packet size*

	Basket B			Basket A		
	Standard packets (500 g) Price SD	Small packets (500 g) Price SD	Diff (%)	Standard packets (500 g) Price SD	Small packets (500 g) Price SD	Diff (%)
Entire District	£9.72 ± 118 p	£11.13 ± 129 p	15	£11.51 ± 91 p	£12.25 ± 88 p	6
Deprived Areas	£9.23 ± 150 p	£10.85 ± 79 p	17	£11.13 ± 43 p	£11.89 ± 60 p	7
Affluent Areas	£10.32 ± 40 p	£11.50 ± 158 p	11	£11.95 ± 111 p	£12.71 ± 95 p	6

*Prices calculated on the basis of 500 g. of the cheapest variety of each item, in standard and small packets.

Table 9. Mean weekly cost of Diet A (NACNE type diet) and Diet B (NFS low-income diet) in Hampstead district supermarkets

		Diet A Recommended Type of Diet		Diet B Diet type not Recommended		
	No. Shops	Weekly Cost	SD	Weekly Cost	SD	Difference %
Entire District	9	£13.99	±107 p	£8.33	±87 p	68***
Deprived Areas	5	£13.84	±109 p	£8.02	±65 p	73***
Affluent Areas	4	£14.19	±101 p	£8.71	±96 p	63**

**P<0.01.
***P<0.001.

An exact comparison between the two Baskets cannot be made, because many of the items in Basket A are lower in calorie content than the alternatives in Basket B e.g. low fat burgers, mince meat and sausages. Thus people choosing these foods might need to buy more of them or supplement their diets with other foods. This would increase any price premium on Basket A foods and should be kept in mind when interpreting the figures.

Diets A and B are not entirely comparable. Diet A consisted of the foods chosen by a group of dietitians and their families, who would belong to social classes I and II. Diet B consisted of the foods chosen by income Group D in the National food survey who would probably belong to social classes IV and V. Consequently, the dietitians may have had a higher budget for food, and thus set out to spend more than the low income groups.

However, even if only a few health changes are made to Diet B i.e. changing over to wholegrain and low fat products, the cost is immediately increased, since the majority of these foods are more expensive (Table 5).

Healthy food choices appear to be more expensive and less readily available throughout this district (Tables 4, 5 & 6). However, individuals living in the affluent areas, most of whom belong to social classes I and II (Donaldson *et al.*, 1985) have more opportunity to choose a 'healthy' diet if they wish to. There are on average two varieties of each of the foods from our 'healthy' Basket A, available in the affluent areas, compared to only one in the deprived areas (Table 7). In general, however, food is cheaper in the deprived areas as shown in Tables 4 and 8. On the other hand, there is a relatively higher premium on the 'healthy' food choices in those areas than in affluent areas (Tables 4 and 9). In the deprived areas Shopping Basket A cost 21% more than Shopping Basket B, whereas in the affluent areas the extra cost was only 13% (Table 4). Similarly Diet A, the recommended Diet type cost 73% more in the deprived areas than Diet B, compared to a 63% difference in the affluent areas.

For people on the lowest incomes the extra cost of a healthy diet is likely to be a serious obstacle to healthy eating. In Britain, individuals over 25 years-old on unemployment benefit or income support, receive £32.75 and £33.40 per week, respectively (1988 figures); Lennon & Fieldhouse (1982) reported that the unemployed spend 23.1% of income on food, compared to 20.4% by the employed. Diet B, the diet typically chosen by low-income families in this country costs £8.33 per week in Hampstead, representing approximately 25% of weekly benefit. Consequently, it would be financially very difficult for this income group to switch to more expensive healthier food items. Diet A, the recommended diet type, would cost roughly 42% of these benefits. Unemployed people living alone may have difficulty affording even the low-income diet,

as buying in small packets costs up to 17% more than in standard packets. Similarly, pensioners on £41.15 per week (1988 figures) will have problems purchasing adequate fibre in the form of wholemeal bread and fruit and vegetables.

There are many gradations of financial deprivation. Thus, while people on the lowest incomes may not be able to afford any dietary improvements, others with slightly higher incomes may be able to afford only one or two changes. For example, a family may change over to wholemeal bread, but not be able to afford polyunsaturated fats and oils, or extra fruit and vegetables. In this district those on the lowest incomes will have the least opportunity to improve their diets because of poor availability and choice of the healthy food varieties in the deprived areas, and the discincentive of a relatively higher price premium on healthy food choices.

Since publication of the *Black Report*, (Townsend & Davidson 1982), health workers are aware that the very people who have most to gain by improving their diets are those in social classes IV and V, who suffer from an excess of mortality from most causes. The situation remains the same in the late 1980s (Whitehead, 1987). Food Health Policies may have the effect of increasing the 'Health Divide' (Whitehead, 1987). If those on the lowest incomes can neither find appropriate foods in their local shops, nor afford many of the recommended foods, food policy guidelines may largely be implemented by the better off, in higher social classes. Presumably this would result in an improvement in their health, whilst those on lower incomes, living in more deprived areas may make fewer or no dietary modifications, and thus may continue to have high rates of diet-related diseases.

Efforts to promote healthy eating should at every level combine nutrition education with programmes to increase the availability of cheap healthy foods. When acceptable high fibre, low fat/sugar/salt foods and dishes become available at competitive prices in supermarkets, schools, cafes, works canteens etc., eating a healthy diet will become a more realistic choice for everyone. Many such efforts are being made at local level (Fewell, 1988; Gibson, 1987; Summers, 1987). At National level much more could be achieved through an effective National food labelling scheme, through inter-departmental co-operation at Government level, and through Government liaison with the food industry. Finally, more money in the form of increased and better benefits would do much to create more equitable access to healthy foods.

Meanwhile, at least in one inner London district, healthy eating remains something of a luxury.

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References

Anderson, A.S., Umapathy, D., Palumbo, L. & Pearson, D.W.M. (1988) Nutrition Knowledge Assessed by a structured questionnaire in a group of medical in-patients. *J. Hum. Nutr. & Diet.* **1**, 39–46.

Cole-Hamilton, I., Gunner, K., Leverkus, C. & Starr, J. (1986) A study among dietitians and adult members of their households of the practicalities and implications of following proposed dietary guidelines for the UK. *Hum. Nutr.: Appl. Nutr.* **40A**, 365–389.

Cole-Hamilton, I. & Lang, T. (1986) *Tightening Belts. A report on the impact of poverty on food.* London Food Commission.

Department of Health and Social Security (1984) Diet and Cardiovascular Disease. *Report on Health and Social Subjects No. 28.* HMSO: London.

Department of Health and Social Security & Health Education Council (1986). *Look After Your Heart—A Campaign on Healthier Lifestyles—Strategy Document.*

Donaldson, R.J., Donohoe, H., Bridgwood, C., Logie, S. & Robertshaw, C. (1985) *Identifying Needs. To Have and Have Not.* Community Health Unit, Hampstead Health Authority.

Fewell, A. & Taylor, W. (1988) *Fad Eating at School Today.* North Yorkshire County Council.

Gibson, L. (1987) UK development survey of local Food Health Policies, *MPhil. Thesis.* Cranfield Institute of Technology.

Lang, T., Andrews, J., Bedale, C. & Hannon, E. (1984) *Jam Tomorrow?* Food Policy Unit, Hollings Faculty, Manchester Polytechnic, Manchester.

Lennon, D. & Fieldhouse, P. (1982) *Social Nutrition.* Forbes Publishing: London.

Ministry of Agriculture, Fisheries and Food (1985) Household Food Consumption and Expenditure 1985—Annual Report of the Expenditure 1985—Annual Report of the National Food Survey Committee. Table 5, HMSO: London.

National Advisory Committee on Nutrition Education (NACNE) (1983) *A discussion paper on proposals for nutritional guidelines for health education in Britain.* The Health Education Council: London.

Paul, A.A. & Southgate, D.A.T. (1978) *McCance and Widdowson's The Composition of Foods,* 4th Edn, HMSO: London.

Summers, H. (1987) Eating Out A la Heart in Hackney. *Nutr. & Food Science,* **107,** July–August 6.

Townsend, P. & Davidson, N. (1982) *Inequalities in Health: the Black Report.* Pelican Edition, Penguin: Harmondsworth.

Whitehead, M. (1987) *The Health Divide: Inequalities in Health in the 1980's.* Health Education Council: London.

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