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Barriers to accessing healthy foods: Differentials by gender, social class, income and mode of transport.

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ABSTRACT

This article examines the issues of access to food and the influences people face when shopping for a healthy food basket. It uses data from the Health Education Authority's 1993 Health and Lifestyle Survey to examine the barriers people face in accessing a healthy diet.

The main findings are that access to food is primarily determined by income, and this is in turn closely related to physical resources available to access healthy food. There is an associated class bias over access to sources of healthy food. The poor have less access to a car, find it harder to get to out of town shopping centres and thus less able to carry and transport food in bulk. The majority of people shop in supermarkets as they report that local shops do not provide the services people demand and that food choice and quality are limited.

In tackling food poverty and promoting healthy eating health promotion practice needs to address these structural issues as opposed to relying on psycho-social models of education based on the provision of information and choice.

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INTRODUCTION

This study draws upon data from the Health Education Authority's (HEA) 1993 Health and Lifestyles Survey (HLS) to explore the issue of healthy eating and the barriers that people face in choosing a healthy lifestyle.

Data on shopping patterns and food choice were explored from the perspectives people use in choosing food. Income, social class, gender and age were examined as possible factors that determined, or limited, shopping patterns and diet. Questions on shopping patterns and food choice were included for the first time on the health and lifestyles questionnaire in 1993. This was due to a growing awareness that healthy eating and its promotion required a better understanding of how the public made food choices and their nutritional impact. This relates to the emerging knowledge that nutritional knowledge is only one factor influencing food choice and that other factors such as income, access, taste and culture also play an important part.[1] Dowler[2] says of recent UK policy the emphasis has been on the state's responsibility to enable individuals to make informed choices. Until recently, the food aspects of poverty were excluded from this debate, the official government position downplayed the roles and obligations and emphasised those of the individual. The HEA Health and Lifestyles survey, with its large sample offers an opportunity to explore these issues quantitatively as opposed to qualitatively where a large range of studies are currently focused. Also it offered the opportunity to provide a baseline and marker for changing patterns. The analysis here focuses on the public health concerns about to access to and purchasing of food.

The data from the Health and Lifestyles survey was used to develop and test the hypothesis that food choice is not primarily based on health issues but on structural and material factors, imbued with elements of culture, aesthetics and taste: a perspective that is not always adopted by nutrition education or health promotion. Health promotion practice based on the provision of information or focused on psycho-social aspects is likely to fail or to appeal to only key sections of the community. Food and nutrition policy needs to broaden its scope in order to tackle food culture as opposed to focusing solely on dietary based guidelines.[3] Consumer concerns, for example, within the European Union are for a food supply that is free of contaminants and additives and for a fresher and more 'natural' one. [4] Other research suggests that aligned with the constraints of finance and access these demands take precedence over nutritional ones.[5] Health promotion when centred on nutrition has tended to rely on psychological models of choice, and to give less emphasis to the broader aspects of public health such as access to food as a determining factor in food choice.[67] Feichtinger[8] argues that a holistic view of poverty and food is required, one which incorporates the individual, household and societal levels. She says that such a framework has been missing from food research and policy.

Methods

The article is based on a secondary analysis of the 1993 Health and Lifestyle Survey (HLS). The survey was conducted by MORI on behalf of the Health Education Authority (HEA) and is a rich and detailed source of information, especially on access to food supplies, eating, cooking and shopping.

The present paper concentrates on the HLS questions which refer to shopping, purchasing, cooking, consuming and attitudes towards food and health. The authors have analysed further topics from the survey in a report to the HEA.[9] The report contains additional material on cooking skills, nutrition knowledge, food consumption in the home and sources of nutrition knowledge

The 1993 Health and Lifestyle Survey consisted of 5,553 interviews with 16-74 year olds at a random sample of addresses in England, stratified by NHS region. Despite the use of a booster sample of 16-24 year-olds the sample is biased in several ways and it is necessary to weight these data to make the results more representative. There are three main sources of bias due to: stratification by region, under-representation of certain age groups, and the policy of only interviewing one person per household, regardless of household size. Cases are weighted in two ways to compensate for these effects. Firstly, each case is weighted by the number of eligible adults (16-74 year olds) in each household. Secondly, the cases have been weighted to match the 1991 census age and gender distributions for all 16-74 year olds in England. The cases could not be weighted to match the age and gender distributions for the eight English NHS Regions because of the lack of geographical identifiers in the released data. Instead, the

cases have been weighted to match the 1991 census age and gender distributions for all 16-74 year olds in England.

The variable definitions used in the article should be familiar to the reader; for example, the Registrar General's 6-group classification of social class.[10] However, the definition of income may need further explanation. It is an estimate of per capita disposable income calculated by a linear equivalence scale of a type that is widely used in reporting variations in wealth and purchasing behaviour. The gross household income is divided by a weighted sum of the number of people in the household: the first adult counting as 1, subsequent adults counting as 0.7 and any under 16 year olds counting as 0.5. The scale is recommended by the OECD Social Indicators Programme[11] and was selected for its compatibility with the relatively crude age coding of the data in the survey. It gives similar, but not identical, results to the more detailed scale more widely used in the UK.[12] The differences between the scales are too small to affect the statistical significance of the results in this paper.

RESULTS

The findings are reported under the headings of general concern with eating, who and where people shopped, the impact of income on food choice, the limitations introduced by transport and finally socio-economic influences on food purchasing and attitudes once people were in the shop or supermarket.

General concerns with eating

There was a general trend reported here with lower income and lower socio-economic groups expressing less concern with healthy eating than the higher income or lower socio-economic groups. This confirms the findings of other studies which show that those on low incomes are more concerned with food that fill you up than with those that are healthy. This is not to say that they are unaware of health eating messages, but that other priorities operate in their lives. Table 1 show that 9.0% of those in social classes I & II report no concern with what they eat as opposed to 24.9% in classes IIIM and 21.1% in classes IV & V. The rest of the findings reported here need to be located within this framework.

TABLE 1 Responses to 'I don't really care what I eat', by class

	Percentage who responded in this way to "I don't really care what I eat"			
	Social Class			
	I x II	IIIn	IIIM	IV + V
Agrees	9.0	12.0	24.9	21.1
Neither agrees nor disagrees	5.2	4.2	6.3	8.1
Disagrees	85.8	83.7	68.8	70.8
No. of respondents	1468	1328	1052	1195

Who shopped and where they shopped?

The survey confirmed that food shopping is a predominately female activity: 82.3% of female respondents identified themselves as the person who shopped in their household compared with 32.4% of males. Whoever shopped, they overwhelmingly shopped in supermarkets, with 66.5% doing the bulk of their food shopping at a local supermarket and 30.3% at other non local supermarkets (Table 2). This predominance of supermarkets, confirmed by other surveys, means that access to a car becomes an important factor in managing food shopping.[13]

TABLE 2 Where people shop

(Based on the 3601 answers given by the 3210 respondents who said they were principally responsible for their household's food shopping).

	Count	Percentage of Cases
Small local shops	272	8.5
Local Supermarkets	2134	66.5
Supermarkets in other towns	974	30.3
Market	126	3.9
Food Halls in Department Stores	24	0.7
Farm Shops and Stalls	31	1.0
Mobile shops	7	0.2
Other/ don't know	33	1.0
Total responses	3601	112.2

The fact that the majority of shopping was done by women is not surprising and has been reported elsewhere. The only significant difference is that 7.2% of women shop at small local stores compared with 11.8% of men. (F=16.9***). We shall explore later on the implications of this for access to transport both public and private. Such factors do not operate in isolation.

The impact of income on shopping patterns and food selection

Table 3 suggests that income affects where people shop and that with increased income people are less likely to use local shops. Only 6% of those in the highest income group used local supermarkets compared to 11% of those in the lowest income bracket. This lower income group includes a greater number of vulnerable individuals such as those on welfare and the elderly.[14] The tendency to use local shops is also related to age: 7.8% of 16-34 year olds, 7.9% of 35-54 year olds and 10.5% of those aged 55 and over use local shops. However, the relation with income is stronger that that with age and within each age group the poorest respondents are most likely to use local shops.

TABLE 3 Where people shop, by per capita income

Percentages of people of each income group who use these types of shops for their main food shopping - based on people who have responsibility for their household's food shopping for whom there was household income data.

	£3000 or less n=525	£3001-7000 n=927	£7001-14000 n=747	£14001 & over n=302	All incomes n=2501	F test for relation with income
Small local shops	11.1	8.4	7.8	7.0	8.6	4.9**
Local Supermarkets	67.8	66.2	68.6	65.2	67.1	0.03ns
Supermarkets in other towns	29.5	29.7	28.4	31.5	29.5	0.04ns

Significance levels reported in all tables *** <1% ** 1-5% * 5-10%

On the issue of why people do most of their shopping in the place they do (local shop or supermarket, etc.). 47.3% of those in the lowest income bracket identified cost as the main reason for selecting where they shop as opposed to 16.6% in the highest income group. Speed and convenience emerged as the key issue among the highest income groups with 69.4% of the highest income bracket identifying this as the main determinant in where they shop

compared to 46.1% of those in the lowest income groups. The quality of the food and the range of healthy food were viewed as much less important and were cited by less than 10% of respondents as factors in deciding where to shop. They were rated as less important criteria than the ability to buy other types of goods at the same time as food - cited by 19% of the highest income group and 14% of the other three groups.

Transport

With more than 90% of people citing supermarkets as their main source of food shopping, access to transport is a major influence on shopping behaviour. Hidden within this figure is the issue of inequity. We know from other work that the disadvantaged are likely to be over represented in the 10% not using supermarkets.[15] A proxy indicator of this inequity is access to transport. Table 4 shows that car ownership and access to cars are indeed strongly related to income. Only 46.2% of those in the lowest income group owned their own car, compared to 86.1% in the highest income group. In the lowest income group 43.4% had no access to a car, compared with 7.7% of those with the highest incomes.

Table 4. Ownership or use of car /van, by per capita household income groups

Percentage in each income group, owning or having access to cars.

	£3000 or less (n= 1214)	£3001-7000 (n= 1518)_	£7001-14000 (n= 1231)	£14001 & over (n= 407)	All income groups (n=4370)	F test for relation with income
Access to own car	46.2	74.5	88.2	86.1	71.6	578.8***

Access to car but not their own	10.2	2.6	4.4	6.3	5.5	21.1***
No access to car	43.3	23.0	7.1	7.7	22.7	525.2***

Significance levels reported in all tables *** <1% ** 1-5% * 5-10%

Variations by income in the ways people get to the shops (see Table 5) reflect these differences in car ownership. The two most striking figures are the high use of cars and the low use of public transport by the highest income groups: 82% of this group use their cars to shop, only 3.9% use the bus. The lowest income group have a more varied pattern of transport use for shopping: 33% walk, 52% go by car and 13% use the bus. There are strong statistical relations with income for all three means of transport to shops. The differences between the rich and poor are as strong when presented by class rather than income (see Table 6). For example, 26.8% of social classes IV and V walk to the shops, compared with 12.6% of classes I and II. The use of buses for shopping is also strongly related to class: 0.5% of social class I shop by bus compared with 16.9% of class V. (For clarity these breakdowns by single classes are not shown in Table 6).

TABLE 5 Transport used to access shops, by income group

Table based on those in each group with main responsibility for household food shopping in households which supplied income data (figures are in percentages).

	£3000 or less (n=525)	£3001-7000 (n=927)	£7001-14000 (n=747)	£14001 & over (n=302)	All income groups (n=2501)	F test for relation with income
Walk	33.4	21.0	12.7	14.2	20.3	76.7***

Car	51.8	68.5	85.3	82.1	71.7	175.6***
Bus	13.3	10.8	2.5	3.9	8.0	55.5***

Significance levels reported in all tables *** <1% ** 1-5% * 5-10%

Stereotypical inequalities between women and men in access to cars are not supported by the data in this survey: 75.2% of women had access to a car compared with 78.9% of men. Although this difference is statistically significant at more than 1%, the numerical difference is not great; although it must be remembered that this is self reported access, not actual use. However, when it comes to shopping by car, the women who have major responsibility for household shopping shop by car more often than men with the same responsibility: 74% of women shop by car compared with 68.3% of men. There were no statistically significant differences in the proportions of women and men who travelled to the shops on foot or by bus.

TABLE 6 Transport used to access shops, by social class

Table is based on those with main responsibility for household food shopping.
(figures are in percentages).

	Classes I&II (n=854)	Class IIIN (non-manual) (n=971)	Class IIIM (manual) (n=440)	Class IV&V (n=740)	All classes (n=2501)	F test for relation with class
Walk	12.6	16.5	20.1	26.8	18.5	56.4***
Car	84.5	76.9	66.1	62.1	73.8	124.4***
Bus	2.3	7.5	11.1	12.0	7.7	58.5***

Significance levels reported in all tables *** <1% ** 1-5% * 5-10%

Factors limiting choice of food purchased once in the shop

The last great era of nineteenth century public health initiatives was concerned with structural issues such the availability of basic facilities in people's homes. In food, concerns centred on issues such as quality of food, availability and lack of adequate cooking facilities as barriers to healthy living. Today modern versions of these concerns have re-emerged. The lack of cooking facilities and skills or knowledge of food preparation techniques were identified as a more important factor limiting men's choice of food purchased (see table 5). Safe and adequate storage of food is no longer dependent on the availability of a larder but the possession of an adequate size deep-freeze. In the HLS, two of the main barriers reported to purchasing food were transporting food back home and storage of food in the home. These are related to a third reported factor that of food going off before eaten. There are differences on most of these factors in the extent to which these factors impinge on women and men, including the issue of child care responsibilities being a factor for women (see Table 7).

TABLE 7. Factors limiting choice of food purchased, by gender

(based on respondents with responsibility for household food shopping)

	Percentage citing these factors		F value of difference between sexes
	Women	Men	
Ability to store food	10.5	11.1	0.21ns
Limited cooking facilities	0.9	2.1	7.9***
Does not know how to cook some foods	5.4	12.7	50.9***
Problems of carrying/ transport food	11.1	7.7	8.3***
Goes off before eaten	15.1	20.0	11.2***
Difficult to get to shops with children	3.9	1.3	14.3***
Difficulty to get to shops because of age or disability	1.8	1.7	0.5ns
N	2327	883	

Significance levels reported in all tables *** <1% ** 1-5% * 5-10%

Arranging transport and child-care are more problematic for women, while food storage, and limited cooking facilities are more of a problem for men. 12.7% of men compared to only 5.4% of women cited not knowing how to cook as a restriction on their choice of food, by far the greatest gender difference for any factor cited. Again the difference in cooking skills is a factor that comes before people make their decisions about food purchasing and whether to buy ready cooked or raw ingredients. This is something that can be influenced by public health policy , particularly the provision of basic cooking skills in schools.[16] Given the clear evidence about differential impact of gender on health,[17] further research is needed to judge the interplay between cooking skills, gender and health outcome.

The same factors are strongly stratified by income (see Table 8). The strongest effects, which are somewhat ironic when juxtaposed, are that lower income groups have most difficulty transporting food, and that in the most affluent groups some seem to have sufficient transport to buy so much food that it decays before it is used. It may be that the food purchased by higher income groups, is of the fresh variety (i.e. fruit and vegetables) and more subject to going off.

TABLE 8. Factors limiting choice of food purchased, by income (respondents who do most of the household shopping)

	Percentage in each income group citing these factors					F test of relation with income
	£3000 or less	£3001-7000	£7001-14000	£14001 & over	All income groups	
Ability to store food	10.4	10.2	12.5	11.6	11.1	1.3ns
Limited cooking facilities	1.1	1.1	1.1	1.4	1.2	0.05ns
Does not know how to cook some foods	9.2	5.7	8.7	11.8	8.1	2.8*
Problems of carrying/ transport food	14.5	12.7	5.0	6.6	10.0	33.8***
Goes off before eaten	14.3	14.4	19.5	27.9	17.5	28.2***
Difficult to get to shops with children	5.5	2.9	3.7	0.3	3.4	10.4**
Difficulty to get to shops because of age or disability	1.7	2.8	0.9	0.7	0.2	4.0**
N	525	927	747	302	2501	

Significance levels reported in all tables *** <1% ** 1-5% * 5-10%

Of social class I, only 4.6% identified carrying or transport of food as a factor limiting their choice, whereas 22.4% of social class V identified it as a factor. Variations were more marked with social class, than with the rather broader income bands used in the tables. Although the relations with income were often statistically significant. The most striking difference in methods of shopping is that the highest income group used cars on 83% of occasions, compared to 43% of the poorest group. When asked about factors they felt limited their choice of food, a third of women compared to 7.7% of men cited transport as a factor.

DISCUSSION

The HLS data generates a complicated picture of influences on food purchasing and access to food affected by class, income and gender issues. The survey shows men and women shopping more or less equally by car, although other work suggests that many of these women may be reliant on men as drivers and car owners for both access to cars and shopping.[18] Access to cars and thus to food supply are also influenced by income and social class.

Income has a strong influence on both what people purchase and where they shop: the poorer people are, the more the price of food is an important factor; and the richer they are, the more they select (or are able to select) forms of shopping that are quick and convenient. Higher

income groups tend to select food on the basis of taste and healthy diet and feel much less constrained by cost. Low income groups select food on the basis of cost and taste, rather than on what is healthy. Lower income and lower social class families tended to think in terms of meals rather than the nutritional value of individual foods. In particular, there is a growing concern about the impact of low income on diet. As with other studies, healthy food did not emerge as a major factor influencing food purchasing.[19]

Most food purchasing was in supermarkets, with females overwhelmingly identifying themselves as the person who shopped. Speed and convenience emerged as the key issue for both sexes, with price the next most important issue. Quality and the range of healthy foods were less important.

Local shops tend to be used by people on low income who are more likely to have difficulty transporting food than higher income groups. The post war revolution in food retailing has had considerable impact both on what is cooked and on where people can get access to foods for domestic consumption. [20] There is a need to bring food to people as opposed to people to food.[21]

From the present study, when asked about what influences their food choices (once they are in the shop), the four most significant factors mentioned were:

- the problem that food may go off before it is eaten;
- the ability to store food;
- the difficulty of carrying shopping home;

- not having suitable cooking skills.

Two of these were related to income - the higher income group had least trouble transporting shopping, but most problems with food going off. This may reflect a situation where they buy more fresh fruit and vegetables, a fact supported by other studies. It also suggests that people are not buying fresh food locally in small amounts but in bulk on fewer occasions.

This study and the new analyses of food poverty reinforce the need for a rethink about health promotion strategy. The emphasis on informing consumers within health promotion has perhaps underplayed the role of other structural factors in health. The evidence of a link between the provision of information on its own and behaviour change is at best weak.[22] [23] The findings of this study highlight a need to revitalise public health policy provision in relation to healthy eating. Ensuring access to affordable and healthy food needs to be part of this new approach. As Piachaud and Webb note, it is important that whole segments of the community are not excluded from participation in food culture simply due to cost considerations.[24]

CONCLUSION: ***Implications for health promotion policy and practice***

The new Green and White Papers on the NHS and public health [25] [26] offer the opportunity to expand on the narrow focus of The Health of the Nation.[27] [28]and to address many of the issues raised in this paper, such as access to food, transport policy and local involvement

The HLS data indicates different priorities among different groups towards food purchasing and consumption and what constitutes healthy eating. This should be reflected in health promotion policy and practice at both local and national level.

In line with the above, we suggest that local targets reflect these social and structural dimensions. Targets could be set to encourage uptake of local shopping facilities, or ensure that local street markets are encouraged or to cut down on the number of car trips people use to shop.[29]

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