





# **Food and nutrient intake and attitudes among disadvantaged groups on the island of Ireland**

## *Summary Report*

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## Overview of the research

Poverty has been consistently associated with poorer health. The factors driving this association with poorer health among disadvantaged groups have been extensively investigated and include economic, ecological, psycho-social and structural factors. The behavioural factors which influence these socio-economic health inequalities include adverse diet and nutrient intake. There were gaps in the evidence base on the island of Ireland (IOI) in this regard.

This research was commissioned by **safefood** to examine the socio-economic differences in food and nutrient intakes which exist on IOI, and also to investigate the attitudinal factors which contribute to these differences.

The initial investigations (Part 1) examined a series of existing quantitative databases for differences in relation to food and nutrient intakes and attitudes across socio-economic status (SES). These databases included the North/South Ireland Food Consumption Survey (NSIFCS), the National Children's Food Survey (NCFs) and Republic of Ireland (ROI) data from three pan-EU studies which examined the attitudes and beliefs of consumers.

The results of Part 1 of the research identified young, urban women of low SES as having particular increased risk of food poverty and micronutrient inadequacy. This group was selected as the target group for further detailed research (Part 2) which explored the material, structural, social and attitudinal factors influencing dietary behaviour among disadvantaged women. A quantitative study was undertaken with a sample of 295 women of mixed SES. A qualitative study of women drawn primarily from low SES (Part 3) was conducted to compliment the above two pieces of research. These methodologies were employed to fully capture the complex sociological processes which are thought to underpin food and nutrient intakes among women of low SES.

This summary report outlines key findings from the research. The findings provide current evidence of SES food and nutrient inequalities among disadvantaged groups on IOI and also describe the barriers to healthy eating among disadvantaged young urban women.

# 1. Interrogation of five existing databases

## Introduction

The key aim of this part of the research was to investigate the impact of SES on food and nutrient intake and attitudes to food, nutrition, physical activity and health using existing data available on IOI. These data had not previously been examined in detail from a SES perspective. Other factors such as smoking, food supplement use and physical activity were also explored. These are not discussed in this overview but are available elsewhere<sup>1</sup>.

## How were the data collected?

Five databases were examined (see Table 1). The North/South Ireland Food Consumption Survey (NSIFCS) and National Children's Food Survey (NCFS) contained data primarily on the food and nutrient intake of adults and children respectively. Three pan-European studies which were each commissioned across 15 EU Member States focused on attitudes to health, food, nutrition and physical activity. All databases were nationally representative in terms of SES and educational status.

Table 1: Summary of databases investigated

Databases	Year of Data Collection	Population Group
North/South Ireland Food Consumption Survey	1997-1999	1,379 adults aged 18-64 years (662 men & 717 women) on IOI
National Children's Food Survey	2003-2004	594 children aged 5-12 years (293 boys & 301 girls) in ROI
<b>Pan European Attitudinal Databases</b>		
Survey of Consumer Attitudes to Food, Nutrition and Health	1995-1996	1,009 adults aged 15-64 years (494 men & 515 women) in ROI
Consumer Attitudes to Physical Activity, Body Weight and Health	1997	1,001 adults aged 15-64 years (498 men & 503 women) in ROI
Survey of Older Adults' Attitudes to Food, Nutrition and Health	2001	406 adults aged >56 years (186 men & 220 women) in ROI

<sup>1</sup> Details are available in the full report available at [www.safefood.eu](http://www.safefood.eu)

### How were the data organised?

The data from all databases were organised so that comparisons could be made between food and nutrient intakes, attitudes and other variables across SES. Due to the difference in types of data collected this was done differently for each dataset (Table 2). A statistical significance level of  $p < 0.05$  was taken.

*Table 2: Summary of data organisation*

<b>Databases</b>	<b>Data Organisation</b>
NSIFCS	Univariate data analysis was used to elucidate the association between SES (as defined by social class) and food and nutrient intakes and lifestyle behaviours. Multivariate techniques (analysis of covariance) were employed to investigate the association of education level with food and nutrient intakes, health behaviours, attitudes and anthropometric status, after controlling for age.
NCFS	Univariate data analysis was used to elucidate the association between SES (as defined by social class) or parental education and food and nutrient intakes and lifestyle behaviours. Binary logistic regression was used to assess the impact of health and lifestyle variables in predicting inclusion in the groups: lower social class, lower education level or attendance at a disadvantaged school.
Pan-EU Studies	Attitudinal variables were categorised by social class and/or educational level and were then compared across groups using Pearson's chi-square analysis.

## Key findings

### (A) Food and nutrient intake

#### Children (NCFS database)

- Those of lower SES
  - consumed more butter and spreads, meat and meat products and potatoes and potato products
  - consumed less pasta & rice, fruit, fish & fish dishes, creams, ice-creams & desserts and poultry & poultry dishes
  - had lower intakes of the minerals copper, magnesium and zinc
- Children from non-professional families consumed less fibre and protein
- Children attending “disadvantaged” schools had lower fibre and protein intakes, had higher sugar intakes and fewer met magnesium and riboflavin intake guidelines.

#### Adults (NSFCS database)

- Adults of lower SES
  - consumed less fruit, vegetables and breakfast cereals, and had higher intakes of meat and meat products and confectioner
  - women had lower fibre and micronutrient intakes than men
  - fewer women of low SES met fibre, iron, calcium, folate and vitamin C recommendations than more affluent women
  - no significant SES differences were noted in food and nutrient intake in men
- Adults with lower education
  - men had lower vitamin C intake
  - women had lower fibre and micronutrient intakes – fewer met fibre, iron, calcium, folate and vitamin C recommendations
  - fewer individuals (%) had a healthy Body Mass Index (<25 kg/M<sup>2</sup>) and waist:hip ratio (men <0.95; women <0.80).

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*Note: SES and educational differences were more pronounced in adults compared to children.*

### (B) Attitudes

#### NCFS database

Parents of lower SES and with lower education expressed less interest in providing their children with a healthy diet than their advantaged counterparts and cited children’s food preferences as a greater barrier to healthy eating. Additionally, there were associations between low education attainment and emotional overeating and lower willingness to seek variety in the diet in this study.

### NSIFCS database

Men showed no significant attitudinal differences across SES. However, fewer women of low SES reported consciously following a healthy diet or described their diet as healthy. Women who were less educated reported inadequate fruit and vegetable intakes and more were overweight.

### Consumer attitudes to food, nutrition and health survey database

- The ability to define healthy eating did not differ across SES. Therefore most people appeared to be knowledgeable about healthy eating
- The low influence of healthy eating on food choices was evident across low SES and low education
- Price had greater perceived influence than healthy eating on food choices among adults of low SES compared to their more advantaged peers. This was the case particularly for older individuals and women of lower education and lower SES
- There was a higher proportion of health-conscious eaters among the more educated and higher social classes
- Young women of low education were less likely to start and sustain dietary change.

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*Note: SES and educational differences were more pronounced in adults compared to children*

### Consumer attitudes to physical activity, bodyweight and health database

- Although overall physical activity levels were similar across SES, those in lower groups tended to have higher occupational levels, and lower recreational levels of physical activity than their more affluent counterparts
- Low motivation was a key barrier to increased physical activity among the disadvantaged respondents. Those of higher education and higher SES cited work and study commitments as a barrier to physical activity whereas respondents of low SES were more likely to cite lack of facilities as a barrier
- The proportion of overweight subjects who were content with their body image appeared to rise considerably as both education and social class declined. These findings indicated a greater cultural acceptance of overweight and obesity among disadvantaged groups.

### The pan-EU survey of older adults' attitudes to diet, food and health database

- Price of food as a determinant of food choice was negatively associated with both education and SES status among older adults
- While health fatalism increased health consciousness decreased with declining education and social class status.

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*Note: Health fatalism is a belief that ones' health is determined by external factors and that one has little or no control over their own health.*

## 2. *Quantitative study of young disadvantaged women in Dublin*

### **Introduction**

Part 1 of this research highlighted distinct SES differences in food and nutrient intakes, and in the attitudes thought to influence these behaviours. It highlighted young women to be the most vulnerable group. However, none of the studies explored were designed to specifically look at SES differences and focus on the most disadvantaged sectors of society.

Women who were considered more disadvantaged than those investigated in Part 1 were chosen for this research to try and capture those experiencing more extreme food poverty. This part of the research investigated the food and nutrient intake and attitudinal factors associated with dietary and health behaviour among this group. This group was compared to a reference group of women who were not from disadvantaged areas.

The Greater Dublin area was chosen as an area to conduct this research due to its proximity to the researchers and for the density of population.

### **How were participants recruited?**

Women aged 18-35 years were recruited at 20 different sites across areas in Dublin classed as most disadvantaged (based on a composite index which included parameters such as occupational social class, education and employment status). Two hundred and twenty-one “disadvantaged” women from community groups, training schemes, crèches, health centres and other public agencies in these areas agreed to participate. A reference population of 74 “advantaged” respondents was recruited from various sites including commercial companies, colleges and social clubs.

### **Questionnaires**

Four questionnaires were administered to participants during this particular study. Diet history, 24-hour recall and food frequency questionnaires were used to investigate food intake. A lifestyle and attitudinal questionnaire was also developed and piloted. It was based on previously validated questions and expanded for the purposes of the study. The readiness to change behaviour was assessed based on the Transtheoretical (Stages of Change) behavioural change model which includes the following stages: pre-contemplation, contemplation, preparation, action and maintenance.

### How was the study carried out?

The researchers met the participants in groups of between three and 20 people for a 40-90 minute interview to complete the questionnaires. During the interview, participants' weight, height and waist circumference were measured by the researcher. The length of the interviews varied depending on the literacy levels of the participants and the size of the group.

### How were the data analysed?

The three dietary questionnaires were cross referenced to assess the accuracy of information given. A total of 216 dietary questionnaires were deemed valid to include in the analysis, of which 153 were from disadvantaged and 63 from non-disadvantaged participants. The diet history data was selected as the most reliable data for subsequent analysis using computer software.

Disadvantaged and advantaged groups were compared using univariate statistical tests to test for any differences in food and nutrient intake, and in food sources contributing to nutrient intake. Food and nutrient intakes were subsequently compared according to a range of attitudinal responses to ascertain if these attitudes predicted food and nutrient intake. Cross-tabulation and chi-square analysis were then employed to investigate whether the attitudes that predicted food and intake varied according to SES.

### Key findings

The disadvantaged and advantaged population groups had different characteristics based on a range of poverty indices (Table 3).

Table 3: Socio-economic characteristics of the study population

SE Indicator	Definition	Disadvantaged Population (n=221)	Advantaged Population (n=74)
Low Social Class	Social class 4-6	140 (63.3%)	0 (0.0%)
Low SE Group	Socio-economic group E-G	96 (43.4%)	0 (0.0%)
Low Education	None, primary or intermediate education	120 (54.8%)	0 (0.0%)
Early School Leaving	Left school aged <16 years	103 (46.6%)	2 (2.7%)
Relative Income Poverty	Equivalised income <60% of median income (<€208.71/wk)	113 (51.1%)	2 (2.7%)
Relative Deprivation	Lacking one or more of the 8 basic indicators of deprivation	89 (40.5%)	3 (4.1%)
Consistent Poverty	Equivalised income <€208.71/wk AND lacking in one or more of the 8 basic indicators of deprivation	55 (25.0%)	1 (1.4%)
Benefit Entitlement	Entitled to social welfare payments	140 (63.6%)	8 (10.8%)
Medical Card Status	Entitlement to a medical card	153 (69.2%)	1 (1.4%)
Single Adult Family Unit	Family unit comprising a single adult and 1+ children	99 (44.8%)	0 (0.0%)

**Food and nutrition intake**

More pronounced SES gradients in food and nutrient intakes were seen in this study when compared to the NSIFCS. There were a number of differences noted between the two groups, disadvantaged women had:-

- lower intakes of fruit and vegetables, dairy foods and breakfast cereals (Table 4)
- higher intakes of energy, total fat and saturated fat, and lower fibre intakes (Table 5)
- lower folate and vitamin C intakes
- higher sodium intakes which reflected their higher overall intake of processed foods.

Table 4: Median (IQR) intakes of food groups between disadvantaged and advantaged women

Food Group	Median Intake (g/day (IQR))	
	Disadvantaged (n=153)	Advantaged (n=63)
Fruit and Vegetables	172 (225.5)	405 (340)
Breakfast Cereals	4 (17.5)	29 (44)
Sweet Foods & Confectionery	67 (91.5)	64 (52)
Dairy Products	166 (164.5)	228 (150)

Note: IQR = interquartile range

Table 5: Socio-economic differences in energy, fibre and macronutrient intakes among valid dietary reporters

	Recommended Daily Intake	Disadvantaged	Advantaged
Energy (kCals)	~2000kCals/day	2,329 (560)	1,978 (385)
Energy (MJ)	~8.4MJ/day	9.79 (2.35)	8.33 (1.62)
Dietary Fibre (g/day)	>25g/day (WHO/FAO, 2003)	10.1 (3.9)	12.6 (4.5)
Total Fat (% Energy)	<33% Total Energy (UK DH, 1991)	35.3 (5.8)	30.7 (5.1)
Saturated Fat (% Energy)	<10% Total Energy (UK DH, 1991)	13.9 (3.3)	11.6 (2.6)

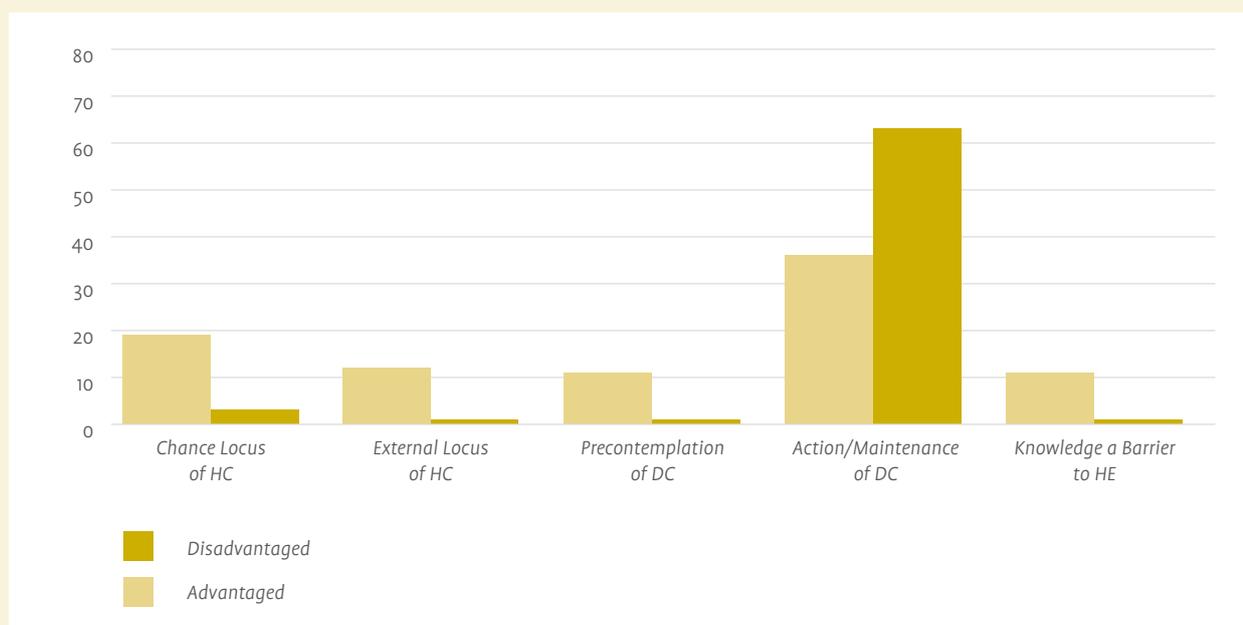
### Health fatalism

Health fatalism was associated with poorer dietary habits including lower fruit and vegetable, breakfast cereal and fish intakes, along with higher intakes of potatoes and potato products among both groups. This fatalism was more prominent among disadvantaged women.

### Behaviour change

Being in the pre-contemplation stage of dietary change (unaware of the need to change) was more prevalent, and action or maintenance stages less prevalent among disadvantaged participants, and again, these attitudinal profiles were associated with poorer overall dietary habits (see Figure 1).

Figure 1: Differences in Attitudinal Traits between Disadvantaged and Advantaged Women



Note: HC = Health Control, DC = Dietary Change and HE = Healthy Eating.

### Knowledge of healthy eating

Poor self-reported healthy eating knowledge was associated with adverse dietary habits and this occurred more frequently among the disadvantaged cohort. Those citing this barrier to healthy eating demonstrated lower intakes of fruit and vegetables, fish and dairy products.

## 3. Qualitative study – focus groups

### Introduction

The application of qualitative research techniques in Part 3 allowed for a more in depth exploration of the complex social, psychological and cultural phenomena which influence SES differences in dietary and health behaviours. This was achieved by conducting focus groups with disadvantaged groups on IOI and complimented the quantitative findings in Parts 1 and 2.

### How were the focus groups conducted?

Twelve focus groups were conducted, seven in NI (March to May 2006) and five in ROI (March/April 2007). Participants were recruited on a voluntary basis through community groups in disadvantaged areas.

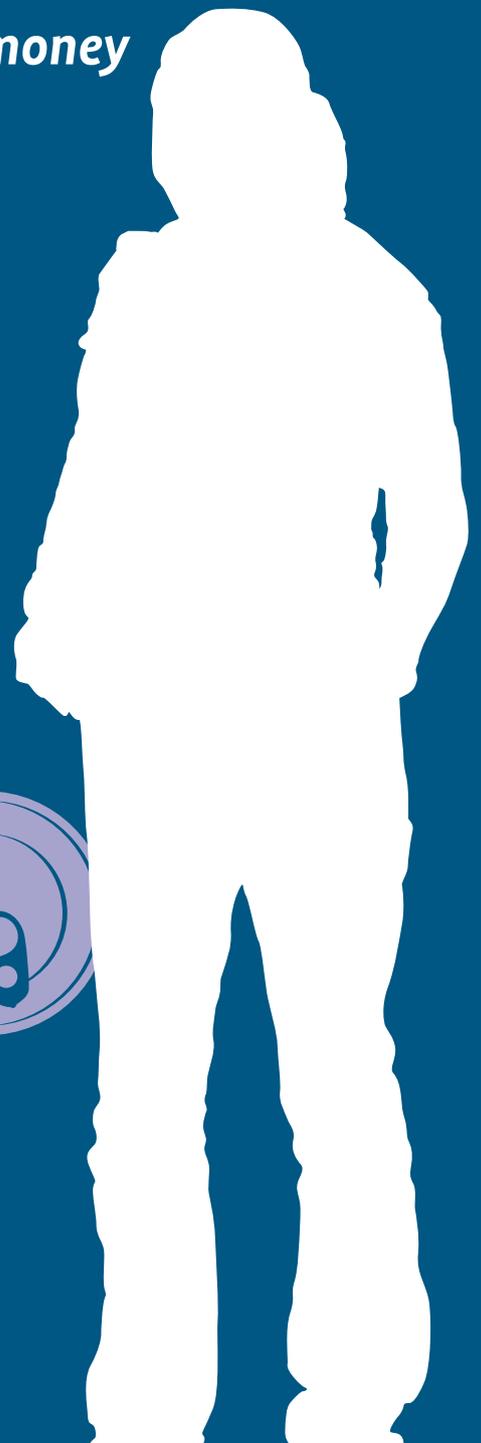
The NI and ROI focus groups were conducted at different stages of the research. The NI focus groups were carried out with men and women aged 18-74 years recruited from the Coleraine, Ballymena and city of Derry areas. A total of 39 women and three males participated in seven focus groups each containing five to eight individuals. In Dublin five focus groups were carried out with women aged 18-35 years since the research to date identified them as the most vulnerable group. They were recruited from disadvantaged areas in inner-city and north Dublin. These focus groups each comprised five to eight individuals with a total of 32 participants.

Topic guides were developed and piloted separately for both sets of focus groups. For NI, the topic guide consisted of the following broad topics: health, dietary habits, impact of diet on health, perceptions of obesity, factors determining food choice, food labelling and barriers to healthy eating. For the Dublin research, six major themes formed the basis of the topic guide: future salience, locus of health control, perceptions of a healthy diet, perceived barriers to health and healthy eating, perceptions of poverty and psychosocial stress.

All focus groups were audio-taped and subsequently transcribed. A grounded theory approach was used to analyse the data.

***“People can get into a vicious circle where they’re not working, and they’re not having any outside activity so they become depressed. Through that depression, they can start smoking, drinking, going to bingo etc., that then has an impact on the amount of money that they’ve got to spend on food.”***

*(Focus Group 4, NI)*



## Key findings

### Common themes from NI and Dublin focus groups

Psycho-social stress was a major contributor to adverse dietary intake and included aspects such as insecure housing tenure, local crime and social disorder, the demands of childcare, financial worries and time constraints.

*“Like for instance I live in a one bedroom with three children.....that can be very stressful. Like sometimes I feel like throwing me hat in but I don’t, just have to get on with it.” (Focus Group 4, Dublin)*

*“People can get into a vicious circle where they’re not working, and they’re not having any outside activity so they become depressed. Through that depression, they can start smoking, drinking, going to bingo etc., that then has an impact on the amount of money that they’ve got to spend on food.” (Focus Group 4, NI)*

Comfort eating and self-reward with food was frequently cited as the behavioural outcome of socially-mediated anxiety and depression.

*“Yeah, comfort eating yeah, cause I lost me job a couple of years, well two years ago before I started this and I was off work from January to July and I lashed on two stone....I was staying in bed late just sitting there pigging out and me neighbour was bringing me young fella home. So it was just comfort eating really.”*

*(Focus Group 1, Dublin)*

*“If someone hasn’t enough money, they go into depression, and what’s the first thing you do if you’re down is eat..... I think that’s why obesity is always falling into the poor crowd.” (Focus Group 3, NI)*

Cost was mentioned as a potential barrier to healthy eating but it appeared to play a subservient role only, when compared with potential impediments such as stress-related comfort eating, fatalism, lack of interest or prioritisation of healthy eating, personal taste preferences, time constraints and poor dietary knowledge/misconceived definitions of healthy eating.

### Other themes from Dublin focus groups

Greater self perceived dietary knowledge was not reflected in subsequent discussion with the participants where many misconceptions were evident. This optimistic bias may lead to a lower engagement with healthy eating messages by these women.

*“Everyone knows what’s healthy and what’s not, you know what I mean, the knowledge is there, it’s just whether you use it or not.” (Focus Group 1)*

Taste was viewed as an important barrier to healthy eating, while time constraints and ease of access to poorly nutritious, energy dense foods also conspired to undermine healthy eating behaviour.

*"Wouldn't like the taste of potatoes or anything like, I would never taste it. Everything that's good for you is horrible." (Focus Group 4, Dublin)*

#### Other themes from NI focus group

Children's preferences played a big part in foods chosen in the family setting.

*"Advertisements play a big part (in what children want to eat). You get all the adverts for like Burger King, where this big thing comes down in the shape of a burger." (Focus Group 2, NI)*

*"You can say eat this because it's better for you, but they want a burger because they get it in school." (Focus Group 2, NI)*

Apparent cultural acceptance of overweight and obesity and a greater health fatalism i.e, no control over health were evident among the disadvantaged participants.

*"(affluent people have)..... the money ..... to buy all those healthy foods..... and go on all those machines (in the gym)." (Focus Group 3, NI)*

Social and intergenerational learning was an important factor in enabling people to improve their diets, while food labels were viewed to be of much lower utility in this regard.

*"My granny made stews and soups and that there, all done from scratch, and that would be the sort of things my Ma would have made for us." (Focus Group 1, NI)*

The taste of food was deemed in many cases, to reflect its nutritional quality. However, poor palatability of foods such as fruit and vegetables, which were attributed to mass production techniques, also acted as an impediment to the consumption of these foods.

*"You can get strawberries at any time of year when they're not in season, but they're tasteless." (Focus Group 6, NI)*

***“Wouldn’t like the taste of potatoes or anything like, I would never taste it. Everything that’s good for you is horrible.”***

*(Focus Group 4, Dublin)*



# KEY CONCLUSIONS AND RECOMMENDATIONS



## *Key conclusions*

### **The studies conducted in this research have highlighted that individuals of lower SES:**

- Had a dietary pattern that was more energy dense and micronutrient poor than their more affluent peers. As a result they were less likely to meet the healthy eating guidelines especially the fruit and vegetable and fibre guidelines. Women and children were found to be more vulnerable than men to these SES differences in food and nutrient intake
- Express a lower interest in healthy eating. As a result they were less likely to engage in and implement dietary change
- Found cost of food was a barrier to eating a healthy diet but the qualitative research indicated that this cost barrier played a secondary role when compared to social stresses
- Social stresses such as unemployment coupled with a higher level of health fatalism had a major influence over food choices. In general lower SES groups were more fatalistic and hopeless about health and associated health related behaviours. These factors were associated with a tendency towards comfort eating among these groups
- Taste and individual preferences played a role in food choices most evidently in relation to children. Many parents reported making food choices based on what children wanted to eat
- Were more accepting of being overweight and were less likely to instigate and maintain changes in dietary habits.

## *Key recommendations*

- The factors that influence dietary behaviour are complex. A concerted cross-sectoral effort is required to alleviate these inequalities that exist in modern Irish society. This needs to occur at both public policy and community levels
- A focus on community-based, peer-led education programmes that put emphasis on practical skills will help to address knowledge of gaps among lower SES groups. The design and delivery of such programmes must support an understanding of the health beliefs of the target audience
- Women and children are a priority group in relation to food poverty. Encouragement of variety in foods eaten from a young age and strategies for coping with children's preference and comfort eating should be a focus
- A social marketing approach is another alternative that should be used in targeting lower SES groups. This approach will lead to a greater involvement of the target group in the development of appropriate and culturally acceptable messages
- The promotion of several specific foods such as fruit and vegetables, dairy foods and fish among those of low SES is warranted, as low intakes of these foods are predictive of generally less favourable nutrient intakes and intakes of more processed food high in fat, sugar and salt. In this regard, such promotions should consider the broader barriers to accessing these foods.



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