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Correlates of food choice in unemployed young people: the role of demographic factors, self-efficacy, food involvement, food poverty and physical activity

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Abstract

Associations between socio-demographic and psychological factors and food choice patterns were explored in unemployed young people who constitute a vulnerable group at risk of poor dietary health. Volunteers (N=168), male (n=97) and female (n=71), aged 15-25 years were recruited through United Kingdom (UK) community-based organisations serving young people not in education training or employment (NEET). Survey questionnaire enquired on food poverty, physical activity and measured responses to the Food Involvement Scale (FIS), Food Self-Efficacy Scale (FSS) and a 19-item Food Frequency Questionnaire (FFQ). A path analysis was undertaken to explore associations between age, gender, food poverty, age at leaving school, food self-efficacy (FS-E), food involvement (FI) (kitchen; uninvolved; enjoyment), physical activity and the 4 food choice patterns (junk food; healthy; fast food; high fat). FS-E was strong in the model and increased with age. FS-E was positively associated with more frequent choice of healthy food and less frequent junk or high fat food (having controlled for age, gender and age at leaving school). FI (kitchen and enjoyment) increased with age. Higher FI (kitchen) was associated with less frequent junk food and fast food choice. Being uninvolved with food was associated with more frequent fast food choice. Those who left school after the age of 16 years reported more frequent physical activity. Of the indirect effects, younger individuals had lower FI (kitchen) which led to frequent junk and fast food choice. Females who were older had higher FI (enjoyment) which led to less frequent fast food choice. Those who had left school before the age of 16 had low food involvement (uninvolved) which led to frequent junk food choice. Multiple indices implied that data were a good fit to the model which indicated a need to enhance food self-efficacy and encourage food involvement in order to improve dietary health among these disadvantaged young people.
Key words: Young people; NEET; Survey; Path Analysis; Food Choice; FFQ; Self-Efficacy; Food Involvement; Food Poverty.
1. Introduction

A substantial proportion (9.7%) of young Europeans aged 15-24 years, are currently unemployed (EU Labour Force Survey, 2-12). Although education is mandatory up to the age of sixteen years, the number of young people in the United Kingdom who leave mainstream education at the age of 16 years and who are not in education, employment or training (NEET) is increasing (Institute for Public Policy Research, 2010) with as many as 13% of 16-19 year olds in Northern Ireland (NI) unemployed (Department of Employment & Learning, 2010; Bennett, 2010; Monteith, Lloyd & McKee, 2008). Most research directed toward understanding young people’s food choices has been conducted within the school environment (Shepherd Harden, Rees et al., 2006). Unemployed young people, however, constitute a vulnerable group who have been under-researched and who may be especially at risk of adverse health behaviour and outcomes (McCoy, Kelly & Watson, 2007) and who may be especially at risk of inadequate diet (Ball, MacFarland, Crawford et al., 2009). Previous research has suggested that young people have a tendency toward consumption of ‘junk’ (energy dense/low nutrient) food (Share & Stewart-Knox, 2012; Fraser, Edwards, Cade et al., 2011a; Fraser, Clarke, Cade et al., 2011b; Kerr, Rennie, McCaffrey et al., 2009; Larson, Neumark-Sztainer, Story et al., 2008) which increases through adolescence (Larson et al., 2008) and is associated with socio-economic deprivation (Fraser et al., 2011a).

Young people’s food choices are multifactorally determined (Story, Neumark-Sztainer & French, 2002) and include socio-demographic factors (Share & Stewart-Knox, 2012; Shepherd et al., 2006) and physical activity, which declines during the transition from adolescence to adulthood (Pearson & Biddle, 2011; de Vet, de Ridder & de Wit, 2011). Qualitative studies of disadvantaged young people aged 15-24 years in Australia (Crawford et al., 2014; Booth, 2006) and the UK (Davison, Share, Hennessy et al., 2014) have also indicated that such young people experience a considerable degree of food insecurity and that
this is at least in part, a result of structural barriers to the access of healthy food (Davison et al., 2014; Crawford et al., 2014).

Psychological factors are also likely to determine food choice in young people. Self-efficacy, a key psychological construct in Social Cognitive Theory, is defined as an individual’s perceived ability to achieve a desired outcome (Bandura, 1995). Self-efficacy has been found to be associated with eating behaviour among young people residing in Ireland (Fitzgerald, Heary, Kelly et al., 2013), the UK (Lubans, Plotnikoff, Morgan et al., 2012), the USA (Franko, Cousineau, Rodgers et al., 2013; Kinnard & Webster, 2012; Granner & Evans, 2012; Bruening, Kubik, Kenyon et al., 2010) and Australia (Pearson, Ball & Crawford, 2012; Pearson, Ball & Crawford, 2011). Food involvement, defined as ‘the level of importance of food in a person’s life’ (Bell & Marshall, 2003 pp236) appears lacking among young people (Watt & Sheiham, 1996) and has been found to be associated with healthier eating in adolescents in the USA (Laska, Larson, Neumark-Sztainer et al., 2012; Larson, Perry, Story et al., 2006). UK research has suggested that educational attainment is associated with food involvement particularly that which is concerned with food purchase, preparation and choice (Bell and Marshall, 2013). There is also evidence that this impacts upon food choice. Women who have spent less time in education report lower food involvement and less fruit and vegetable consumption (Jarman, Lawrence, Ntani et al., 2012).

There appear to be no previously published surveys of unemployed young people that have considered food choice. Those surveys which exist have focussed upon nutrient intake (Mark, Lambert, O’Loughlin et al., 2012) or acquisition of food through welfare agencies (Booth, 2006) rather than food choice per se. Given that both the prior qualitative research (Davison et al., 2014; Share et al., 2013) and previous studies have indicated that young peoples’ food choices are associated with physical activity (Pearson & Biddle, 2011; de Vet; de Ridder & de Wit, 2011), food poverty (Crawford et al., 2014; Mark et al., 2012; Booth,
2006), self-efficacy (Fitzgerald et al., 2013; Franko et al., 2013; Lubans et al., 2012; Kinnard & Webster, 2012; Granner & Evans, 2012; Pearson et al., 2012; Bruening et al., 2010) and food involvement (Bell and Marshall, 2013; Laska et al., 2012; Jarman et al., 2012; Larson et al., 2006), items reflecting these issues have been included in the questionnaire. The aim of this study has been to determine intervention needs among young people not in education, employment or training, a purpose that has also informed selection of items and constructs for inclusion. No previous studies appear to have considered the above factors together as potential correlates of dietary habits in young people. This survey, therefore, sought to understand the degree to which self-efficacy, food involvement, physical activity, age at leaving school and food poverty were associated with food choice patterns in this important, disadvantaged, under-researched group of young people. It is anticipated that the results will inform policy toward addressing dietary health related inequality among these young people.

2. Method

The study was of a cross-sectional, self-complete survey design.

2.1. Sampling

The study took place in Northern Ireland (UK). Community-based organisations with a remit to enable young people to get into education or employment or training were considered eligible to participate. Initial contact with youth and training service providers was via telephone. Of the thirteen organisations contacted, all agreed to participate. All young people attending each centre on the day of data collection freely volunteered to take part and give of their time to complete the questionnaire. There were no refusals.
2.2. Questionnaire

Self-administered questionnaire was used to record demographic characteristics, food choices, physical activity, food poverty, food involvement and self-efficacy. Questionnaire content was informed by prior qualitative studies (Share et al., 2013) and review of the literature on food issues in young people.

2.3. Procedure

Ethical approval was granted by the University Research Ethical Committee. The survey was piloted on a sub-sample (n=12). There appeared to be confusion over the meaning of the response option ‘somewhat confident’ in the self-efficacy scale. The wording of the item, therefore, was changed to ‘a little confident’. Data collection took place in youth service provider organisations located in greater Belfast and Counties Armagh, Antrim and Londonderry during November and December 2011. Informed consent was obtained from the young people prior to completion of the questionnaire. Parental consent was not required given nearly half (47%) were living independently and all were over the age of consent which is 16 years in the UK. In the interests of confidentiality, no names were recorded. The questionnaire was completed in groups of five to six in a quiet room within the premises of the respective organisation. Prior to completion of the questionnaire, the researcher read aloud an information sheet, detailing the questions and explaining the response formats to each scale. The questionnaire took 15 to 20 minutes to complete.

2.4. Data Analysis

2.4.1. Preliminary Analyses
Exploratory factor analysis was conducted on the Food Frequency Questionnaire (FFQ), Food Involvement Scale (FIS) and Food Self Efficacy Scale (FSES) using the statistical software package SPSS (version 19). Maximum likelihood estimation was used along with a promax factor rotation. The Bartlett method was used for the factor scores as this procedure produces unbiased estimates of the true scores (Hershberger, 2005).

2.4.1.1. Food Frequency Questionnaire (FFQ)

The 19-item food frequency questionnaire (FFQ) previously employed in the WHO Health Behaviour of School Children (HBSC) Survey (Nic Gabhainn, Kelly & Molcho, 2007) was used to assess the frequency consumption of a variety of food: fruit; vegetables; sweets; cheese; other dairy (yoghurt); crisps; chips/fried potatoes; white bread; wholemeal bread; cake; biscuits; burgers/sausages; fish; and drinks: low fat milk; whole milk; cola and/or other sugar sweetened soft drinks; diet soft drinks; stimulant/energy drinks; and, alcohol. Respondents were asked to indicate ‘How many days per week do you usually eat or drink ...’, on a 0-6-point Likert scale ranging from: never; less than once a week; once a week; 2 to 4 days per week; 5 to 6 days per week; once a day, every day; and every day, more than once.

Exploratory factor analysis was conducted on the Food Frequency Questionnaire to determine food choice patterns (Table 1). A maximum likelihood extraction method was employed with a promax rotation solution which identified 4 food choice factors on the criterion of having an eigenvalue greater than 1 (Table 2). Items with a loading magnitude greater than or equal to 0.40 (Table 1): 1) ‘junk food’; 2) (5 items - sweets, cola, crisps, chips/fried potatoes, biscuits and white bread); 3) ‘healthy food’ (4 items - fruit, vegetables, wholemeal bread and fish); 4) ‘fast food’ (2 items - energy drinks/burgers/sausages); 5) ‘high fat food’ (2 items – cake, burgers/sausages); 6). Yogurt and whole milk each loaded onto
factors in which they were the only items, therefore, were excluded from further analysis. The item burgers/sausages loaded onto both the ‘fast food’ and ‘high fat’ factors. This item was retained within both factors given that burgers/sausages are sold via fast food outlets and contain high amounts of fat.

Insert Tables 1 and 2

2.4.1.2. Food Involvement Scale

Attitudes to food, eating and cooking were assessed using the 12-item Food Involvement Scale (Bell & Marshall, 2013). Respondents were asked to indicate on a 5-point Likert scale ranging from strongly agree (5) to strongly disagree (1) responses to the statements: I don’t think much about food each day; cooking or barbequing is not much fun; Talking about what I ate or am going to eat is something I like to do; Compared with other daily decisions my dietary habits are not very important; When I travel one of the things I anticipate most is eating the food there; I do most or all of the clean up after eating; I enjoy cooking for others and myself; When I eat out I don’t think or talk much about how the food tastes; I do not like to mix or chop food; I do most or all of my own food shopping; I do not wash dishes or clean the table; I care whether or not a table is nicely set.

Exploratory factor analysis using maximum likelihood extraction method with a promax rotation solution was employed on the Food Involvement Scale (Table 3). Factor analysis confirmed a three-factor solution with factor scores greater than or equal to 0.40 eigenvalues: ‘kitchen’ (2 items - I do most or all of the clean up after eating; and, I do not wash dishes or clean the table); ‘uninvolved’ (3 items - I don’t think much about food each day; compared with other daily decisions, my food choice habits are not very important; and,
When I eat out, I don’t think or talk much about how the food tastes. ‘enjoyment’ (3 items - talking about what I ate or am going to eat is something I like to do; when I travel one of the things I anticipate most is eating the food there; and, I enjoy cooking for others and myself.

**Insert Table 3**

### 2.4.1.3. Food Self-Efficacy Scale

The 6-item Food Self-Efficacy Scale (Ball et al., 2009) was used to assess self-efficacy on a 4-point scale: not at all confident (1); a little confident (2); confident (3); and, very confident (4) in their ability to reduce junk food and increase fruit consumption across three different situations: when hanging out with friends; when at training/work; and, when at home (Table 4).

This was entered using a latent variable technique to test a 1-factor model which was taken as a good description of the model.

**Insert Table 4**

### 2.4.1.4. Physical Activity

The short-form International Physical Activity Questionnaire (IPAQ) (The IPAQ Group, 2001) was employed to measure physical activity: ‘during the last 7 days, how many days did you engage in: moderate-intensity activities; vigorous-intensity activities; and walking?’ Although the IPAQ has been shown to have acceptable levels of validity and
reliability for a self-reported measure, it tends to overestimate physical activity in comparison to objective measures (Lee et al., 2011). Owing to a relative lack of vigorous-intensity activity in our sample, only moderate-intensity activity was entered into the analysis.

2.4.1.5. Food Poverty

A single measure was derived from the Health Behaviour in School-Aged Children Survey (HBSC) (Nic Gabhainn, Kelly & Molcho, 2007) to enquire on food poverty: ‘Some young people go to school/work/training or to bed hungry because there is not enough food at home. How often does this happen to you?’ Responses were ‘how often (always, often, sometimes or never) they went (during the day and/or to bed) hungry because there was not enough food at home?’ This item has been shown to have face and content validity for use with children (Niclasen, Molcho, Arnfjord et al., 2013).

2.4.2. Path Analysis

A path analysis was then conducted using the Mplus Ver. 7.11 (Muthen & Muthen © 1998-13) to explore relationships between: age (continuous – mean centred at zero); gender (dichotomous); age left school (pre/post 16 years old) (dichotomous); food poverty (continuous); self-efficacy (continuous); food involvement (kitchen; uninvolved; enjoyment); physical activity (continuous); and, frequency of food consumption patterns (junk food; healthy food; fast food; and, high fat food). The robust maximum likelihood (MLR) was used to estimate model weights. Goodness-of-fit was assessed using the chi-Square test of model fit, the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) and the standardised root mean square residual (SRMR) which takes into account the degrees of freedom of the model. A CFI greater than 0.95 (Hu & Bentler, 1999), a SRMR
of below 0.05 and an RMSEA of less than 0.08 (Browne & Cudeck, 1993) are considered acceptable.

3. Results

3.1. Sample Characteristics

A total of 168 young people, 97 male and 71 female, aged between 15 and 25 years (mean age = 18.39 years; standard deviation = 2.756) completed the survey. Despite education being mandatory until the age of 16 years, more than a third of the sample (35%) ($n=59$) left school before the age of 16 years. At the time of data collection, 23% ($n=40$) were living independently, 7.1% ($n=12$) were living with their children and 16.1% ($n=27$) lived in a care-home or hostel. More than half (56%) reported that they ‘never’ went to school/work/training or to bed hungry because there is not enough food at home’, nearly one third (31%) reported ‘sometimes’, 8% reported ‘often’ and 5% ‘always’. Nearly two-thirds (60%) reported engaging in moderate-intensity physical activity on at least one of the previous seven days.

3.2. Correlates of Food Choice Patterns

The path analysis was based on the model shown in figure 1. Gender (dichotomous); age (continuous); leaving school (dichotomous - before or after age 16 yrs); and, food poverty were treated as contextual, exogenous fixed variables which were entered into the model first. Food involvement (low involvement; kitchen; enjoyment) and physical activity (continuous) were entered as intervening variables. Food self-efficacy (continuous) was entered as a latent variable. The outcome variables were food choice patterns (junk food; fast
food; healthy; high fat). From the fit indices (CFI = 0.95; TLI = 0.91; RMSEA = 0.05; SRMR = 0.05) it was concluded that there was little discrepancy between the original data and the model and that the model (N=166) fitted these data well. The $\chi^2$ test of model fit, which was used to compare raw data with re-computed data, indicated that they were a reasonable description of these data ($\chi^2=119.20$, $df=80$, $p=0.003$). Food self-efficacy was particularly strong in the model (Table 5).

**Insert Table 5**

### 3.2.1. Food Self-Efficacy and Food Choice Pattern

Food self-efficacy was age-dependent such that for every year above the sample average age (set at zero) there was a significant increase in self-efficacy (Figure 1). There were no direct associations between gender and having left school before or after 16 years, food poverty or food self-efficacy (FSE).

Those higher on food self-efficacy reported consuming the junk food or high fat food choice pattern less frequently and the healthy pattern more frequently, even when controlling for the exogenous measures in the analysis. Food self-efficacy was not associated with the fast food choice pattern (Table 6).

**Insert Table 6**

### 3.2.2. Food Involvement and Food Choice Pattern

Food involvement (kitchen and enjoyment) increased with age. Those scoring higher on food involvement (kitchen) reported less frequent choice of the junk food pattern (Table
6). Those higher on food involvement (enjoyment) also reported less frequent choice of the fast food choice pattern. Those who scored higher on food involvement (kitchen) reported more frequent choice of the fast food pattern. Higher scores on food involvement (uninvolved) were associated with more frequent choice of the fast food pattern.

There were no associations between food involvement (low involvement or enjoyment) and choice of the high fat or healthy food choice pattern or between food involvement (kitchen) and the high fat food choice pattern (Figure 1).

**Insert figure 1 here**

### 3.2.3. Physical Activity and Food Choice Pattern

Having left school after the age of 16 years was associated with more frequent physical activity (Table 6). Frequency of physical activity was not associated with food-self-efficacy, food involvement or any of the food choice frequency patterns (Figure 1).

### 3.2.4. Indirect Effects on Food Choice Pattern

#### 3.2.4.1. Gender

The total (standardised) effect of gender was associated with the fast food choice pattern via food involvement (enjoyment) (Est/SE = -1.081; \( P = 0.037 \)). Females were higher in food involvement (enjoyment) which led to less frequent fast food choice (Figure 1).

#### 3.2.4.2. Age

For every year younger than the mean age there was an effect of -0.604 on junk food choice. Being younger led to more frequent choice of the junk food via lower food
involvement (kitchen) (Est/SE = -0.933; P = 0.018). Those who were younger had lower kitchen involvement which led to more frequent junk food choice (Figure 1).

Being younger was associated with more frequent fast food choice (Est/SE = -0.298; P = 0.001). This effect was via food involvement (kitchen) (Est/SE = 0.300; P = 0.025). Those who were younger had lower food involvement (kitchen) which led to more frequent fast food choice (Figure 1).

Being younger was associated with more frequent fast food choice via food involvement enjoyment (Est/SE = -0.582; P = 0.001). Those who were younger had lower food involvement (enjoyment) which led to more frequent fast food choice (Figure 1).

3.2.4.3. Left School Before/After Age 16 Years

Having left school before the age of 16 years was associated with the more frequent junk food choice pattern (Est/SE = -3.275; P = 0.010). This effect was via food involvement (kitchen) (Est/SE = -4.145; P = 0.053) such that those who had left school before the age of 16 were less involved in the kitchen which led to more frequent junk food choice (Figure 1).

4. Discussion

This analysis sought to determine the degree to which socio-demographic factors, food poverty, physical activity, food involvement and food self-efficacy were associated with food choice patterns in this unemployed group of young people. The frequency with which food was chosen aligned with four patterns (healthy; junk food; fast food; and, high fat). As suggested by previous research conducted on Irish (Fitzgerald et al., 2013; Share & Stewart-Knox, 2012; Kerr et al., 2009) and other young people (Fraser et al., 2011b; Larson et al., 2008), a substantial proportion frequently consumed ‘junk food’ or ‘fast food’.
As indicated by previous (school based) studies of the young conducted in Ireland (Fitzgerald et al., 2013), Australia (Lubans et al., 2012; Pearson, Ball & Crawford, 2012) and the USA (Kinard & Webster, 2012; Granner & Evans, 2012; Bruening et al., 2010) self-efficacy was an important correlate of food choice patterns among this group of young people. The food self-efficacy scale showed high reliability and was very strong in the path model implying we can have confidence in the measure. Higher food self-efficacy was associated with the healthy food choice pattern and lower self-efficacy with the junk food and high fat food choice patterns, even when controlling for age, gender and whether left school before or after the age of 16 years. Food self-efficacy, however, was age-dependent. For every year above the sample average age (set at zero) there was a significant increase in self-efficacy. Together, these data and previous studies emphasise the need for intervention to encourage food-related self-efficacy in young people, particularly those who are younger and those who leave mainstream education prior to or at the age of 16 years. That having low self-efficacy was associated with more frequent junk and high fat food choices corroborates the growing body of research which suggests that self-efficacy may hold the key to compliance with healthy eating recommendations among the young (Fitzgerald et al., 2013; Pearson, Ball & Crawford, 2012; Lubans et al., 2012; Kinard & Webster, 2012; Granner & Evans, 2012; Bruening et al., 2010).

Food involvement (kitchen and enjoyment) increased with age implying that dietary health promotion initiatives should be targeted at younger school leavers. Consistent with previous research (Laska et al., 2012; Larson et al., 2006) suggesting that involvement with food is associated with better dietary quality, those scoring lower on food involvement (kitchen) reported more frequent choice of junk food. Also as expected was that being ‘uninvolved’ with food was associated with more frequent consumption of the fast food choice pattern. The finding that those higher on food involvement (kitchen) chose the fast
food pattern more frequently, however, was unexpected. A possible explanation is that those
who were more involved in kitchen-related, for example, cleaning up activities, sought to
avoid them by acquiring fast food. Intervention to reduce fast food consumption, therefore,
should seek to engage young people with food that is quick and easy to prepare and which
requires minimal cleaning up. That being high on food ‘enjoyment’ was associated with less
frequent fast food choice and indicates that intervention to reduce fast food choice in this
group should portray healthy eating as a fun activity.

There were some indirect pathways exogenous variables (age; gender; left school
pre/post age 16 yrs; food poverty - going hungry) via the intervening variables (food
involvement (FI) (kitchen; uninvolved; enjoyment), physical activity and the latent factor of
food self-efficacy (FS-E) on the food choice patterns (junk; fast food; healthy; high fat)
(outcome measures). Although females tended to score high on food involvement enjoyment,
and chose fast food less frequently, if younger, higher food involvement (enjoyment) led to
more frequent fast food choice. This suggests that food involvement, particularly those
aspects surrounding enjoyment of the eating experience interact with food choice differently
between males and females depending upon age. That high ‘enjoyment’ may drive choice of
fast foods in younger females implies a need for healthy fast-food options to be made
available to this group.

Age was an important indirect determinant of food choice. Being younger was also
associated with lower food involvement (kitchen) which led to more frequent choice of the
junk food. Those who were younger scored lower on the ‘enjoyment’ food involvement
factor which led to more frequent fast food choice. Together, these findings imply that dietary
health promotion efforts to be most effective should target the youngest school leavers and
promote healthy foods that are enjoyable to eat and that are quick and easy to prepare. At the
same time efforts should be directed toward enhancing the enjoyment associated with food and increasing involvement in the kitchen.

Despite education being mandatory until the age of 16 years, more than a third of the sample reported having left school prior to this age. Those who had left school before the age of 16 may be especially prone to making less healthy food choices. According to the findings of this study, they were uninvolved with food which led to frequent junk food choice. In testament to the economically deprived circumstances in which these young people existed, more than a third reported going to bed hungry ‘often’ or ‘always’. Contrary to research conducted in Australia (Ball et al., 2009) and in Canada (Mark et al., 2012) suggesting that food poverty is associated with less healthy food choices, food poverty was not associated either directly or indirectly with any of the food choice patterns among our sample. This apparent disparity may reflect differences in how different studies have assessed food poverty and/or food intake.

Previous reviews of studies of food and health in adolescents and young people (de Vet, de Ridder & de Wit, 2011) have concluded that whereas greater physical activity is positively related to dietary healthfulness, sedentary behaviour tends to be associated with lower consumption of fruit and vegetables and higher consumption of energy dense food and drink. It was unexpected, therefore, to find that the frequency with which physical activity was undertaken was not associated with food-self-efficacy, food involvement or indeed any of the food choice frequency patterns in these young people. Physical activity was less frequent among those who had left school before the age of 16 years which agrees with previous research indicating that school leavers who do not enter tertiary education are less likely to engage in physical activity than those who continue in full-time education (Simons, Rosenberg, Salmon et al. 2015).
Conclusions should also take into account the bias inherent in self-reported survey (Brener, Billy & Grady, 2002; Tourangeau, Rips & Rasinski, 2001; Stone et al, 2000). That data were gathered by cross-sectional survey and analysed using correlational techniques renders it difficult to conclude as to causality. The use of single item measures of food poverty and physical activity could be considered crude (Loo, 2002; Bowling, 2005), although both have been used as valid constructs in the HBSC 43-Country Study of Child Health Behaviours, which has been ongoing for the last three decades (Nic Gabhainn et al., 2007). Given that the target group were young people with low levels of educational attainment, there was an imperative to keep questionnaire straightforward and its length to a minimum. Further limitations relate to inaccuracies inherent in food choice assessment (MacDiarmid & Blundell, 1998). The food frequency questionnaire employed could not indicate quantity and that it showed only moderate reliability could imply that it may not have fully accounted for food choices in this group. It is also possible that the degree to which the findings can be generalised to other unemployed youth could be limited by the relatively small sample size. Comparable studies which have looked at correlates of food intake in similarly aged unemployed youth conducted in the USA (Bruening et al., 2010) and Australia (Booth, 2006), however, have employed smaller samples and produced similar findings.

Unlike previous research into food choice in young people (Shepherd et al., 2006) this study has been conducted in the community rather than in schools and has considered an under-researched group of young people who are not in the mainstream education system. These data imply that policies are needed to promote healthy eating among those who leave school prior to the age of 16 and seek to encourage food self-efficacy and food involvement.
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