

Child undernutrition in England: could better targetting of state benefits help?

John Simister

London South Bank University: SimistJG@lsbu.ac.uk

Introduction

This document presents evidence of undernutrition among children in England, and suggests that this problem is associated with excessive alcohol consumption by some parents. A possible solution is suggested: targeting state benefits towards mothers, rather than fathers. Such targetting can be achieved by increasing Child Benefit, while reducing other state benefits such as Job Seekers' Allowance (JSA). This research suggests that state benefits which are intended to help children should be paid to women, rather than to men.

This document also indicates the need for more data, and suggests a pivotal role for BHPS.

Can government policy affect household behaviour?

Economists often use bargaining (game theory) models, in which each household member attempts to influence the spending patterns of the household; the outcome of this bargaining is influenced by the resources (such as earnings) of each household member (MacPhail and Bowles, 1989; Haddad and Reardon, 1993; Haddad and Hoddinott, 1994). Another economic approach is to use a 'principal/agent' model, in which the 'principal' (the husband) hands over day-to-day control over spending to the 'agent' (the wife); such a transfer of control may give the wife more control over spending than the husband wishes (Woolley and Marshall, 1994: 425).

In recent years, several sociologists have investigated the allocation of money within households - a topic referred to as 'Household allocative systems': who decides how household money is spent. This approach divides households into different types, depending on which household member(s) had responsibility for handling money: husband, wife, or both (Morris, 1989; Pahl, 1980: 316-327; Pahl, 1983; Pahl, 1989). Financial management is thought to be important, because it influences the relative power of different household members over financial decisions; this, in turn, influences household spending patterns.

As regards empirical evidence (from various countries), there is general agreement that a woman's relative influence on household decision-making affects household spending patterns:

"there is now some empirical regularity in the result that marginal income under women's control tends to result in increased food consumption of children and better child nutrition"
(Haddad, 2000: p.114).

This research project will explore the idea that increasing a woman's income will enhance her ability to influence household decisions, and allow her to spend more money on food for the children (rather than allowing her husband to spend more on alcohol).

The idea that a child may suffer from undernutrition because his/her parents choose to spend their money on non-food items is not new, but previous empirical research has usually focussed on "Third World" countries (e.g. Haddad & Reardon, 1993). This document is unusual in reporting evidence that English children are underfed; but the claim is not entirely new - Pahl (1985: pp.33-4) found that British women who had left violent

husbands/partners often became better off when they received state benefit in their own right, rather than receiving a small share of the income of their husband/partner.

Undernutrition: the 'Body Mass Index'

The Body Mass Index (BMI) combines data on a person's weight & height to assess if a person is too thin, normal, or obese. The average value of the BMI index varies according to the age of children, so I compare each child's BMI with the 1998 average for a child of that age & sex (Department of Health, 2001). I use data from the 'Health Survey of England (*HSE*)'; I limit the sample to children aged between 2 and 15, because Department of Health (2001: Table 10) only report BMI averages for ages 2 to 15. To increase the sample-size, I combine data from three *HSE* surveys: 1995, 1996, and 1997.

There are various ways of estimating if a child is developing normally. Commonly-used methods include weight-for-age; height-for-age; weight-for-height (such as 'Body Mass Index'); and skinfold thickness. These measure slightly different aspects of nutrition:

"Wasting, or low weight for height, reflects a current or recent nutritional crisis. Stunting, or low height for age, is the cumulative effect of a child's longer-term nutrition history"
(Millman & DeRose, 1998: p.153).

To measure undernutrition, I compare weights of UK children with the reference weight for children of the same age (in years) and gender. The reference is are 75% of the median weight of USA children, reported in NCHS (2001). This method may understate the proportion of the sample who are underweight, because about 19% of children in USA are 'food insecure', i.e. have difficulty obtaining sufficient or acceptable quality food (data for 1995, 1998 and 1999: FIFCFS, 2001); however, it may overstate the problem, if the reference weights are too high because of obesity in USA. Because of the possibility of obesity, it may be argued that height is more reliable than weight to measure undernutrition.

Alcohol consumption

For this research, I compare alcohol consumption with average male consumption - which is 16.19 units per week (author's analysis of *HSE* 1995 to 1997). Note that *HSE* include data on current, but not previous, alcohol consumption, but it would be preferable to know the alcohol consumption for the period of a child's life, in order to be able to assess the cumulative effects of undernutrition on child weight or height. Men tend to drink more than women, as shown in Table 1.

TABLE 1: Alcohol consumption

	MEN	WOMEN
below male average	65 %	90 %
1 to 2 times male average	21 %	8 %
2 to 3 times male average	8 %	2 %
3 to 4 times male average	3 %	0.4%
more than 4 times male average	3 %	0.2%
TOTAL	100% (46,411 cases)	100% (33,386 cases)

Source: *HSE* 1995 to 1997 - author's analysis

Table 1 refers to all adults in the *HSE* sample (age 16 or older); it indicates that heavy drinking in England is mainly (though not exclusively) associated with men.

Alcohol and undernutrition

I now consider the effects of alcohol on nutrition. I focus on households where at least one member is unemployed. I limit the *HSE* data to households (with at least one child) containing exactly two adults, to avoid complications such as extended families. I classify a child as 'underweight' if s/he is less than 97% of the average for a child of that age & sex.

TABLE 2: Proportion of children in low-income households

	fraction underweight
father drinks below (male) average	53 %
father drinks 1 to 2 times average	53 %
father drinks 2 to 3 times average	59 %
father drinks 3 to 4 times average	68 %
father drinks more than 4 times average	77 %

Source: *HSE 1995 to 1997 - author's analysis; total sample-size = 7,045 households.*

Table 2 above indicates that if a man in a poor household drinks a lot of alcohol, then children in the same household are more likely to be underweight. The fraction underweight rises from 53% to 77% - a large increase, which suggests that many thousands of English children are underfed because their fathers drink too much. I suggest that further research is needed on this topic - I recommend more thorough investigation of those children found to be underweight in future *HSE* surveys, preferably by the nurse who carries out the weight, height, and other medical tests on *HSE* interviewees.

Based on results in Table 2, I think it almost certain that excessive spending on alcohol impoverishes many poor households - so much so, that they cannot afford sufficient food for the children. The equivalent to Table 2 for women is not reported here: I did not find a clear link between women's heavy drinking and child undernutrition. Even if mother's drinking is associated with child undernutrition, women's drinking is less cause for concern than men's drinking - because, as Table 1 indicates, most heavy drinkers are men.

Is household expenditure affected by source of income?

The above analysis suggests that many unemployed households spend too much money on alcohol, and not enough on food. To study household spending patterns in more detail, I used data from the 'Family Expenditure Survey' (*FES*), for two years: 1997/8 and 1998/9. I limited the sample to English households receiving JSA, or Child Benefit, or both. I use *FES* variable 'weight' to weight the data.

Previous research into household spending has generally used regression, in one of six forms (Abdel-Ghany & Schwenk, 1993: p.329); see also research on 'household equivalence scales' (DSS, 1993). I chose a 'semilog' form, as follows:

$$E = \forall + \exists D + P \text{Log}(Y) + 2A + NC$$

where coefficients \forall , \exists , P , 2 and N above are estimated by 'Ordinary Least Squares' regression. E represents household expenditure on the item (food, or alcohol); Y represents household income (from all sources); A represents the number of adults, and C the number of children, in the household. But D is the key variable: D is equal to [Child Benefit minus JSA]. Hence, the value of coefficient \exists indicates the amount by which spending would increase if Child Benefit were increased by £1 at the same time as JSA were reduced by £1. I ran two regressions - one with alcohol spending as the dependent variable E , and one with total food spending as the dependent variable. For each regression, the unweighted sample-size was 1,357 households.

The regression results were as follows: $\beta = -0.039$ for alcohol, and $\beta = +0.058$ for food (both statistically significant at the 1% level). These findings indicate that if Child Benefit were increased by £1 at the same time as JSA were reduced by £1, then these low-income households would spend (on average) about 4 pence less on alcohol, and about 6 pence more on food. This change would reduce undernutrition - it suggests that the government should spend more on Child Benefit, and less on JSA.

My interpretation of the above regression results is that spending is affected by which household member receives the benefit: JSA is mainly paid to men, some of whom are prone to heavy drinking; whereas Child Benefit is usually paid to women, who are much less likely to spend excessively on alcohol.

Requirement for future research

Various datasets could be helpful for this research, including British Social Attitudes (Witherspoon: 1988); FES; HSE; and SCEDI (Vogler, 1989). But each of these datasets has limitations: for example, FES doesn't tell us about child weight or height, whereas HSE doesn't report earnings of husband & wife. In many ways, BHPS data could be ideal:

- BHPS contains information on earnings of husband and wife;
- BHPS allows us to explore the history of a household's income, rather than just a "snapshot" at the time of interview (as is the case for most surveys);
- BHPS is representative of Britain as a whole.

Hence, I request assessments of child nutrition status (such as weight or height) be included in future BHPS surveys.

Data from the 'Health Survey for England' and 'Family Expenditure Survey' are crown copyright; have been made available by the Office for National Statistics through The Data Archive; and have been used by permission. Neither the ONS nor The Data Archive bear any responsibility for the analysis or interpretation of the data reported here.

References

- Abdel-Ghany M. and Schwenk F.N. (1993), 'Functional forms of household expenditure patterns in the United States', Journal of Consumer Studies and Home Economics vol 17 (number 4): pp.325-42.
- Department of Health (2001), 'Table 10', <http://www.doh.gov.uk/stats/crtables.htm>
- DSS (1993), Households Below Average Income: a Statistical Analysis 1979-1990/91, London: HMSO.
- Haddad L. (2000), 'Women's status: levels, determinants, consequences for malnutrition, interventions, and policy', Asian Development Review Vol 17 (numbers 1-2): pp.96-131.
- Haddad L. and Hoddinott J. (1994), 'Women's Income and Boy-Girl Anthropometric Status in the Côte d'Ivoire', World Development Vol 24 (number 4).
- Haddad L. and Reardon T. (1993), 'Gender Bias in the Allocation of Resources Within Households in Burkina Faso: A Disaggregated Outlay Equivalent Analysis', Journal of Development Studies, Vol 29 (number 2).
- Hoddinott J. and Haddad L. (1995), 'Does Female Income Share Influence Household Expenditures? Evidence from Côte d'Ivoire', Oxford Bulletin of Economics and Statistics Vol 57 (number 1).
- Inland Revenue (2001), www.inlandrevenue.gov.uk/menus/future.htm
- MacPhail F. and Bowles P. (1989), 'Technical Change and Intra-Household Welfare: A Case Study of Irrigated Rice Production in South Sulawesi, Indonesia', Journal of Development Studies Vol 26 (number 3).
- Morris L. (1989), 'Household strategies: the individual, the collectivity and the labour market - the case of married couples', Work, Employment and Society Vol 3.

FIFCFS (2001), <http://childstats.gov/ac2000/econ4a.htm> Federal Interagency Forum on Child and Family Statistics (U.S. government).

Millman, Sara R. & DeRose, Laurie F. (1998), 'Food deprivation', in DeRose L., Messer E. & Millman S. (eds.), Who's hungry? And how do we know? Food shortage, poverty, and deprivation, United Nations University Press: Tokyo.

NCHS (2001), files 'wtage.txt' and 'wtinf.txt' downloaded on 7/4/2001 from the 'growth charts' section of www.cdc.gov/nchs, National Center for Health Statistics.

Pahl J. (1980), 'Patterns of money management within marriage', Journal of Social Policy, Vol 9.

Pahl J. (1983), 'The allocation of money and the structuring of inequality within marriage', Sociological Review Vol 31.

Pahl J. (1985), Private violence and public policy: the needs of battered women and the response of the public services, London: Routledge & Kegan Paul.

Pahl J. (1989), Money and Marriage, London: MacMillan.

Witherspoon S. (1988), 'Interim report: a woman's work', British Social Attitudes: the 5th Report eds. R. Jowell, S. Witherspoon, and L. Brook, Aldershot: Gower.

Vogler C. (1989), Labour Market Change and Patterns of Financial Allocation Within Households, Social Change and Economic Life Initiative, Working Paper 12, Oxford: ESRC/SCELI.

Woolley F.R. and Marshall J. (1994), 'Measuring Inequality Within the Household', Review of Income and Wealth, Vol 40 (number 4).