A minimum income for healthy living

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Abstract

Background—Half a century of research has provided consensual evidence of major personal requisites of adult health in nutrition, physical activity and psychosocial relations. Their minimal money costs, together with those of a home and other basic necessities, indicate disposable income that is now essential for health.

Methods—In a first application we identified such representative minimal costs for healthy, single, working men aged 18–30, in the UK. Costs were derived from ad hoc survey, relevant figures in the national Family Expenditure Survey, and by pragmatic decision for the few minor items where survey data were not available.

Results—Minimum costs were assessed at £131.86 per week (UK April 1999 prices). Component costs, especially those of housing (which represents around 40% of this total), depend on region and on several assumptions. By varying these a range of totals from £106.47 to £163.86 per week was detailed. These figures compare, 1999, with the new UK national minimum wage, after statutory deductions, of £105.84 at 18–21 years and £121.12 at 22+ years for a 38 hour working week. Corresponding basic social security rates are £40.70–£51.40 per week.

Interpretation—Accumulating science means that absolute standards of living, “poverty”, minimal official incomes and the like, can now be assessed by objective measurement of the personal capacity to meet the costs of major requisites of healthy living. A realistic assessment of these costs is presented as an impetus to public discussion. It is a historical role of public health as social medicine to lead in public discussion. It is a historical role of public health as social medicine to lead in public discussion. It is a historical role of public health as social medicine to lead in

Policy Implications

This study was triggered by the innovation in the UK of a statutory minimum wage. During intensive preliminary discussion of it there was virtually no reference to health needs that such an income should be capable of meeting. We seek to rectify this as a contribution to public health.

Half a century of research has provided consensual evidence of major requisites of adult health, and lower disease and death rates, particularly in nutrition, physical activity and psychosocial relations. These, together with standard attitudes to what otherwise is decent and necessary, can now be recognised as an objective basis for personal health. As yet, however, society has adapted little to this modern knowledge.

We have assessed minimal costs in the UK of such healthy living, selecting single young men, a relatively defined group, to establish the principle and to ease our initial foray into what we foresaw would be a difficult field; and also because they are a national priority of concern.

As will be illustrated, a huge volume of research at population and individual levels has been coalescing on conditions of health and wellbeing, on physiological status, risk factors and the prevention of disease, on morbidity and mortality. Equally remarkable, is the consensus of recommendations on lifestyles for the population at large that is flowing for the first time and with increasing consistency and confidence from this modern knowledge, and the specific guidance that, indeed, is now often given by government itself. From the perspective of public health, the possibility of meeting these needs should also be a major consideration of officially approved income policies. Be that as it may, there can be no questioning the duty of public health to disseminate the current consensus of scientific evidence—and to begin to price its application.

Methods

We were concerned with single healthy men, 18 to 30 years, living away from their family and on their own. Throughout we sought to identify cautious pragmatic, representative minimal costs per week in the UK. We used several sources. For diet, we used a direct survey. For exercise costs and some other components, we made ad hoc enquiries of official sources to determine inexpensive prices that would meet the defined needs (denoted below by an asterisk).

For most other items, including housing, we used data from the national Family Expenditure Surveys (FES)1 2 1994/5 and 1995/6 on the actual expenditure of households of never-married men aged 18–30. Our figures are based on the third of such households with the lowest income per person. These 63 households contained an average of 1.17 men/household (range 1–4), and had an average gross income of £159.99/week. We divided mean weekly household expenditure on any particular item by 1.17 to give cost per person.

Finally, for a few minor but essential items, where direct survey data were not available, we agreed a minimal figure based on such information as was available (denoted below with two asterisks). These summed to 4% of the total costs.

Costs have been corrected for inflation since the time of data collection using the apposite
There is overwhelming evidence of the role of food and nutrition in the maintenance and promotion of good health, from the avoidance of classic deficiency diseases to the role of antioxidants in the prevention of coronary heart disease and cancer. Consensual dietary guidelines recommend, for example, no more than 35% of total dietary energy from fat; a polyunsaturated/saturated fat ratio >0.45; <10% of dietary energy from non-intrinsic sugars; at least five portions of fruit and vegetables (400 g) excluding potatoes a day; 24 grams of non-starch polysaccharides a day; and two portions of fish a week, one of them oily. In addition, there are dietary reference values for major vitamins and minerals.

We estimated the costs of achieving these recommended intakes by using data from a detailed survey of shops in a very deprived area of London. These costs were assessed for a man of 18–30 years, weighing 69 kg, of average height (1.75 m) and body mass index 22.5. We selected foods that are commonly consumed by low income groups of the general UK population. The diet provides 2711 kcal/day, 22 kcal higher than the Estimated Average Requirement (EAR) for men aged 19–50 as, though typically in a “light” job, he is active in recreation. This is consistent with weight regulation.

Table 1 Food, the healthy diet

<table>
<thead>
<tr>
<th>Component</th>
<th>Local shops Mean cost (£/week)† if bought from:</th>
<th>Cheapest local superstore Mean cost (£/week)† if bought from:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread, breakfast cereals,</td>
<td>3.13</td>
<td>1.33</td>
</tr>
<tr>
<td>pasta and rice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potato and potato products</td>
<td>1.28</td>
<td>0.85</td>
</tr>
<tr>
<td>Fruit</td>
<td>1.80</td>
<td>1.56</td>
</tr>
<tr>
<td>Vegetables</td>
<td>1.62</td>
<td>0.97</td>
</tr>
<tr>
<td>Meat and poultry</td>
<td>3.41</td>
<td>2.54</td>
</tr>
<tr>
<td>Fish</td>
<td>1.39</td>
<td>0.82</td>
</tr>
<tr>
<td>Dairy products, eggs, fats</td>
<td>5.61</td>
<td>3.46</td>
</tr>
<tr>
<td>Total food eaten in home</td>
<td>18.24</td>
<td>11.53</td>
</tr>
<tr>
<td>Food not consumed (6%)††</td>
<td>1.09</td>
<td>0.69</td>
</tr>
<tr>
<td>Store cupboard ingredients (FES data)</td>
<td>1.83</td>
<td>1.83</td>
</tr>
<tr>
<td>Food and drink consumed outside the home‡</td>
<td>11.42</td>
<td>11.42</td>
</tr>
<tr>
<td>Total</td>
<td>32.58</td>
<td>25.47</td>
</tr>
</tbody>
</table>

†Based on data from a deprived area of London, with same groceries purchased from up to 205 local shops (small supermarkets, discount shops, garage forecourts, specialist shops and newsagents), or a local supermarket, April 1999 prices. See reference 13.

Bread, breakfast cereals, pasta and rice are important, acknowledging the role of food and alcohol as a medium for social interaction. The alcohol costs translate into an average of 62 kcal a day, equivalent to less than half of the “approved” weekly maximum of 21 units.

The cost of a healthy diet would therefore be £25.47 or £32.58 per week in total, depending on access to a competitively priced superstore. We used the mean of these two figures (£29.03) in our final calculation.

EXERCISE, PHYSICAL FITNESS, RECREATION (2)

Hopefully, the man will be active and enjoy a lot of walking, in comfortable shoes and away from traffic. Such exercise is rewarding in mental refreshment, in sociality, and weight regulation with its multiple short and long term metabolic benefits. On average, however, at such young ages, walking cannot be vigorous enough to exceed the 50% of maximum oxygen uptake, 65% of maximum heart rate, needed to improve and maintain aerobic health related fitness, wellbeing and multiple physical gains.

A choice of least expensive popular dynamic aerobic recreational sports is therefore budgeted: either jogging or fast cycling, whichever is preferred, on three or more days a week and sustained for at least 20 minutes. Minimal weekly expenditure for trainers, etc* or for purchase (annualised) of a reasonably geared lightweight bicycle and its maintenance, plus helmet and kit averages £1.54 a week.

Swimming vigorously, three times a week, again for spells of at least 20 minutes, is also offered as a further alternative especially in bad weather, and like jogging and cycling, in company if desired. Cost: 3 × £1.60 for enrolled local residents in the London boroughs and provincial cities that we consulted. Budgeted minimally for one week in four, this would come to £1.60/week over the year, including kit.*

Muscle strength resistance training (for example, “weights”) could also be encouraged (friends, competition, self image, metabolic gains). But no allowance has been included for it.

Minimal cost therefore averages £3.14/week. These activities should assure adequate regular aerobic exercise, and “listening to the body” with few if any side effects. As with the healthy diet, today’s consensus is also on the need in youth to establish attitudes and habits—here of exercise and fitness—that will matter increasingly as middle age approaches and over the lifetime.
with vulnerability to excess winter death; and indoor air is an important source of exposure to solvents, nitrogen oxide, carbon monoxide, asbestos fibres, radon and other pollutants, including biological allergens.\(^3\) Noise and poor sound insulation reduce privacy and may have a nuisance impact.

Regrettably, there are few data that allow the (large) cost of housing to be estimated in relation to health criteria. Our figures (table 2) are therefore based on average actual expenditure for the relevant age and income group, but we know that a disproportionate number of low income people live in dwellings of unsatisfactory condition. Some 1.5 million homes are considered unfit for human habitation because of disrepair or inadequate facilities for the hygienic preparation of food.\(^3\)

Thus, the costs of accommodation meeting required standards for health are likely to be higher than those quoted. Costs are also substantially higher for privately rented than for public housing, and they vary almost twofold across regions. Table 2 figures are therefore overestimates for some and underestimates for others, notably London.

OTHER COSTS OF LIVING (4)

The NHS of course provides medical care, and apart from an occasional prescription and the annual dental examination, there are generally no charges. These and other essential living costs are outlined in table 3. Some of the items listed in the table, such as personal care and clothing, have combined importance by both meeting physical needs and contributing to social integration.

SOCIAL INTEGRATION, SUPPORT NETWORKS\(^3\)–\(^5\) (5)

Lifestyles described in components (1) to (4) have included requisites for “social inclusion”. Conventionally, the touchstone of this work—that is, full time study or a paid job with training. Both demand social interaction, sharing, cooperating.

Some expenses are now specified, table 4, entailed directly in social participation, leading to personal wellbeing, good health—and at the same time to social cohesion, social capital. Group membership, mutual obligations, social roles, communicating, time, merely getting about, all realistically incur money costs, possibly multiple and recurrent, that vary with social class and may lose out with declining income.\(^6\)–\(^8\)

These relationships generate the bonds, extending from family and the interpersonal to wider networks of reciprocal attachment and affection that foster emotional growth, emotional and physical health, longevity. A widening range of physiological processes, cardiovascular perhaps most notably, are being associated with this personal-social environment, the most “modern” of the requisites for health and prevention being considered.\(^0\)–\(^4\) “The good life is through love and work.”\(^4\)–\(^4\)

SENSITIVITY ANALYSIS

The total of the five component costs, and their sensitivity to a few key assumptions, are shown in table 5. Region/country of residence, access to supermarkets, and the scope of the fitness regimen are important determinants. For example, a young man living in Wales, close to a cheap supermarket, having a limited exercise programme and generally very low outgoings, could perhaps “live healthily” on £106/week (net). On the other hand, living in London, depending on local shops, with an optimal

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Other costs of living</th>
</tr>
</thead>
<tbody>
<tr>
<td>£/week</td>
<td></td>
</tr>
<tr>
<td>Health—direct</td>
<td>0.04</td>
</tr>
<tr>
<td>NHS prescriptions</td>
<td>**1.00</td>
</tr>
<tr>
<td>Over the counter medicines and contraceptives</td>
<td>**1.00</td>
</tr>
<tr>
<td>Dental check up</td>
<td>0.09</td>
</tr>
<tr>
<td>Holidays</td>
<td>3.22</td>
</tr>
<tr>
<td>Personal care</td>
<td></td>
</tr>
<tr>
<td>Toiletries, soap, toothpaste, etc</td>
<td>1.24</td>
</tr>
<tr>
<td>Handwashing, etc</td>
<td>0.25</td>
</tr>
<tr>
<td>Clothes and footwear</td>
<td></td>
</tr>
<tr>
<td>Outerwear</td>
<td>4.97</td>
</tr>
<tr>
<td>Underwear and accessories</td>
<td>0.75</td>
</tr>
<tr>
<td>Footwear</td>
<td>2.79</td>
</tr>
<tr>
<td>Household goods and services</td>
<td></td>
</tr>
<tr>
<td>Equipment, including bedding</td>
<td>2.63</td>
</tr>
<tr>
<td>Cleaning, laundry, repairs, etc</td>
<td>0.86</td>
</tr>
<tr>
<td>Fares on public transport (work and leisure)</td>
<td>10.27</td>
</tr>
<tr>
<td>Savings</td>
<td>**3.00</td>
</tr>
<tr>
<td>Non-state pension contribution (2% of net income)</td>
<td>**2.99</td>
</tr>
<tr>
<td>Total</td>
<td>33.70</td>
</tr>
</tbody>
</table>

Data from FES except *. †Occupational Pensions Advisory Service (personal communication, 1999).

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Social, cultural, psychosocial integration</th>
</tr>
</thead>
<tbody>
<tr>
<td>£/week</td>
<td></td>
</tr>
<tr>
<td>TV rental and licence</td>
<td>**3.80</td>
</tr>
<tr>
<td>Books, magazines</td>
<td>1.33</td>
</tr>
<tr>
<td>Telephone rental and calls</td>
<td>2.24</td>
</tr>
<tr>
<td>Stationery, postage</td>
<td>0.51</td>
</tr>
<tr>
<td>Sports and social club subscriptions</td>
<td>0.40</td>
</tr>
<tr>
<td>Cinema, theatre, concerts, discos etc</td>
<td>2.39</td>
</tr>
<tr>
<td>Sociality at work</td>
<td>**0.20</td>
</tr>
<tr>
<td>Trade Union dues</td>
<td>**1.91</td>
</tr>
<tr>
<td>Gifts, including charity</td>
<td>**1.00</td>
</tr>
<tr>
<td>Total</td>
<td>13.78</td>
</tr>
</tbody>
</table>

Data from FES except * and **. †Varies; a low figure.
Possible personal margin

When deriving our costs we were unable to agree a minimal figure for a “personal margin”. Missing thus are any costs for refreshing computer skills, literacy and numeracy, should these not be put right at work. There is no allowance for contingencies such as an eye test when needed, or for emergencies. If he lives in the country, his bicycle could be inadequate.

Neither have we allowed for personal tastes, hobbies, individuality and enthusiasms that have not been covered in the “necessities” of (1) to (5), yet are so much entailed in quality of life. The “social integration” costs quoted in table 4 may be altogether too conservative; they do not, for example, allow for newspapers or for attending even one football match. Reciprocal arrangements with women friends are too variable to call. (Of course there is no allowance for smoking.)

To the extent that all such “marginal” components are omitted, our budget underestimates minimal costs for healthy living.

Discussion

A project in evidence-based public health is reported. Our “minimum cost of healthy living” for single young men is assessed at £131.86/week (UK 1999).

This figure does not allow for a personal margin (or for possible housing or Council Tax benefits). In today’s society, the disposable income that could meet this minimal cost may be posited as a necessary pre-condition of health.

Pay from the new national minimum wage (in April 1999), £3.00 an hour at 18–21 years and £3.60 at 22 years plus translates into disposable weekly income of £105.84 and £121.12, respectively, for a 38 hour working week after statutory tax and social security deductions. At 18–21, 51 hours, and at 22 plus 42.5 hours would have to be worked to earn the income needed to meet our assessed minimal costs of healthy living.

On basic social security, the jobseeker’s allowance at ages 18–24 is £40.70/week and £51.40 at 25 years and over (again April 1999). We thank the London School of Hygiene and Tropical Medicine’s UK Health Policy Group (chair: Professor M Coleman), and are greatly obliged to the Low Pay Unit for the data on the National Minimum Wage and Social Security.
A minimum income for healthy living

Contributors
JM directed the study and drafted much of the text. AD and ED contributed the nutrition component, 1; JM, 2; and PW, 3; and DW, who was also responsible for analysing the FES and RPI data, 4. All authors shared in the final formulation and text.

Funding: the dietary study was funded by North Thames NHS Executive, ICA 12, who permitted publication of the data on food prices. The Academic Initiative Fund of the London School of Hygiene and Tropical Medicine defrayed running costs.

Conflicts of interest: none.

Addendum

Update of principal figures, June 2000.
Minimum income for healthy living: £136.66 per week.
(Uprated by Retail price index.)
National minimum wage, disposable income: £112.30 pw at 18-21 years. £122.64 pw at 22 years plus. (Uprated for statutory deductions and increase of NMW at 18-21 years by 20 p a year.)
Jobseeker’s allowance; £41.35 at 18-24 years. £52.20 at 25 years plus.


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