PART 6

POPULATION NUTRITION AND
THE ROLE OF GOVERNMENT
CHAPTER 19

BARRIERS TO PROGRESS TOWARDS A HEALTHIER DIET

The Need for Government Action

Norman J. Temple

Outline

• Barriers to a healthy diet:
  • Energy density of food, nutritional value, and cost of dietary energy
  • Food costs and healthy diets
  • Salt content of food
  • Unhealthy oils
  • Food labels
  • Food advertising
  • Food eaten in schools
• Nutrition policy and government action
• Nutrition policies, disease prevention, and cost-effectiveness

Objectives

At the completion of this chapter you should be able to:

• Explain the relationship between the energy density of food, the nutritional value of food, and the cost of dietary energy.
• Discuss the effect of the extra cost of healthy foods on the cost of a healthy diet.
• Discuss how the following factors act as barriers that impede progress towards healthier diets: the salt content of food, the use of trans-fatty acids and tropical oils in foods, food labels that are confusing, food advertising on TV that targets children, and the sale of unhealthy foods in schools.
• Discuss the merits of using nutrition policies implemented by governments as a way to improve the health value of the diet of the population.
• Discuss the cost-effectiveness of nutrition policies implemented by governments as a way to improve population health and prevent disease.
• Compare the cost-effectiveness of nutrition policies and that of health care (including drugs) as a means to improving population health.
**Abbreviations**

- CDE  
  
  cost of dietary energy
- DALY  
  
  disability-adjusted life years
- ED  
  
  energy density
- QALY  
  
  quality-adjusted life years

1. INTRODUCTION

This book contains a great deal of valuable information that will help community nutritionists in their work of providing education and advice to the general population. By these means, people’s diets can be much improved. Explaining to people how they should eat in order to be healthy is quite easy, but actually persuading them to follow the advice is far more challenging. It is therefore important to recognize the limitations of what a community nutritionist can achieve when the tools available are mainly the spoken and written word.

In this chapter we examine how the food environment creates serious barriers to improving diets. This leads to a discussion of the importance of the implementation of nutrition policies by governments. As you will see, such an approach can both be effective and cost relatively little to implement.

2. BARRIERS TO A HEALTHY DIET

Several barriers stand between people and a healthy diet. Here, we examine several that community nutritionists should be aware of.

2.1 Energy Density of Food, Nutritional Value, and Cost of Dietary Energy

Studies conducted in developed countries have analyzed the relationship between the cost of different foods and their nutritional value (Drewnowski, 2004; Drewnowski et al., 2007). In these studies, researchers looked at food in terms of the following three key factors:

- Energy density (ED): the amount of energy per 100 grams of food
- Nutrient density: the content of micronutrients per 1000 kcal
- Cost of dietary energy (CDE): the price of food per 1000 kcal

In general, energy-dense foods (foods with a high ED) are relatively cheap sources of energy (foods with a low CDE). This includes foods such as refined cereals and foods with added sugar and fat. Unfortunately, such foods typically have a low nutrient density. The “opposite” of these foods are those with a low ED, including many foods with a high nutrient density, such as fish, lean meat, vegetables, and fruit. These generally have a high CDE.

It is important to remember that when our bodies send a signal that we are hungry, that we satisfy this hunger with energy, not micronutrients. Consider now a person who needs to buy food for a family but is poor. He or she will learn by trial and error which foods are the cheapest ones for providing the required amount of energy and therefore satisfying the appetite; far less priority will be given to the nutritional value of this food. Consequently, a low-cost diet is likely to have a high ED and a low nutrient density. Likewise, when people select a healthier diet, their food costs typically increase by about 20%.

The net result of this scenario is that low-income people are pressured to select foods and maintain a diet with a low content of several micronutrients, such as vitamin C and beta-carotene, but a high ED (Darmon & Drewnowski, 2008). Such a diet is doubly unhealthy: not only is it relatively poor in several essential micronutrients, but its high ED is also believed to be an important factor leading to spontaneous overeating and thence overweight (Rolls, 2009. These findings are especially relevant to developing countries where average incomes are much lower than in highly developed countries.

The editors of this book carried out studies in South Africa in order to better understand how food costs may pressure low-income people to consume an unhealthy diet. In one study we investigated the relationship between the CDE (cost per 1000 kcal) of foods and their ED (kcal per 100 grams) (Temple & Steyn, 2009).
Table 19.1 summarizes the findings. We observed an extremely wide range in the CDE of foods: obtaining 100 kcal from lettuce, cucumber, and spinach costs approximately 50 to 100 times more than from oil, sugar, rice, maize meal, and margarine. The studies show that poor people simply cannot afford foods with a high CDE.

<table>
<thead>
<tr>
<th>CDE</th>
<th>ED</th>
<th>Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>low</td>
<td>maize meal, oats, lentils, rice, dry beans, spaghetti</td>
</tr>
<tr>
<td></td>
<td>intermediate</td>
<td>bread</td>
</tr>
<tr>
<td></td>
<td>high</td>
<td>sugar, biscuits, peanut butter, margarine, oil</td>
</tr>
<tr>
<td>Intermediate</td>
<td>low</td>
<td>milk, vegetables, orange juice, apples, bananas, tinned baked beans, tinned pilchards (sardines)</td>
</tr>
<tr>
<td></td>
<td>intermediate</td>
<td>chicken, minced beef, eggs, jam</td>
</tr>
<tr>
<td></td>
<td>high</td>
<td>cheese, sweets, chocolate</td>
</tr>
<tr>
<td>High</td>
<td>low</td>
<td>tuna, green leafy and raw vegetables (e.g., tomatoes, cucumber, lettuce)</td>
</tr>
</tbody>
</table>


Among foods with a low CDE, some have a high ED (such as biscuits, peanut butter, and oil) whereas others have a low ED (such as oats, lentils, and rice). We see the same pattern with foods of intermediate CDE: some have a high ED (such as sweets and chocolate) while others have a low ED (such as milk, vegetables, and apples). From this it follows that by carefully selecting which foods to eat, it is possible to consume a diet that has both a low cost and a relatively low ED. Moreover, many low-ED foods are also nutrient dense. However, selecting a diet that is both cheap and has a low ED requires that those who shop for food be aware of these issues and have a desire to eat a healthier diet. In reality, this is simply not realistic for the great majority of people. In practice, most people will select generous amounts of less healthy – but tasty – foods with a high ED, such as sweets, biscuits, jam, and chocolate, while having inadequate amounts of healthier foods such as oats, beans, carrots, and apples.

2.2 Food Costs and Healthy Diets

In our next study we looked at the cost of healthy foods and of a healthy diet in South Africa (Temple et al., 2011). We first compared the prices of six pairs of food items; each pair consisted of a commonly consumed food and a healthier version of that food. This comparison tells us the extra cost of improving the health value of the diet by making simple food substitutions. The food items were: bran flakes (in place of corn flakes), wholewheat bread (white bread), brown rice (white rice), fat-free milk (full cream milk), margarine or fat-reduced spread rich in polyunsaturated fats (brick margarine, high in saturated fat), and lean minced beef (high-fat minced beef). The healthier foods mostly cost 10% to 60% more on a per weight basis (cost per 100 grams). However, it is important to remember that healthier foods have a lower ED. As a result, when the foods prices were compared based on CDE (cost per 1000 kcal), the cost differences became expanded: the healthier foods were then between 30% and 110% more expensive.

Clearly, healthy foods cost considerably more than similar but less healthy food choices. What impact does this have on the total cost of a healthy diet? In order to determine this, we compared the cost of typical South African diets and healthier versions of these diets (Temple et al., 2011; Temple & Steyn, 2011). Our estimations reveal that the healthier diets cost about 70% more than typical diets. For a family of five people whose household income is exceeded by one third of the population, the increased food costs represent 30% of total household income. This figure could be reduced to about 10% to 15% by carefully designing the healthy diet so as to reduce the cost. For example, the diet could include more oats, lentils, dry beans, tinned...
pilchards, and tinned baked beans. However, that would require a level of motivation and dietary knowledge that most people do not have. These findings lead us to the conclusion that the healthier diet is likely to be unaffordable except for people in the top 20% or so of income levels.

Our calculations are based on food costs and incomes in South Africa, a middle-income country. The findings should only be extrapolated to other countries with much caution; factors such as local food prices, the foods selected, and income levels will have a major impact on the overall conclusions.

### 2.3 Salt Content of Food

Many foods contain excessive amounts of salt. In developed countries, around 75% to 80% of dietary salt comes from processed foods (Hooper et al., 2004), which results in an excessively high intake for most people, typically around 8 to 10 grams per day. This plays a major role in the causation of hypertension (He & MacGregor, 2013; Aburto et al., 2013) and is strongly linked to cardiovascular disease (CVD) (Aburto et al., 2013) as well as stomach cancer (WCRF/AICR, 2007).

### 2.4 Unhealthy Oils

Partially hydrogenated oils contain trans-fatty acids. Major foods sources include hard margarine, cakes, doughnuts, cookies, pastry, and deep-fried foods. As discussed in Chapter 12, trans-fatty acids significantly increase the risk of ischaemic heart disease (IHD).

Saturated fats are another kind of fat found in food that are undesirable because they are linked to IHD. Tropical oils, such as palm oil, are rich in saturated fat and are commonly used in many countries for cooking.

### 2.5 Food Labels

In Chapter 14 we discussed the problems seen with food labels used in many countries. In summary, the food composition is presented on labels in a way that is difficult for most people to comprehend.

### 2.6 Food Advertising

Many studies have been carried out in developed countries regarding food advertising that targets children. The great majority of this advertising is on TV, and 80% to 90% of it is for unhealthy food choices or for fast-food restaurants (Batada et al., 2008; Harrison & Marske, 2005). These advertisements rarely promote the consumption of fruit and vegetables. Mchiza et al. (2013) carried out a study of food advertising on both children’s and adult’s TV in South Africa. The pattern of advertising there was found to be similar to what is seen in Western countries.

Not surprisingly, such advertising leads to higher sales of the advertised foods (Coon & Tucker, 2002; Wiecha et al., 2006). We conclude that the effects of this may be damaging to children’s health because studies reveal that children who see more food advertisements are more likely to become overweight (Chou et al., 2008).

### 2.7 Food Eaten in Schools

Most schools in North America have vending machines that allow pupils to buy foods or beverages that are energy dense but nutrient poor (i.e., “junk food”) (Finkelstein et al., 2008). Temple and colleagues (2006) investigated this situation in schools in Cape Town, South Africa. They found that when adolescent pupils purchased food at school, it was mainly unhealthy items.

### 2.8 Barriers to a Healthy Diet: Comments

It is quite easy for nutritionists to give advice to the people living in their community, but it is far more challenging to persuade people to actually improve their diets. We have now reviewed various barriers that impede progress. Understanding the nature of these barriers helps nutritionists develop better action plans.
Most of the evidence discussed above is based on research carried out in North America and parts of Europe. Some research conducted in South Africa has also been mentioned. However, every country tells its own story. It is therefore essential that community nutritionists carefully examine their local situation with respect to food prices, food advertisements, food eaten in local schools, and so forth. Based on this assessment of the local situation, the following questions need to be answered:

- What are the barriers that cause people to ignore much of the advice that community nutritionists give?
- How can community nutritionists improve their message in order to better overcome these barriers so that more people follow dietary advice?

### 3. NUTRITION POLICY AND GOVERNMENT ACTION

As a result of the barriers discussed above, there are limits on what even the most skilled and dedicated community nutritionist can accomplish. It follows, therefore, that in order to effect significant improvements in the diet consumed across a population, there must be action to overcome the various barriers. This can only be done by the implementation of nutrition policies by governments.

Policies, including government action, that are designed to improve public health have a long and highly successful history. For example, the terrible scourge of major infectious diseases, such as cholera and typhoid, was largely defeated in the industrialized countries in the nineteenth century by the provision of safe drinking water, sewage disposal, and proper hygiene. In recent decades there have been many more examples of this policy approach to the improvement of public health. One example is the banning of smoking in public places in many countries. Similarly, roads have been made safer by the criminalization of drunk driving and the mandatory use of seat belts. Such policy approaches can often achieve a major benefit at low cost.

As we shall see next, there is much evidence that nutrition policies can also deliver major health benefits at relatively low cost. The proposed interventions have been arranged in approximate order of cost-effectiveness, starting with the lowest cost. An explanation of cost-effectiveness is given later in this chapter. In Chapter 20, we describe the development and implementation of policies.

#### 3.1 Reducing the Salt Content of Food

As noted above, the excessive level of salt in food is linked to hypertension and cardiovascular disease. The most effective solution to this problem is the implementation of government policy requiring that the salt content of processed foods be cut by at least half (Temple, 2011). Salt intake in most countries is typically around 8 to 10 grams per day; a reasonable goal is to reduce this to no more than 6 grams (roughly 2300 mg sodium) per day. A lower amount (1500 mg sodium) would be even better. Tests show that consumers have little problem accepting food with a much-reduced salt content (Li et al., 2009; Karanja et al., 2007). Such a policy would cost extremely little to implement and we can confidently predict that it would generate substantial health benefits (Bibbins-Domingo et al., 2010; Asaria et al., 2007).

Although, as we saw, in developed countries around 75% to 80% of dietary salt comes from processed foods, in many developing countries salt added during cooking and at the table is a major source. For that reason, an educational component of a salt-reduction strategy is needed in many countries.

#### 3.2 Unhealthy Oils

A policy approach by governments is also the most effective means to reduce use of hydrogenated oils and thereby cut intake of trans-fatty acids. This would help reduce population risk of IHD. Denmark has implemented one such policy, while serious attempts have been made in some American cities to ban these fats from food sold in restaurants and bakeries. The cost of such a policy depends on the cost of alternative oils.

Where possible, tropical oils should be replaced by oils rich in unsaturated fats. For example, as a result of government policy, palm oil was replaced with soybean oil in Mauritius (Chapter 13). However, as discussed later, this policy is far less cost-effective than one focused on trans-fatty acids.
3.3 **Countering Excessive Intake of Alcohol**

Alcohol is another important barrier to a healthy diet. It is estimated that alcohol is responsible for 3.8% of all deaths globally, about the same as the number caused by smoking (Rehm et al., 2009). However, the rates vary greatly between different regions. The most effective ways to counter this problem are to make alcohol more expensive and less available, and to ban alcohol advertising. These are highly cost-effective strategies for reducing alcohol-related harm (Anderson et al., 2009).

3.4 **Improved Food Labels**

Nutrition labels should be easy to understand. Unfortunately, as briefly mentioned earlier, food labels used in many countries are confusing. It is obviously a challenging enterprise to set up such a system in developing countries. The food labels used in each country need to be carefully designed based on local factors, such as the major nutrition-related health challenges (e.g., undernutrition or obesity), levels of education, and the types of foods sold (including packaging and whether food is sold in the street, a market, or a supermarket). A system that shows much promise has been developed in Britain and is based on traffic lights. It is described in Chapter 14. Traffic Lights labels, or some other simple system, may be especially valuable in developing countries because they are quite easy for people with a low educational or reading level to understand.

3.5 **Nutrition Policy, Children, and Adolescents**

Several important nutritional policies concern children and adolescents. An excellent place to start improving the diet is a ban on the advertising of unhealthy foods on children’s TV. Such a policy has been put in place in several countries or jurisdictions (Caraher et al., 2006). Policies are also needed in the school food environment. Meals served in schools should be of high nutritional quality. Likewise, schools should be compelled to restrict the sale of unhealthy food. Allowing the sale of such food means that schools are – implicitly – conveying an educational message that is the opposite of the one stated in food guidelines. An important potential benefit of these policies is that improved dietary habits will, at least to some extent, carry over into adulthood.

There have been positive developments in recent years in the USA and other Western countries with respect to implementing policies that take the school nutrition environment in the right direction. In 2010, Abu Dhabi (part of the United Arab Emirates) declared a policy that bans unhealthy food from schools (El Shammaa, 2010).

3.6 **Food Prices and Vouchers**

Taxes and subsidies can be employed as tools to change food prices and thereby encourage healthier eating patterns. Such policy is based on price elasticity, a well-established principle in economics stating that consumption falls in response to a rise in price. This has been clearly shown for both smoking and alcohol (Anderson et al., 2009; Herttua et al., 2008; Meier & Licari, 1997). Adjusting food prices can therefore lead to a shift of eating patterns in a healthier direction (Andreyeva et al., 2010).

Studies carried out at worksites and in high schools in the USA demonstrated that halving the prices of healthier food choices (e.g., low-fat snacks sold in vending machines and choices of fruit and salad ingredients sold in cafeterias) led to a doubling or trebling of sales (French et al., 1997, 2001). Such evidence supports the argument that if governments use taxes and subsidies to manipulate food prices, desirable changes in eating patterns result (Powell et al., 2010). Several prominent nutritionists in the USA have argued in favour of a tax on sugar-sweetened beverages (Brownell et al., 2009). As price elasticity is generally stronger among the least affluent socio-economic groups, such a strategy is likely to be especially effective in developing countries.

The best way to design a programme is probably to make sure extra costs on some foods are cancelled out by savings on others (Nnoaham et al., 2009). This ensures that there is no overall effect on the cost of the diet as a whole, and that the cost to the government should be minimal.

An alternative strategy is giving vouchers to needy people, who exchange the vouchers for healthy foods (Finkelstein et al., 2004). For example, researchers in both the UK and USA reported an increased intake of fruit and vegetables when low-income women were given vouchers that could be exchanged for these foods (Burr et al., 2007; Herman et al., 2006). A closely related issue is that of the common unavailability of healthy food choices in local food shops (Temple et al., 2011). This is a particular challenge for rural populations, in which
people often lack convenient access to a supermarket or large food store. Here again, effective action may require government intervention.

4. **COMPARING THE COST-EFFECTIVENESS OF MEDICAL TREATMENT AND PREVENTATIVE NUTRITIONAL POLICIES**

In order to assess the potential value of nutrition policies, a system is needed for estimating their cost-effectiveness. There are various ways to accomplish this. Such estimates are needed because they provide an objective basis for comparing different policies and thence choosing which ones should be implemented. Understanding issues of cost-effectiveness is also valuable if community nutritionists need to argue the case to government officials as to why particular nutrition policies should be implemented.

Many analyses have been made in the USA and other developed countries regarding the cost-effectiveness of medicine (Neumann, 2005). Benefits achieved as a result of medical interventions are often quantified based on how many quality-adjusted life years (QALY) are generated. The use of QALYs allows all types of interventions to be directly compared, both those that prevent deaths and those that improve the quality of life. The cost-effectiveness of diverse medical interventions can then be estimated based on cost per QALY. Often, as an alternative to QALY, benefits are expressed in terms of a similar measure, called disability-adjusted life years (DALYs).

The cost-effectiveness of medical interventions cover an extremely wide range. Some interventions are relatively inexpensive. Examples include aspirin therapy for the prevention of cardiovascular disease in persons at elevated risk, immunization of children, and screening for tobacco use followed by a brief intervention (Maciosek et al., 2006). However, those are the exception. The cost of most medical interventions is the range of $20,000 to $200,000 per QALY. Around one in eleven preventative interventions cost more than $250,000 per QALY (Cohen et al., 2008). These costs estimates are from the USA; they will be much lower in most other countries.

For example, consider medical treatments for hypertension and for the prevention of IHD. Drug treatment of hypertension for non-diabetics is estimated to cost approximately $53,000 per QALY (Kahn et al., 2008). Statins are a family of drugs widely prescribed for treating high blood cholesterol so as to prevent IHD. Their cost-effectiveness varies from about $20,000 per QALY for patients at high risk of IHD to tenfold more for patients at intermediate risk (Franco et al., 2005). (The cost-effectiveness of an intervention is much lower with high-risk patients as doctors need only treat a relatively small number of patients in order to prevent a new episode of IHD. But with patients at higher risk of IHD, several times more patients must be treated in order to prevent a new episode of IHD.) These cost estimates are based on brand-name drugs. Such drugs are usually still covered by a patent and are relatively expensive. When the patent has expired, any drug manufacturer is free to make and sell the drug. The drugs are then known as generic drugs and are relatively cheap.) Use of generic drugs greatly reduces the cost (Shrank et al., 2011). However, even with the use of generics, the cost of intervention with statins for the prevention of IHD is still typically in the range $8000 to $50,000 per QALY.

How do the costs of medical policy approaches compare with the cost of nutrition policy approaches? Australian investigators reported that reducing the salt content of food would cost approximately US$1180 per QALY (Neal, 2007). Implementation of a policy that leads to the removal of trans-fatty acids would also be highly cost-effective as the cost is modest and it should prevent at least 13,000 IHD deaths per year in the USA. Overall, if these numbers were translated into dollars per QALY, they would doubtless reveal a low cost, likely well under $2000 per QALY.

To summarize:

- For the medical treatment of hypertension and prevention of IHD, most medical interventions cost in the range $8000 to $50,000 per QALY (in the USA). If brand-name drugs are used, this cost is much higher.
- Researchers estimate that nutrition policy approaches can deliver the same health improvements for well under $2000 per QALY.
In a nutshell, a strategy based on implementing preventative nutrition policies can be far more cost-effective than one based on medical diagnosis and treatment (Chokshi & Farley, 2012).

Health promotion interventions are another valuable example of the cost-effectiveness of nutritional policy approaches. Many studies have been carried out in the USA and other developed countries with the goals of reducing excess weight, lowering the blood cholesterol and blood pressure, and encouraging people to quit smoking and exercise more. Many such interventions have been done at worksites, and in these settings, a dollar spent on health promotion can generate several dollars of return for the employer, in the form of reduced days of sickness and correlating higher productivity (Aldana, 2001; Carnethon et al., 2009). Of course, much of this benefit comes from activities unrelated to nutrition. The evidence suggests that interventions that enhance health and prevent disease are cost-effective.

Earlier we discussed several other nutrition approaches, namely policies to counter excessive intake of alcohol, to create improved food labels, to ban the advertising of unhealthy foods on children’s TV, to ensure that food eaten in schools is of high nutritional quality, to change food prices by means of taxes and subsidies, and to give vouchers that can be exchanged for healthy foods. Unfortunately, there is a serious lack of reliable estimates of the cost-effectiveness of these policies. However, it is logical to assume that they are all reasonably cost-effective, with one exception: the policy of giving vouchers may prove to be quite costly.

5. THE COST-EFFECTIVENESS OF NUTRITION INTERVENTIONS IN DEVELOPING COUNTRIES

While the details of costs and benefits may be very different in developing countries than in countries such as the USA, we can confidently predict that the same principle holds true: nutrition policies can be far more cost-effective than therapeutic medicine.

Developing countries commonly fail to deliver basic medical services to much of their population, because the cost of medical treatment is often too high and the available resources are inadequate. Studies in South Africa reveal that most people with hypertension or who require statins for treatment of high blood cholesterol fail to receive the required drugs (Maritz, 2006; Steyn, 2006). The situation is much worse on the rest of the continent. For this reason, not only may a strategy based on implementing nutrition policies not be the better policy, but it may also be the only realistic policy.

While information is limited, researchers such as Horton (2008) have reviewed and estimated the costs of various nutrition interventions in developing countries. Costs below are expressed in US dollars per target person per year. Horton (2008) found that fortification of food with micronutrients (iodine, iron, zinc, and vitamin A) is the least costly intervention: $0.05 to $0.24. Providing people with micronutrients in the form of supplements is somewhat more costly: about $0.20 to $1.70. The cost of educational interventions is: $0.20 to $2 for mass-media education programmes; $2 to $3 for breast-feeding promotion; and $5 to $10 for teaching such programmes as home gardening and growth monitoring. Community-based nutrition programmes cost from $2 to $10 or more depending on the level of intensity. By far the most costly programmes are those where people are given food or where it is subsidized: $36 to $170.

It is very useful to know not only the actual cost of different programmes, but also their cost-effectiveness. The cost-effectiveness of the above programmes is listed below roughly in order of most to least cost-effective:

- Breast-feeding promotion and vitamin A supplementation
- Iron and iodine fortification and zinc supplementation
- Community-based projects
- Feeding programmes and food subsidies

Several organizations, including the World Bank and the World Health Organization, carried out a major project known as the Disease Control Priorities in Developing Countries (DCP2) (Jamison et al., 2006). They estimated that reducing the salt content of manufactured foods, accompanied by an educational campaign, would cost between $1330 and $3060 per DALY. This estimate is surprisingly high. Gaziano et al. (2007) argued that salt reduction by way of public education costs no more than $200 per DALY and could even
be cost-saving. A policy designed to replace trans-fatty acids has an estimated cost of a mere $25 to $73 per DALY. In stark contrast to this, a policy of replacing saturated fat with monounsaturated fat in manufactured products, accompanied by a community media campaign, is far more expensive, costing from $1860 to $4010 per DALY.

A cost analysis was carried out in Argentina, a country in which chronic diseases of lifestyle are now common (Rubinstein et al., 2009). In this setting, the prevention of cardiovascular disease is a priority. The most cost-effective intervention is one designed to reduce the salt content of bread, costing a mere US$40 per DALY. The next best strategy is mass education to reduce hypertension, hypercholesterolaemia, and obesity ($140 per DALY). Drug therapy aimed at the prevention of cardiovascular disease or the treatment of hypertension is many times more costly, at about $950–2030 per DALY for less costly therapies and $19,000 when statins are used. These findings again underline the superior cost-effectiveness of nutrition policies over therapeutic medicine.

It must be stressed that comparative cost-effectiveness varies greatly from country to country depending on local factors; there is no such thing as a “one size fits all” approach. Suppose, for example, that the cost of delivering supplements of vitamin A and iodine to a particular population is similar. But if the population has a high prevalence of vitamin A deficiency and this is causing many problems but problems with iodine are uncommon, then the vitamin A programme will be far more beneficial and therefore have a much superior cost-effectiveness.

Finally, it is important to bear in mind that poor nutrition causes a reduction in productivity at work, owing to impaired cognitive skills and decreased ability to engage in physical work. Therefore a nutrition programme may bring about not only health benefits, but also economic benefits from increased productivity at work.

6. LESSONS FROM DEVELOPED COUNTRIES

It is instructive to look at how developed countries have approached health care and nutrition policies: their results hold important lessons for developing countries.

A first class health-care system is typically viewed as an essential service. Costs are seen as something that should be constrained where possible. Nutrition policies, by contrast, are usually given far lower priority by most governments. One important factor responsible for this is pressure on governments by large, highly profitable industries. The pharmaceutical industry is one of the most profitable industries in the world, with profits dependent on the willingness of governments and populations to pay many billions of dollars for drugs for the treatment of disease. The food industry has exerted much pressure on governments in many countries. As a result, governments often adopt nutrition policies that serve the commercial interests of the food industry but are damaging to the health of the population (Nestle, 2007). This then leads to increased demand for medical treatment.

This whole approach is irrational as it causes much damage to both population health and national finances. Implementation of a evidence-based nutrition policies makes far more sense. Such policies can help prevent much disease and do so at much lower cost than is generally achievable with drugs. Directing finite resources to where they can be most effective makes obviously more sense. Developing countries can learn from and avoid making the same mistakes as developed countries.

DISCUSSION QUESTIONS AND EXERCISES

1. What are the major food sources of salt for the population in your community? What is the approximate daily intake of salt per person? What would be the most effective way to cut salt intake? How much decrease in salt intake is a realistic target? Try to determine how much a salt intake reduction program would cost. Based on the answers you obtain, discuss what policies should be implemented.

2. Your local minister of health announces that she plans to make generic statins widely available. She plans to supply the drug to all patients who receive a prescription for it from their physician. Compare this policy with other policies relevant to heart disease. Write a letter to the minister explaining why you agree or disagree with her policy.

doi:10.15215/aupress/9781927356111.01
3. Look at the food guidelines commonly used in your country. Do they recommend a higher intake of wholegrain cereals, fruit, fish, and lean meat? Investigate the prices of these foods in local shops. Estimate the extra cost incurred if people follow the food guidelines for these foods. Can people in your community afford the extra cost of following the food guidelines?

4. Which has the most impact on the health of the people in your community: machines selling cola beverages in schools, the use of trans-fatty acids in food, alcoholic beverages, or dietary deficiencies of micronutrients? Based on your answer, what nutrition policies should be implemented?

REFERENCES

doi:10.15215/aupress/9781927356111.01


ADDITIONAL RESOURCES


