

## 2.2 Life factors

### Genetic factors

Each living cell in the human body has a nucleus with 23 pairs of chromosomes inside it. In each pair of chromosomes, one chromosome comes from the father and one from the mother. Each chromosome carries units of inheritance, known as genes, and these genes interact to create a new set of instructions for making a new person.

Genes are made of a substance called deoxyribonucleic acid (DNA). The DNA contains the instructions for producing proteins – it is these proteins that regulate the development of a human being. Although half of your chromosomes come from your mother and half from your father, your genetic pattern can be quite different from the patterns of either of your parents.

#### Did you know?

Although you inherit half of your chromosomes from your mum and half from your dad, you are not simply half your mum and half your dad – genetic inheritance is much more complicated! In 2006, scientists discovered that individuals often have multiple copies of the same gene and that the different numbers of copies may be the reason for people being different from one another.



A good example of the interaction of genes and the environment would be the genetic disorder called phenylketonuria or PKU for short. PKU is a rare genetic condition which prevents a person from being able to process a substance called phenylalanine, which is found in many foods. This condition causes the build-up of harmful substances in the body that in turn damages the development of the brain and can eventually kill the person. The condition cannot be cured and a baby born with undetected PKU would fail to meet developmental milestones and would experience developmental delay as their brain became damaged. PKU could result in severe learning disability, the sort of damage that might be regarded as arrested development.

Nowadays babies born in the UK are likely to be tested for this genetic condition soon after birth. If PKU is discovered then the child can be given a special diet

and medication to prevent the build up of harmful substances. Changing the infant's environment will prevent the genetic condition from causing damage. So although we can't yet alter nature (a person's genes) we can alter the environment so that the underlying genetic condition does not cause illness and people can go on to experience normal healthy development. Nurture always interacts with nature and sometimes it is possible to compensate for, or even prevent, any harmful effects of 'biological programming'.

### Cystic fibrosis

Cystic fibrosis is caused by a defective gene. This gene is thought to be carried by as many as 4 per cent of the UK population. The gene is recessive which means that children born to people who carry the gene will not develop cystic fibrosis unless both parents are carriers. When both parents have the defective gene, there is a one-in-four chance that their child will be born with cystic fibrosis.

Cystic fibrosis results in the production of a defective protein that can cause the lungs to become clogged with thick sticky mucus. People with cystic fibrosis may have problems absorbing nourishment from food and they may also suffer from respiratory and chest infections. In the past, children with cystic fibrosis often had a very short life expectancy but modern medical treatments have succeeded in extending it.

We can change the environment in order to help people with cystic fibrosis. Physiotherapy can help people to clear mucus from their lungs and various drugs can help breathing and control infection in the throat and lungs. People may be offered a special diet and drugs to help with food absorption. In the future it may become possible to use a form of genetic therapy to replace the faulty gene and so cure the condition.

### Coeliac disease

A substance called gluten is found in foods made from wheat, barley and rye. People who do not have coeliac disease usually experience no ill effects from eating gluten. In people with coeliac disease, gluten causes the body's immune system to attack the lining of the small intestine. The small intestine becomes damaged and people with coeliac disease have difficulty absorbing vitamins and minerals. These problems can lead to further diseases including diarrhoea, anaemia and osteoporosis.



You are more likely to develop coeliac disease if you have a close relative with the condition, and the condition is often assumed to result from genetic causes although the exact cause is not yet known. It is possible that some people may inherit a susceptibility to the condition which is then triggered by an environmental event such as an infection in the intestine. The medical treatment for coeliac disease is the gluten-free diet.

### Did you know?

Some food products carry a symbol and statement to show they are suitable for coeliacs.



## Asthma

Approximately one in 13 adults is treated for asthma – a disease that causes airways to the lungs to become swollen. The causes of asthma are not fully understood but genetic inheritance, diet and pollution may all contribute to causing the disease.

## Brittle bone disease

Children born with brittle bone disease are likely to fracture or break their bones easily because their bones develop without the right amount or type of a protein called collagen. Brittle bone disease is genetic.

Often the problem is passed on from a person's parents, although brittle bone disease can develop from a genetic mutation; this means that a child might have the condition even though it does not run in the family. There are different types of the disease and some types are more serious than others. Brittle bone disease is different from osteoporosis. Osteoporosis is a different type of disease that can make bones more likely to break later in life.

Although brittle bone disease has a genetic cause, people can often be helped through physiotherapy, assistive equipment and drug treatments to help strengthen their bones.

## Rheumatic disease

The term rheumatic disease is used to cover a wide range of disorders usually involving inflammation of the joints but also disorders involving ligaments, bones and muscles. Rheumatoid arthritis is an example of a rheumatic disease that affects about eight in every thousand people in the UK. It is a painful and disabling condition that causes swelling and damage to the cartilage and bones around joints, most commonly the smaller bones in the hands, feet and wrists.

You have an increased risk of developing rheumatoid arthritis if you have relatives with the disease. However some people develop rheumatoid arthritis without anyone in the family having a history of the disease. The causes of rheumatoid arthritis are not fully understood yet, but it is likely that both genetic and environmental influences play a part. Rheumatoid arthritis is not simply transmitted from one generation



## 2.3 Biological influences before birth

The environment inside a mother's womb can have a dramatic influence on the development of a child. If a woman smokes or drinks during pregnancy then nicotine or alcohol can affect the development of the foetus. Nicotine can limit the amount of blood and nutrition that reaches the foetus. Children born to mothers who smoke tend to weigh less at birth and are more prone to infections. If you smoke during pregnancy then it is possible that your child may have difficulties regarding attention and learning in school. Drugs can also damage a child in the womb.

### Foetal alcohol syndrome

Alcohol can have a negative influence on a child's development before birth. Mothers who drink large amounts of alcohol when pregnant may give birth to children with foetal alcohol syndrome. Children with this condition tend to be smaller and to have smaller heads than normal. These children may also have heart defects and learning difficulties.

### Infections during pregnancy

Infections such as rubella (a type of measles) and cytomegalovirus (a herpes-type virus) can attack the foetus if a mother becomes infected. Rubella is particularly dangerous during the first month of pregnancy. If a mother becomes infected in this period her baby may be born with impaired hearing or eyesight, or a damaged heart. Most women are vaccinated against rubella to prevent this risk. Cytomegalovirus can cause deafness and learning difficulties.

The extent to which these biological influences before birth affect the quality of a person's life will depend on the way in which Deaf or disabled people are treated by others.

### Effects of diet

Our biological life starts at conception nine months before we are born. You will be affected by what your mother ate during pregnancy and breast-feeding. Some recent research on animals suggests that if a mother has a diet that is high in sugar and fat it can result in an increase of cholesterol and a risk of heart disease for her children later in their lives. Malnutrition or a lack of healthy food during pregnancy may result in a lifetime of poor health for the child. The Food Standards Agency (FSA) recommends that pregnant

women should eat plenty of fruit and vegetables; plenty of starchy foods such as bread and pasta and rice; foods rich in protein such as lean meat, chicken and fish; plenty of fibre; and foods which contain calcium such as milk and cheese. They also advise that women should avoid or limit alcohol and avoid too much caffeine as this may result in a low birth weight.

## 2.4 Environmental influences

### Pollution

Air and water pollution can influence development and be a major source of ill health. Historically, a lack of sanitation and sewerage in cities resulted in life-threatening diseases such as cholera. Until lead was removed from petrol and paint, there were major concerns that lead pollution in the air might affect the brain development of young children. There are still concerns about air and water pollution.

Motor vehicles produce a range of pollutants, including carbon monoxide, nitrogen oxides, volatile organic compounds and particulate matter. People who live near busy roads may be particularly exposed to this pollution.

### Reflect

Levels of pollution may be falling but are they acceptable?





Improved vehicle technology (such as the catalytic converter) is reducing air pollution. For example, carbon monoxide emissions fell by 81 per cent between 1970 and 2006. Emissions of nitrogen oxides fell by 46 per cent and particulate emissions by 50 per cent between 1990 and 2006. Power stations now burn less coal and this has contributed to a fall in sulphur dioxide pollution of 81 per cent between 1990 and 2006 (Social Trends, 2009)

While official statistics report improvements in the levels of air pollution, there are concerns that air pollution is still a serious problem. Professor Walters (2009) argues that 24,000 British people die prematurely every year because of air pollution. He states that more than 20 UK towns and cities, including London, have air that is polluted to twice the level permitted by World Health Organization standards. People who live in cities with air pollution may be more at risk of developing lung disease and asthma.

## Activity 8: Research air pollution



Just how serious is air pollution at present? Do an Internet search for news items on air pollution in Britain. You could share and discuss your findings with other course members in order to help you decide how serious this issue is.

## Functional skills



**ICT:** This activity will provide evidence of your ability to find and select information using your ICT skills.

In addition to traffic what else affects air quality?





## Housing

Poor quality housing is associated with poor health. Dampness and mould might increase the risk of allergic and inflammatory diseases including asthma. Poor housing is also more likely to mean problems such as poor lighting, non-safety glass in windows, loose rugs and poor maintenance of stairs, which may result in accidents. Overcrowded housing may cause stress due to lack of privacy, noise and difficulties in relaxing and sleeping. Overcrowded housing may limit people's ability to access washing facilities, TV programmes and Internet and computing facilities

and is likely to make it difficult to study. People on low incomes are more likely to live in damp or overcrowded housing than people with a higher income.

Some older people on low incomes will worry about the cost of heating in their homes. Older properties are often less well insulated than modern flats and houses so that people on low incomes might receive higher heating bills than people who are better off. Poor quality housing may result in the stresses summarised in Fig. 4.8.



How do occupation and income interact with other factors to influence where people live?



Fig. 4.8: Stresses that may arise from living in poor quality housing



## Access to recreational facilities

Low income may restrict access to travel and other recreational activities. Social Trends (2009) reported that, in 2007, 54 per cent of households in the lowest income group did not have access to a car. 92 per cent of households with high incomes had access to a home computer and had a home Internet connection. Only 35 per cent of households with a low

income had access to a home computer and only 25 per cent had an Internet connection. People with a low income may have more difficulty obtaining information about leisure activities and much more difficulty travelling to them if they live in neighbourhoods without regular public transport. The issues in Fig. 4.9 may create barriers to accessing leisure and recreational facilities.

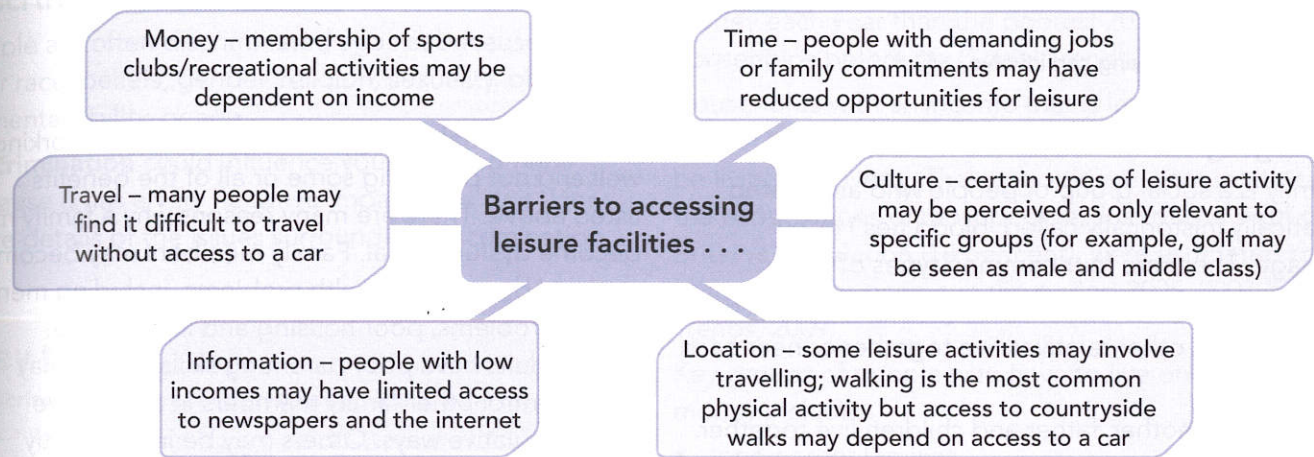


Fig. 4.9: Barriers to accessing leisure facilities

## Access to health and social care services

Areas with a high proportion of low income households may have poorer facilities than more

## Bullying

Discrimination may result in **bullying**. Like discrimination, bullying may undermine your self-



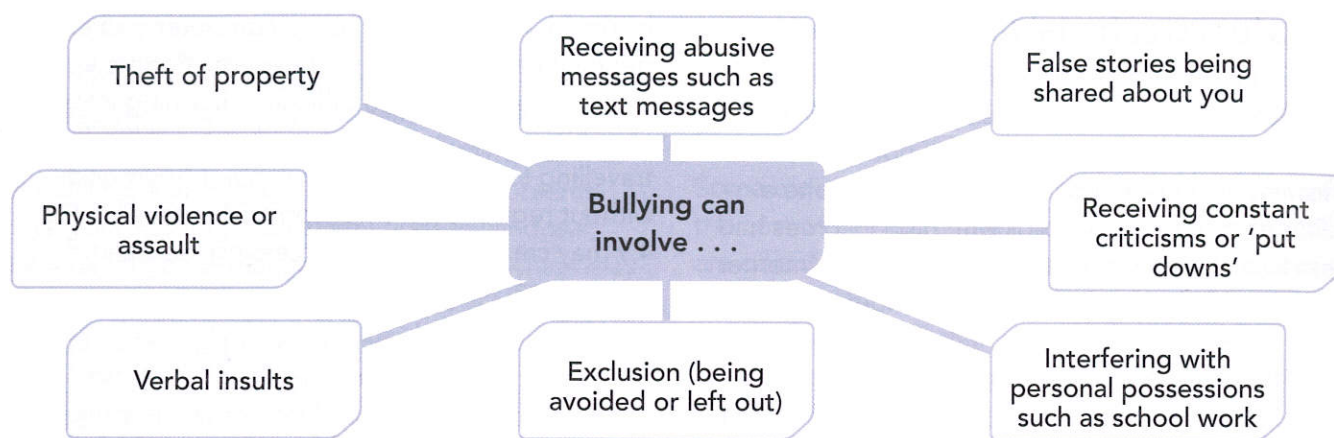


Fig. 4.10: What bullying can involve

## Family dysfunction

A family is a social group of people who are related genetically (historically called 'blood ties') or by marriage. There are four common types of family.

- 1 Extended – parents, children, grandparents and sometimes other relatives live together or near each other.
- 2 Nuclear – mother, father and children live together.
- 3 Reconstituted – as in a nuclear family, adults and children live together but the children are not all biologically related to both adults.
- 4 Lone parent – a lone parent lives with a child or with children.

A well-functioning family can help us to develop in the following ways.

- Families are where our first emotional relationships and attachments take place.
- They provide our first experiences of social interaction.
- Families influence our view of what is socially expected of us.
- Our experience of family life will influence what we assume to be normal or socially acceptable behaviour.
- The family home provides a setting that meets our physical needs for protection, food, shelter and warmth.
- Families can support each other emotionally and protect people from stress.
- Family members may help each other financially or practically. For example, families may support older relatives.

A **dysfunctional family** is a family that is not working well and not providing some or all of the benefits listed above. There are many reasons why a family may become dysfunctional. Family members may become stressed because of health problems, including mental health problems, poor housing and low income. Some adults have poor parenting skills. Some may try to control other family members in aggressive or manipulative ways. Others may be insufficiently involved with their children and so neglect them. Some parents may be inconsistent in the way that they teach children to behave socially. And some may have grown up within a dysfunctional family themselves and have little practical experience of providing appropriate relationships and support for other family members. Stressful family environments may disadvantage children. It may be hard to develop self-confidence if there are constant emotional tensions at home.

## Culture, religion and beliefs

A **culture** can be identified by distinct aspects of language, self-presentation, religion, music, art, architecture and literature. Children learn the customs associated with their family's culture during childhood (see Unit 2 for further details).

### Key terms

**Dysfunctional family** – a family that is not working well, and not providing all of the support and benefits associated with being in a family.

**Culture** – the collection of values, beliefs, customs and behaviours that might make one group of people distinct from others.

In the past, most children would have learned the culture and religion associated with their local community. Everyone on a particular estate, street or village might have shared similar beliefs about religion, work and social roles. Today, we live in a multicultural society where people in the same geographical location may belong to various different cultures. Many people identify with others over the Internet. To some extent people can choose the culture and religion that they identify with.

## Discrimination

People are often discriminated against because of their race, beliefs, gender, religion, sexuality, physical or mental ability, or age.

**Discrimination** could influence your development because it has a very negative impact. See Unit 2 for more details of the issues surrounding discrimination.

### Key term

**Discrimination** – treating some people less well than others because of differences.

## 2.5 Socio-economic factors

### Income and expenditure

The economic resources that you or your family have can make a major difference to your quality of life. A person's weekly income enables them to pay for their

accommodation and to buy food and clothes. Income mainly comes from:

- wages from employment
- profits from your business if you are self-employed
- benefits paid by the government
- money from invested wealth, such as interest on bank accounts or bonds
- money raised through the sale of property you own.

Income is not distributed equally in the UK. The top 20 per cent of households get around 18 times more money each year than the poorest 20 per cent of households before tax (Social Trends, 2004).

Households with an income that is less than 60 per cent of 'median' income in the UK are considered to be living in poverty. These people are poor relative to the expectations of most people. Just over a sixth of Britain's population (18 per cent), were estimated to be living on a low income in the period 2005–2007 (Social Trends, 2009).

Key groups of people who have to live on very little money include:

- lone-parent families
- the unemployed
- older people
- the sick or disabled
- single earners
- unskilled couples (where only one person works in an unskilled job).



## Employment status

Being out of work is likely to mean that you live on a low income. You will also be affected if your parents live on a low income. Social Trends (2009) estimates that around 22 per cent of children (2.9 million children) lived in low income households in 2006/2007. Children living in workless families or households are more likely to have a low income than those in families where adults have full-time work.

## The impact of low income

Paxton and Dixon (2004) found that: children who grew up in poverty in the 1970s achieved less at school, were less likely to go to university or college, and one-and-a-half times more likely to be unemployed than those who did not experience poverty as children. They also earned 10 per cent less over their lifetime. Paxton and Dixon point out the following disadvantages of poverty:

- Poverty is associated with being a victim of crime
- Poorer communities are more likely to live in polluted areas.
- Poorer people have an increased risk of dying young.

## Activity 9: Researching information on poverty

Use the Internet in order to look up recent statistics on the impact of low income on children and adults. The Office of National Statistics website ([www.statistics.gov.uk](http://www.statistics.gov.uk)) and the Poverty Site ([www.poverty.org.uk](http://www.poverty.org.uk)) collect and report statistics on poverty. Use the results of your research in order to discuss whether poverty rates are improving or getting worse with other course members.

## Functional skills

**ICT:** This activity could evidence your ICT skills in finding and selecting information.

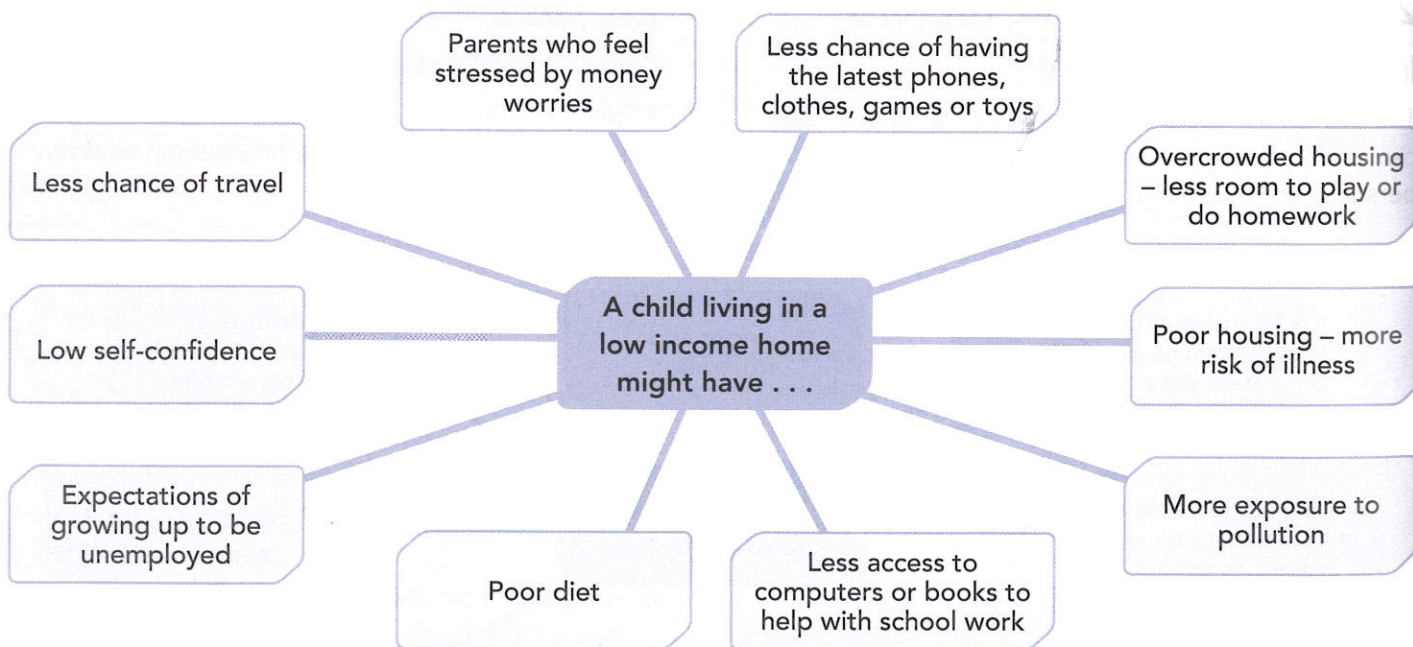


Fig. 4.12: Some problems a child may face if they belong to a low income family



## Education

People with few or no qualifications are more likely to be unemployed or employed in low paid work.

A government report called Unleashing Aspiration was published in July 2009. This report points out that the majority of professional people such as doctors and lawyers grow up in families with substantially higher incomes than average. The report also highlights growing inequality in the degree to which professions are staffed by people from wealthy backgrounds. People from low income families may have less chance of achieving high qualifications and good careers.

### Did you know?

The Poverty Site ([www.poverty.org.uk](http://www.poverty.org.uk)) reported in August 2009, that around half of all employees with no GCSEs at grade C or above were paid less than seven pounds an hour in 2008. Only one in 10 young people with degrees were paid less than seven pounds an hour; 20% of people between 25 and 29 years of age with poor qualifications were unemployed compared with only 5% of graduates.

## Peer groups

As a child you will have learned a lot about social relationships when you played with other children. During adolescence we are very influenced by people of our own age group – our peer group. **Attitudes** and

beliefs might be copied from the people we mix with, or at least from people who we see as being similar to ourselves. Peer groups provide a second source of social learning after our family, which provides our primary socialisation.

## Values and attitudes

Your beliefs, values and attitudes are influenced by your socialisation with family, carers and peer groups. Your **values** and attitudes will also be influenced by your life experiences (issues like bullying and discrimination) and the culture that you are exposed to in your neighbourhood and that you access through social networking and the Internet.

## Key terms

**Attitudes** – assumptions that we use to make sense of our social experience.

**Values** – principles that we use to guide our thoughts and decisions. They explain what we 'value'.

## Reflect

What social pressures do people experience to achieve good educational qualifications? Where do these pressures come from? How far have you chosen your own values and attitudes and how far have you copied them from other people?



## 2.6 Lifestyle

What leisure activities do you engage in? Do you exercise? Are you careful about your diet? How do you dress and present yourself when you are among your friends? These are some of the questions that will explain your **lifestyle**. Your lifestyle represents the way you choose to spend your time and money.

### Key term

**Lifestyle** – how a person spends their time and money in order to create a 'style' of living.

To some extent your lifestyle is something that you choose. Your choices will be limited by the money that you have and influenced by your culture and the people in your life. People on low incomes have limited choices. Most people develop habits connected to diet, exercise and use of alcohol. Many people never actively choose a lifestyle – it just happens – but people can choose to change their lifestyle. Some lifestyle issues are presented below.

### Nutrition and dietary choices

Some people may choose to eat a diet that includes unhealthy fatty, salty or sugary food. But some people may eat an unhealthy diet because of convenience and cost. Some authors argue that convenience food that has a high fat, salt or sugar content is often cheaper than healthier or more labour intensive alternatives. People with a low income will find it harder to travel to supermarkets and stock up on cheaper food. A low income may push people to choose an unhealthy diet, because it can be harder and more expensive to choose a healthy one.

### Use and misuse of substances

#### Alcohol

The Department of Health recommends that, in a day, men should not drink more than four units of alcohol and women should not drink more than three units. Social Trends (2009) states that 65 per cent of men and 49 per cent of women reported drinking more than the recommended limits in 2007. Statistics also show that 32 per cent of young men and 24 per cent of young women have a lifestyle that involves heavy drinking.

### Did you know?

Government guidelines recommend that a healthy diet should include at least five portions of fruit and vegetables a day.



### Activity 10: Research supermarket food

Do some research by reading the labels on processed supermarket food. Look at the amounts of sugar and salt in budget or low-priced ready meals and compare these amounts with the sugar and salt content in more expensive food products. Can you find any evidence to suggest that a low income might influence people to choose products containing more sugar and salt?



### PLTS

**Independent enquirer:** This activity may enable you to evidence the independent enquirer skills by carrying out research.



### Drugs

National Statistics (2006) reported that 14 per cent of men and 8 per cent of women said that they had taken illicit (illegal) drugs in the previous year. Fewer than one in three young men and one in five young women reported that they had used cannabis.

### Smoking

Among other serious risks to health, smoking is associated with heart and lung disease. Smoking is associated with socio-economic class. More people in manual occupations smoke than in the higher social classes. In 2007 roughly one in five people in the UK were smokers (Social Trends 2009).

### Did you know?

The number of people who smoke has halved since 1974 when 51% of men and 41% of women were smokers (Social Trends 2009).





### Activity 11: Discuss high-risk lifestyles

Get together with other course members and discuss the role of nature and nurture in influencing lifestyle choices. You may know of people who put their health at risk by excessive drinking, smoking or taking drugs. To what extent do you think these habits might be influenced by genetics? Are some people more at risk from alcohol, tobacco or other drugs? How far are lifestyles copied from friends, with people just going along with what others are doing? To what extent do people choose to use alcohol, tobacco or other drugs in order to reduce stress in their lives?

### Functional skills

**English:** This activity will help you to evidence English speaking and listening skills.

## 2.7 Major life events

### Predictable and unpredictable events

During our life we are influenced by a range of life factors and we are also influenced by the events which happen to us. Some major changes in life can be predicted and even chosen, while others may be unpredicted. If your life suddenly changes there is always the risk that you will feel out of control and stressed. If you have chosen to leave home, marry or retire you may feel in control of these major events. The idea of predictable and unpredictable life events involves generalisation. For some people issues like divorce or redundancy may be predictable, but other people may not have expected to be divorced or lose their job.

Changes in life often involve positive learning as well as a risk of stress. Some major life events are set out in Table 4.7.

Table 4.7: Predictable life changes

Events that are often predicted	Possible influence on development	
	Positive learning	Risk of stress
Starting school/nursery	Learning to make new friends and cope with change	Feeling unsafe – withdrawing from others. Loss of support from parents
Beginning	Choosing a work role and	Feeling pressured by new demands on time and mental energy.



Table 4.8: Unpredictable life changes

Events that are often unpredicted	Possible influence on development	
	Positive learning	Risk of stress
Birth of a sibling	Learning to make new emotional attachments	Jealousy and rivalry – emotional tension because your role within the family has changed. You may lose attention from parents
Redundancy	Learning to adapt to changes in income and lifestyle	Refusal to accept change. Anger or depression. Failure to cope with a loss of income and lifestyle
Illness and serious injury	Learning to adapt to physical change	Grief at the loss of good health. Anger or depression and failure to adapt to disability
Divorce	Learning to cope with a new lifestyle	Resentment or depression. Grief at the loss of the relationship. Failure to adapt to a new lifestyle. Possible financial hardship
Bereavement	Learning to cope with loss and new lifestyle	Grief at the loss of the relationship. Failure to adapt to an unwanted lifestyle

## The interrelationship between factors

Major changes in life may interact with all the life factors discussed in this section. For example, retirement, redundancy, divorce, bereavement or serious injury might all result in a loss of income or having to live on a low income. Leaving home, marriage or parenthood might all involve changes

in your home, or in your community and friendship networks. Major life events will change your social, emotional and economic circumstances.

Many life events involve some kind of loss, but this change is rarely simple. For example, bereavement can involve a whole range of other losses and changes.

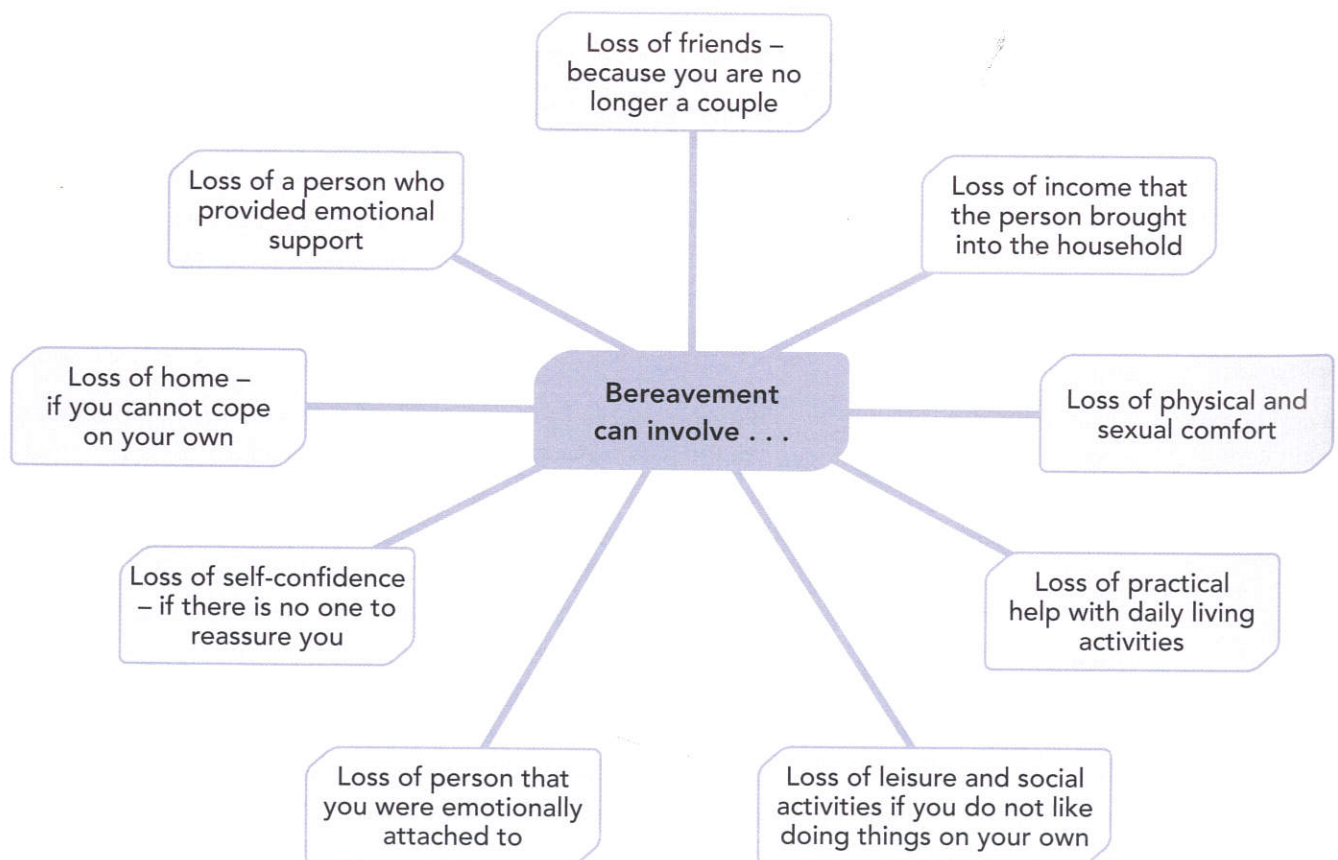


Fig. 4.14: The effects of bereavement