

some tests to confirm the nature of the lump. These tests indicate that there is about a four in ten chance that she does not have cancer.

When Marsha's mother was diagnosed with breast cancer, she had also been in good health. Marsha recalls that her mother had received a reminder for her annual breast screening and a lump was found. Within a matter of weeks, her mother had a biopsy, surgery and was having radiotherapy on the affected breast and lymph tissue. This was a very worrying time for everyone and her mother broke down and cried several times with Marsha. Her mother felt sick from the treatment, and for years afterwards needed to protect her arm on the affected side from injury and infection. Marsha found herself thinking often about her mother's experience and wondered how she would cope if she had breast cancer.

- 1 Does Marsha have a disease? Could you defend your answer based on the disease definition below?
- 2 Marsha witnessed her mother's experience of breast cancer. How might this experience influence Marsha's response to her situation?

DEFINITION 2: THE SICK ARE THOSE WHO HAVE BEEN GIVEN A DIAGNOSIS BY A HEALTH PROFESSIONAL (THE DISEASE DEFINITION)

In Western society it is generally assumed that illness arises from pathological changes in the physical body. In most cases, these changes can—at least potentially—be observed and substantiated by health professionals. We have the means to measure high blood pressure, to observe viruses and bacteria, and to create x-ray or other images of abnormalities or injuries deep inside the body. This objective classification of pathology underlies the concept of **disease**—that there is something biomedically wrong.

It is important to recognise that definitions of what is pathology can change over time and from place to place. HIV/AIDS, for example, was not originally identified by pathology. A number of people, with similar signs and symptoms, went to see their doctors feeling ill, and only then did medical scientists start looking for a common cause. Unusual numbers of a rare condition were observed and it took some time for the cause to be pinned down.

The definition of disease can change over time as well. The most commonly cited example of this in medical textbooks is homosexuality. Once considered in many societies to be a disease requiring treatment, it is now recognised as a sexual preference. So, the disease definition of who is sick also has some problems.

- *Health professionals tend to accept a patient's definition that they are sick.* Many readers will have seen news stories in which doctors were accused of giving people certificates for time off work even when the symptoms cited were minor, difficult to classify as disease or easily faked. Such media reporting is unfair, as doctors and other health professionals tend to respond to the patient's feelings as true expressions of subjective illness, such as feeling unwell, tired or stressed, or even being fed up with work. It would be far more worrying news if health professionals regarded large numbers of their patients as wasting their time, or malingering (lying). Help-seeking is seen by health professionals in most cases as justifying the giving of help, and it would be hard to argue that this is unreasonable.

Disease: an abnormal state of the body or mind of a person as identified by a qualified observer.

- *The diagnosis and treatment of medical conditions varies from time to time and place to place.* Not long ago, a child with tonsillitis living in one state in Australia was twice as likely to have surgery as a child with tonsillitis in another state. Caesarean deliveries are more common in women with private health insurance, and it could be argued that this high rate does not reflect real medical need for them to take place. Diagnoses may even be influenced by political or religious beliefs. In the former Soviet Union, disagreeing with state policy was regarded as the first symptom of a serious mental illness.
- *Diagnosis and treatment depend on concepts of normality.* These concepts may be cultural, subcultural or even family-based. There is a tribal group in Africa in which a particular skin disorder—causing white blotches on the skin—is common. It is so common, in fact, that individuals without it are rare. As a result, these people are considered to have a disease and are treated for their unblotched skin. In an example closer to home, the definition of alcoholism varies considerably between different groups within the population. What is regarded as a symptom of alcoholism in one group—say, drinking every day of the week—may be seen as normal in another. Part of the problem in dealing with alcohol abuse in Indigenous communities is defining exactly what that term means. There may also be differences in beliefs between religious groups, locations, and men and women.

CASE
STUDY

MARSHA (CONT.)

Deciding whether someone has a disease sometimes means deciding what to do next. In Marsha's case, the consequences of doing nothing to treat her symptom could be very severe. If her breast lump is cancerous, the probability of her dying could be greatly increased by inaction. Conversely, doing something about the symptom could save her life. It is likely in this case that the doctor would do everything possible to persuade Marsha that she had a disease worth treating, and that treatment of that disease should begin as soon as possible.

Marsha talked over the initial results with her husband, Peter, who was keen for Marsha to have further tests and treatment. Her daughters also thought it was a good idea for their mother to be fully tested and treated. Marsha felt in a dilemma. She wanted to have further testing to be reassured that everything was okay, but she was also worried about the possibility of having cancer. She kept thinking about her mother's experience and the long-term consequences of treatment. She was worried about losing part or all of her breast. She and Peter still had an active sex life and Marsha was worried that Peter may not find her attractive any more if she was disfigured.

After several nights of talking things through, Marsha and her husband had an appointment with her doctor. They agreed that her lump should be removed and examined to determine whether it was cancerous. During the appointment, the doctor informed her that with appropriate treatment—even if the lump was cancerous—her chance of long-term survival was good, and that she should be well.

- 1 Will treatment make Marsha healthy again?
- 2 How might this experience affect Marsha's view of her health in the short and long term?

HOW DO ILLNESS AND DISEASE COMPARE?

Usually, disease and illness go together—we feel unwell because we have a disease. However, this is not always the case, and problems may arise for the individual when disease and illness do not go together. High blood pressure (hypertension), for instance, is a measurable example of physical pathology. Having high blood pressure is dangerous; people with high blood pressure are at increased risk of stroke and heart attack. Yet most people who have undiagnosed high blood pressure are probably not even aware of the fact—they do not feel ill at all. The vast majority of those who do have the diagnosed disease of high blood pressure found out because a health professional tested for it during a routine examination. An individual who experiences no symptoms is less likely to accept treatment, and any doctor would have difficulty in persuading some of their patients to take their high blood pressure seriously—because, they say, they feel perfectly well.

PAUSE & REFLECT

The definitions presented in this chapter suggest that high blood pressure would be considered a disease, not an illness. How might this affect whether or not a patient diagnosed with high blood pressure would treat it as a serious health problem?

Is it possible to have an illness without having a disease? Again, the answer is yes. Think about a young man who notices that his hair is falling out. He feels that something is not right, and fears the consequences for his future—he does not want to be bald. When he goes to his doctor, however, he is told that there is nothing wrong with him, and that he simply is displaying normal male pattern baldness, which is largely determined by his genes. Some men are satisfied with this definition of themselves as being well and adapt to the change in their appearance. They consider themselves normal and bald. Others are dissatisfied and may pursue treatment with drugs, or even with surgery, to avoid being bald.

If the individual's need to define baldness as a disease is strong enough, they will find professionals who will agree that they need treatment. Because the larger community does not think of baldness as a disease, they will probably have to pay for that treatment out of their own pocket. The ways in which communities decide who is well or ill is discussed in Chapter 14. Briefly, though, the decision involves cultural and social values, religious beliefs and a variety of other factors.

Other cosmetic illnesses are also not considered diseases in most societies. Take the woman who considers her breasts to be too small and wants implants, or the person with crooked or discoloured but otherwise healthy teeth. The boundaries become very unclear in some instances. Is male circumcision a procedure that doctors should conduct? If there is a medical need—for example, the foreskin is too tight or chronic infections occur—then there is likely to be a high degree of agreement that they should. The United States is currently the only Western nation where male circumcision is routinely performed; the procedure is rarely performed in Western Europe and New Zealand (Masem 2012). After an exhaustive review of the evidence, the Royal Australasian College of Physicians (2010) found that circumcision did not provide significant protection against sexually transmitted illnesses (STIs) and HIV, and concluded there was no medical case for neonatal circumcision. If it is for religious purposes, then the level of agreement will differ from place to place depending on the religious mix of the community and the

proportion of male babies who have the procedure. In most societies, female circumcision would be considered to be mutilation, and almost never justifiable. Most of us would be horrified to discover that a health professional in our community was involved in performing this procedure. Yet there are other societies where it is considered not only acceptable but desirable.

CROSS-REFERENCE

Stress and its management are discussed in Chapters 12 and 13.

Confusion about whether illness equals disease is common in the early stages of symptoms, before a cause has been established. There are some conditions where the disease classification has had to catch up with the illness (such as HIV/AIDS), but a number of others feature in the media. For example, there is still disagreement as to whether chronic fatigue syndrome should be reclassified as post-viral syndrome (Gibson, Smith & Ward 2011). Stress leads to a great deal of illness and many lost days of work, yet is notoriously difficult to classify in terms of specific physical signs. Anxiety and depression are still in the grey area where identification of the consequences is much easier than identification of a physical pathology.

As medical science progresses, the classification of disease becomes clearer. More causes are identified and the links between causes and symptoms are better understood. Sometimes, because of new evidence, we find that we have to go back to ideas that have previously been rejected by medical science. Some herbal treatments have been accepted back into orthodox Western medicine, and the recently established medical effectiveness of meditation and relaxation has led to a re-evaluation of the links between mind and body. We revisit some of these issues in Chapters 8 and 9.

HEALTH

Negative definition of health: the absence of symptoms of illness and signs of disease.

It is not uncommon for us to think of health as the normal state, experienced whenever we are not actually ill. The more one thinks about this **negative definition of health**—the absence of disease—the less useful it appears to be. How useful is a definition that would classify whole groups or even populations as sick? Do the members of those groups consider themselves to lack health? One of the main reasons why they do not is that we all tend to measure our health against those around us. Elderly people are highly likely to suffer from sensory problems (hearing or vision), limitations on movement, or chronic health problems such as hypertension (high blood pressure), arthritis and diabetes. And yet a recent study with elderly women (Requena et al. 2010) found that physical well-being was not as important as the mental and social dimensions of life in relation to health. People in developing countries where parasites are common may see themselves as well in spite of having a condition that would be considered a serious health problem for most people in a developed country.

The World Health Organization (WHO 1946) has attempted to promote a positive definition of health that is more flexible than just the absence of disease or infirmity. Health is considered by WHO to be ‘a state of complete physical, social and mental well-being’ that is consistent with living a full and satisfying life. This definition is intended to be useful in all countries—in spite of the differences in economies and the scope of health care available—and responsive to local needs. While this is broadly applicable, it is also clear that problems are going to arise with the differences in health from one place to another. As an example, if all the children in a locality are suffering from brain damage as a result of early malnutrition, they may all find satisfactory lives within their society, but we would still want to do something urgently about the malnutrition.

Another way of thinking about health is in terms of what it enables the individual to do. The *Ottawa Charter for Health Promotion* (WHO 1986) talks about health as being a ‘resource

for everyday life, not the objective of living'. Health allows individuals to tackle their ongoing activities, while disease and illness produce barriers to those activities. Individuals have 'enough' health when it is not a particular concern for them.

WELL-BEING

The concept of **well-being**—included in the WHO definition of health given in the previous section—entered the discussion of what health means in the 1960s (Evans 1965). To some extent, it could be said that health is the opposite of disease, while well-being represents the opposite of illness; that is, a subjective sense that there is basically nothing wrong. Like illness, well-being can be completely independent of our objectively measured health or disease status.

Individuals who have capabilities and coping strategies that allow them to manage their lives without much difficulty (who have an excess of resources over demands, a concept discussed in Chapter 14) tend to find that their disease is irrelevant to their sense of being intact as a person and in control of their life. Similarly, individuals may have a sense of personal well-being in very deprived circumstances, while dealing with chronic or acute disease, and even in the face of very stressful events. It is useful to keep in mind that an individual's **appraisal** of their situation is critically important. It will affect how they think and feel about health, and what behaviours they carry out.

MEASUREMENT OF HEALTH AND ILLNESS

Decisions about what diseases exist, which ones are common or serious, and which ones should attract special attention by health professionals are usually made by the community on the basis of information about the occurrence of disease within that community. In earlier days, these decisions were often made on the basis of common knowledge or on cultural or religious grounds. In most communities now, these decisions are made on the basis of more objective measurements of health and illness within the community. The science of **epidemiology** has taken over the measurement task. Its aim is to inform the decision makers within a community about the health status of that community, or a segment of that community.

The health of a population is usually measured by looking at two characteristics: **morbidity** (amount of sickness) and **mortality** (number of deaths). It is possible to imagine a case where these two do not go together, but it is far more common for them to be closely associated. Where people are sick a lot, they tend not to live as long.

There are two aspects of morbidity that are of particular interest. First, how many people are suffering from a particular disease over a period of time? For example, how many cases of arthritis there were in a community in a year (called the **prevalence** of that disease). Second, how many new cases were observed over a period of time? For example, how many people were first diagnosed as having arthritis in a community during a year (called the **incidence** of that disease). The fact that these can differ is quite significant. The Chernobyl power station in Ukraine became the scene of the world's worst nuclear accident in 1986, and the prevalence of radiation sickness in the area was very high at that time. The incidence is low now because of clean-ups, and because there are few unaffected individuals left to develop the condition. In the same way, if the incidence of HIV infection suddenly becomes low among new-born babies because of new treatments for infected mothers, this will only affect the prevalence among children over time.

Well-being: a state of complete physical, social and mental health that is consistent with living a full and satisfying life.

Appraisal: the cognitions that an individual has about the situation they are in at a given time.

Epidemiology: the science of measuring the health status of a community.

Morbidity: the amount of disease observed within a group.

Mortality: the number of deaths observed within a group.

Prevalence: the number of existing and new cases of a specific disease present in a given population at a certain time.

Incidence: the rate at which new cases of a specific disease occur in a population during a specified period.

PAUSE & REFLECT

Following a change in the kinds of pesticides used on farms in a particular area, it is observed that a large number of babies are born with birth defects. How would the concepts of prevalence and incidence help you to understand this observation?

One very good reason for keeping a watch on the incidence and prevalence of disease in the community is that changes can help us to identify new problems or changed health conditions. An increase in the incidence of polio in parts of the USA alerted experts that the number of children receiving vaccine against it had dropped to the point that there was danger of a polio epidemic for the first time in decades.

More recently, in the Indian state of Uttar Pradesh there was a dramatic increase in polio cases (from 268 in 2001 to 1600 in 2002). An investigation by health authorities learnt that the resistance to polio vaccination came from within the marginalised, largely Muslim communities who were influenced by rumours that the polio vaccine was a Western ploy to sterilise Muslims. The investigation revealed that more than 80 per cent of the children infected in the 2002 outbreak were Muslim boys under two years old. A grassroots campaign was developed to counter these misconceptions. Larson and Ghinai (2011) describe how community members were trained and deployed as local 'champions' for polio eradication, in order to counter resistance to vaccination from within their communities. The significant decline in polio cases is evidence of the close relationship formed between the local champions and the families within these communities. The state of Uttar Pradesh has not seen a case of polio for more than a year.

Monitoring of a population also enables other trends to be predicted. The ageing of the population in Western societies has led to an increase in the prevalence of problems of ageing that will affect health care funding and decisions about the number of doctors, hospitals and nursing homes that will be needed in the near future. In Australia, this has recently led to large increases in the number of training places for health professionals within our universities, either by increasing the number of students in existing institutions or by increasing the number of institutions training particular health professionals.

We also learn a lot about health and illness in a society from looking at the causes of death. One problem with mortality measurement is that eventually everyone dies. This means that if fewer people die from, say, infections during the first year of life, more people must eventually die of other causes later in life. If we look back at statistics taken from death certificates over hundreds of years, it would appear that we are in the midst of cancer and heart disease epidemics—much larger proportions of people are dying of these conditions than ever before. If we look at the age at which people die of these causes, however, they are much older than the people dying from other causes, such as childbirth and infectious diseases. This means that we need to look at premature deaths rather than absolute numbers of deaths to tell us when immediate action is needed to improve health. Unfortunately, this can also lead us to make some unwarranted decisions about health care. Focusing all of our attention on causes of death among children will ensure some individuals will live for many more years. However, if we do not look at the quality of life experienced by those individuals, we may actually be increasing morbidity (sickness) and suffering among this group.

On the other hand, simple interventions with health-related behaviours such as diet and smoking among young people may only slightly increase the lifespan of the people concerned, but at the same time greatly improve the quality of life of those people over many years.

Interventions with the elderly may not increase length of life very significantly for anyone, but may still increase quality of life by a small but important amount for large numbers of people. As a result, when looking at what can be done to improve health it is important that we do not focus simply on adding years to life, but that we also look at adding health to life, adding quality to life, and adding life to years.

MODELS OF HEALTH AND ILLNESS

There is a variety of different ways to think about the human being in health and illness. One traditional way that has often dominated the thinking of health professionals has been called the **medical model** (Engel 1977). This model considers the individual as a case or a patient, primarily the host for some sort of disease or malfunctioning organ. The solution to the individual's disease is to return the biological function to its healthy state by chemical or surgical means, or both. It is a powerful model, because it has led to huge improvements in the development of diagnostic and treatment procedures, and because it is easy to understand.

However, if health professionals rely too heavily on the medical model, it can lead to serious problems in diagnosis and management. These may include:

- failure to consider the whole person—including feelings, needs and socioeconomic factors—as well as the physical machinery
- overlooking the well person that exists between illnesses
- failure to consider the past history of a particular episode of illness.

We live in an age when many of the major threats to health are linked to lifestyle and emotions, so adopting a disease-centred view of people can have grave consequences for their treatment.

The **biopsychosocial model** considers the individual as a whole person in a social setting; someone who may or may not be ill at any given moment (Engel 1977). This involves adding a variety of psychological and social factors to the biological ones. These include behaviours, **attitudes** and beliefs; dispositional factors such as personality; and strategies, sources of support and events in the life of the individual (Engel 1977). These factors form the major themes of this book, and are discussed in detail in later chapters.

Some advantages of taking a biopsychosocial approach are that it:

- recognises that the values of the patient and the health professional must be taken into account
- puts the focus of thinking about health and illness on the interactions between physical, psychological, social and other factors
- allows consideration to be given to the broader context of the individual and the illness, including familial, cultural and financial factors.

The biopsychosocial model is not without its problems (Schwartz 2007). By emphasising the role of lifestyle, this model may lead health professionals to overestimate the individual's control over—and therefore, their responsibility for—their own health. This may lead to less tolerance for those who do not behave in a healthy way and even victim-blaming. The emphasis on the ill person being an active participant in their own care may create an unacceptable burden on someone whose resources are already limited.

Medical model: a model that considers the individual as a case or patient, and primarily the host for some sort of disease or malfunctioning organ.

Biopsychosocial model: a model of health that considers the individual as a whole person, who may or may not be ill at any given moment.

Attitudes: the thoughts, feelings and readiness to act that an individual has about any object, person or event.

CROSS-REFERENCE
Victim-blaming is discussed in more detail in Chapter 16.

CROSS-REFERENCE
The impact of illness on the individual is discussed in Chapter 8.

PAUSE & REFLECT

How would the medical and biopsychosocial models differ in thinking about the causes and management of obesity?

CASE
STUDY

GEOFF MITCHELL AND SLEEP APNOEA

The aim of this case is to get you to think about what happens when an individual may not be ill but is affected by changes to their well-being. Consider the impact on the individual, their family and their functioning in society.

Geoff is 58 years old and works for a logistics company as a section manager. He considers himself to be an easy-going person and is well liked by his colleagues at work. Geoff is currently experiencing difficulties in his marriage of 27 years to Sue. Their three children are young adults and living independently. Sue complains that Geoff works too much. Now that the children have left home, Sue would like to spend more leisure time with Geoff. She also complains about Geoff's snoring, which wakes her several times each night. Sue complains that she can't go back to sleep because of the noise. Geoff says that his snoring isn't that bad, and that most men his age snore. But Sue is worried that the snoring is not normal. At night in bed, she feels distressed watching Geoff stop breathing for long periods and then snort or snore while gasping for air. About two months ago, Sue told Geoff to sleep in the spare bedroom, and this move has added to the tension in their relationship.

Geoff has been steadily gaining weight for some years, but in the last year he gained 10 kilograms. He currently weighs 115 kilograms and constantly feels hungry. He tries to walk one or two mornings a week, but feels increasingly tired during the day. Recently while he was helping out at work on the fork lift, he dozed off and drove into one of the warehouse racks, which are 10 metres high. Although the rack was shaken, it remained standing and stock items didn't fall, but the forklift was damaged and it was a close call that no one was hurt. The accident frightened Geoff and he decided to see his doctor about his constant tiredness. He thought he might have a virus or perhaps be depressed or stressed.

The doctor took Geoff's history and then some measurements of his weight and blood pressure, as well as his neck, waist and hip circumference. Given Geoff's complaints of daytime tiredness, along with his age and weight, the doctor thought he may have sleep apnoea. The doctor explained that sleep apnoea occurs when the airway is obstructed (usually above the larynx) for around 10 seconds (an apnoeic event). Apnoeas end by the person rousing from their sleep (usually for 1–5 seconds) and opening the airway with a dramatic snore, snorting and gasping for air. People with severe obstructive sleep apnoea (known as OSA) may spend more of their time asleep in apnoea than they do breathing. Geoff now understood that his body wasn't getting quality rest and was being starved of oxygen at night. He was referred to a sleep clinic for further testing.

- 1 What might be some areas of concern for Geoff and Sue according to the biopsychosocial model of health?
- 2 What might be some areas of concern for Geoff according to the medical model of health?
- 3 Given that Geoff has been given a medical diagnosis, would he perceive himself to be ill?

- 4 To what extent does Geoff's lifestyle contribute to the development of obstructive sleep apnoea?
- 5 Do most people who complain of daytime tiredness have OSA?
- 6 What is the prevalence OSA in Australia?
- 7 Geoff had an accident at work due to his sleepiness. What may be some other consequences of OSA?

Points to consider

The person's own approach to wellness is recognised as one, if not the most, significant factor determining health status. Recognising that a symptom is not normal, or noticing the negative impact of lifestyle on well-being, often motivates a person to act or seek more information. It is estimated that around 40 per cent of middle-aged people have sleep-disordered breathing, although prevalence figures vary. This is due in large part because there is no standard agreement about the criteria for a diagnosis or how to grade its severity. Those at risk include men who are obese and hypertensive (high blood pressure), postmenopausal woman, people who complain of daytime sleepiness, and those who snore. It is estimated that 2–4 per cent of overweight adult males and 1–2 per cent of postmenopausal women require treatment for OSA. Conservative estimates of a prevalence of the general adult population rank OSA as twice as common as severe asthma and as common as type 1 diabetes.

OSA is associated with significant morbidity and mortality. Motor vehicle accidents, lost working days, increased use of health care services, poor quality of life, cognitive deficits and fatal accidents have been associated with OSA. The treatment of choice for OSA is continuous positive airway pressure (CPAP). A machine blows air at a constant pressure through the nose and into the lungs. The positive pressure keeps the airway open during sleep. Help with weight loss is important, and all patients with OSA are encouraged avoid alcohol several hours before sleep.

CHAPTER SUMMARY

- Being sick is a social definition.
- The illness definition suggests that symptoms are the key to defining who is sick. Problems with this definition include the frequency of symptoms in healthy individuals and the importance that a person attaches to the meaning of a particular symptom.
- The disease definition emphasises diagnosis by a health professional as the key element in deciding who is sick. Problems with this definition include differences in how diagnoses are made from time to time and from place to place, and the need for professionals to respond to the information provided by patients.
- Health cannot simply be defined as the absence of disease, but must take into account the social environment and sense of well-being of the individual.

- Health is measured using the amount of sickness (morbidity) and the number of deaths (mortality). The total number of cases (prevalence) and new cases (incidence) are important in judging the health of a community.
- The medical and biopsychosocial models provide different ways of thinking about the causes and management of illness, and how health can be maintained.

SELF TEST

- 1 Which of the following best fits the concept of a disease but not that of an illness?
 - a Mary has a painful splinter under her fingernail.
 - b Carlos has tested positive for hepatitis B, but does not know it yet.
 - c Grigor's arthritis is so bad that the doctor recommends he have his hip joint replaced.
 - d Meg has a serious reaction to a bee sting and needs to be hospitalised.
- 2 One definition discussed in the chapter is that the sick are those who have signs and symptoms. Which of the following is not a criticism of that definition?
 - a It is not normally the symptom but its meaning that matters to the individual.
 - b For a given individual and symptom, the meaning may vary with mood, knowledge and other factors.
 - c The diagnosis and treatment of medical conditions varies from time to time and place to place.
 - d Most symptoms are trivial and easily forgotten.
- 3 Which of the following statements is true?
 - a Definitions of disease are fixed and based on biomedical science.
 - b Illnesses are patterns of symptoms and signs identified by doctors.
 - c Patients can recover from diseases but not from illnesses.
 - d Definitions of illness and disease may differ between cultures.
- 4 A negative definition of health is based on:
 - a pathological changes diagnosed by a health professional
 - b the person's belief that something is not right
 - c absence of disease or illness
 - d a state of complete mental and physical well-being.
- 5 Morbidity:
 - a can be used as a measure of the health of a community
 - b refers to the number of deaths in a given year
 - c can be used as a measure of illness in a person
 - d indicates to a patient whether their treatment is the correct one.

FURTHER READING

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National Sleep Foundation (2006) Prevalence of symptoms and risk of sleep apnoea in the US population: results from the National Sleep Foundation 'Sleep in America 2005' poll. *Chest*, 130(3): 780–6. www.sleepfoundation.org.

Sleep Alliance (UK) *The Sleep SOS Report. The impact of sleep on society*. Sleep Alliance (UK). www.orsa.org.uk.

World Health Organization (1986) *The Ottawa Charter for Health Promotion*. Copenhagen: WHO, Health Canada, CPHA.

USEFUL WEBSITES

Australian Sleep Association (ASA):
www.sleep.org.au

Evaluating breast lumps:
www.imaginis.com/cervical-cancer-symptoms-diagnosis/evaluating-a-breast-lump-1

Sleep education for nurses, therapists and doctors, plus the Epworth Sleepiness Scale:
www.faultywinks.com