

1 PSYCHOLOGY AND MEDICINE

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LEARNING OBJECTIVES

This chapter is designed to enable you to:

- Understand different definitions of health and discuss the implications of this for treatment.
- Describe the biomedical and biopsychosocial approaches to healthcare.
- Consider the role of psychological and social factors in healthcare.

1.1 PSYCHOLOGY AND MEDICINE

The importance of psychology for medicine is being increasingly recognised and psychological topics are now included in most medical curricula. In the UK, a report on *Tomorrow's Doctors* emphasised the need for a greater incorporation of psychological and social sciences in medical training (General Medical Council, 2009). This rests on a wealth of research evidence that psychological factors are important in many aspects of physical and mental health – as you will see throughout the course of this textbook.

Yet it has been our experience that there are a number of barriers to medical students learning about psychological topics. First, psychology is often seen as a 'soft' science in medicine. It is a bit like medical Marmite – students either love it or hate it! We will come back to this later on in the chapter but hope this book will encourage the sceptics among you to explore psychology more and use it in clinical practice. Second, psychology is a wide-ranging discipline that includes many specialisms. As a result, few students or doctors have the time to become familiar with the rich evidence base and psychological theory that are available. Box 1.1 shows the different psychological specialisms with examples of how these may be relevant to medicine. Psychology's breadth of scope makes it hard for healthcare professionals to work out which parts are most relevant to clinical practice. Third, being bombarded with psychobabble in the press makes it even more difficult to screen out evidence-based information from popular 'fact'. A further challenge is working out where medical care stops and psychological or social care begins.

A final difficulty is that, until now, there has been no integrated textbook that covered all the aspects of psychology that were relevant to medicine and highlighted the clinical relevance and application of this information. We hope this book solves this problem by providing a single, integrated overview of the psychology that is relevant to medicine and by considering how this can be used in medical practice. This is done in four sections. In this introductory chapter we examine fundamental conceptual issues of what we mean by health and illness, why psychology is important, and different approaches to medicine.

Section I focuses on psychology of health and covers theories and research relevant to most areas of medical practice, such as stress, symptoms, and chronic illness. Section II discusses knowledge from other areas of psychology that is relevant, such as brain and behaviour, development from infancy to old age, and the effects of social context on

BOX 1.1 Specialisms in psychology

Specialism	Focus	Relevance to medicine
Health	Psychological factors and health	Understanding health behaviour, effective health promotion and intervention, the link between psychosocial factors and health.
Clinical	Psychological disorders	Understanding emotions, emotional disorders (psychopathology), and developing effective interventions.
Developmental	Development and change over the lifespan	Understanding about normal and abnormal aspects of development across the lifespan.
Forensic	Criminal and judicial behaviour and systems	Understanding crime when relevant to medicine. Medico-legal investigations and testimony.
Social	Social and group processes	Understanding how social and group processes influence our own and patients' behaviour in medical settings.
Biological and Neuropsychological	Link between physiological and mental processes or behaviour	Understanding the interaction between psychological and physical systems.
Cognitive	Internal mental processes e.g. perception, memory	Understanding risk perception and decision making. How memory processes affect adherence to medication.
Occupational	Work, the workplace, and organisations	Understanding work performance and training requirements. How medical organisations function.
Educational	Learning and education	Improving education or training for healthcare professionals. Health education.

people's behaviour. Section III focuses on psychology that is relevant to different body systems, including cardiovascular, respiratory, gastrointestinal, immune, genitourinary, and reproductive systems. Finally, Section IV outlines psychology that is relevant to clinical practice, such as communication skills and psychological interventions.

Throughout the book you will find clinically relevant information and tips in the clinical notes boxes. Activity boxes will encourage you to apply psychology to your own experiences. Learning objectives and summary boxes also provide easy guides to the main

learning points that may prove useful for exams. Revision questions are given at the end of every chapter to help you revise and test yourself.

1.2 WHAT IS HEALTH?

As healthcare professionals you will be embarking on careers that will commit you to helping people get better. But 'better', like 'health' is not the same for everyone. How then can we decide who to treat and who not to treat? Take a look at the examples in Case Study 1.1 and the definitions of health in Box 1.2.

CASE STUDY 1.1 Are these people healthy or ill?



Emily is 22 and a university student. She has a healthy diet and is a keen athlete. Her mother died of breast cancer when Emily was 13 and Emily's older sister has just been diagnosed with breast cancer. Screening shows that Emily is carrying a mutation in the BRCA gene which means she is also at high risk of breast cancer. She has been offered surgery to remove both breasts as a preventative measure.






David is a retired businessman aged 50. He has been training to ski the 'Wall of Death', a slope in the Swiss Alps which notorious for injuries to skiers. David did it once when he was younger and fitter, but had to stop and inch his way down parts of it. Last week he attempted it and managed to ski all the way down without stopping. He says it was exhilarating. He has terminal liver cancer and probably only six months left to live.



Karen is 32 and divorced with four children under the age of 7. She works part-time. Her ex-husband has remarried and has a new baby. Karen is upset about her divorce and finds it hard to maintain another steady relationship. She is depressed and smokes 30 cigarettes a day. Four weeks ago she took a large number of paracetamol together with a bottle of wine and woke up in hospital.

BOX 1.2 Definitions of health

Definition	Features of definition	Are they healthy or ill?		
		Emily 	David 	Karen 
Physical	Absence of disease	Healthy	Ill	Healthy
	Not vulnerable to disease	Ill	Ill	Healthy
	Strong physical reserves	Healthy	Ill	Healthy
	Physically fit, has vitality	Healthy	Healthy	Ill
Subjective	No symptoms of physical illness	Healthy	Ill	Healthy
Behavioural	Living a healthy lifestyle	Healthy	Healthy	Ill
Functional	Able to function in day-to-day life	Healthy	Healthy	Ill
Psychosocial	Psychosocial wellbeing	Healthy	Healthy	Ill
Social	Able to contribute to society	Healthy	Healthy	Ill
Cultural for health	Matches cultural norm	Healthy	Ill	Ill

These cases illustrate that 'health' is not easy to define and is very individual. Research shows that people with a terminal illness will generally have a reduced quality of life. Yet quality of life is not a single entity and although people may report worse physical symptoms, pain, and disability they may also report an increased appreciation of life and family and other positive benefits (as David's case illustrates). Karen may be particularly at risk, as research shows that young, divorced or widowed women are most likely to attempt suicide (although men are more likely to succeed at committing suicide). Being depressed is a critical risk factor – in Europe, 28 per cent of people with clinical depression will attempt suicide at some point during their lives (Bernal et al., 2007). Cases like Emily's will become more common as screening for genetic risk becomes more widespread. Women who have prophylactic mastectomies generally report a reduction in cancer-related distress afterwards, although there can be other negative impacts on their lives.

It should be clear that health issues are complex and require our consideration of the individual. We need to recognise that, for individuals, health and illness are subjective states of wellbeing. In other words, does the person *feel* or *think* they are healthy or ill? Do they have physical symptoms that they believe mean there is a problem with their

health? We also need to take account of disease in the form of underlying pathology – although research shows that a physiological basis is not found for the majority of physical symptoms. In fact, an organic cause is usually only found for 10–15 per cent of symptoms reported by patients in primary care (Katon and Walker, 1998).

Health operates on many levels such as the physical, subjective, behavioural, functional, and social. One survey of around 9,000 people found that we generally think of health in six different ways (Blaxter, 1990):

- 1 Not having symptoms of illness.
- 2 Having physical or social reserves.
- 3 having healthy lifestyles.
- 4 being physically fit or vital.
- 5 psychological wellbeing.
- 6 being able to function.

Which of these definitions we use will have implications for who receives treatment. Box 1.2 applies these to the cases of David, Karen, and Emily. It shows, for each one, who would be considered healthy and who would be considered ill. Common sense would suggest that both David and Karen are ill and need treatment. David has terminal cancer and Karen has attempted suicide. Yet David would be classified as ill by physical definitions of health but not by behavioural, functional or psychosocial definitions. In contrast, Karen would be classified as ill by behavioural, function and psychosocial definitions but not by physical. In fact, the only definition of health that would classify both of them as ill is the cultural norm for health – in other words, they are both outside the norm within our society for what is regarded as healthy.



ACTIVITY 1.1 WHAT IS HEALTH?

- Rate your own health on a scale from 1 (very poor) to 10 (excellent).
- What factors were important in helping you decide where to rate your health?

We therefore need to think of health on many levels. The World Health Organisation attempted this by defining **health** very broadly as ‘*a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity*’ (WHO, 1992). The value of this definition is that it is inclusive and the emphasis on wellbeing accounts for individual differences in a subjective perception of health. However, this definition has been criticised for being too broad to be useful and for referring to a Utopian ‘perfect’ state that few of us will reach, even when we feel healthy.

To quibble over definitions of health might seem pedantic but these have wide ranging implications for the treatments provided by health services. For example, if we aim for

health as defined by the WHO it would put unrealistic pressures on countries to provide social circumstances and medical systems that mean everyone lives in a state of complete wellbeing. Others have pointed out that the conception of complete wellbeing confuses happiness with health (Saracci, 1997). This opens the door to limitless treatments if people view the pursuit of happiness as a legitimate medical goal. The rapid increase in cosmetic surgery to help people feel happier with their appearance is one example of this.

The way we define health therefore has implications for who can be seen as responsible for our health and for which treatments we offer. These implications are more than just medical and affect society's policies and laws. In the Western world, the dominant view is that individuals are responsible for their health by adopting healthy or unhealthy lifestyles. Policies have been implemented that attempt to improve our lifestyles and health, such as providing fruit for young school children and banning smoking in public places.

A striking example of the effect that our definition of health has on treatment is the increasing numbers of obese children being put into foster care by the authorities in an attempt to combat their obesity. The story of one such girl is given in Case Study 1.2. This course of action rests on a number of debateable assumptions, including the view that:

- 1 Obesity is an illness.
- 2 Obesity is controllable through diet.
- 3 Parental behaviour is the major cause of childhood obesity.
- 4 A child's physical health takes priority over the psychological impact of removing that child from their family.

Ultimately, the multidimensional nature of health makes finding an adequate definition difficult. Antonovsky (1987) therefore proposed that we think of **health as a continuum** from optimal wellness to death as shown in Figure 1.1. Health promotion techniques operate on the wellness side of the continuum to encourage people to choose a lifestyle that optimises their health. Medical treatment focuses on the illness side of the continuum when people show signs or symptoms of illness. The irony in the UK is that our medical system is called the National *Health* Service yet it deals predominantly with the illness end of the continuum!

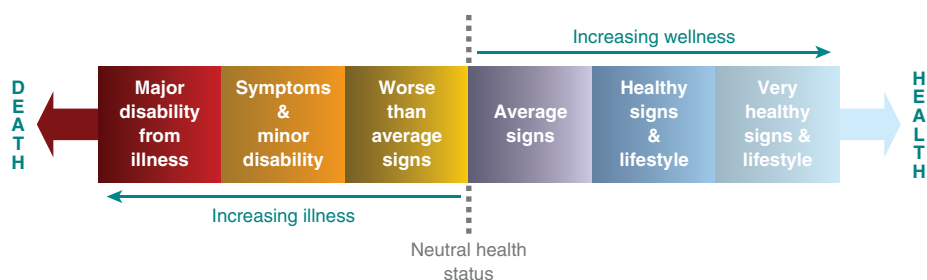


FIGURE 1.1 Illness-wellness continuum
[Source: Antonovsky, 1987 – adapted from Sarafino, 2002]

CASE STUDY 1.2 Anamarie Martinez-Regino



In August 2000, in a controversial case, New Mexico State took legal custody of 3 year old Anamarie Martinez-Regino because she was morbidly obese. She was removed from her parents and put in foster care for three months. A gagging order was put on her parents so they could not talk publicly about the case for five months.

Anamarie weighed three times more than a normal 3 year old and was 50 per cent taller. She had undergone numerous tests to

determine what was causing her increased growth but doctors could not find a medical cause.

While in foster care, Anamarie was put on a strict diet, lost weight, and learned to walk unassisted. It is difficult to gauge the emotional impact of being taken from her parents (e.g. she stopped speaking Spanish, her father's language).

After three months of legal and political wrangling, Anamarie was returned to her parents, although the state kept legal custody of her for a while, monitoring her progress. Years later Anamarie lives at home with her parents on a strict diet and exercise programme. She is still obese and is growing much quicker than other children her age. At seven years of age she was 5 foot 1 inch and her condition continues to be a medical mystery. (Photograph reproduced courtesy of Malingering/www.flickr.com)




1.3 WHY IS PSYCHOLOGY IMPORTANT?

The importance of treating the person and not just the disease is widely recognised. Each person is a unique mix of thoughts, emotions, personality, behaviour patterns, and their own personal history and experiences. Understanding more about this will help us treat our patients better. Psychology, however, as we have said is a rather like medical marmite – you either love it or hate it! Those who do not like it will often comment that 'It's just common sense', 'It's interesting but I can't see how it's useful', and 'I prefer to do real medicine'. Here we will consider each of these objections in turn.

'Psychology is just common sense'

Often statements from psychological research will indeed coincide with common sense. Examples of these include 'Stress is bad for you', 'A healthy lifestyle is important', and 'People with chronic illness have a worse quality of life'. If this was all we could take from

psychology, then most of us would indeed dismiss the subject as mere common sense. The value of psychological research is that:

-  It *tests* commonsense views empirically to confirm or disconfirm them.
-  It goes *beyond* common sense.
-  People don't always act according to common sense!

First, let's look at the empirical testing of commonsense views. Much common sense is in fact contradictory. For example, the proverbs 'Too many cooks spoil the broth' and 'Many hands make light work' contradict each other. In some cases psychological research has confirmed commonsense views, whilst for others it has rejected these. Some examples of commonsense views that have been tested by research are given in Box 1.3—take a look at these statements and make up your own mind about whether these are facts or myths.

BOX 1.3 Common sense: fact or myth?

- 1 Getting old leads to depression and social withdrawal¹
- 2 People are happier if they have a better standard of living¹
- 3 Worried patients are reassured by negative test results²
- 4 Character is formed by parental discipline¹
- 5 Being out in wet weather makes you more likely to catch a cold³
- 6 Taking vitamin C prevents colds⁴
- 7 Bed rest is a good adjunctive treatment for medical conditions²

Sources: 1 – McCrae & Costa (2003); 2 – Flaherty (2007); 3 – NIAID (2007); 4 – Hemilä et al (2007)

In fact, all of the views given in Box 1.3 have not been supported by research. Research therefore not only challenges common sense but also examines the things that go beyond common knowledge, such as why depression puts people at a higher risk of heart disease, whether there are critical periods in development when babies are more sensitive to psycho-social or biological circumstances, and whether psychotherapy should try to change *what* people think or the *relationship* people have with their thoughts. There are many other examples of this that you will read about throughout the course of this book.

'Psychology is interesting but not useful'

Most people will find at least some parts of psychology interesting, but that does not necessarily mean it is useful. We need to ask what exactly it means in medicine for something to be useful. If the goal in medicine is to treat people effectively and restore them to health, what does this involve and how can psychology help? In order to treat people effectively we

need to be able to (i) diagnose the problem accurately and (ii) treat that problem appropriately. Psychology can help in both these areas. Accurate diagnoses can be helped by understanding how people's beliefs shape their help-seeking behaviours, perceptions, and their reporting of symptoms (see Chapter 4). Negotiating an acceptable and effective treatment plan can be assisted by an understanding of decision making, what makes people more likely to adhere to treatment, and the influence of people's beliefs and emotions (see Chapter 17). In illnesses, such as HIV, where there is no medical cure behaviour change is crucial for limiting the spread of disease (see Chapter 15). Effective communication skills can facilitate this (see Chapter 18). Thus understanding psychological and social processes will help us both diagnose and treat people effectively.

Psychology can also help us to understand psychological *symptoms*, such as anxiety and depression, which can range from mild to severe, as well as *diagnostic disorders* such as panic disorder, major depressive disorder or schizophrenia. In the UK, psychological symptoms of anxiety and depression account for approximately 9 per cent of consultations in general practice (Office for National Statistics, 2000). However, the majority of patients with psychological symptoms will present with physical symptoms (Kroenke, 2003a). One study asked primary care physicians in the UK (GPs) to rate the content of 2,206 consultations and found that, in addition to consultations for psychological symptoms, 30 per cent of consultations were rated as involving some psychological content (Ashworth et al., 2003).

Evidently there is a strong link between physical health and psychological health and if we concentrate on only one side we risk missing important information and prescribing ineffective treatments. For example, chronic illness is associated with increased rates of psychological disorders (Cooke et al., 2007). People with psychological disorders are also at an increased risk of illness. A worldwide study of the link between medically unexplained symptoms and psychological disorders found that 69 per cent of patients with five or more unexplained symptoms had a psychological disorder, compared to 4 per cent of patients with no unexplained symptoms (Kisely et al., 1997). Psychological interventions, such as cognitive behaviour therapy (CBT), can be effective in managing or treating illnesses that have physical and psychological components, such as obesity, chronic pain, irritable bowel syndrome, and addiction (see Chapters 11 to 16). Psychological interventions can also be used to treat a range of psychological disorders, including bipolar disorder, personality disorder, and schizophrenia (see Chapters 16 and 19).

While psychological knowledge can help us be more effective medical practitioners, many students are put off psychology because of a sense that it is 'woolly' or 'interesting, but there's no right answer'. Psychology can appear abstract or ambiguous with many competing theories. The reasons for this are that when studying people we must deal with outcomes, such as behaviour, that are influenced by many factors. Explanatory theories are therefore tested by using a range of research methods and statistics to try to identify which factors are the most important. This means psychology will often present students with competing theories and supporting or conflicting evidence (and this book is no exception!). The ambiguity or uncertainty this involves may contrast directly with the large

amount of physiological and anatomical facts students are required to learn in the first few years of their medical degree.

So psychology may require a different way of thinking, but there should be no doubt that this method of thinking is a useful skill in itself – and one that can prove essential in later medical practice. For example, patients will rarely present with a clearly defined textbook set of symptoms. In trying to diagnose and treat a patient, you will often have to form a hypothesis about what might be wrong, then find a way to test it, and then reformulate your hypothesis if the tests do not confirm it. There are still many medical conditions that do not have suitable tests to confirm them. Examples here include chronic fatigue syndrome and irritable bowel syndrome (see Chapter 13). As with psychological learning, these conditions involve a tolerance of ambiguity and an openness to alternative explanations, particularly in the early stages of diagnosis and treatment.

'Psychology is not real medicine'

Most students will come to their medical studies keen to learn about the workings of the body, how it goes wrong, and how to fix it. Learning about the heart and how to resuscitate people is much closer to the common view of what it means to be a medical doctor than learning about such topics as health behaviour and stress. This implies a mechanical view of the body and medicine. Such a view is not new: it stems from a belief in dualism, according to which the mind and body are seen as independent. Dualism has its roots in classical philosophy and was reinforced by later thinkers, such as René Descartes (1637). Focusing on the mechanics of the body enabled rapid advances in medicine during the eighteenth and nineteenth century. Medical understanding grew exponentially as doctors and researchers focused on increasingly detailed physiological processes and identified the causes of pathology. Treatment also advanced: antibiotics and vaccines were developed and anaesthesia was introduced. The disadvantage of dualism is that it resulted in the **biomedical approach** or model, which dominated medicine for centuries. This approach, which is examined below, is based on a separation of body and mind that is unhelpful in many ways.

1.4 DIFFERENT APPROACHES TO MEDICINE

1.4.1 BIOMEDICAL APPROACH

The biomedical approach to medicine is summarised in Figure 1.2. This approach assumes that all disease can be explained in terms of physiological processes: therefore the treatment acts on the disease and not on the person. There is a linear progression of causality from the pathogen to the person and not the other way around. Psychological and social processes are separate and incidental. The person as a whole is therefore not considered by the biomedical approach.

Although this view has dominated medicine and led to great advances it has been criticised for many reasons, in particular that it does not consider the influence of (i) social or

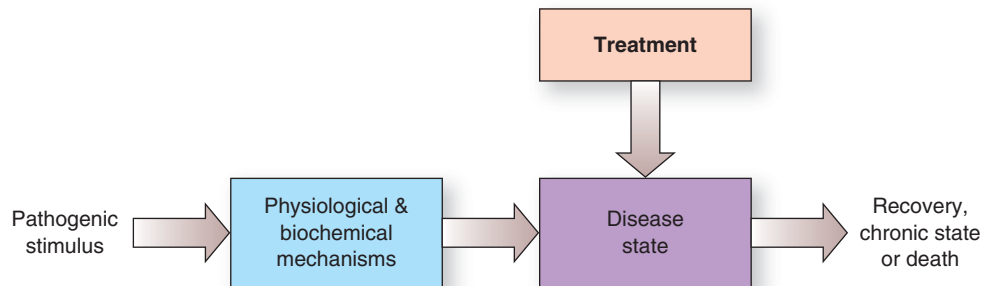


FIGURE 1.2 Biomedical approach to health (adapted from Lovallo, 2004)

(ii) psychological factors on health. Historically, the influence of social factors on population health is clear. Let us take the example of infectious diseases. Figure 1.3 shows the rapid decline in deaths from infectious diseases in the UK between 1859 and 1978 and also shows when vaccines were introduced. You can see that the largest decreases in deaths from infectious diseases occurred *before* vaccines were introduced. Why? Some of the

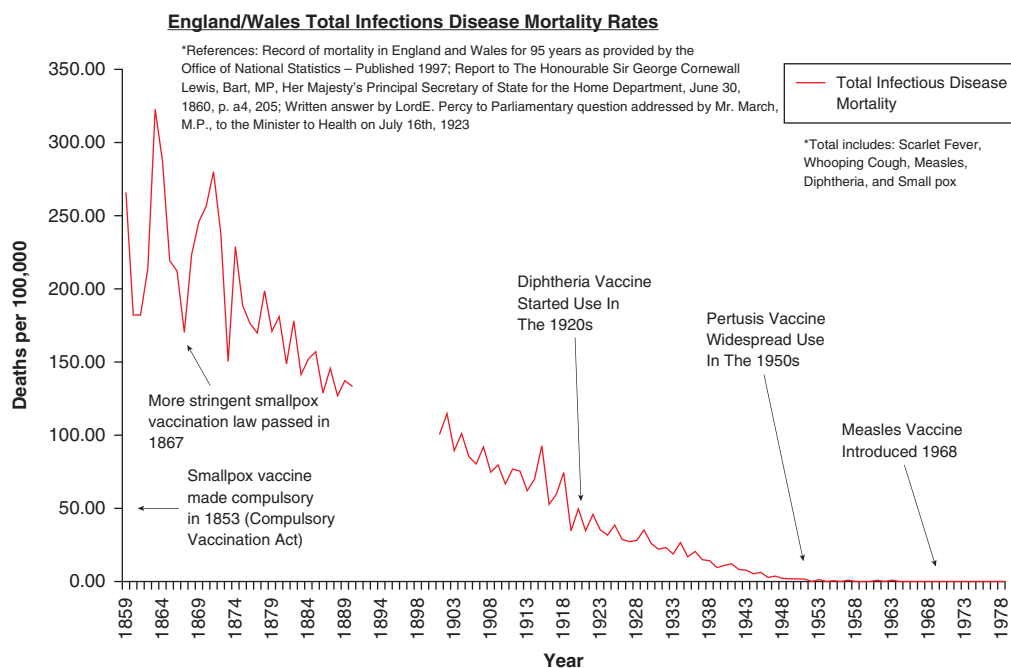


FIGURE 1.3 Decline in mortality from infectious diseases in the UK
Graph reproduced courtesy of Roman Bystrianyk (www.healthsentinel.com)

reason for this can be explained by more effective treatments, but a lot was due to changes in people's understanding of illness and the effect of lifestyle. For example, in the mid-1800s a physician, John Snow, noticed that patterns of cholera outbreaks clustered around particular water supplies in London. This led to a better understanding of the cause and transmission of cholera; as well as social changes such as an improved water supply and sanitation. Here we can see that, biomedical or public health knowledge provided the impetus for social change and that the reduction of cholera and many other diseases cannot be explained on a purely biomedical basis.

Social factors are just as important today. One of the most consistent findings from public health research is the influence of social class on health. People in lower social classes are at more risk of illness (**morbidity**) or death (**mortality**) from a variety of causes. This increased risk is partly due to differences in lifestyles. For example, people in lower social classes have a poorer diet, harder working and living conditions, and are more likely to smoke. However, studies that examine this indicate that even after these factors are taken into account people in lower social classes still remain at an increased risk of poor health (see Research Box 1.1).

RESEARCH BOX 1.1 Social class and morbidity

Borg, V., & Kristensen, T.S. (2000) 'Social class and self-rated health: can the gradient be explained by differences in life style or work environment?', *Social Science & Medicine*, 51: 1019–1030.

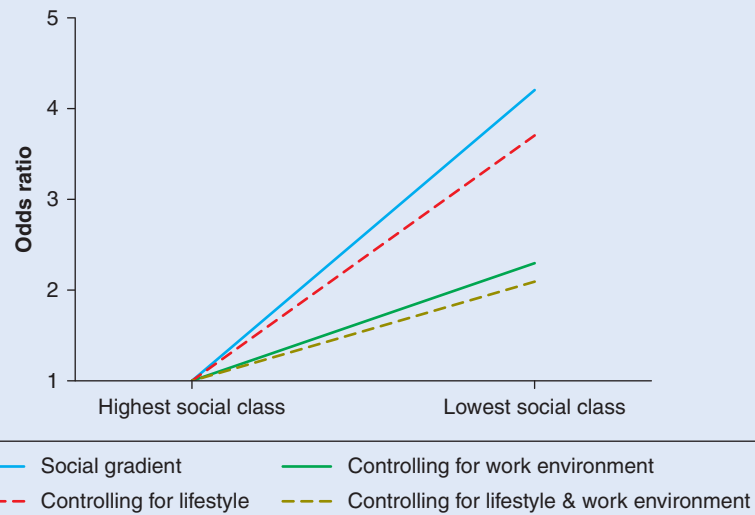
Background

In addition to being affected by health behaviours, morbidity and mortality rates are affected by socioeconomic status. This study was designed to determine the relative importance of social class and health behaviour.

Methods and findings

The Danish National Work Environment Cohort Study was a prospective study of 5001 people aged 18 to 59 years-old and assessed over five years. Participants were interviewed in the first year and five years later. Measures were taken of self-rated health, social class, lifestyle factors, and work.

People in the lowest social class were over three times more likely to report poor health than people in the highest social class, and their health was more likely to deteriorate over the five years of the study. However, poor health was also associated with lifestyle (smoking, obesity) and work factors (repetitive, unskilled job, poor security, more exposure to weather, and physical risks). Lifestyle and work factors accounted for 66 per cent of the effect of social class on health, with work factors making the strongest contribution (see figure). However, while the influence of social class on health reduced it remained significant.



Significance

Although this study relied on a single self-reported rating of health, and did not examine other factors known to be important to health (e.g. social resources and support), it showed that most of the effect of social class on health is due to work and lifestyle factors.

The role of lifestyle in illness illustrates the importance of psychological factors, yet these are not considered by the biomedical model. Understanding and changing health behaviour would do more than anything else to reduce morbidity and mortality in our society (see Chapter 5). For example, one in four deaths from cancer in the UK are estimated to be due to unhealthy diets and obesity (CRUK, 2010). Increased alcohol use is directly related to increased rates of liver disorders and cancers of the GI tract (see Chapter 13). Smoking is directly related to lung cancer—the third highest cause of mortality in the UK (see Chapter 12).

It is not only lifestyle that is important. Individual factors such as personality, health behaviours, and beliefs also affect health. For example, individuals who are high on the personality trait of conscientiousness are less likely to engage in risky behaviours and more likely to engage in positive health behaviours. Perhaps unsurprisingly, they are therefore also more likely to live longer (Stone and McCrae, 2007). Stress and depression are strongly implicated in a range of illnesses, including cardiovascular disease where evidence suggests both these factors are associated with the onset of heart disease (see Chapter 12).

A good example of the effect of our beliefs on health and illness is the **placebo effect**, where people recover because they think they are going to recover, as opposed to recovering because of pharmacological or physical treatment. The placebo effect is typically tested by giving one group of patients a fake drug (placebo group), and comparing their recovery to another group of patients given an active drug (drug group) or no drug (control). The placebo effect is the recovery that occurs in the group given the fake drug, which is over and above any recovery observed in the control group. This effect is well established and there is evidence that beliefs are responsible for a large part of it. For example, a study of surgery for osteoarthritis compared two different types of procedure (arthroscopic debridement or lavage) with placebo surgery where the patients were anaesthetised and skin incisions made but the arthroscope was not inserted. Those who had placebo surgery showed the same level of improvements up to two years later (Moseley et al., 2002). The placebo effect is considered in more detail in Chapter 4.

The biomedical approach cannot account for any of these effects of social and psychological factors on health. Even when the biomedical approach dominated medicine most healthcare professionals realised that psychological and social factors were still important. However, working within the biomedical framework meant these factors were not made explicit or used to the advantage of medicine. They therefore remained part of the *art* of medicine rather than the *science* – although ironically the term ‘medicine’ comes from the Latin *medicīna (ars)* – the (art of) healing.

1.4.2 BIOPSYCHOSOCIAL APPROACH

The **biopsychosocial approach**, proposed by Engel (1977), is a framework that does take into account the effect of biological, psychological, and social factors. This approach was later expanded to include such factors as ethnicity and culture (Kaplan, 1990; Matarazzo, 1980; Schwartz, 1982). A schematic diagram of the biopsychosocial approach is shown in Figure 1.4. We can see the personal and external factors that, according to this approach, impact on health.

The external factors include the sociocultural environment such as poverty, available support structures, access to healthcare and other facilities, and legislation that impacts on health. External factors also include pathogenic stimuli, which can range from, for example, being exposed to a virus, to passive smoking, to living in an area high in radon gas. External factors also include any treatment that the individual receives which can act on the pathogenic stimuli or the person. All of these external factors both influence the person and are influenced by the person.

Internal factors include personal history, psychosocial processes, and physiological and biochemical mechanisms. Personal history involves multiple factors such as ethnicity, genetic make-up, learned behaviour, developmental processes, and previous illnesses. These inevitably influence psychosocial processes such as lifestyle, sociability, personality, mood, perception of symptoms, behaviour, adherence to treatment and so on, so that all in turn will influence, and be influenced by, physiological mechanisms.

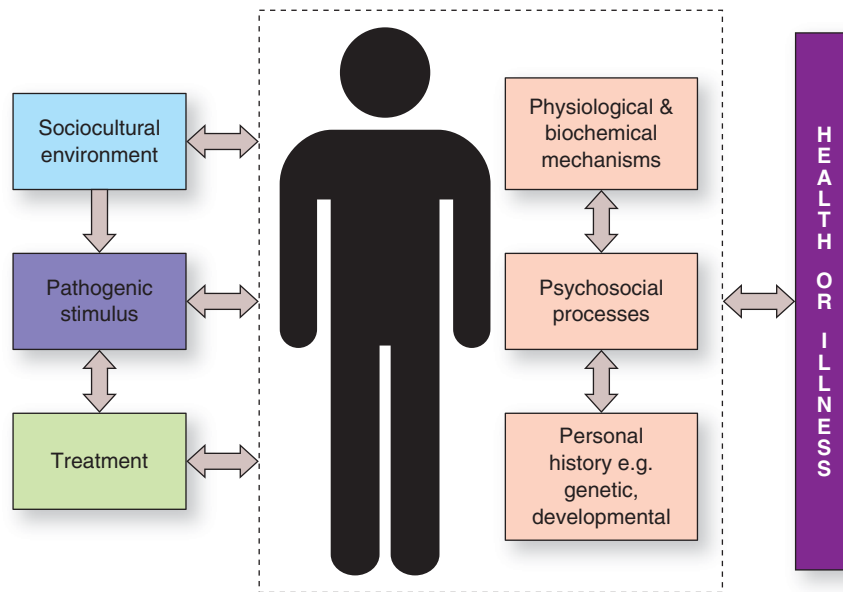


FIGURE 1.4 Biopsychosocial approach to health

Consider smoking, for example. Many people report that their first taste of a cigarette is fairly disgusting, so why do people persist in smoking until they are addicted? Most people will start smoking in adolescence when it is important to them to gain peer approval and fit in with group norms. The prevalence of smoking is highest in people from deprived backgrounds with a low socioeconomic status (West and Hardy, 2007). Thus a child growing up in a deprived area may be more exposed to others who smoke and more likely to start smoking which further reinforces the group norm. Without a motivation to quit smoking this child is also unlikely to seek help.

The pathogens in cigarettes mean that, with continued use, smokers are at increased risk of many illnesses including lung cancer, chronic obstructive pulmonary disease, heart disease, head and neck cancer, impotence, infertility, gum disease, back pain, and type II diabetes (West and Hardy, 2007). Whether an individual develops any of these illnesses will be determined by the other aspects in the biopsychosocial approach, such as their individual vulnerability, physiological processes, other lifestyle behaviours, and exposure to other pathogens. However, to return to our example, not all children in deprived circumstances will smoke. Therefore the sociocultural environment interacts with the characteristics of each child to determine exposure to the pathogen of cigarettes, the likelihood of seeking treatment, and the risk of disease.

The biopsychosocial approach provides a clear framework that sums up what many healthcare professionals already intuitively know. It is an improvement on the biomedical approach in that it makes the links between psychological and social factors and health

explicit. Illness is seen to be caused by many factors at different levels, rather than purely by pathogens as posited by the biomedical model. Responsibility for health and illness therefore rests on individuals and society rather than on only the medical profession alone. Similarly, treatment considers physical, psychological and social contributing factors as oppose to the physical in isolation. A further comparison of the key features of the biomedical and biopsychosocial approaches is given in Box 1.4.

BOX 1.4 Comparison of biomedical and biopsychosocial approaches

	Biomedical	Biopsychosocial
Mind-body relationship	Separate; independent (dualism)	Part of dynamic system; influence each other
Cause of disease	Pathogens	Multiple factors at different levels
Causality	Linear	Circular
Psychosocial factors	Irrelevant	Essential
Approach to illness and treatment	Reductionist	Holistic
Responsibility for health	Medical professionals – e.g. to combat disease	Individuals/society – e.g. healthy lifestyle
Focus of treatment	Eradication or containment of pathology	Physical, psychological, and social factors contributing to illness
Focus of health promotion	Avoidance of pathogens	Reduction of physical, psychological, and social risk factors

The biopsychosocial approach has implications for research, education, and clinical practice. It should lead to more comprehensive research that examines the multiple levels, systems, and factors involved in health. Moreover, in clinical practice the biopsychosocial approach should result in a more complete understanding of the many factors that can contribute to health or illness. This in turn should lead to a more **holistic approach**—that is, treatment of the whole person. The biopsychosocial approach has already resulted in a more patient-centred approach to medicine (Borrell-Carrio et al., 2004). It should also lead to better medical training, with the inclusion of education about psychological and social factors.

Thus the biopsychosocial approach is an improvement on the biomedical approach and should result in clear clinical benefits if used. It is therefore puzzling that, more than thirty years after it was proposed, the biopsychosocial approach still is not widely used or practised in medicine or psychology. Whilst the biopsychosocial approach is taught in most training courses for healthcare professionals, it tends to be taught more as a theoretical framework than applied to clinical work. As one medic observed ‘The term was thrown

around as often as possible in the first two years, in the classroom, and then disappeared entirely during the final two clinical years' (Myunclestu, 2005).

So we still have a long way to go to properly incorporate the biopsychosocial approach into medicine. There are many reasons why this might be. The biomedical approach has been dominant for centuries and modern medicine has developed within this framework. Although the biopsychosocial approach may appear simple, in fact the inclusion of all the different elements makes research and medicine more complicated to carry out in practice. In addition, the biopsychosocial approach suggests circular or nonlinear causality. In other words, that physical, psychological and social factors all influence, and are influenced by, each other. This means there is rarely a simple and linear cause-effect relationship between one factor and illness. This raises difficulties in clinical practice because we need to choose or prioritise one treatment. To do this, we have to think in terms of a hierarchy of causes (e.g. one cause is more important than others) and linearity of treatment (e.g. removing this cause will remove illness) (Borrell-Carrio et al., 2004).

Consider the case of Anne, a 50 year old woman with hypertension. This hypertension could be due to Anne's high cholesterol, obesity, smoking, demanding job, lack of support at home, or perfectionist tendencies and inflated beliefs about responsibility that mean she works long hours and is stressed. Which of these explanations we adopt will influence the treatment we offer. If we take the biological cause (high cholesterol) then we would treat Anne with cholesterol-reducing drugs. If we take the behavioural explanations (smoking and obesity), we might offer Anne support to stop smoking or lose weight. If we adopt the psychological explanation (stress and maladaptive beliefs) we might offer Anne stress-management or psychotherapy sessions. Finally, if we adopt the social explanations (work stress and a lack of support) we might refer her to a local support group, self-help groups, or an occupational health worker. In reality Anne's hypertension is probably affected by all these factors but we need to treat her in the most effective way. What would constitute 'effective' treatment here? To decide this, we would need to consider which treatment will provide the best outcome for Anne at the least cost and time for the health service.



ACTIVITY 1.2 DIFFERENT APPROACHES TO MEDICINE

- Reflect on the last time you saw a doctor.
- To what extent did they appear to be working with a biomedical framework and to what extent with a biopsychosocial one?
- How would their treatment have differed if they altered their framework(s)?

We can see that barriers to applying the biopsychosocial approach include the facts that (i) it is not possible to address all the factors that influence illness and (ii) in order to plan treatment we need to think in terms of linear causality rather than circular causality. However, this does not mean we should abandon it and return to the biomedical approach, which ignores psychosocial and environmental factors completely. There is, after all, a

crucial difference between, on the one hand, recognising all potential determinants and then selectively treating an individual and, on the other, focusing only on biomedical factors because that's all we must look at. Psychologists also need to be reminded of this. Just as medics will naturally err towards biological explanations, psychologists will naturally err towards psychological explanations.

Therefore we all need to consciously remind ourselves to explore factors at each level of the biopsychosocial approach when assessing and treating patients. This will give us a more complete understanding of the illness, encourage an holistic treatment of the person, include a consideration of potential psychosocial barriers to treatment efficacy, and allow us to change or modify treatments accordingly if our first approach is not as effective as expected.

Summary

- It is difficult to define health. The choice of definition has implications for medical practice and society.
- No single definition of health is adequate and it is perhaps easier to think of health and illness on a continuum from complete wellness to death.
- The separation of psychology and medicine was initially founded on the mind-body divide (dualism).
- Medicine was dominated by the biomedical approach for many years.
- The more recent biopsychosocial approach has the capacity to unify disciplines in theory and practice, and encourage an holistic approach to medicine.

FURTHER READING

Frankel, R.M., Quill, T.E. & McDaniel, S.H. (eds) (2003) *The Biopsychosocial Approach: Past, Present, Future*. Rochester: University of Rochester Press. A comprehensive edited book on the biopsychosocial approach, clinical applications, patient-centred clinical methods, educational/administrative issues, and the future of this approach.

White, P. (ed.) (2005) *Biopsychosocial Medicine: An Integrated Approach to Understanding Illness*. Oxford: Oxford University Press. Edited book based on experts discussing the application of the biopsychosocial approach in medicine.

REVISION QUESTIONS

- 1 What are the various specialisms in psychology?
- 2 Describe two specialisms in psychology. How are they relevant to healthcare?
- 3 Outline four different definitions of health.

- 4 Compare and contrast two definitions of health. What are the implications of each definition for treatment?
- 5 What is dualism? How has it influenced medicine?
- 6 Describe the biomedical approach to medicine and outline the strengths and weaknesses of this approach.
- 7 Describe the biopsychosocial approach to medicine and outline the strengths and weaknesses of this approach.
- 8 Compare and contrast the biomedical and biopsychosocial approaches to medicine.

CLINICAL NOTES 1.1

In primary care:

- Up to a third of the patients you see will have psychological disorders and many more will have psychological issues or symptoms.
- Physical causes are usually only found for around 15 per cent of people's symptoms.
- Psychological and physical symptoms are highly related. Many patients will only mention physical symptoms, so it is important to ask about psychological symptoms as well.
- In treatment, a lot of the effect of drugs can be due to patients believing they will recover rather than the drug itself.



CLINICAL NOTES 1.2

In clinical practice:

- Promoting healthy lifestyles is an important aspect of medicine and has the potential to save thousands of lives.
- People respond differently to illness so it's important not to assume you know how they feel.
- Tolerance of ambiguity and the ability to test alternative explanations for symptoms are necessary clinical skills.
- The holistic approach means we should consider biomedical factors, lifestyle behaviour, psychological factors (e.g. beliefs, emotions, symptoms), and social factors.

