SUSAN AYERS & RICHARD DE VISSER

PSYCHOLOGY FOR MEDICINE & HEALTHCARE

THIRD EDITION

PSYCHOLOGY FOR MEDICINE & HEALTHCARE

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Dedication

Susan Ayers:
For Hannah and Callum

Richard de Visser:
For Thom, Felix, and Iris

CONTENTS

ABOUT THE AUTHORS

Susan is a psychologist specialising in wellbeing and mental health during pregnancy and after birth. She is a professor at City, University of London in the School of Health Sciences, a chartered health psychologist and cognitive behaviour therapist. Since obtaining her PhD from the University of London, Susan worked at St George's Hospital Medical School (London) and Brighton & Sussex Medical School (Sussex) before moving to City, University of London. Susan is co-author of *Psychology for Medicine* (2011) and *Psychology for Medicine and Healthcare* (2017) and editor of the *Cambridge Handbook of Psychology, Health and Medicine* (2007, 2019). She has given numerous invited lectures and workshops and was awarded the Annual Lecturer Prize by the Society of Reproductive and Infant Psychology in 2012.

Richard teaches at Brighton & Sussex Medical School and in the School of Psychology at the University of Sussex, where he has received awards for his individual and group teaching. He was co-author of *Psychology for Medicine* (2011) and *Psychology for Medicine and Healthcare* (2017). Richard completed a BSc in Psychology at the University of Melbourne, and a PhD at the Australian Research Centre in Sex, Health & Society. He then undertook post-doctoral work at Birkbeck College, University of London before moving to Sussex where he was Lecturer, then Senior Lecturer, and is now Reader in Psychology. Richard's research interests span a broad range of topics in health psychology, including sexuality and relationships; gender and health; alcohol use; use of health services; and cross-cultural analyses. He has expertise in qualitative and quantitative methods, intervention studies, and mixed-method designs.

ACKNOWLEDGEMENTS

There is more to a book than its contents, and the story behind this one would make a good read in itself. The journey started because we were frustrated by the lack of a comprehensive textbooks on psychology for medical students. We happened to mention this in passing to the people at SAGE who harnessed all their enthusiasm and considerable expertise into getting the first edition of this book published in 2011. SAGE started the ball rolling with the first edition and their enthusiasm and subsequent success of the book took us into a second and third edition, so we are grateful for their impetus and help.

The second and third editions gave us the opportunity to make some important changes. The first edition was used in many countries by people studying medicine and other health professions. We therefore changed the language and examples throughout the book to reflect the global community and diversity of healthcare students and professionals using this book. Some areas of research and understanding have developed rapidly since the first edition, so we've been able to include and update information on issues such as epigenetics, social diversity, health technology, and resilience. We've also expanded important topics that we were only able to cover briefly in previous editions, such as pain, perinatal mental health, and therapies such as mindfulness. This third edition is accompanied by a range of online resources for students and teachers to use to support their learning. These include powerpoint slides, case studies, revision questions, other fun tasks, and links which you can find at https://study.sagepub.com/ayers3e.

The real story of this book, however, has always been the students and medical consultants who were so important in making it happen. With the first edition it was only really when students got involved that the book took on a life of its own. Our students have told us what works and what needs to change, what online materials help (or don't). We are truly indebted to the many amazing people who have been an integral part of every edition. Students gave up their summer vacation to help with researching literature, sourcing copyright permissions, developing online resources, and arranging illustrations with the requisite amount of enthusiasm and unbelievable organisational skills to make sure this book was completed. Students also read, re-read, and commented on every chapter through various drafts. They gave us their honest opinions and helped make this book what it is. When we asked for volunteers, we never dreamt so many people would get involved. They told us what they liked and did not like, where we had the tone wrong, what features were missing. The cartoons were drawn by an artist who happened to be studying medicine at the time we were writing this book. We were lucky to have excellent medical consultants advise us on chapters throughout the book – and with plenty of good humour. We laughed a lot along the way!

We have been humbled by people's enthusiasm, the amount of time they put in, and the expertise they brought to this book. We have been inspired by many of these people and are very grateful for their input. Even now, when celebrating a third edition it feels like a collective journey, which has been a great experience and a testament to the combined efforts of many people who gave their considerable time and energy to get it there. This must clearly include our respective families, who put up with us being total book-bores and still supported us at every step.

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Nazihah Uddin, School of Health Sciences, City, University of London

CARTOONS

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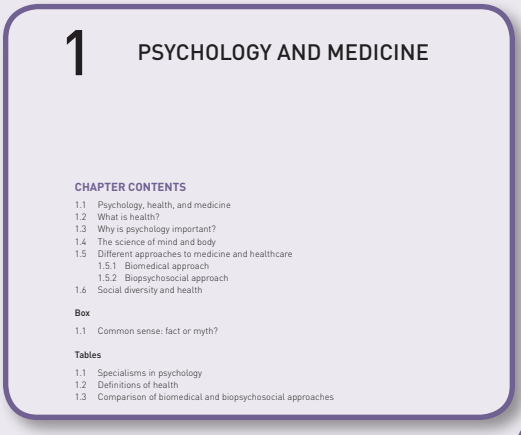
GUIDED TOUR

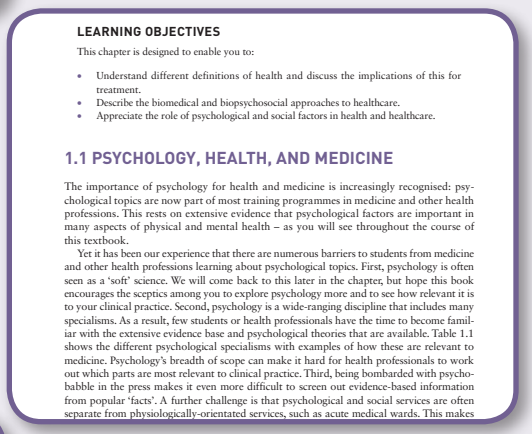


1 PSYCHOLOGY AND MEDICINE

CHAPTER CONTENTS

Chapter Contents Every chapter has a clear, numbered list of the contents of the chapter, including major sections, subheadings, case studies, research boxes, and other features.

Learning Objectives are given at the beginning of each chapter. These state the most important things we hope you will learn from each chapter.



LEARNING OBJECTIVES

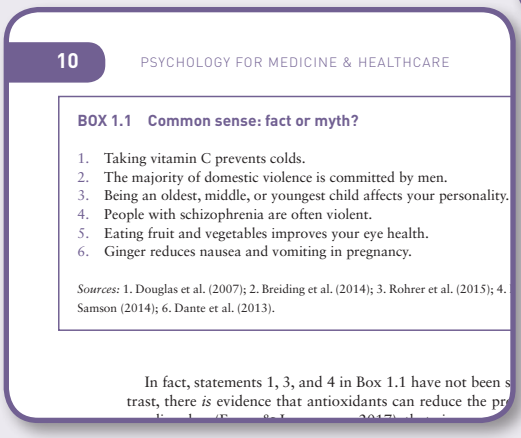
This chapter is designed to enable you to:

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

1.1 PSYCHOLOGY, HEALTH, AND MEDICINE

The importance of psychology for health and medicine is increasingly recognised: psychological topics are now part of most training programmes in medicine and other health professions. This rests on extensive 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 numerous barriers to students from medicine and other health professions learning about psychological topics. First, psychology is often seen as a 'soft' science. We will come back to this later in the chapter, but hope this book encourages the sceptics among you to explore psychology more and to see how relevant it is to your clinical practice. Second, psychology is a wide-ranging discipline that includes many specialisms. As a result, few students or health professionals have the time to become familiar with the extensive evidence base and psychological theories that are available. Table 1.1 shows the different psychological specialisms with examples of how these are relevant to medicine. Psychology's breadth of scope can make it hard for health 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 'facts'. A further challenge is that psychological and social services are often separate from physiologically-orientated services, such as acute medical wards. This makes



10 PSYCHOLOGY FOR MEDICINE & HEALTHCARE

BOX 1.1 Common sense: fact or myth?

1. Taking vitamin C prevents colds.
2. The majority of domestic violence is committed by men.
3. Being an oldest, middle, or youngest child affects your personality.
4. People with schizophrenia are often violent.
5. Eating fruit and vegetables improves your eye health.
6. Ginger reduces nausea and vomiting in pregnancy.

Sources: 1. Douglas et al. (2007); 2. Breiding et al. (2014); 3. Rohrer et al. (2015); 4. Samson (2014); 6. Dante et al. (2013).

In fact, statements 1, 3, and 4 in Box 1.1 have not been s
trast, there *is* evidence that antioxidants can reduce the pr

Boxes are used to illustrate key concepts described in the text. Some of these are lists of key points, some are descriptions of important issues, and others are diagrams or tables of information.

The **biopsychosocial approach** (Engel, 1977) is a framework that does incorporate biological, psychological, and social factors. This approach was later expanded to include such factors as ethnicity and culture (Suls & Rothman, 2004). A schematic diagram of the biopsychosocial approach is shown in Figure 1.3, which shows the personal and external factors that, according to this approach, affect health.

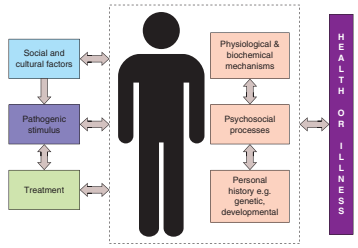


FIGURE 1.3 Biopsychosocial approach to health

Source: Adapted from Lovallo, W.R. (2004) Stress & Health: Biological and Psychological Interactions. Thousand Oaks, CA: Sage.

Figures A variety of figures is used to help you understand the material described in the text. These include photographs, diagrams, flowcharts, and theoretical models.

Case Studies are used to illustrate peoples' experiences of the issues described in the text. They also show how psychological theories and techniques can be used in clinical practice to help patients.

CASE STUDY 1.3 Applying a biopsychosocial approach

Damini has hypertension, which could be due to her high cholesterol, obesity, demanding job, stress of juggling work and home responsibilities, or strong perfectionist tendencies and beliefs about responsibility that mean she works long hours and is stressed. Which of these explanations we adopt will influence the treatment we offer, but for her it's important that we consider all these factors.

If we take the biological cause (high cholesterol), then we would treat Damini with cholesterol-reducing drugs. If we take the behavioural explanations (obesity), we might offer Damini support to lose weight. If we take the psychological explanation (stress and maladaptive beliefs), we might offer Damini stress-management or psychotherapy sessions. Finally, if we adopt the social explanations (work stress and a lack of support), we might refer her to an occupational health worker, counsellor, or a life coach.

In reality, Damini's hypertension will be affected by all these factors and we need to treat her in the most effective way. To decide this, we would need to consider which treatment will provide the best outcome for Damini at the least cost and time for the health service. What do you think would constitute effective treatment in this case?

Image credit: © Fernanda/Adobe Stock

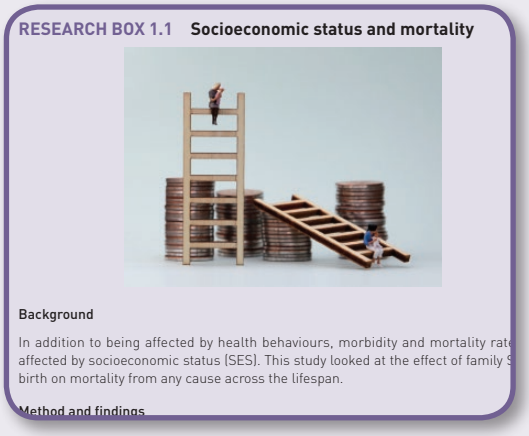
approach has been dominant for centuries, and modern medicine and healthcare developed within this framework. Although the biopsychosocial approach may appear simple, in fact the inclusion of all the different elements makes research and medicine more complicated to carry out in practice. In addition, the biopsychosocial approach suggests circular or nonlinear causality. In other words, 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 if we need to choose or prioritise one treatment (see Case Study 1.3). 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).

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 each person feels.
- Tolerance of ambiguity and the ability to test alternative explanations for symptoms are essential clinical skills.
- The holistic approach means we should consider biomedical factors, lifestyle behaviour, psychological factors (e.g. beliefs, emotions, symptoms), and social factors.

Clinical Notes give key recommendations and tips for healthcare practice based on the psychological principles and techniques described in the text.


RESEARCH BOX 1.1 Socioeconomic status and mortality

Background

In addition to being affected by health behaviours, morbidity and mortality rat
affected by socioeconomic status (SES). This study looked at the effect of family S
birth on mortality from any cause across the lifespan.

Method and findings

Research Boxes Each research box describes a research study that illustrates the psychological concepts or findings described in the text, and gives examples of how different research methods are applied in clinical contexts.

Activities are designed to help you stop and think about the information contained in the text and how it might apply to your own life.

ACTIVITY 1.1 WHAT IS HEALTH?

- How would you rate your own health?
  - Very poor
  - Poor
  - Fair
  - Good
  - Excellent
- What factors were important in helping you decide where to rate your health?

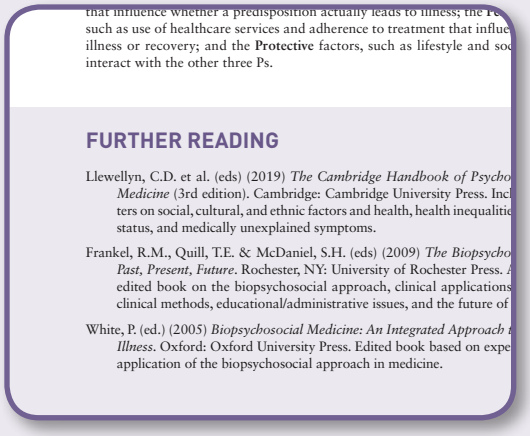
We therefore need to think of health on many levels. The World Health Organisation (WHO) defines **health** very broadly as 'a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity' (World Health Organisation, 1992). The value of this definition is that it is inclusive, and the emphasis on wellbeing accounts for individual differences in subjective perceptions 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.

How we define health has wide-ranging implications for the treatments provided by health services. For example, if we aim for health as defined by the WHO, it might 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 conceptualising health as complete wellbeing confuses happiness with health (Saracci,

Rates of burnout among doctors vary widely with one review of the
that between 18% and 82% of medical residents report burnout (Pri

Burnout is also high in nurses, with
affected (Li et al., 2018; Pradas-H
2018). A European survey of famil
countries found that high levels o
associated with poor job satisfacti
change job, sick leave, younger a
and use of alcohol, tobacco, an
medication. Burnout also varied
country and region (Soler et al.,
analysis of burnout in over 28,0
found differences between countri
in the USA having lower levels
exhaustion than those in Europe. In
out was associated with work–li
poor coping strategies, whereas in E
was associated with negative att
(Lee et al., 2013). Lifestyle and he
are also affected: a study of bu
European countries found that
more fast-food consumption, les
greater use of alcohol and painkill
ciations remained even after controlling for individual differences
residence (Alexandrova-Karamanova et al., 2016).

Cartoons provide time out from the masses of words and provide a more humorous view of psychology and healthcare!


that influence whether a predisposition actually leads to illness; the **Pe**
such as use of healthcare services and adherence to treatment that influe
illness or recovery; and the **Protective** factors, such as lifestyle and soc
interact with the other three Ps.

FURTHER READING

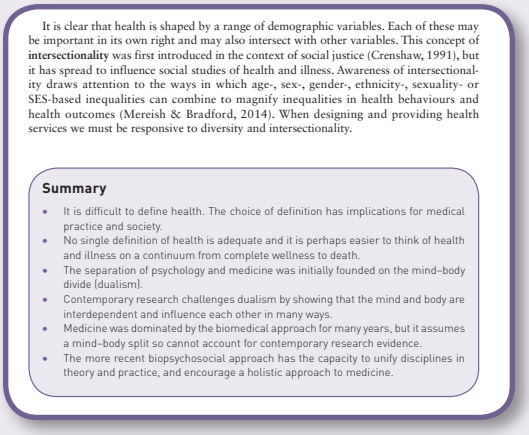
Llewellyn, C.D. et al. (eds) (2019) *The Cambridge Handbook of Psycho*
Medicine (3rd edition). Cambridge: Cambridge University Press. Incl
ters on social, cultural, and ethnic factors and health, health inequalitie
status, and medically unexplained symptoms.

Frankel, R.M., Quill, T.E. & McDaniel, S.H. (eds) (2009) *The Biopsycho*
Past, Present, Future. Rochester, NY: University of Rochester Press. *A*
edited book on the biopsychosocial approach, clinical applications
clinical methods, educational/administrative issues, and the future of

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

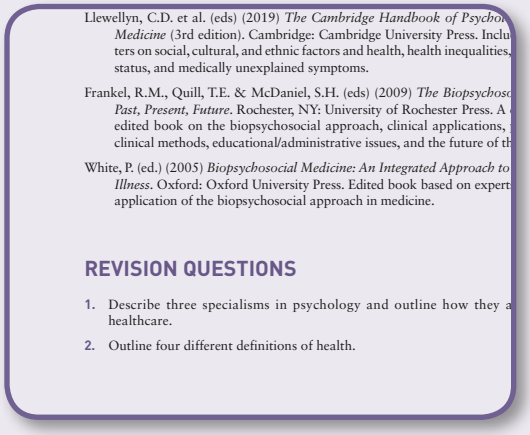
Further Reading At the end of each chapter there are suggestions for further reading, along with brief comments about each book to help you choose which ones to read.

Summaries Each section concludes with a bullet-point summary of the most important psychological theories and applications covered in that section. These summaries relate to the learning objectives and revision questions, so will help you learn and revise.


It is clear that health is shaped by a range of demographic variables. Each of these may be important in its own right and may also intersect with other variables. This concept of **intersectionality** was first introduced in the context of social justice (Crenshaw, 1991), but it has spread to influence social studies of health and illness. Awareness of intersectionality draws attention to the ways in which age-, sex-, gender-, ethnicity-, sexuality- or SES-based inequalities can combine to magnify inequalities in health behaviours and health outcomes (Mereish & Bradford, 2014). When designing and providing health services we must be responsive to diversity and intersectionality.

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).
- Contemporary research challenges dualism by showing that the mind and body are interdependent and influence each other in many ways.
- Medicine was dominated by the biomedical approach for many years, but it assumes a mind–body split so cannot account for contemporary research evidence.
- The more recent biopsychosocial approach has the capacity to unify disciplines in theory and practice, and encourage a holistic approach to medicine.


Llewellyn, C.D. et al. (eds) (2019) *The Cambridge Handbook of Psycho*
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ters on social, cultural, and ethnic factors and health, health inequalities,
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Frankel, R.M., Quill, T.E. & McDaniel, S.H. (eds) (2009) *The Biopsychosc*
Past, Present, Future. Rochester, NY: University of Rochester Press. A
edited book on the biopsychosocial approach, clinical applications,
clinical methods, educational/administrative issues, and the future of th

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

REVISION QUESTIONS

1. Describe three specialisms in psychology and outline how they a
healthcare.
2. Outline four different definitions of health.

Revision Questions are included at the end of every chapter to help you learn and revise for exams.

ONLINE RESOURCES

Visit **https://study.sagepub.com/ayers3e** to find a range of additional resources for both students and lecturers, to aid study and support teaching.

FOR LECTURERS

- **PowerPoint slides** featuring figures and tables from the book, which can be downloaded and customized for use in your own presentations.
- An **instructor's manual** providing you with author-selected journal articles and additional case studies to use in class or for assignments.
- **Testbanks** containing multiple choice questionnaires related to the key concepts in each chapter can be downloaded and used in class, as homework or exams.

1 PSYCHOLOGY AND MEDICINE

CHAPTER CONTENTS

(Continued)

LEARNING OBJECTIVES

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TABLE 1.1 Specialisms in psychology

Specialism	Focus	Relevance to medicine
Health	Psychological factors and health	Effective health promotion and intervention. Psychosocial influences on health, including resilience.
Clinical	Psychological resilience and disorders	Emotions, emotional disorders (psychopathology), and developing effective interventions.
Developmental	Change over the lifespan	Normal and abnormal aspects of development across the lifespan.
Forensic	Criminal and judicial behaviour and systems	Criminal behaviour. Medico-legal investigations and testimony.
Social	Social and group processes	How social and group processes influence our own and other people's behaviour in healthcare settings.
Biological and Neuropsychological	Links between physiological and mental processes	The interaction between physiological processes and psychological experiences, and behaviour.
Cognitive	Internal mental processes, e.g. attention, perception, memory	Risk perception and decision making. How memory processes and biases affect treatment and adherence to medication.
Occupational	Work, the workplace, and organisations	Work performance and training requirements. How healthcare organisations function.
Educational	Learning and education	Improving education and training for health professionals. Health education.

This book addresses this problem by providing a single, integrated overview of the psychology that is relevant to medicine and healthcare, and by considering how this can be applied in 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 psychological and social factors are important, and different approaches to medicine and healthcare.

The rest of the book is divided into four sections. Section I focuses on the psychology of health and covers theories and research relevant to most areas of healthcare practice, such as emotions, 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 factors on people's behaviour. Section III focuses on psychology that is relevant to different body systems, including the

cardiovascular, respiratory, gastrointestinal, immune, genitourinary, neurological, reproductive and edocrine systems. Finally, Section IV outlines psychology that is relevant to clinical practice, such as evidence-based practice, communication skills, clinical interviewing, and psychological interventions.

Throughout the book you will find clinically relevant information and tips in the clinical notes boxes. Activity boxes encourage you to apply what you are learning to your own experiences. Case studies also help you apply what you are learning to clinical scenarios, and help you to understand the impact of illness on individuals. Learning objectives and summary boxes 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. Online supporting resources are available for students and teachers at https://study.sagepub.com/ayers3e.

1.2 WHAT IS HEALTH?

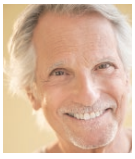
As health professionals you are embarking on careers that involve helping people to get better. But 'better', like 'health', is not the same for everyone. So how can we decide who to treat and who not to treat? Take a look at the examples in Case Study 1.1 and the definitions of health in Table 1.2.

Health operates on many levels: the physical, subjective, behavioural, functional, and social. One large landmark study found that people 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.

These definitions are not mutually exclusive: they overlap and intersect. However, which of these definitions we prioritise will have implications for who receives treatment. Table 1.2 applies these to the cases of a fit young woman with a high risk of breast cancer (Jeeval), a terminally ill man who is living life to the full (David), and a suicidal woman (Karen). It shows, for each one, who would be considered healthy and who would be considered ill using these different definitions. Common sense would suggest that the terminally ill man, David, and suicidal woman, Karen, are ill and need treatment. 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, functional, and psychosocial definitions but not by physical ones. 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.

TABLE 1.2 Definitions of health

Definition	Features of definition	Are they healthy or ill?		
		Jeeval 	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	Matches cultural norm for health	Healthy	Ill	Ill

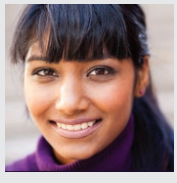
These cases illustrate that 'health' is not easy to define and is very individual. This may be especially so for people with a comorbidity (i.e. the presence of another illness in addition to a major 'index' chronic condition) or multimorbidity (i.e. the presence of multiple chronic illnesses where there is no major 'index' condition) (Suls et al., 2019). Multimorbidities are becoming more prevalent due to our ageing populations and the increasing prominence of chronic conditions. Studies of high-income countries (Wister et al., 2016) and middle- and low-income countries (Arokiasamy et al., 2015) indicate that multimorbidities are associated with lower self-rated health, quality of life, and psychological wellbeing. There is also evidence of the role of depression as a causal factor in the development of multimorbidities (Birk et al., 2019). This highlights the need to screen for and treat depression in those who are at risk of developing multimorbidities. It is notable that physical activity can reduce the impact of multimorbidities on wellbeing (Marques et al., 2018)

Furthermore, research shows that people with a terminal illness generally have a reduced quality of life. Yet quality of life is not a single entity, and although people with terminal illnesses tend to report worse physical symptoms, greater pain and disability, many also report an increased appreciation of life and family and other positive benefits – as illustrated by David in Case Study 1.1.

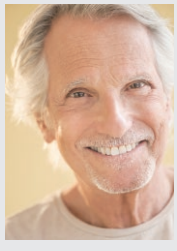
In Case Study 1.1, Karen may be particularly at risk, as research shows that young, divorced, or widowed women are most likely to attempt suicide, although men are more likely to succeed at completing suicide. Being depressed is a critical risk factor. In Europe, 28% of people with clinical depression will attempt suicide at some point during their lives (Bernal et al., 2007).

Cases of apparently healthy people being offered interventions for genetic risk of disease are likely to become more common as screening for genetic risk becomes more widespread. Women who have prophylactic mastectomies (like Jeeval in Case Study 1.1) generally report a reduction in cancer-related distress afterwards, although there can be other negative impacts on their lives.

CASE STUDY 1.1 Are these people healthy or ill?



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



David is a businessman who has taken a sabbatical to ski the 'Swiss Wall', a slope in the Alps which is notoriously difficult. 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 approximately six months left to live.

Karen is 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, struggling financially, and finding 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 with a bottle of wine, but was found by a friend and taken to the emergency department at hospital.

It is clear that health issues are complex and that 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 many physical symptoms. At least 30% of physical symptoms in primary care have no identifiable organic cause, and at least 10% of primary care patients have a history of unexplained symptoms (Haller et al., 2015; Hilderink et al., 2013).

ACTIVITY 1.1 WHAT IS HEALTH?

- How would you rate your own health?
  - Very poor
  - Poor
  - Fair
  - Good
  - 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 (WHO) defines **health** very broadly as 'a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity' (World Health Organisation, 1992). The value of this definition is that it is inclusive, and the emphasis on wellbeing accounts for individual differences in subjective perceptions 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.

How we define health has wide-ranging implications for the treatments provided by health services. For example, if we aim for health as defined by the WHO, it might 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 conceptualising health as 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 increase in cosmetic surgery and aesthetic procedures to address people's concerns about their appearance is one example of this.

The way we define health 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: they affect society's policies and laws. In the western world, the dominant view is that

individuals are responsible for their health by adopting either healthy or unhealthy lifestyles, and much work goes into encouraging people to adhere to guidelines for healthy living. Additional policies to help improve our lifestyles and health include 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 debatable 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; and (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.

CASE STUDY 1.2 Obese child taken into care

In August 2000, in a controversial case, the state of New Mexico took legal custody of a 3-year-old girl 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.

She weighed three times more than a normal 3-year-old and was 50% 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, she 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, she was returned to her parents, although the state kept legal custody of her for a while, monitoring her progress.

Image credit: Anja #helpinghands #solidarity#stays healthy from Pixabay

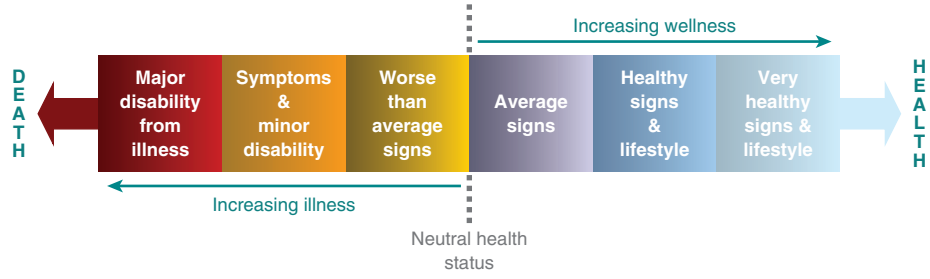


FIGURE 1.1 Illness–wellness continuum

Source: Antonovsky, 1987 (adapted from Sarafino, 2002)

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 people will help us to treat them more effectively. Psychology, however, is a subject that some students think is 'just common sense', 'interesting but I can't see how it's useful', or not 'proper medicine'. Here we will consider each of these objections in turn before looking at the science underpinning the integral nature of body and mind.

'Psychology is just common sense'

Often statements from psychological research 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* common-sense 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 common-sense 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 common-sense views, although in other cases it has rejected them. Examples of common-sense views that have been tested by research are given in Box 1.1 – take a look at these statements and make up your own mind about whether they are facts or myths.

BOX 1.1 Common sense: fact or myth?

1. Taking vitamin C prevents colds.
2. The majority of domestic violence is committed by men.
3. Being an oldest, middle, or youngest child affects your personality.
4. People with schizophrenia are often violent.
5. Eating fruit and vegetables improves your eye health.
6. Ginger reduces nausea and vomiting in pregnancy.

Sources: 1. Douglas et al. (2007); 2. Breiding et al. (2014); 3. Rohrer et al. (2015); 4. Large et al. (2011); 5. Grover and Samson (2014); 6. Dante et al. (2013).

In fact, statements 1, 3, and 4 in Box 1.1 have not been supported by research. In contrast, there *is* evidence that antioxidants can reduce the progression and impact of some eye disorders (Evans & Lawrenson, 2017), that ginger can reduce nausea and vomiting in pregnancy (McParlin et al., 2016), and that the majority of domestic violence toward women and men is carried out by men (Breiding et al., 2014). 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 psychosocial or biological circumstances, and whether therapy for psychological disorders should try to change *what* people think or the *relationship* people have with their thoughts. There are many other examples that you will read about throughout the course of this book.

'Psychology is interesting but not useful'

If the goal in medicine and healthcare is to treat people effectively and restore them to health, then what does this involve and how can psychology help? In order to treat people effectively we need to be able to: (1) diagnose the problem accurately; and (2) treat that problem appropriately. Psychology can help in both these areas. Accurate diagnoses are more likely if we understand how people's experiences shape their perception and reporting of symptoms, and help-seeking behaviours (see Chapter 4). Negotiating an acceptable and effective treatment plan rests on understanding decision-making processes, 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 complete cure, behaviour change is crucial for limiting the spread of disease (see Chapter 15). Furthermore, research suggests that people would prefer lifestyle modification over medication for conditions such as cardiovascular disease (Jarbøl et al., 2017). Effective communication skills also help in making an accurate diagnosis and in agreeing appropriate treatment for each individual (see Chapter 18). Thus, understanding psychological and social processes will help us to diagnose and treat people more 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. Psychological symptoms of anxiety and depression account for around 10% of consultations in general practice (Office for National Statistics, 2000). However, people with psychological symptoms often present with physical symptoms, leading to under-diagnosis and missed opportunities for treatment (Cepoiu et al., 2008; Jackson et al., 2007). One study asked primary care physicians in the UK to rate the content of 2,206 consultations and found that, in addition to consultations that were booked for psychological symptoms, another 30% of consultations were rated as involving some important psychological content (Ashworth et al., 2003).

Evidence shows there is a strong link between physical health and psychological health: 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 (Clarke & Currie, 2009; Remes et al., 2016). People with psychological disorders are also at an increased risk of illness. A study of 4,864 people in the USA found that anxiety, depression, psychological distress, substance use disorders, and use of healthcare services were associated with experiencing more physical symptoms, regardless of whether these symptoms had an identifiable physical cause (Escobar et al., 2010). 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), as well as psychological disorders, such as bipolar disorder, personality disorder, and schizophrenia (see Chapters 16 and 19).

Although psychological knowledge can help us to be more effective health practitioners, many students are put off psychology because of a sense that it is 'interesting, but there's no right answer'. Psychology can appear abstract or ambiguous, especially in areas where there are many competing theories. The reasons for this are that when studying people we must deal with outcomes like 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 their associated evidence. 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 training.

So psychology requires a different way of thinking, but this method of thinking is a useful skill in itself – and one that is essential in healthcare practice. A lot of healthcare practice is about dealing with uncertainty, often in the face of patients who want certainty. For example, people will rarely present with a clearly defined textbook set of symptoms. In trying to diagnose and treat a person, 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. Understanding the psychosocial context of a person's symptoms and concerns will help you reach a more probable diagnosis and/or provide reassurance in the face of uncertainty. Furthermore, there are still many medical conditions that do not have

suitable tests to confirm them. Examples 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 healthcare students come to their studies keen to learn about the workings of the body, how it goes wrong, and how to fix it. For example, learning about the heart and how to resuscitate people is much closer to the common view of what it means to be a doctor than learning about topics such as health behaviours and stress. The first approach 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 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 centuries. Medical understanding grew exponentially as doctors and researchers focused on increasingly detailed physiological processes and identified the causes of pathology. Treatments also advanced: antibiotics and vaccines were developed and anaesthesia was introduced. The disadvantage of dualism is that it provided the basis for the **biomedical approach** or model, which dominated medicine for centuries. This approach, which is examined later in this chapter, is based on a separation of body and mind that is unhelpful in many ways.

1.4 THE SCIENCE OF MIND AND BODY

Science has advanced considerably since dualism, and there is now increasing evidence that the mind and body are integrally linked and important in health. Throughout this book there are examples of how our mind influences physiological factors, such as fight-flight stress responses, pain, and physical symptoms. Cognitive science and neuroscience have also challenged dualism by showing that the mind (e.g. thoughts, feelings) is influenced by our body and bodily experiences. Theories of embodied cognition propose that many aspects of cognition are influenced by our bodily state. These cognitive factors include memory making and recall, tasks such as decision making and judgement, as well as higher-level mental constructs such as concepts and language. Bodily factors that influence cognition include the motor system (e.g. movement, posture), perceptual system (e.g. sight, hearing), and physical interactions with others and the environment.

Theories of embodied cognition rest on research from areas like psychology, neuroscience, linguistics, and artificial intelligence. Psychological research has shown that sensorimotor feedback can influence our thoughts and emotions (Niedenthal, 2007). Many of these studies artificially place a person in a particular posture and examine the effect of this posture on thoughts, feelings, and behaviour. For example, research into feedback from facial expressions gets people to activate smile muscles by holding a pencil

between their teeth and shows that when people 'smile' they are more likely to rate cartoons as funny, remember positive memories, evaluate stories more positively, and are quicker to perceive things that are congruent with a positive emotional state (Coles et al., 2019). Facial feedback has also been shown to reduce stress responses like heart rate and skin conductance (Price & Harmon-Jones, 2015), and increase recovery from stress (Kraft & Pressman, 2012).

The importance of bodily feedback in how we think and feel extends beyond an individual. Social psychologists have looked at how rapport between people – such as between health professionals and patients – is embodied through mirroring each other's posture and gestures (interpersonal synchrony). A review and meta-analysis of the research on interpersonal synchrony shows that it leads to people having more prosocial attitudes and behaviours, such as perceived affiliation, cooperation, and helping behaviours (Rennung & Göritz, 2016).

Functional brain imaging has identified some of the physiological processes that underlie this. There is evidence that animals and humans have mirror neurons which fire both when we carry out a specific act and when we see others performing the same action. So our minds respond to observed movements of others as if we were carrying out the same behaviour. Similarly, recognising someone else's facial expression of an emotion and feeling that emotion ourselves involve overlapping neural circuits in the brain (Niedenthal, 2007; Rizzolatti & Sinigaglia, 2016).

The science of mind and body has therefore moved beyond simple separation of mind and body to show that they are interdependent and influence each other in numerous ways, as does our environment and the people around us. This science has informed developments in artificial intelligence and robotics. Artificial humans are being created with socio-emotional intelligence, such as virtual characters that facilitate interaction between humans and technology by interpreting and responding to nonverbal cues (Vogeley & Bente, 2010). This is also being used in healthcare interventions, such as using virtual characters to assess and train people with high-functioning autism to recognise nonverbal communication cues (Georgescu et al., 2014).

1.5 DIFFERENT APPROACHES TO MEDICINE AND HEALTHCARE

1.5.1 BIOMEDICAL APPROACH

The biomedical approach to healthcare is based on a dualistic approach to mind and body, so it is not consistent with current science and evidence. The biomedical approach is summarised in Figure 1.2. It 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.

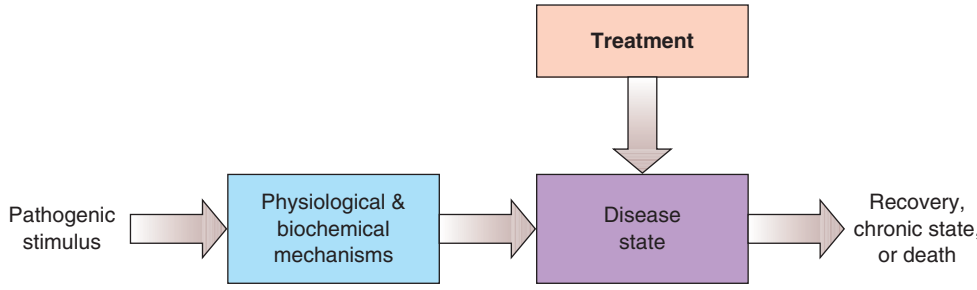


FIGURE 1.2 Biomedical approach to health (adapted from Lovallo, 2004)

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 social or psychological factors on health. Historically, the influence of social factors on population health is clear. Let us take the example of infectious diseases. The rapid decline in deaths from infectious diseases in the UK between 1859 and 1978 occurred *before* most vaccines were introduced. Some of the 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. More recently, the global COVID-19 pandemic showed how individual and collective actions such as lockdowns, quarantines and self-isolation could reduce or even stop the spread of the virus. The examples of cholera and COVID-19 show how social and cultural change is important and that the reduction of infectious 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 socioeconomic status (SES) on health. People of lower SES are at more risk of illness (**morbidity**) and death (**mortality**) from a variety of causes (see Research Box 1.1). This increased risk is partly due to differences in lifestyles. For example, people of lower SES have poorer diets, 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 of lower SES still remain at an increased risk of poor health.

The role of lifestyle in illness illustrates the importance of psychosocial 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 (see Chapter 5). For example, it has been estimated that 20% of deaths globally are attributable to poor diets (GBD 2017 Diet Collaborators, 2019). Greater 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 and cardiovascular disease – two of the most important causes of mortality in the world.

In addition to lifestyle, individual factors such as personality, health behaviours, and beliefs also have important effects on health. For example, individuals who are higher on

RESEARCH BOX 1.1 Socioeconomic status and mortality

Background

In addition to being affected by health behaviours, morbidity and mortality rates are affected by socioeconomic status (SES). This study looked at the effect of family SES at birth on mortality from any cause across the lifespan.

Method and findings

The Uppsala Birth Cohort follows 11,868 men and women born in Uppsala, Sweden, between 1915 and 1929. This study looked at death rates in this cohort up to 2009 to examine the risk of mortality according to the family's socioeconomic position and the mother's marital status.

People born in families of lower SES and whose mothers were unmarried had an increased risk of death from any cause (hazard ratios were 1.19 and 1.18 respectively). This increased risk was still observed after adjusting for the child's sex, birth year, birth weight, gestational age, parity, and maternal age. The effect of lower SES on mortality was found across all age groups. However, mothers' marital status had a greater effect on mortality in the first year of life and after 75 years of age.

Significance

This study shows the lifelong impact of socioeconomic status on risk of mortality from any cause.

Juárez, S.P., Goodman, A. & Koupil, I. (2016) From cradle to grave: Tracking socioeconomic inequalities in mortality in a cohort of 11,868 men and women born in Uppsala, Sweden, 1915–1929. *Journal of Epidemiology & Community Health*, *70*(6): 569–575.

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 (Turiano et al., 2015). Stress and depression are strongly implicated in a range of illnesses, including cardiovascular disease: evidence suggests that 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**, whereby 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 people a fake treatment (placebo group) and comparing their recovery to another group of people given an active treatment (treatment group) or no treatment (control). The placebo effect is the recovery that occurs in the placebo group that is over and above any recovery observed in the control group. The treatment effect is the recovery that occurs in the treatment group that is over and above any placebo effect. For example, a study of surgery for osteoarthritis compared two different types of procedure (arthroscopic debridement or lavage) with placebo surgery where people 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). A review and meta-analysis of this and seven other randomised controlled trials concluded that arthroscopic debridement does not improve pain or functional status more than sham surgery or usual care (Evidence Development and Standards Branch, Health Quality Ontario, 2014). The placebo effect is well established and there is evidence that beliefs are responsible for a large part of it. It 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 healthcare, most health 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 *medici-na* (*ars*) – the (art of) healing.

CLINICAL NOTES 1.1

In primary care

- At least 30% of physical symptoms seen in primary care have no identifiable organic cause.
- At least 10% of primary care patients have a history of multiple unexplained physical symptoms.
- Psychological and physical symptoms are highly related. Many people will only mention physical symptoms, so it is important to ask about psychological symptoms as well.
- A large part of 'treatment' effects are due to people believing they will recover rather than the treatment itself.

1.5.2 BIOPSYCHOSOCIAL APPROACH

The **biopsychosocial approach** (Engel, 1977) is a framework that does incorporate biological, psychological, and social factors. This approach was later expanded to include such factors as ethnicity and culture (Suls & Rothman, 2004). A schematic diagram of the biopsychosocial approach is shown in Figure 1.3, which shows the personal and external factors that, according to this approach, affect health.

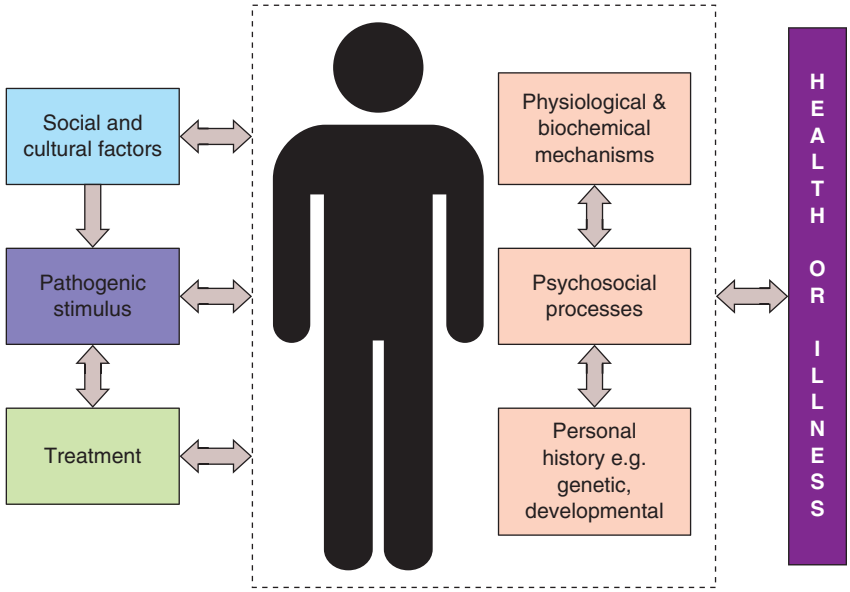


FIGURE 1.3 Biopsychosocial approach to health

Source: Adapted from Lovallo, W.R. (2004) Stress & Health: Biological and Psychological Interactions. Thousand Oaks, CA: Sage.

External factors include the sociocultural environment, such as poverty, available support structures, access to healthcare and other facilities, and environmental factors and legislation that affect health. External factors 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, and adherence to treatment. All these factors influence, and are influenced by, physiological mechanisms.

Consider smoking, for example. Many people report that their first cigarette is fairly unpleasant, so why do people persist in smoking until they are addicted? Most people start smoking in adolescence when it is important for them to gain peer approval and to fit in with group norms. In high-income countries, the prevalence of smoking is often highest in people from deprived backgrounds with a low socioeconomic status (Substance Abuse and Mental Health Services Administration, 2017). 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 2 diabetes (West & Hardy, 2019). 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 health 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 the medical profession alone. Similarly, treatment considers physical, psychological and social contributing factors as opposed to the physical in isolation. A further comparison of the key features of the biomedical and biopsychosocial approaches is given in Table 1.3.

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 formed the basis for a more person-centred approach to medicine (Borrell-Carrio et al., 2004). It should also lead to better healthcare 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 40 years after it was proposed, the biopsychosocial approach still is not widely used or practised in medicine or psychology. Although the biopsychosocial approach is taught in most training courses for health professionals, it tends to be taught more as a theoretical framework than applied to clinical work.

So we still have a long way to go to properly incorporate the biopsychosocial approach into medicine and healthcare. There are many reasons why this might be. The biomedical

TABLE 1.3 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

approach has been dominant for centuries, and modern medicine and healthcare 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, 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 if we need to choose or prioritise one treatment (see Case Study 1.3). 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).

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 each person feels.
- Tolerance of ambiguity and the ability to test alternative explanations for symptoms are essential clinical skills.
- The holistic approach means we should consider biomedical factors, lifestyle behaviour, psychological factors (e.g. beliefs, emotions, symptoms), and social factors.

CASE STUDY 1.3 Applying a biopsychosocial approach

Damini has hypertension, which could be due to her high cholesterol, obesity, demanding job, stress of juggling work and home responsibilities, or strong perfectionist tendencies and beliefs about responsibility that mean she works long hours and is stressed. Which of these explanations we adopt will influence the treatment we offer, but for her it's important that we consider all these factors.

If we take the biological cause (high cholesterol), then we would treat Damini with cholesterol-reducing drugs. If we take the behavioural explanations (obesity), we might offer Damini support to lose weight. If we take the psychological explanation (stress and maladaptive beliefs), we might offer Damini stress-management or psychotherapy sessions. Finally, if we adopt the social explanations (work stress and a lack of support), we might refer her to an occupational health worker, counsellor, or a life coach.

In reality, Damini's hypertension will be affected by all these factors and we need to treat her in the most effective way. To decide this, we would need to consider which treatment will provide the best outcome for Damini at the least cost and time for the health service. What do you think would constitute effective treatment in this case?

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ACTIVITY 1.2 DIFFERENT APPROACHES TO MEDICINE

Reflect on the last time you saw a doctor.

- To what extent was this doctor working with a biomedical framework or a biopsychosocial one?
- How would their treatment have differed if they had altered their framework(s)?

We can see that barriers to applying the biopsychosocial approach include the facts that (1) it is not possible to address all the factors that influence illness, and (2) 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 hand, focusing only on biomedical

factors because that is all we look at. Psychologists also need to be reminded of this. Just as medicine and other health professions err toward biological explanations, psychologists err toward psychological explanations. In fact, a search of research published in a leading health psychology journal found that only 26% of studies included biological, psychological, social, and macro-cultural variables (Suls & Rothman, 2004).

Therefore, we all need to consciously remind ourselves to explore factors at each level of the biopsychosocial approach when assessing and treating people. This will give us a more complete understanding of the illness, encourage a 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.

This tendency to focus on biology or psychology emerges in debates about nature and nurture. Some argue strongly that nature (i.e. genes) is the determinant of behaviour and wellbeing. Others argue just as strongly that nurture (i.e. environment and psychosocial context) is the main determinant. The problem with many **nature–nurture debates** is that health and wellbeing are determined by nature *and* nurture. Furthermore, interactions between nature and nurture are often crucial. As noted in Chapter 16, the likelihood of developing psychological disorders such as schizophrenia may be influenced by a genetic predisposition *and* experiences during pregnancy/birth, early childhood, or later life. Similarly, material presented in Chapter 8 shows how the cognitive potential children inherit in their genes can be optimised or impaired by psychosocial experiences in childhood.

The field of **epigenetics** focuses on how environmental factors – including social contextual factors – regulate the activity and expression of genes (Gluckman et al., 2009; Jones et al., 2018; Wang et al., 2017). Skin cells, muscle cells, and neurons all contain the same DNA, but they have a different structure and function because their genes are expressed (turned 'on' or 'off') differently. The expression of genes in cells – and the consequences of this – is the key focus of epigenetics. After cells have formed, external factors can influence the expression of their genes. Our physical environments, psychological experiences, and behaviour all influence how our genes are expressed. Various epigenetic processes affect how genes are expressed. One is DNA methylation: the addition of a methyl group to part of the DNA molecule prevents certain genes from being expressed. Another is histone modification: this determines how tightly DNA is wrapped, and influences whether the DNA is accessible to proteins that read genes. Research in humans and non-human animals has provided growing evidence of epigenetic processes across various bodily systems. These include the effects of stress on DNA expression in immune cells (Glaser et al., 1990; see also Chapters 3 and 11), and the effects of stress and trauma on methylation of serotonin transporter genes (Nikolova & Hariri, 2015; see also the diathesis-stress model of psychiatric disorders in Chapter 16).

There is emerging evidence that environmental influences such as a lack of nurturing can lead to physiological changes that can then be passed from parents to children and grandchildren; this is sometimes termed the **intergenerational transmission of vulnerability**. It has led some to suggest that health communication and health education

should incorporate epigenetics to explain how parenting practices, lifestyle factors, and social environments affect different people in different ways (Koehly et al., 2019). Better knowledge of epigenetic processes could help the planning of public health interventions so that they are delivered at key times, when environmental exposures most strongly influence gene expression.

1.6 SOCIAL DIVERSITY AND HEALTH

Within any population, there is wide variation in health behaviours and health outcomes along the lines of age, sex, education, socioeconomic status (SES), ethnicity (sometimes referred to as 'race'), sexual orientation, and other demographic variables.

Health status is more than simply a consequence of biological, physiological, or genetic factors; it is also affected by much broader economic, social, cultural, and environmental elements. The conditions in which people are born, grow up, and live influence their health (World Health Organisation, 2008a). Research in different countries has revealed that the general sociopolitical context (social democratic, corporatist, or welfare state) and levels of gender equity affect health outcomes and health-related behaviours (Bambra et al., 2009; King et al., 2020). **Socioeconomic status** (**SES**) influences health behaviours and health outcomes, including mortality. Poor health and poverty go hand in hand (Centers for Disease Control and Prevention, 2014). People with lower levels of education and/or income tend to report less healthy patterns of behaviour, report poorer physical and psychological wellbeing, and have shorter life expectancy (Braveman & Gottlieb, 2014; Kino et al., 2017; Walker & Druss, 2017). Furthermore, countries with greater income inequality (i.e. a greater difference in wealth between the richest and poorest people) have higher rates of depression (Patel et al., 2018).

Ethnicity is an important influence on health behaviours and health outcomes, and people from ethnic minorities tend to have poorer health. Some research indicates that our understanding of risk factors may be blind to the important influence of ethnicity. For example, a 13-year follow-up study of nearly 60,000 Canadians revealed that the risk of diabetes was significantly higher among people of south Asian, black, or Chinese ethnicity than among white adults (Chiu et al., 2011). Furthermore, the risk of diabetes for a white person with a Body Mass Index (BMI) of 30 (the lower boundary of the 'obese' category) was comparable to that of south Asian, black, and Chinese people with much lower BMIs at the boundary between 'healthy' and 'overweight'. This highlights a need for ethnicity-specific BMI targets and prevention strategies. In addition to considering how ethnicity interacts with physiological factors to influence disease onset and progression, it is important to consider whether health services and individual health professionals are aware of, and responsive to, cultural diversity (Memon et al., 2016).

Sex and gender also have an influence on health and health outcomes. Statistics reveal some stark differences between women's and men's health. In nearly every country, life expectancy is several years shorter for men than for women. This difference is strongly influenced by patterns of behaviour, such as smoking, alcohol use, and poor diets, which

are linked to chronic conditions such as cardiovascular disease, diabetes, and some cancers (White et al., 2011; World Health Organisation, 2014a, 2014b). In addition, women are more likely than men to engage in screening behaviours or to consult health professionals for psychological or physical concerns (Hing & Albert, 2016; White et al., 2011). Such sex differences should not simply be interpreted as the result of biological differences. The health of men living in different countries can vary greatly, and the health of women within the same country (e.g. women of different ethnicity) can also vary greatly (Bambra et al., 2009; White et al., 2011).

People often use the terms 'sex' and 'gender' interchangeably, but they have quite distinct meanings. Sex and sex differences are biologically based: they refer to comparisons between people who are biologically female and people who are biologically male. Gender refers to the social construction of femininities and masculinities through 'feminine' and 'masculine' behaviours. Of course there are some basic biological characteristics that distinguish all men from all women, but femininity is not a single thing – compare Margaret Thatcher and Marilyn Monroe – and nor is masculinity a single thing – compare Genghis Khan and Freddie Mercury. Some have argued that gender is better conceptualised as a verb than a noun: femininity is not something that women *have*, but something that they *do* (West & Zimmerman, 1987). Many social behaviours – including types of jobs, expressions of emotion, and competitiveness – have clear links to traditional definitions of gender.

Furthermore, many health-related behaviours have clear gender stereotypes: boys and men are encouraged to take risks and not to show weakness, whereas women are often expected to take care of themselves and others (Courtenay, 2000). This helps to explain within-sex differences in health that cannot be explained by biological differences. For example, men who believe more in 'traditional' definitions of masculinity are more likely to engage in unhealthy 'masculine' behaviours, such as excessive alcohol consumption, and less likely to engage in healthy 'feminine' behaviours, such as consulting health professionals about physical or psychological wellbeing (de Visser & McDonnell, 2013; Seidler et al., 2016). Furthermore, health professionals' beliefs about masculinity and femininity can influence how they respond to men's and women's emotional distress (Möller-Leimkuhler, 2002).

Health behaviours and health outcomes also vary along the lines of **sexual identity**. People who identify as Lesbian, Gay, Bisexual, or Transgender (often abbreviated as **LGBT**) tend to have poorer psychological wellbeing and are more likely to attempt or complete suicide (O'Brien et al., 2016). LGBT people are also more likely to report smoking, drinking alcohol excessively, or using illicit drugs, and are also more likely to experience and report barriers to using health services (Conron et al., 2010). Important reasons for poorer wellbeing and less healthy behaviour among LGBT people include minority stress, and responses to stress arising from prejudice, discrimination, and violence (Hughes, 2016). Furthermore, many LGBT people may avoid health services because health professionals do not understand their specific needs or because they feel marginalised by health professionals' heteronormative assumptions (i.e. unquestioningly assuming that heterosexuality is a given and is normal instead of being one of many possibilities).

It is clear that health is shaped by a range of demographic variables. Each of these may be important in its own right and may also intersect with other variables. This concept of **intersectionality** was first introduced in the context of social justice (Crenshaw, 1991), but it has spread to influence social studies of health and illness. Awareness of intersectionality draws attention to the ways in which age-, sex-, gender-, ethnicity-, sexuality- or SES-based inequalities can combine to magnify inequalities in health behaviours and health outcomes (Mereish & Bradford, 2014). When designing and providing health services we must be responsive to diversity and intersectionality.

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).
- Contemporary research challenges dualism by showing that the mind and body are interdependent and influence each other in many ways.
- Medicine was dominated by the biomedical approach for many years, but it assumes a mind–body split so cannot account for contemporary research evidence.
- The more recent biopsychosocial approach has the capacity to unify disciplines in theory and practice, and encourage a holistic approach to medicine.

CONCLUSION

In this chapter we have looked at how health is difficult to define and, for individuals, health is subjective in terms of whether they feel or think they are healthy or ill. It is therefore important to consider psychological and social factors for a number of reasons. First, a substantial proportion of people seen by health professionals have no identifiable physical cause for their symptoms. Second, there is substantial evidence for the importance of psychological and social factors in both the onset, spread, and treatment of diseases, such as COVID-19. Third, elements of social diversity and intersectionality are also associated with health and health outcomes.

Historically, the lack of focus on psychosocial factors in healthcare was perpetuated by a widespread belief in mind–body separation (dualism) and the pervasiveness of the biomedical approach. Developments in psychological sciences and neuroscience have shown how the mind and body are integrally linked. Research on embodied cognition and emotion shows how bodily sensations influence our thoughts and feelings, as do the actions of

people around us. Epigenetics shows how environmental factors regulate the activity and expression of genes, and there is evidence that psychosocial factors during pregnancy and early childhood influence long-term health and can lead to an intergenerational transmission of vulnerability (see Chapters 8 and 14).

The biopsychosocial approach is consistent with current evidence and shows that we need to consider biological, psychological, social, and macro-cultural factors in health and healthcare. This will lead to a more complete understanding, more accurate and appropriate treatment, and a holistic approach to treating people. The aim of health psychology is to identify and understand the range of biological, psychological, and social factors that influence health and illness, and to use this knowledge to develop effective interventions. In the chapters that follow, attention is given to the four Ps (McKnight et al., 2019): the **Predisposing** factors, such as genetics and early life experience that increase susceptibility to illness; the **Precipitating** factors, such as unhealthy behaviour that influence whether a predisposition actually leads to illness; the **Perpetuating** factors, such as use of healthcare services and adherence to treatment that influence the course of illness or recovery; and the **Protective** factors, such as lifestyle and social support that interact with the other three Ps.

FURTHER READING

Llewellyn, C.D. et al. (eds) (2019) *The Cambridge Handbook of Psychology, Health and Medicine* (3rd edition). Cambridge: Cambridge University Press. Includes short chapters on social, cultural, and ethnic factors and health, health inequalities, socioeconomic status, and medically unexplained symptoms.

Frankel, R.M., Quill, T.E. & McDaniel, S.H. (eds) (2009) *The Biopsychosocial Approach: Past, Present, Future*. Rochester, NY: 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. Describe three specialisms in psychology and outline how they are relevant to healthcare.
2. Outline four different definitions of health.

3. Compare and contrast two definitions of health. What are the implications of each definition for treatment?
4. What is dualism? How has it influenced medicine?
5. Describe the biomedical approach to medicine and outline the strengths and weaknesses of this approach.
6. Describe the biopsychosocial approach to medicine and outline the strengths and weaknesses of this approach.
7. Compare and contrast the biomedical and biopsychosocial approaches to medicine.
8. Explain what is meant by 'intersectionality' and why it is an important influence on health outcomes.

SECTION I

PSYCHOLOGY AND HEALTH

2 MOTIVATION, EMOTION, AND HEALTH

CHAPTER CONTENTS

Tables

Boxes

(Continued)

LEARNING OBJECTIVES

This chapter is designed to enable you to:

- Describe motivation and discuss how it affects health.
- Outline the different components of emotion.
- Appreciate the role of positive and negative emotions in health.
- Consider whether expressing emotion is good or bad for health.

Motivation, emotion, and the way we respond to stress shape our lives in many ways. Emotions are powerful motivators that can even make us risk our lives in extreme cases, such as when parents risk their lives trying to save their children. In medicine and other health professions we are surrounded by stressful and emotional events as people face illnesses and death, either their own or others. How people respond to these situations varies hugely and there are many examples in healthcare of people behaving in ways we might not understand. For example, the woman in Case Study 2.1 was prepared to risk her own and her unborn baby's life rather than have a caesarean section.

The media are full of similar examples: parents refusing life-saving treatment for their child on religious grounds; a man with liver cirrhosis who continues to drink alcohol even though he knows it will kill him; a pregnant woman with cancer who refuses chemotherapy and then dies just after her daughter is born; a teenage girl who cuts her arms with a razor blade. These are real cases that illustrate the importance of beliefs, motivation, and

emotion in how people respond to day-to-day stress and extreme situations. They also illustrate the complex interaction between motivation and emotion. In this chapter we shall look at motivation and emotion in turn, examining what these are and how they are relevant to health.

CASE STUDY 2.1 Freebirth or unassisted childbirth

Freebirth or unassisted childbirth is where women intentionally give birth without a medical professional present. This is within women's rights and is legal in most countries. Ms S was a 29-year-old single woman who did not see a doctor for the majority of her pregnancy. When she was 36 weeks pregnant, she registered with a doctor, who found she had severe pre-eclampsia – a life-threatening condition marked by high blood pressure, which can develop very quickly and lead to the death of the mother and baby. Women with this condition are usually admitted to hospital immediately, and the baby is delivered by inducing labour or performing a caesarean section. However, Ms S refused to be admitted to hospital despite two doctors recommending it. She insisted she wanted to give birth without medical assistance and not in hospital. When told that she and the baby might die, Ms S responded 'so be it'.

The doctors called a social worker, who concluded that Ms S had 'little interest in her own survival and certainly none in the survival of her baby'. The social worker and doctors therefore admitted Ms S to a psychiatric hospital against her will. Although a psychiatrist judged her mentally competent, Ms S was then transferred to a hospital and a court application was made to perform an emergency caesarean section. The court granted the injunction and Ms S was forced to have a caesarean section. Her daughter was born healthy.

Ms S took her case to the High Court. Her admission to hospital and caesarean section were deemed unlawful and she was awarded financial compensation. The judge acknowledged that the social worker and doctors appeared to be well-motivated, but concluded that women have the right to refuse operations, even if they risk their own life or that of their baby. Ms S argued that she did not want a hospital birth because she did not like medical procedures and was prepared to risk both her own and her daughter's life because she felt so strongly about it.

2.1 MOTIVATION

2.1.1 WHAT IS MOTIVATION?

Motivation is essentially a drive to act. People are motivated to do (or, indeed, not do) things in their life by many different factors. Because of this, theories from various areas of psychology and other disciplines are relevant. These include health behaviour (see Chapter 5) and decision making (see Chapter 17). Some motives are biological – for example, the desire to eat, drink, or reproduce. Others are more psychological and social – for example, the drive for achievement and status. Box 2.1 gives some examples of biological and social motives, although it is worth noting that the distinction between biological and social motives is not clear-cut. For example, sexual motives can be both biological (the drive to reproduce) and social (e.g. the need for affiliation and nurturance).

BOX 2.1 Examples of motives

Biological motives

Hunger

Thirst

Sex

Temperature: need for appropriate body temperature

Excretory: need to eliminate bodily wastes

Sleep and rest

Activity: need for optimal stimulation/arousal

Aggression

Social motives

Achievement: need to excel

Affiliation: need for social bonds

Autonomy: need for independence

Nurturance: need to nourish and protect others

Dominance: need to influence or control others

Exhibition: need to make an impression on others

Order: need for orderliness, tidiness, organisation

Play: need for fun, relaxation, amusement

(adapted from Weiten, 2004)

Theories of motivation can be separated into three broad categories, namely drive theories, evolutionary theories, and incentive theories. **Drive theories** use the concept of homeostasis to explain motivation. Homeostasis is a state of physiological equilibrium or stability that organisms strive to maintain. An organism's behavioural and physiological systems operate together to ensure the stability in bodily functions that is necessary to survive. A lack of equilibrium between our current state and our needs creates an internal tension which we are motivated to reduce.

Drive theory is most easily applied to biological drives, such as hunger. When we are hungry, we are motivated to find food and eat. We are also more likely to think about food and notice food-related stimuli like advertisements for food (Berry et al., 2007). Drive theory would predict that once we have eaten, we are no longer motivated to continue eating. However, there are many examples of people continuing to eat when they are no longer hungry or refusing to eat when they are hungry. Dieting provides a good example of where a drive to eat is not acted on (see Chapter 13). In societies where food is abundant our intake of food is actually dependent on internal cues, such as hunger and satiety, and external cues, such as availability, packaging, and portion sizes, which determine what and how much we eat (Bilman et al., 2017). Thus, drive theory can account for some biological drives and motivation but is limited in its application to a lot of human behaviour.

Evolutionary theories of motivation argue that social characteristics are shaped by processes of natural selection in the same way as physical characteristics: desirable social characteristics maximise the chances of reproductive success. Thus, social motives, such as the need for affiliation or dominance, are thought to occur because they increase our chances of survival and reproduction. There is some evidence to support this. For example, pair bonding and parental care occur in many species and facilitate reproduction and the survival of offspring. Research suggests that the hormone oxytocin is important in reproductive and social behaviours like bonding, attachment and love. Oxytocin is released during sexual activity, giving birth and breastfeeding. It is also released in response to pleasant touch, such as a hug or massage (Uvnäs-Moberg et al., 2015) and can reduce stress. Oxytocin is therefore sometimes referred to in the media as the 'love' or 'cuddle' hormone. There is plenty of research demonstrating this effect. For example, women who have higher levels of oxytocin after birth have a better mother–infant bond and show more positive maternal caregiving, particularly if they are stressed or anxious (Samuel et al., 2015).

Incentive theories emphasise the role of external factors that trigger and regulate motivation. For example, a man may not be motivated to seek a relationship until he meets a woman he finds particularly desirable. More elaborate incentive theories take into account **expectations** and **values**, which are common in models of health behaviour (see Chapter 5). Expectancies and values allow for the influence of whether people (1) expect to attain their goal, and (2) how important or valuable that goal is to them. Therefore, when a man meets a woman he finds very desirable he will not act on his desire if he thinks (1) that there is no chance she will be interested in him or (2) that he does not really value having a relationship at that stage in his life.

These different theories of motivation are not incompatible. Drive theories emphasise internal states as motivating us, whereas incentive theories emphasise external stimuli and

rewards. The two can be thought of as push and pull theories of motivation: internal states push us to act and external stimuli pull us. However, all these theories are reductionist in one form or another because they concentrate solely on internal, external, or genetic causes. More comprehensive theories have therefore been proposed that incorporate biological, behavioural, cognitive and social elements of motivation (e.g. Bernard et al., 2005; Toates, 2009).

ACTIVITY 2.1 MOTIVATION

- How would different theories explain the motives of Ms S in Case Study 2.1? She refused a caesarean even though it put both her own and her baby's life at risk.

2.2 MOTIVATION AND HEALTH

Clearly, motivation is relevant to health and health professionals. Understanding biological motivations can help us to treat abnormal extremes of biological drives, such as obesity, eating disorders, smoking, addiction, risky sexual behaviour, and insomnia. Understanding social motivations can help us to comprehend our own behaviour and what motivates us to work as health professionals. It can also help us to empathise and deal better with other people's behaviour that we might not understand. Knowing more about another person's motives means we can address situations more constructively. Interventions such as motivational interviewing have been developed to treat disorders with a strong motivational component, such as addiction. Motivational interviewing is defined as 'a collaborative conversation style for strengthening a person's own motivation and commitment to change' (Miller & Rollnick, 2013). It is effective in encouraging and promoting behaviour changes in drug, alcohol, and nicotine use, and risky sexual behaviours (Llewellyn, 2019), and is an effective adjunct to standard treatment (Hettema et al., 2005).

Motivation is relevant to many health topics. These include smoking, which is discussed in Chapter 5, and obesity, which we look at in Chapter 13. Here we focus on alcohol use because it is a good example of complex motives preventing people from changing their drinking behaviour. Alcohol consumption and alcohol-related problems are high in developed countries. Rates of consumption per capita are shown in Figure 2.1. Alcohol-related diseases account for almost 5% of deaths worldwide, and 5% of the global disease burden (World Health Organisation, 2018a). Alcohol consumption increases as societies become richer, with the highest consumption of alcohol per capita in Europe, where alcohol-related diseases account for 10% of all deaths. However, the disease burden due to alcohol-related diseases is greater in low- and low-middle income countries (WHO, 2018a). Increased alcohol consumption inevitably affects morbidity and mortality. In the UK, there has been a dramatic increase in deaths from liver cirrhosis and