INTRODUCTION: WHAT IS CHILD HEALTH PSYCHOLOGY?

Interest in the promotion and enhancement of health in children reflects a central human drive to protect and nurture, often in the hope of improving life chances and well-being for future generations. In this chapter, I begin by defining what is meant by *child health psychology*, and look at where it fits within the framework of psychology, health and medicine. I then start to consider what, how and why psychological factors might be important in relation to physical health in children and the impact of psychological factors across the different stages of development from infancy to adolescence. The role of psychological influences on physical health in children is introduced from an historical perspective in order to set in context our modern-day approach. Biomedical advances are discussed in the context of past, present and future physical health threats and challenges to child and adolescent health. Whilst this book focuses on health in the Western world, we will also consider threats to health in developing countries and contrasts between health threats across the globe.
DEFINITION OF CHILD HEALTH PSYCHOLOGY

In its broadest sense, the discipline of health psychology as defined by the British Psychological Society’s (BPS) Division of Health Psychology (DHP) relates psychosocial factors to physical health and illness in order to (i) promote and maintain health; (ii) prevent and manage illness; (iii) identify psychological factors which contribute to physical illness; (iv) improve the health care system; and (v) help formulate health policy (see www.health-psychology.org.uk). The term ‘psychosocial’ refers to any combination of psychological and social factors and their interplay. Psychological factors include the way a person thinks (cognitions), their coping responses, attitude and their temperament or personality (sometimes termed individual differences). Social factors include the social resources available to an individual, which are embedded within their culture and position within society and within their more immediate social network.

Child health psychology, then, is the specific application of health psychology research and practice to physical health in children, as well as the implications and applications of psychosocial influences during childhood development on subsequent health in adulthood. In this book, I use the term ‘childhood’ to cover the full age range of child and adolescent years from zero through to 18 years old, with specific age groups highlighted as different issues are covered. In some chapters, the boundaries of this age range are extended at either end of the spectrum in order to consider prenatal health issues during pregnancy or the transition from adolescence to adulthood and what this means for access to health services, as well as the implications of childhood experience on adult health in middle and older age. As the focus throughout this book is on biopsychosocial interactions, important questions relate to how the physiological response systems of the body might be shaped, both positively and negatively, by early life experience, and how these influences map onto health during childhood and through to adulthood. This begs the question of what the potential might be for interventions to repair or ‘normalize’ the response systems in cases where early psychosocial experiences have created a physiological imbalance. These are not easy questions to answer, and research in this area has a long way to go, but we can go part way in answering some of these questions based on research findings to date (as well as debunking some more spurious ideas that have developed along the way).

In many respects, these are exciting times for health psychologists interested in child health. An important change in perspective, or paradigm shift, is beginning to emerge across the many related scientific disciplines of health and illness, which reflects a greater understanding of the impact of early life adversity on physical health right across the whole gamut of different life stages. This gives recognition to the idea that early life experience from conception through to childhood can have a large influence on health outcomes throughout the lifespan or course of life. I will return to this life-course idea throughout the book but, to introduce it here, it is based on an increasing amount of evidence which has found a whole range of adult health conditions to be associated with childhood experiences. The influence of psychosocial factors on children is central to health psychology and related disciplines because of the lifespan implications. The full
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Consideration of the influences of psychological factors in child health is important, not just for childhood itself but also for the longer-term perspective into adulthood and across the lifespan, as well as prenatal influences on child health.

There are also several overlapping disciplines specific to childhood that directly acknowledge psychosocial influences on physical health, including developmental psychology and the field of developmental psychobiology, as well as other broader fields, such as clinical psychology and biomedicine, from which the topic of child health psychology draws. Figure 1.1 gives an idea of these disciplinary links and influences which I will be drawing on throughout this book. It is by no means intended to be exhaustive but may be useful to consider whilst reading the following chapters. Think of it as a conceptual drawing board rather than a definitive conceptual model: you may want to add further areas or links between the disciplines given.

In connection with this, in recent years there has been a sea change in the use of positive terminology relating to ‘wellness’ rather than the more historical terminology of ‘illness’.
and ‘ill health’. This, of course, fits with major advances in medical technology and pharmaceutical development. This shift has, on the whole, been presented as an optimistic paradigm change. Yet, at the risk of appearing cynical, this could, in part, be due to a reluctance to face the negative side of ill health realistically. The positive or optimistic approach of health psychology is, first and foremost, to recognize the negative impact and turmoil brought about by ill health and to use this knowledge and understanding to build prevention programmes and interventions where possible, but also to provide care and support in the face of chronic or terminal illness.

THE PSYCHOSOCIAL CONTEXT OF CHILD HEALTH

There are two main concepts that I want to introduce in relation to the psychosocial context of child health: these are the concepts of social support and socioeconomic status. The concept of social support encompasses both psychological and social aspects: for example, the size of a person’s social network, or having a family member or friend who can offer emotional support (someone to talk to or share emotions with), financial support (providing money for a school trip) or practical support (ensuring a safe lift home from a late-night party). These latter two types of support may be practical in origin, but whether or not help is available or perceived to be available is also likely to be bound up with emotional meaning and significance, as it is for emotional support itself. As will become obvious, harnessing the power of social support is an important tool in interventions to improve physical health outcome. The concept of social support is discussed in detail in Chapter 2; the methodological aspects of social support assessment are covered in Chapter 3; and various forms of support are mentioned throughout the remaining chapters.

The second of these concepts, socioeconomic status, is the term used for an individual’s position in society and is measured in a number of different ways, including household income, a person’s marital status (or for children that of their parents), access to/level of education, family size, or whether or not a household owns a car. In particular, socioeconomic status is relevant in situations where childhood experience has its roots in social and economic disadvantage or poverty. Childhood socioeconomic status has been implicated in an impressive array of examples of causes of death (mortality) during adulthood and the occurrence of a variety of adult health conditions from depression to cardiovascular disease (Braveman and Barclay, 2009).

The strength of this association between low socioeconomic status and poor physical health has been demonstrated across a range of racial groups and ethnicities. Using family income as the measure of socioeconomic status, Braveman and Barclay (2009) illustrate the consistent nature of socioeconomic status in its impact on health in a sample of children aged 17 years and under in the United States. For each of their three categories of race/ethnicity, a clear pattern was found which indicated that the lower the family income, the poorer the physical health of the children. Within this income–health pattern, they also demonstrate variability in health outcome between the race/ethnicity categories, with
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Hispanic children showing a larger proportion ‘in less than very good health’, followed by black/Hispanic children, and white/non-Hispanic children showing a larger proportion in good health.

It has long been accepted that investment in early education is a key area for reducing social deprivation and breaking the cycle of poverty, and extensive education research exists in this area. This has emerged from an increasing awareness and acceptance of the effects of early life stress on physical health outcomes, coupled with the understanding that socioeconomic disadvantage (i.e., lower income, poorer education) can influence health via the numerous potential stressors that it may create. Individuals living in a poorer environment are more likely to experience stressful events relating to various disruptions in their personal, family, community, or school life, including personal maltreatment, parental conflict, and violence in their neighbourhood (Shonkoff et al., 2009). There is increasingly compelling evidence for a process of ‘biological embedding’ in which the experience of early adversity primes the physiological systems, setting the scene for vulnerability to negative health outcome following subsequent life stress (Shonkoff et al., 2009). This is a theme I will return to later as we consider the theories and mechanisms by which this might operate (Chapter 2), how this can be applied to the experience of intra-uterine stress during pregnancy (Chapter 4), and the effects on childhood health and illness later in life (Chapter 5).

Of course, just as low socioeconomic status per se does not cause ill health, disease and illness are not solely the domain of those with low socioeconomic status. Indeed, the effects of stress and anxiety on underlying physiological mechanisms associated with ill health are often a curse of the middle classes in the developed world. Disease and illness are seen throughout the socioeconomic classes, but having low socioeconomic status during childhood carries with it an increased chance of ill health, particularly for certain types of conditions as described above. Gaining an understanding of how and why these health differences exist, and the interactions between these social factors and psychological factors, is of much interest to health psychology and related disciplines.

The implication of this life-course perspective is that early intervention is essential if health disparities later in life are to be minimized. The factor that has enabled this to receive attention and move the field forward is the potential economic impact for health-care provision. The current thought is that providing health investment in adult care is expensive and limited, whilst investment in improving the physical and social environment of children will pay dividends through a reduction in their health-care needs throughout their life. This perspective goes beyond the idea that investment in childhood poverty will merely improve health-related behaviours such as diet and exercise, important though they are, to the notion that reducing stress in early life will physiologically alter the developing child and consequently improve their health outcome over time as well as that of future generations. This may all sound rather far-fetched, and it is unrealistic to think that inequality, stress and adversity can be eliminated, but aside from the very real practical improvements in health outcome, the theory and supporting evidence for alterations in this way provide a sound theoretical basis for understanding the powerful mechanisms behind mind–body links and their central importance in the application to child health.
THE DEVELOPMENTAL CONTEXT OF CHILD HEALTH

It is vital to consider the developmental context in which health and illness are set. There are many excellent developmental psychology textbooks which document the biological, cognitive, language and social development during childhood (e.g., see Parke and Gauvain, 2009). Of particular importance with respect to child health psychology are the ways in which these developmental changes impact upon understanding and expression of the concept of health and illness and the degree to which children may be more biologically vulnerable or resistant to disease. In Chapter 2, we consider the developmental progression of children’s cognitive understanding of health and illness, particularly through the earlier part of childhood. In conjunction with this, we also examine the biological development of the immune system and the endocrine system, which help explain patterns of resilience and vulnerability in childhood as a critical period in the setting of the stress response systems, the outcome of which can influence adolescent responses and development.

Within the developmental context of child health, the concept of attachment is particularly relevant. Attachment is very much a cornerstone theory in the field of developmental psychology, central to understanding social relationships across the lifespan. Whilst the focus in this book is on health psychology rather than developmental psychology, one of the compelling aspects of health psychology, as suggested above, is its interaction across several different strands of psychology and beyond. The theory of attachment also underlies the key concepts of social support and supportive relationships. Attachment theory was originally associated with mental health outcomes and psychopathology, but it is intimately bound up with an individual’s ability to give and receive social support and, as such, is a recurrent theme which underlies many of the physical health issues discussed throughout this book.

FIGURE 1.2 Konrad Lorenz swimming with imprinted goslings

Source: www.flickr.com/photos/pluriverse/3403875417/sizes/m/in/photostream/.
Attachment theory was first put forward by John Bowlby, a psychiatrist with a background in psychoanalysis, almost half a century ago in 1969. He built on the incredible work of ethologist Konrad Lorenz (1937) who was the first to show the process of ‘imprinting’ in action. Using goslings, Lorenz discovered that, during the critical period shortly after hatching, if he was the first figure they saw and bonded with at this time, the young goslings would imprint or attach to him as their object of affection and this bond would remain with them throughout their life. Figure 1.2 shows imprinted goslings following Lorenz, their ‘mother-goose’, out swimming.

Imprinting experiments with newly hatched ducklings are still used as a powerful teaching tool on some undergraduate courses in psychology. The process of imprinting has also been popularized in film and fiction: for example, the story ‘Fly Away Home’ in which goslings imprint on a young girl who is able to fly the geese to safety as they follow her microlight plane. The term ‘imprinting’ is also still attracting attention as a concept in recent popular teen vampire fiction, albeit an altered use of the term not to be confused with original Lorenzian theory. Bowlby’s theories on attachment, particularly mother–child bonding, attracted an international following in psychology and, with the contribution of other theorists and practitioners in this area, led to work which is still influential across many branches of psychology as we know them today.

So what is attachment? Attachment is described as a ‘strong affectional tie that binds a person to an intimate companion’ and is a ‘behavioral system through which humans regulate their emotional distress when under threat’ (Sigelman and Rider, 2009: 406–7). Being close to the attachment figure creates security, and being away from the attachment figure can create separation anxiety. It stems from the initial bonds formed with parents or close attachment figures at just a few months of age, and in different forms early attachment plays out in all subsequent attachment relationships experienced throughout life, particularly in close relationships with significant people, including romantic relationships. Sigelman and Rider (2009) describe the longevity of attachment from a lifespan perspective: there are ‘basic similarities among the infant attached to a caregiver, the child attached to a best friend, and the adolescent or adult attached to a mate or lover’ (2009: 407), although we develop different ways of expressing this attachment and of coping with separation from the attachment figure and regulating the emotions this produces. The theory of attachment comes up again when we consider developmental aspects below, and as applied to separation anxiety as a source of stress in Chapters 2 and 5, as well as in Part II when we consider issues of death and dying.

THE MIND–BODY LINK: FROM MEDIEVAL TO MODERN-DAY VIEWS

Every age of man has in some way expressed an awareness of the influence of the human psyche in illness and disease or rather, in health, as modern thinking would have it.
Historically, the relationship between mind and body has had a somewhat chequered career in Western medicine. In the ancient world, belief in the healing powers of non-medicinal or spiritual forms abounded, often in the shape of myths or legends (Box 1.1).

**BOX 1.1**

The legend of King Bladud

In the world heritage city of Bath, home to many things ancient, including the ancient Roman spa visited for its healing waters, the legend of King Bladud persists to this day. As long ago as 863 BC, Bladud, prince and heir to the throne, had returned home after studying Latin in Athens. Yet there was no rest from his years of study as health was on his mind. He had contracted leprosy during his travels abroad and was keen to make sure his condition did not cause his inheritance to be overlooked by his father, the king. In order to hide, he disappeared from the comfort of the palace, disguised himself as a swineherd, and sought refuge in the countryside near Bath. The pigs he tended also contracted leprosy but, much to Prince Bladud’s surprise, they were cured after rolling in the hot, muddy waters around Bath’s springs. Bladud followed suit, rolling in the hot, muddy water, and he too experienced the miracle cure. He went on to become king and was so delighted at the curative powers of the area that he founded the city of Bath, dedicating the healing waters to the Celtic goddess Sul (the city becoming known as Aquae Sulis to the Romans).

It may be just a legend but it demonstrates enduring interest in the power of non-medicinal healing. Incidentally, the legend is still very much alive in the city of Bath [see www.kingbladudspigs.org/].

Together with the Greek philosophers Plato and Aristotle, most writings document the birth of medicine as stemming from the thinking and scholarship of the ancient Greeks (Nutton in Porter, 2001), particularly the work attributed to Hippocrates and his disciples, written approximately 300–500 BC. Notorious in this work is the humoral theory which proposed four humours, that of bile, phlegm, blood and black bile, synonymous with the four mental states or temperaments: choleric, phlegmatic, sanguine and melancholic. The influential work of Galen, an ancient Roman of Greek origin, built on these ideas in the second century AD, advancing knowledge with his practice of animal dissection; he can be thought of as an early pioneer of stress-related illness (Nutton in Porter, 2001). This mind–body view persisted, the mind being associated with mental illness rather than physical illness, and observations of mind–body links being explained as witchcraft, magic or even demon possession well into the seventeenth century (Box 1.2).
Medieval ducking stool

This instrument of social control and public humiliation was used to punish those believed to be witches (as well as nagging wives). There persists a fascination with such forms of extreme social ostracism, with medieval relics and reconstructions still attracting captivated crowds today. The ducking stool (Figure 1.3) can be seen as an icon of the mind–body connection since it represents a misunderstanding of the link between psychological processes and physical events. Those thought to be witches, usually women, were accused for a range of reasons and these included the belief that they had inflicted disease or caused stillbirth, or simply because they had a skin condition or birthmark (for more on what constituted witchcraft in medieval times, see www.witchcraftandwitches.com). In other words, they were thought to exhibit a link between the human psyche and physical ills. In this way, the ducking stool symbolizes a fear of the mind–body link and an intrinsic fear of social evaluation and rejection if suggestion was made as to such a link.

FIGURE 1.3 Medieval ducking stool over the River Stour in Canterbury, UK

It was René Descartes, renowned French philosopher (he of ‘I think therefore I am’ fame) and early physiological psychologist, who refined mind–body dualism, subsequently
referred to as Cartesian dualism (Descartes, 1984). Amongst other things, Descartes identified the connection between mind (or soul) and body as physically occurring in the pituitary gland of the brain via retinal nerves from the eye (Leahey, 2004). It is also vital to consider the role played by organized religion in the development of medicine and health, a role which has shown a typically conflictual ‘approach–avoidance’ relationship through the ages (the psychological notion of moving forward with something whilst at the same time being held back by fear). In many respects, religion was often seen as holding back medical advances (i.e., ‘avoidance’) due to the fear of science and the unknown, retaining a strict distinction between body and soul and being in favour of persecuting evil in the form of witches and magic. Yet in other respects, religion promoted the idea of divine healing and welcomed it (i.e., ‘approach’), embraced the tolerance of physical suffering as a coping technique, and was central to the provision of psychosocial concepts such as social support. One does not have to search very far to see this debate continuing today (for example, see Dawkins, 2006; McGrath and Collicut McGrath, 2007) and I am not about to resolve it here. Yet it is important to bear in mind the role of religious beliefs, at both a personal and a cultural level, when considering the historical context of health psychology, particularly relating to children and the role of the family as a social unit.

Treatment of physical illness progressed exponentially in the eighteenth and nineteenth centuries with scientific and medical advances, including the invention of tools such as the stethoscope and the microscope, an increase in knowledge about bacteria and antiseptics, the development of vaccinations (e.g., against smallpox, tetanus and diphtheria) and the advancement of surgical ability made possible by the application of anaesthetics such as ether and chloroform (Porter, 2001). An important change in the delivery of primary health care during the nineteenth century was the family doctor or general practitioner, although they had relatively few effective medical tools at their disposal, bloodletting being one of the most commonly used (Shorter in Porter, 2001). From the 1850s onwards, the provision of hospital care for children grew rapidly, with Great Ormond Street Hospital for Children leading the way in the UK (1952) and the New York Hospital for Women and Children in the US (1954), resulting in dedicated children’s services provided in most major cities in the developed world today. Similarly, advances in obstetrics and gynaecology in the nineteenth century saw a decline in the previously high death rates of mothers and newborns, with the advent of anaesthetics, antibiotics, delivery methods and hospital provision. (For a fascinating illustrated account of medical history, documenting a timeline of medical advances, see Porter et al., 2009.)

Yet with these advances in physical medicine, the psychological and social person-centred approach was largely overlooked, perhaps even feared (again, we are reminded of the duckings tool), in the struggle to move forward in scientific recognition. The twentieth century saw the development of psychosocial schools of thought, namely psychoanalysis, psychosomatic medicine, behavioural medicine, psychoneuroimmunology and health psychology. The human need for consideration of psychosocial aspects in health created a shift from the biomedical model to a biopsychosocial model of health and illness. Physicist Sir Isaac Newton’s third law of motion that ‘for every action there is an equal and opposite reaction’ is a useful analogy: in this case, the extent of the shift is made possible due to
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The reduction in resistance enabled by the cultural readiness for more person-centred medicine. This shift towards the inclusion of psychosocial factors was significantly advanced by George Engel’s work, and is beautifully articulated in his influential paper over three decades ago (Engel, 1977; see Figure 1.4). His seminal paper argued for a need to move from the reductionist dualism of the then pervading medical model of disease (mind and body being separate entities never to interact with one another) to a more holistic, integrated approach. This new approach put forward was the biopsychosocial model, which incorporated psychological and social factors, along with physical factors, in consideration of health, illness and treatment. It is well worth taking a look at Engel’s original paper which skilfully explains the two positions, setting them in historical context. Interestingly, Engel, in particular, notes the role of Western religion in the evolution and maintenance of the biomedical model (1977: 131), due to the Church’s belief in the separation between the body and the soul.

THE MIND–BODY CONNECTION IN MODERN TIMES

The biopsychosocial model is now a major contributor in modern-day health care and pervades thinking about health and well-being at a cultural and society level, although the battle with reductionist dualism is far from over. It is interesting that in advocating and advancing such new ways of thinking about health and illness, examples of child health
are often used. For example, Engel used the case of a traumatized infant female patient, called Monica, whom he and his colleague Franz Reichsman studied in depth over the course of 25 years (Reichsman et al., 1957; Engel et al., 1979; Dowling, 2005). This represents an early documented example of the longitudinal effect of childhood trauma, an idea we will come back to in subsequent chapters.

This is the point at which, in a lecture, I would probably be interrupted and bombarded with questions from those who have a background or interest in psychoanalysis. You may also have noticed that I have already referred to the field of psychoanalysis when introducing the work of Bowlby above. In considering the historical context, it would be remiss of me not to mention that Engel’s work took much of its influence from psychoanalytical thinking and, indeed, the work of Sigmund Freud also used examples of mental neuroses in children resulting in a range of physical health symptoms (Brown, 1972). Psychoanalysis was, after all, influential in psychology in the mid-twentieth century. For the purposes of this book, however, I point to this merely to the extent of showing an early and important milestone of the biopsychosocial concept in the study of child health.

However, since the discipline of psychology is traditionally associated with mental health and psychological well-being, it is often difficult to shift or extend this view to include an understanding or appreciation of the impact of psychological factors on physical health outcomes. I seem to spend a lot of time doing exactly this, explaining how psychosocial factors can affect physical health to people who are simultaneously surprised that there is a science which looks into this, yet are intuitively in agreement from personal experience. In fact, once the subject is mentioned, people are often only too keen to recount numerous examples where they have seen mind–body influences in action. There is, of course, significant overlap or co-morbidity between physical health and mental health. Whilst mental health issues and psychopathology are referred to in this book, the focus is on physical health as an outcome and intervening physiological dysregulation.

In Chapter 2, I look in more depth at definitions of health and illness, as well as definitions of stress and coping and the processes and mechanisms through which psychosocial factors influence physical health. Before we go there, it is important to understand the essence of the mind–body relationship. The best way to explain the mind–body link is with a quote from leading therapist and academic, David Spiegel, who sums up one of his editorials linking psychosocial factors and cancer progression in adults by saying that ‘it is not simply mind over matter, but it is clear that mind matters’ (Spiegel, 1999: 1329). In other words, disciplines which incorporate psychosocial factors in physical health are not purporting some kind of magical ‘think positive’ influence of mind over physical matter. Instead, they are providing strong scientific evidence for the importance of the mind in physical health through recognized physiological routes.

I come back to the mind–body issue several times throughout the book, so it is worth taking a few moments to think about what is meant by this in scientific terms before continuing, in order to grasp the concept thoroughly. Related concepts, such as immune conditioning and areas of research such as psychoneuroimmunology, are also described later in the book (see Chapter 3). The reason I am making such a song and dance about grasping the scientific meaning of mind–body relationships is because the influence of psychological factors has
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frequently been misunderstood and consequently misinterpreted or unrealistically portrayed, particularly in the media and in popular self-help texts. For example, positive thinking (see Box 1.3) has often been over-interpreted as the ‘cure all’ for a host of conditions, including cancer, sometimes to the extent of having the damaging effect of blaming patients for their own illness. For an in-depth critique of the ‘think positive’ campaign, see Barbara Ehrenreich’s (2009) book devoted to the broader theme at a cultural level.

In this book, we will be adhering closely to the scientific reality that psychological state is important in physical health, not through some magical means, but as evidenced through careful consideration of the processes, mechanisms, models and theories underlying mind–body connections. These processes and mechanisms are central to child health, and child health is key to understanding the theories and models linking psychosocial factors and health outcome across the lifespan.

BOX 1.3

Positive thinking cures all?

Think about the news articles, advertisements (see Figure 1.5), TV programmes and children’s stories related to health that you have recently read, heard or seen. Consider the following questions:

What message do they convey?
What does the product promise to deliver?
Can positive thinking be a barrier to improved health outcome?
How might these messages shape the health attitudes, health-related behaviours and understanding of the link between stress and illness in children?
Think about not just the direct effect on children but the indirect effects via parental influence.

FIGURE 1.5  Happy pills
Source: Shutterstock_1572633.
So what are we left with after considering this meandering pathway of medical and psychosocial evolution in the study of child health? Modern Western society uses the terms ‘stress’, ‘coping’ and ‘social support’ in everyday common parlance. These are considered in depth in Chapter 2, but here we ask the question of why they are so key to

**BOX 1.4**

*Ring a Ring o’ Roses*

![Image of children's nursery rhyme 'Ring a Ring o’ Roses'](image)

*FIGURE 1.6* Children’s nursery rhyme ‘Ring a Ring o’ Roses’

Artist: E. Cobb.

Ring-a-ring o’ roses,
A pocket full of posies,
A-tishoo! A-tishoo!

We all fall down

The Great Plague of London (1665) was caused by bubonic plague or the Black Death. The children’s nursery rhyme ‘Ring a Ring o’ Roses’ (English version; ‘Ring around the Rosies’ in the US version) symbolizes the fear and misunderstanding of the time surrounding contagious disease. The words ‘ring o’ roses’ reflect the rosy red skin rash characteristic of bubonic plague, and in the English version ‘A tishoo’ represents the symptoms of violent sneezing. The ‘pocket full of posies’ is a reference to the sweet-smelling herbs carried in order to ward off the plague, as people believed that bad smells were the cause of contagion (Alchin, 2009). Do the posies perhaps hint at an early form of homeopathy as we know it today, or do flowers simply symbolize the provision of comfort and hope in an otherwise seemingly helpless situation?

Children would typically hold hands in a circle to recite the song (Figure 1.6), possibly unintentionally symbolizing both the ease of contagion through contact and the importance of social support through friendship.
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physical health – in fact, why are we even considering them? The answer in many respects is simple: because psychosocial factors have a scientifically measurable impact on physical health outcome. Ask any health-care professional, any member of the public – indeed, ask a child – and they will most likely be able to recall anecdotal evidence from their own experience of psychosocial factors affecting physical health.

It is intriguing to look at examples of how misunderstandings relating to health and illness have been tied up with trying to make sense of the influence that psychological factors might have on health. Aside from the medieval examples given above, examples have pervaded children’s literature down through the centuries, seen in popular nursery rhymes, stories, legends and sayings, an example of which is the nursery rhyme ‘Ring a Ring o’ Roses’ (see Box 1.4). Nursery rhymes and legends often reflect accounts of common misunderstandings, yet they also sometimes reflect understanding and knowledge about the relationship between psychological factors and disease prior to scientific evidence being available to explain the connection. As such, they may be bound up with magic and mystery, yet often contain essential truths which one generation felt important to pass on to the children of the next.

As you will see throughout the rest of this book, although we may hold these beliefs about the link between psychosocial factors and physical health outcomes, and while science has provided evidence to support them and Western medicine has gone a long way to incorporate these factors into health care, there is still a long way to go. The scope to develop these links further and to capitalize on them in order to improve health and prevent illness is enormous. In some respects, consideration of psychosocial concepts in physical health and illness could be viewed as an affluent modern addition for Western societies to adopt, or for the more affluent in those societies to improve their comfort and quality of life. It could be argued that the developing world has more life-and-death dilemmas to face and cannot afford to include such luxuries. This, of course, is true to a degree, but it could also be argued that we cannot afford to ignore psychosocial factors given their potentially powerful and cost-effective outcomes. Seminal work by House and colleagues (1988) demonstrates the power of one of these concepts – that of social support. In respect of mortality, lack of social integration was found to be comparable with risk factors such as smoking and serum cholesterol levels (House et al., 1988). Of all the research that has been published in the past quarter of a century, this is perhaps one of the most compelling and straightforward comparative examples of the influence of psychosocial factors on physical health outcome.

HEALTH-RELATED BEHAVIOUR AND SOCIAL COGNITION MODELS

Whilst the main focus of this book is on the physiological changes that occur under different psychosocial conditions and how early psychosocial experiences play out
across the lifespan, it is important not to overlook some of the more practical influences of psychosocial factors on health outcome. In the past 25 years, psychologists have put much collective effort into improving health outcome by attempting to influence lifestyle factors, such as diet, exercise and sexual behaviour, in order to prevent or reduce the prevalence of ill health. Health intervention projects and promotion campaigns, often targeted at children or their parents, use a variety of techniques to alter behaviour. These techniques stem from a number of key theories in this area, which highlight beliefs and attitudes about, and intentions towards, performing health-related behaviours. Termed ‘social cognitive models’ or ‘models of social cognition’, the theories they generate help to explain some of the conscious and unconscious cognitive processes operating to influence behaviour: in other words, to explain why people do or do not take action towards averting illness or towards improving behaviour relating to their health.

Dominant theories in this area are that of the health belief model (HBM; Becker, 1974; Rosenstock, 1974; Becker and Maiman, 1975) and the theory of planned behaviour (TPB; Ajzen, 1985, 1991), along with its earlier, less famous relation, the theory of reasoned action (TRA; Fishbein, 1967, 1980, 2008; Morrison et al., 2002). For a detailed account of such models, you will be spoilt for choice over which health psychology text to consult (highly recommend for coverage of this topic is Morrison and Bennett, 2012). To summarize the concepts involved, the HBM attempts to predict behaviour based on the interaction of demographic factors, such as age and gender, with the socially constructed, learnt beliefs an individual holds. The beliefs held are driven by that person’s perception of how threatening a certain behaviour is and the relevance it has for them, as well as their perception of the benefits of, and barriers to, performing the behaviour. The TPB incorporates social dimensions of health behaviour to include mediating levels concerned with a person’s ‘attitude’ towards the behaviour, what their family and friends will think (termed ‘subjective norm’), and how much control they feel they have over the behaviour (termed ‘perceived behavioural control’). These, in turn, influence the intention an individual has to change their behaviour (termed ‘behavioural intention’) and, ultimately, the behaviour. So, for example, if aiming to engage in behaviours such as trying to lose weight, engage in more exercise or to practise safe sex by using a condom, an individual’s success in meeting this behavioural goal or outcome will be determined by their own attitude to that behaviour, what others would think of them performing that behaviour, and how much control they believe they have in performing that behaviour. Admittedly, this is not rocket science, but towards the end of the 1990s and into the new millennium, these theories became exceedingly popular and, in particular, took the UK health psychology field by storm. The TPB became a key theory and was applied across numerous health-outcome studies, covering all manner of applications from breast/testicular self-examination (Steadman and Quine, 2004) to the safe storage of firearms in houses with children (Johnson et al., 2008).
WHAT IS CHILD HEALTH PSYCHOLOGY?

The reason for the success of these seemingly ‘common-sense’ theories was due in part to the fact that they offered an intuitive explanation for why some people were more likely to perform health behaviours than others. Coupled with the later addition of the concept of implementation intentions (Gollwitzer and Oettingen, 1998) to explain the gap between intention and behaviour, this has been one of the most successful intervention-based models in health psychology. The intention–behaviour gap, as its name implies, addressed the issue that, despite good intentions, people often fail to perform the intended behaviour and need additional prompts to encourage them to do this. Implementation intentions involve individuals committing to when they will perform a behaviour and to locate a trigger to remind them to do it (e.g., taking a vitamin pill every morning with breakfast). Similarly, stage-based models which have enabled interventions to be individually tailored and targeted, based on the person’s readiness for change, have also been incredibly successful in health psychology. The stage-based models known as the transtheoretical model (TTM; DiClemente and Prochaska, 1982) and the health action process approach model (HAPA; for applications, see Sutton, 2008) have shown significant cost-effective potential for intervention studies seeking to change behaviour. Since their inception, a plethora of publications has applied these theories across a range of health behaviours.

Yet of the thousands of papers published which are based on social cognition and stage-based models, a vast majority cater to adult populations, with only approximately 10 per cent being concerned with health behaviours in children or adolescents. Areas where they have been applied in child and adolescent populations include the full gamut of health and related behaviours, such as immunization uptake (e.g., against influenza and the more recently available human papillomavirus [HPV] vaccine);

**BOX 1.5**

**Jamie Oliver’s healthy eating campaign**

In September 2006, a media storm hit pupils at a School in South Yorkshire following changes to the lunch menu as part of celebrity TV chef Jamie Oliver’s campaign to improve nutrition in schools. A mother was captured on camera taking orders for junk food from the school gates. Seen as a ‘backlash’ against the introduction of healthier school lunches, this example demonstrates just how difficult it is to change behaviour and the many influences on that behaviour. From the mothers’ perspective, reports suggested that there were concerns over whether the children were receiving a sufficient quantity of food and enough time to eat it within the new schedule imposed by the school.
### TABLE 1.1 Examples of studies applying social cognition models to child health

<table>
<thead>
<tr>
<th>Health behaviour</th>
<th>Population</th>
<th>Study</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immunization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza vaccination</td>
<td>Adolescents in a rural area (n = 337; mean age 14 years)</td>
<td>Painter et al. (2010)</td>
<td>HBM</td>
</tr>
<tr>
<td>HPV vaccination</td>
<td>Physicians (n = 207) of adolescent girls aged 9–15 years</td>
<td>Askelson et al. (2010)</td>
<td>TPB</td>
</tr>
<tr>
<td></td>
<td>Parents (n = 567) of adolescent girls aged 10–18 years</td>
<td>Brewer et al. (2010)</td>
<td>HBM</td>
</tr>
<tr>
<td>Rotavirus (gastroenteritis)</td>
<td>Expectant parents/parents (n = 807) of newborns up to 6 weeks old</td>
<td>Dubé et al. (2012)</td>
<td>TPB</td>
</tr>
<tr>
<td><strong>Diet and nutrition</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood obesity</td>
<td>Mothers (n = 201) of children aged 2–5 years</td>
<td>Andrews et al. (2010)</td>
<td>TPB</td>
</tr>
<tr>
<td>Healthy eating</td>
<td>Adolescents aged 10–13 years (n = 261)</td>
<td>Hewitt and Stephens (2007)</td>
<td>TPB</td>
</tr>
<tr>
<td>Quality of diet</td>
<td>Mothers (n = 300) of toddlers aged 24–36 months</td>
<td>Swanson et al. (2011)</td>
<td>TPB</td>
</tr>
<tr>
<td><strong>Physical exercise</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical activity</td>
<td>Low SES children aged 6–10 years (n = 77)</td>
<td>Armitage and Sprigg (2010)</td>
<td>TPB/imple-</td>
</tr>
<tr>
<td></td>
<td>ACTIVE lifestyle (physical activity and ‘screen time’ behaviour (i.e., watching TV, DVDs, playing computer games)</td>
<td></td>
<td>mentation</td>
</tr>
<tr>
<td></td>
<td>Mothers (n = 162) of children aged 4–5 years</td>
<td>Hamilton et al. (2013)</td>
<td>intentions</td>
</tr>
<tr>
<td><strong>Smoking</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental factors/smoking</td>
<td>Adolescents aged 10–14 years (n = 1070)</td>
<td>Harakeh et al. (2004)</td>
<td>TPB</td>
</tr>
<tr>
<td>Maternal communication/parental</td>
<td>Children aged 8–12 years (n = 1478)</td>
<td>Hiemstra et al. (2012)</td>
<td>TPB</td>
</tr>
<tr>
<td>smoking</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Medication</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Adherence to antiretroviral therapy</td>
<td>Parents of HIV-positive children aged 0.9–11.5 years</td>
<td>Steele et al. (2001)</td>
<td>HBM</td>
</tr>
<tr>
<td><strong>Sun protection</strong></td>
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<td></td>
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<tr>
<td>Encouraging sun safety</td>
<td>Adolescent girls and boys (n = 80) aged 13–16 years</td>
<td>White et al. (2010)</td>
<td>TPB</td>
</tr>
<tr>
<td>Sun protective practices towards children</td>
<td>Preschool staff (n = 245)</td>
<td>James et al. (2002)</td>
<td>TPB</td>
</tr>
<tr>
<td><strong>Safety practices</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safe storage of firearms</td>
<td>Married women with children (n = 185)</td>
<td>Johnson et al. (2008)</td>
<td>TPB</td>
</tr>
<tr>
<td>Use of car booster seats</td>
<td>Parents (n = 151) of children aged 4–8 years</td>
<td>Bracchitta (2006)</td>
<td>TPB</td>
</tr>
</tbody>
</table>

Note: HBM, health belief model; SES, socioeconomic status; TPB, theory of planned behaviour.
adherence to medication such as antiretroviral therapy; sleep and bedtime routines; parental use of booster seats in cars; encouraging physical activity and exercise; improving dietary behaviour and reducing obesity; smoking behaviour; and sexual health – in particular, condom use. Table 1.1 gives some specific examples of research in which the HBM and the TPB have been applied in child and adolescent populations across a range of health behaviours and age groups. These are just examples and many more can be found in the literature. As can be seen from the list of examples in Table 1.1, the applications in child and adolescent health have enormous potential, not least because the influences on attitude and habit formation may be greatest during the developing years. During this time, parental and peer pressure can exert considerable effect, creating an optimum environment for maximizing intervention, laying down foundations for lifelong attitudes towards, and habits associated with, health behaviours. An example from the media of the barriers faced in changing health behaviours in children and their parents is given in Box 1.5.

When considering the likelihood of changing a behaviour, it is important to bear in mind that not all health-related behaviours are equal in their resistance to change. Whilst the use of sunscreen by parents and children may be relatively simple to predict or to change based on these models, some behaviours, as can be seen in Box 1.5 above, are more difficult to change than others. More emotionally laden behaviours, such as condom use in adolescents, create different barriers and challenges. The gap between intention and behaviour is often the greatest for behaviours associated with actions that have a strong element of emotional and physical pleasure (e.g., sexual behaviour and condom use in adolescents).

Not only are the applications of these models relevant in their own right but, importantly, the social cognitions driving health behaviours are important in terms of biopsychosocial interactions. Health behaviours contribute to and interact with underlying psychosocial and physiological processes involved in health and illness. In other words, behavioural factors, such as medication adherence, may mediate between psychological factors, such as stress, and disease activity or progression in chronic illness (Gore-Felton and Koopman, 2008).

Without getting into a full-blown nature–nurture debate about the relative influence of genes versus environment on child health, some of these examples demonstrate the power of parental input on health outcomes in children. With the exception of cases of negative parental influences via deliberate neglect and harm, parental influences on health-related behaviours in children more frequently stem from good intentions, as seen above in the example of parents insisting on junk food for school lunches (see Box 1.5). A further example which very quickly spiralled into a major international news story, due to the understandable concern and anxiety of parents, is that of the combined vaccination for measles, mumps and rubella (MMR) described in Box 1.6. This vaccine is offered to children at 13 months, with a booster vaccination at 3 years and 4 months of age or shortly afterwards.
The MMR controversy demonstrates how parental eagerness to promote health in their children, combined with fear of taking the wrong course of action, can in fact have negative consequences for health outcome. In other words, the result of actions generated by fear or lack of understanding of the risk associated with doing or not doing a certain behaviour (i.e., to vaccinate or not to vaccinate) often creates the greatest risks to health. The notion of risk perception features heavily in recent debates and in popular writing about child health and safety. In an attempt to protect children, many would argue that society has become so risk averse that children are overprotected or effectively ‘bubble-wrapped’ during childhood and adolescence to a degree that is detrimental to their development (for discussion of this topic, see Gill, 2007; Tovey, 2007; these types of ideas are cleverly articulated from a popular perspective in the novel May Contain Nuts by O’Farrell, 2005). Of particular note here is also the drive to purchase dietary products with the addition of omega-3 fish oils. Whilst the association between omega-3 and cognitive functioning is
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well substantiated, the introduction of products such as omega-3 milk and omega-3 supplements appeals to parents who believe that they are giving their children an advantage never before available. Of course, omega-3 fish oils have been around as long as fish have been available for consumption. Yet with the advent of new omega-3 products and peer pressure on parents to compete (i.e., ‘subjective norm’), consumerism is able to cash in on parental concerns and fears about their children’s health and related academic performance. For psychologists, this gives a perfect opportunity to observe parental behaviour in relation to child health, including that of parental overprotection.

THE CHANGING FACE OF HEALTH THREATS

It is important to keep in mind that health threats are constantly changing over time. Medications and vaccines are developed, viruses mutate and the rate of the spread of infection fluctuates according to many variables, from compliance with simple hygiene recommendations to global warming (a debate I am not going to enter, but it is a variable worth mentioning). As we will see in Chapter 2, when considering biological development, the status of the T-helper balance of the immune system during childhood contributes to vulnerability or resistance to certain types of disease. Due to the typical immune profile of early childhood, a greater incidence of conditions such as asthma and other atopic allergic reactions is seen. Similarly, younger children are less able to regulate their temperature and are more likely to develop fever and hence be less able to defend against viral invasion. Yet children are more resistant to certain types of diseases spread by parasitic invasion. In Chapter 2, there is a full account of the T-helper balance mentioned above.

Prior to the development of vaccinations and antibiotics in the twentieth century, the leading cause of disease was from infection, including smallpox, measles, tuberculosis, syphilis, diphtheria, meningitis, and malaria. Frequently appearing in plague proportions as epidemics (a plague across a specific region or country) or, indeed, pandemics (an epidemic that has spread across the globe), such diseases would often later become viewed as ‘childhood illnesses’: the reason being that adults who survived the disease were immune to developing the infection if subsequently exposed, but previously unexposed children were not immune so were more vulnerable to contracting these illnesses (Kiple in Porter, 2001). With the advent of vaccinations, there is now the potential to prevent contagion of these diseases, and that of other viral infections. A recent development in viral resistance is the development of a vaccine against the cervical cancer-causing human papillomavirus (HPV) now offered to teenage girls in most developed countries.

In Western countries where vaccines are routinely offered, uptake is not 100 per cent, even without health controversies such as that surrounding the MMR vaccine, which reflects the psychosocial context of parental decisions to vaccinate children. The advent of the HPV vaccine carried with it additional psychosocial issues relating to parental views on, and knowledge of, sexual activity in adolescence, sparking an array of controversies. The dilemma reflects parental concern to protect whilst at the same time addressing concerns
over condoning and encouraging sexual activity amongst adolescents. Coupled with the drive for adolescent freedom to choose, and strong beliefs about whether or not adolescents should be or are sexually active, the introduction of the HPV vaccine has met with some strong opposition, particularly in the United States. Yet, by contrast, in developing countries, much-needed provision of vaccines is hampered by lack of financial aid rather than psychosocial and cultural choice. Thus, worldwide, a range of factors shapes the current landscape of disease prevalence in children.

The threat of pandemics from avian influenza (H5N1), commonly known as ‘bird flu’, and influenza A virus (H1N1), commonly known as ‘swine flu’, has dominated public awareness of infectious disease. They demonstrate the rapid spread of viruses, enhanced by viral mutation and exacerbated by modern global travel and lifestyle. Swine flu emerged as a pandemic in Mexico in the spring of 2009. In August 2010, the World Health Organization (WHO) announced that the virus was officially in a post-pandemic period. However, the threat from swine flu is certainly not over and it continues particularly as a seasonal health threat, especially for children under 15 years of age, a group which has shown particular vulnerability to the virus. The vaccine for swine flu is now included in the UK seasonal flu vaccine provided by the NHS, available to ‘high-risk’ categories of patients (such as the elderly, those with chronic conditions or those who have compromised immunity) or, where available, to those who choose to pay privately. Given the particular susceptibility of children to swine flu and the rise in cases seen from increased contagion at the start of the school term during winter months, a heated debate currently exists over whether the swine flu vaccine should be provided to all children, particularly those in younger age groups, as part of the standard vaccination programme. Whilst swine flu has not seen anywhere near a return to the numbers of deaths seen from plague in centuries gone by, such pandemics are a stark reminder of our continued vulnerability to viral infection despite modern medical advances. Exposure to viral infection and the psychosocial factors that influence susceptibility are a central theme of this book and are explored in depth in Chapters 3 and 5. It is worth being mindful of the landscape of infectious illness worldwide in order to appreciate how and to what extent interventions to increase resistance may be possible.

Human immunodeficiency virus (HIV) and the syndrome that results from this virus, acquired immune deficiency syndrome (AIDS), remains a significant health threat worldwide. The WHO estimated a staggering 3.4 million children under 15 years of age living with HIV worldwide in 2010 (WHO/UNAIDS, 2011). New infections of HIV in children aged under 15 years in 2010 are estimated at 390,000, with AIDS-related deaths in children estimated at 250,000 (WHO/UNAIDS, 2011). HIV/AIDS is a good example of a modern condition once viewed as a life-threatening pandemic in the 1980s, now defined in the Western world largely as a chronic condition which can be managed by antiretroviral medication. However, in developing countries where preventive measures are more limited, the HIV infection rate and death from AIDS-related illness are declining more slowly, and so it remains a life-threatening virus in these less affluent parts of the world. The WHO has made significant advances in providing antiretroviral treatment for children in developing countries in recent years (see www.who.int) in line with their HIV prevention and treatment policy. It is a target of the WHO to enable every child throughout
A WORLDVIEW ON CHILD HEALTH

The World Health Organization states that ‘over 40% of the global burden of disease attributed to environmental factors falls on children below five years of age, who account for only about 10% of the world’s population’ (www.who.int/en). Furthermore, the WHO points out that ‘environmental risk factors often act in concert, and their effects are exacerbated by adverse social and economic conditions, particularly conflict, poverty and malnutrition’ (www.who.int/en). Some of the major causes of childhood disease and death in developing countries include malaria, HIV/AIDS, pneumonia and meningitis. For example, the leading cause of death in children under 5 years old in developing countries is malaria. This treatable virus continues as an epidemic in Sub-Saharan African and Asian countries due to socioeconomic conditions, with malaria affecting predominantly poor women and children, perpetuating the vicious cycle of poverty under which they live. The WHO has set eight Millennium Development Goals (MDGs), with the aim of achieving these by 2015. At least four of these goals are directly related to improving the health of children worldwide. These are to (i) eradicate poverty and hunger (MDG 1); (ii) reduce child mortality (MDG 4); (iii) improve maternal health (MDG 5); and (iv) combat HIV/AIDS, malaria, and other diseases (MDG 6).

In 2010, the WHO reported approximately 400,000 mother-to-child transmissions (MTCTs) of HIV. The successful achievement of MDGs 4 and 5 is supported by the WHO Partnership for Maternal, Newborn and Child Health (PMNCH). Initiatives generated by these goals include interventions to reduce and eventually to eliminate mother-to-child transmission of HIV (either pre-, peri- or postnatally) through the use of antiretroviral therapy (ART). Changes in the landscape of world health are demonstrated by the introduction of pneumococcal vaccine in several developing countries; for example, in early 2011, in Kenya. This vaccine protects against pneumonia which the WHO estimates is responsible for 1.6 million childhood deaths per annum worldwide, as well as protection against meningitis and sepsis.

Other environmental risks to children include those from unclean drinking water, poor sanitation, food and chemicals. Although we touch less on these types of health risk in this book, health psychology has a part to play in improving child health through changing attitude and behaviour at an individual and societal level. This links to child health psychology in improving provision of, and access to, health care, as well as uptake of the health care provided for children and adolescents. One chemical pollutant affecting children is that of second-hand smoke. The statistics on second-hand smoke exposure for children are staggering, the WHO reporting that 40 per cent of children worldwide are exposed to second-hand smoke at home, and 31 per cent of deaths from second-hand smoke are in children. Furthermore, exposure to second-hand smoking at home perpetuates the cycle of smoking behaviour as youth exposed are 1.5–2 times more
likely to start smoking themselves (see WHO, ‘10 Facts on second-hand smoke’; www.who.int/features/factfiles/tobacco/en/; Figure 1.7). Countries worldwide have made significant effort in tackling this issue through increased awareness, attitude change and legislation over the past decade.

COMMUNICATING HEALTH

In Chapter 2, we address children’s understanding of health and illness, approximate ages at which different cognitions develop, and the context of these developments. Appreciation of a child’s level of cognition and their context-relevant experience is vital for effective communication. In later chapters, we directly examine the effect of acute and chronic illness during childhood and the associated medical experience, including hospitalization. There have been huge advances in child-friendly hospital environments over the past half-century, which acknowledge the necessity to minimize stress or trauma relating to medical procedures. Stress responses generated from more routine health procedures, such as the heel-prick test in newborns or responses to minor surgical procedures such as circumcision, are well documented. Effective communication does not just entail age-appropriate verbal communication, but extends to the entire experience relating to health and health care. Communication takes on special importance when children are chronically ill, or when they are seeking to understand serious illness or death in a parent. Yet, central to this book is also the
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importance of appropriate communication about health and illness in healthy children, and the transmission of beliefs about illness across generations and cultures. Accurate understanding about the link between psychosocial and physical health influences from an early age places the child at an advantage in reducing health risk and maximizing physical health throughout the course of life.

CHAPTER SUMMARY

In this chapter, we have introduced some of the underlying psychosocial issues in child health. The psychology of child health has been defined and the various disciplines that contribute towards the interdisciplinary approach taken have been outlined. I have attempted to debunk the myth of positive thinking as a magical ‘cure all’ and instead introduced the scientific foundation behind the mind–body link. I have also explored some of the origins of psychosocial influences in health as they relate to children and adolescents, and pointed towards some of the developmental considerations inherent in understanding child health. The biopsychosocial model has been introduced as the key perspective that will inform the topics discussed throughout the book. In Chapter 2, we will look in more detail at health, illness and well-being, with a focus on the concept of stress and how this fits in with the concepts already outlined here.

KEY CONCEPTS AND ISSUES

- The biopsychosocial model
- Social support
- Socioeconomic status
- Imprinting and attachment theory
- The mind–body relationship
- Health behaviours
- Social cognition models
- Intergenerational transmission
- A life-course perspective

FURTHER READING

To read the original work on the biopsychosocial model by Engel is inspirational:


For in-depth background on medical history, containing some very poignant illustrations:


More detail about the historical context of psychology:

For a sound text on developmental psychology:

The original attachment work and related volumes on loss and separation (amusingly yet cleverly marketed by some booksellers as ‘the attachment and loss trilogy’):

For a summary of Bowlby’s work set in the context of research in ethology:

USEFUL WEBSITES

The British Psychological Society Division of Health Psychology: www.health-psychology.org.uk
The World Health Organization (WHO): www.who.int/en
Health Protection Agency (HPA): www.hpa.org.uk
HPA’s e-bug website for an interactive educational tool explaining the spread, prevention and treatment of infection: www.e-bug.eu
National Health Service (NHS) information on swine flu: www.nhs.uk/conditions/pandemic-flu/Pages/Introduction.aspx