

HEALTH PSYCHOLOGY

THEORY, RESEARCH AND PRACTICE

DAVID F MARKS, MICHAEL MURRAY,
BRIAN EVANS & EMEE VIDA ESTACIO

4TH
EDITION



Los Angeles | London | New Delhi
Singapore | Washington DC | Boston

1

HEALTH PSYCHOLOGY: AN INTRODUCTION

The desire for the prolongation of life we may take to be one of the most universal of all human motives.

(Kenneth Arrow, 1963: 75)

OUTLINE

In this chapter we introduce health psychology as a field of inquiry. The concept of health is introduced from a historical perspective. Health psychology is defined and theories of need-satisfaction and subjective well-being are reviewed. We present a theory of well-being with a life-span perspective that includes the constructs of attachment, life satisfaction, affect and consumption. The scope and rationale of health psychology are discussed. Problems with measurement are discussed and a framework we call the 'Health Onion' is described.

WHAT DO WE MEAN BY 'HEALTH'?

It seems natural to discuss what is meant by **'health'** in a book about health psychology. Otherwise, how do we understand the subject? To unravel the origin of the word, a quick dip into etymology is called for. The word 'health' is derived from Old High German and Anglo-Saxon words meaning whole, hale and holy. The etymology of 'heal' has been traced to a Proto-Indo-European root 'kailo-' (meaning whole, uninjured or of good omen). In Old English this became 'hælan' (to make whole, sound and well) and the Old English 'hal' (health), the root of the adjectives 'whole', 'hale' and 'holy', and the greeting 'Hail'. The word became 'heil' in German (unhurt, unharmed), 'Heil'

Health psychology in context

(good luck or fortune), 'heilig' (holy) and 'heilen' (to heal). In Old Norse there was 'heill' (health, prosperity, good luck). From the same roots, 'Hello' in English, 'Hallo' in German, or 'Hi' are everyday greetings.

Ancient links exist between the concepts of 'health', 'wholeness', 'holiness', 'hygiene', 'cleanliness', 'goodness', 'godliness', 'sanitary', 'sanity' and 'saintliness', as in: 'Wash you, make you clean; put away the evil of your doings from before mine eyes; cease to do evil' (Isaiah, 1:16, King James Bible) and: 'O you who believe! when you rise up to prayer, wash your faces and your hands' (Quran). The concept of health as wholeness existed in ancient China and classical Greece where health was seen as a state of 'harmony', 'balance', 'order' or 'equilibrium' with nature. Related ideas are found in many healing systems today. On the other hand, there are traditional associations between concepts of 'disease', 'disorder', 'disintegration', 'illness', 'crankiness' (or 'krankheit' in German), 'uncleanness', 'insanity', 'chaos' and 'evil'.

Galen (CE 129–200), the early Roman physician, followed the Hippocratic tradition with *hygieia* (health) or *euexia* (soundness) as a balance between the four bodily humours of black bile, yellow bile, phlegm and blood. Galen believed that the body's 'constitution', 'temperament' or 'state' could be put out of equilibrium by excessive heat, cold, dryness or wetness. Such imbalances might be caused by fatigue, insomnia, distress, anxiety, or by food residues resulting from eating the wrong quantity or quality of food. For example, an excess of black bile would cause melancholia. The theory was related to the four elements: earth, fire, water and air (Table 1.1).

In the winter, when it is chilly and wet, people worry about catching a cold, caused by a build up of phlegm. In summer, when a person is hot and sweaty, they may worry about not drinking enough water because they could otherwise become 'hot and bothered' (bad tempered). It is remarkable that some common beliefs today are descendants of early Greek and Roman theories of medicine from 2,000-plus years ago.

Universal interest in health is fuelled by a continuous torrent of content in the media about health and medicine, especially concerning the 'dread' diseases. In 1946 the **World Health Organization (WHO)** defined health as: 'the state of complete physical, social and spiritual well-being, not simply the absence of illness'. It is doubtful whether 'complete physical, social and spiritual well-being' can ever be reached by anyone. Apart from this idealism, the WHO

Table 1.1 Galen's theory of humours

Humour	Season	Element	Organ	Qualities	Personality type	Characteristics
Blood	spring	air	liver	warm and moist	sanguine	amorous, courageous, hopeful
Yellow bile	summer	fire	gall bladder	warm and dry	choleric	easily angered, bad tempered
Black bile	autumn	earth	spleen	cold and dry	melancholic	despondent, sleepless, irritable
Phlegm	winter	water	brain/lungs	cold and moist	phlegmatic	calm, unemotional

definition overlooks the *psychological*, *cultural* and *economic* aspects of health. Psychological processes, the main subject of this book, are a key factor in health and are embedded in a social context. For this reason, the term ‘psychosocial’ is often used to describe human behaviour and experience as an influence on well-being. Social inequalities and poverty are also strongly associated with health outcomes and warrant explicit inclusion in any definition of health. With these thoughts in mind, we define health in the light of five key elements (Box 1.1).

BOX 1.1 DEFINITION OF HEALTH

Health is a state of well-being with satisfaction of physical, cultural, psychosocial, economic and spiritual needs, not simply the absence of illness.

NEED SATISFACTION, HAPPINESS AND SUBJECTIVE WELL-BEING

To be useful, the above definition of health needs to be unpacked. Philosophers, psychologists, songsters and others have had much to say about what makes a person feel well. A key concept is that of **need satisfaction**, immortalized by Mick Jagger and Keith Richards in the 1965 Rolling Stones release ‘(I Can’t Get No) Satisfaction’. In Maslow’s (1943) **hierarchy of needs** (Figure 1.1), a person is healthy if all of their needs are satisfied, starting with the most basic needs for air, food, water, sex, sleep, homeostasis and excretion. Then as need satisfaction moves toward the top of the pyramid, the epitome of need satisfaction, a person becomes more and more ‘satisfied’, and thus physically and mentally healthy to the point of self-actualization.

Maslow’s hierarchy framework has been highly influential. It puts at the top of the pyramid the concept of ‘self-actualization’, a state in which the person feels they have achieved a ‘peak experience’ of meaningful and purposeful existence. Maslow’s needs hierarchy emphasizes the great importance of safety, love and belonging, and self-esteem. For every good principle in psychology, there are always exceptions; human needs do not always fall into any fixed hierarchy. For example, an extreme sports enthusiast who is into mountain climbing may put ‘esteem’ and ‘self-actualization’ ahead of ‘safety’. We read about it in the news the next morning. Few would disagree about the value of the five levels of need within the pyramid. However, there are key elements of human fulfilment that are not explicitly mentioned in Maslow’s hierarchy, for example, **agency** and **autonomy** – the freedom to choose – and the often-neglected **spirituality** – the feeling that not all that is significant is of the physical world.

Scholars have attempted to improve on Maslow’s hierarchy. Doyal and Gough (1991: 4) argued that: “‘health’ and ‘autonomy’ are the most basic of human needs that are the same for everyone . . . all humans have a right to optimum need-satisfaction . . . For this to occur . . . certain societal preconditions – political, economic and ecological – must be fulfilled.’ The satisfaction

Health psychology in context

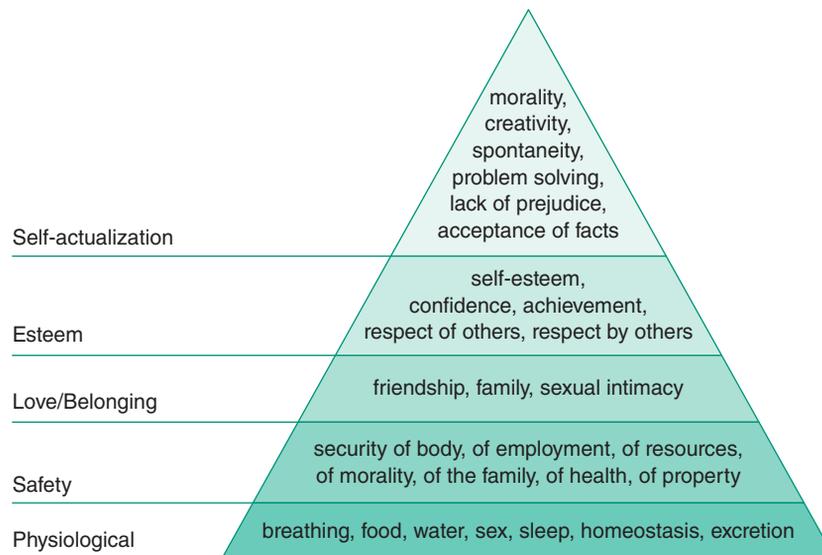


Figure 1.1 Maslow's hierarchy of human needs

of three basic needs – physical health, autonomy of agency, and critical autonomy – are necessary to achieve the avoidance of serious harm as a universal goal in all cultures. If or when a person has reached this universal goal, he/she will then be able to experience ‘minimally disabled social participation’ (p. 170) and be free to participate in his/her chosen forms of life. The form of the latter will depend upon culture, interests and education. A related psychological theory called ‘Self-Determination Theory’ suggested three basic human needs: competence, relatedness and autonomy (Ryan and Deci, 2000), but Maslow’s hierarchy suggests a more nuanced set of needs than just these three.

Throughout history, philosophers have discussed the nature of a *good and happy life* or what, in health care, is termed ‘**quality of life**’ (QoL). For Aristotle, happiness was viewed as ‘the meaning and the purpose of life, the whole aim and end of human existence’. For utilitarians such as Jeremy Bentham, happiness was pleasure without pain. To individuals suffering from cancer or other conditions with pain, unpleasant symptoms and treatment options, and uncertain prognosis, QoL has special relevance.

QoL has been defined by WHO as (take a deep breath):

An individual’s perception of their position in life, in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns. It is a broad ranging concept, affected in a complex way by the person’s physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment.

(WHOQoL Group, 1995: 1404)

A sixth domain on spirituality, religiousness and personal beliefs, was later added to these five domains by the WHOQoL Group (1995). The Collins dictionary defines QoL more simply as: ‘The general well-being of a person or society, defined in terms of health and happiness, rather than wealth.’ The QoL concept overlaps with that of **subjective well-being (SWB)**, which has been defined by a leader in the field, Ed Diener, known as ‘Dr Happiness’, as: ‘An umbrella term for different valuations that people make regarding their lives, the events happening to them, their bodies and minds, and the circumstances in which they live’ (Diener, 2006: 400). The evidence linking SWB with health and longevity is strong and plentiful.

With a global population of more than seven billion unique individuals in diverse cultures, religions and social circumstances, can QoL ever be assessed using a single yardstick? A few courageous individuals and organizations have given it a try and, since the 1970s, many scales and measures have been constructed. A few examples are listed in Table 1.2.

Table 1.2 Examples of QoL, subjective well-being and happiness scales

Authors	Year	Title	Domains	Samples
Andrews and Withey	1976	Social indicators of well-being	Job satisfaction	Adults
Flanagan	1978	The QoL scale (QoLS)	Material and physical well-being Relationships Social, community and civic activities Personal development and fulfilment Recreation	Healthy adults and patients with chronic illnesses
Kammann	1979	Affectometer 1	Happiness/subjective well-being	Adults
Kammann and Flett	1983	Affectometer 2		
Diener et al.	1985	Satisfaction with Life Scale (SWLS)	Satisfaction with life	Adults
European Organization for Research and Treatment of Cancer (EORTC)	1986	QLQ-C30	Physical Role Cognitive Emotional Social Global QoL	Patient samples

(Continued)

Health psychology in context

Table 1.2 (Continued)

Authors	Year	Title	Domains	Samples
Ware and Sherbourne	1992	Short-Form Health Survey (SF-36)	Vitality Physical functioning Bodily pain General health perceptions Physical role functioning Emotional role functioning Social role functioning Mental health	Healthy adults and patients with chronic illnesses
WHOQoL group	1995	WHOQoL	Physical Psychological Level of independence Social relationships Environment Spirituality	Healthy adults and patient groups

By far, the most utilized scale is the SF-36, which accounts for around 50% of all clinical studies (Marks, 2013). These ‘happiness scales’ are diverse and consist of items about what makes a ‘good life’. For example, Diener et al.’s (1985) brief *Satisfaction With Life Scale* (SWLS) uses a seven-point Likert scale with five items:

In most ways my life is close to my ideal.

The conditions of my life are excellent.

I am satisfied with my life.

So far I have gotten the important things I want in life.

If I could live my life over, I would change almost nothing.

Using the 1–7 scale below, testees indicate their agreement with each item by placing the appropriate number on the line preceding that item. They are asked to ‘be open and honest’ in their responding.

7 Strongly agree

6 Agree

5 Slightly agree

- 4 Neither agree nor disagree
- 3 Slightly disagree
- 2 Disagree
- 1 Strongly disagree

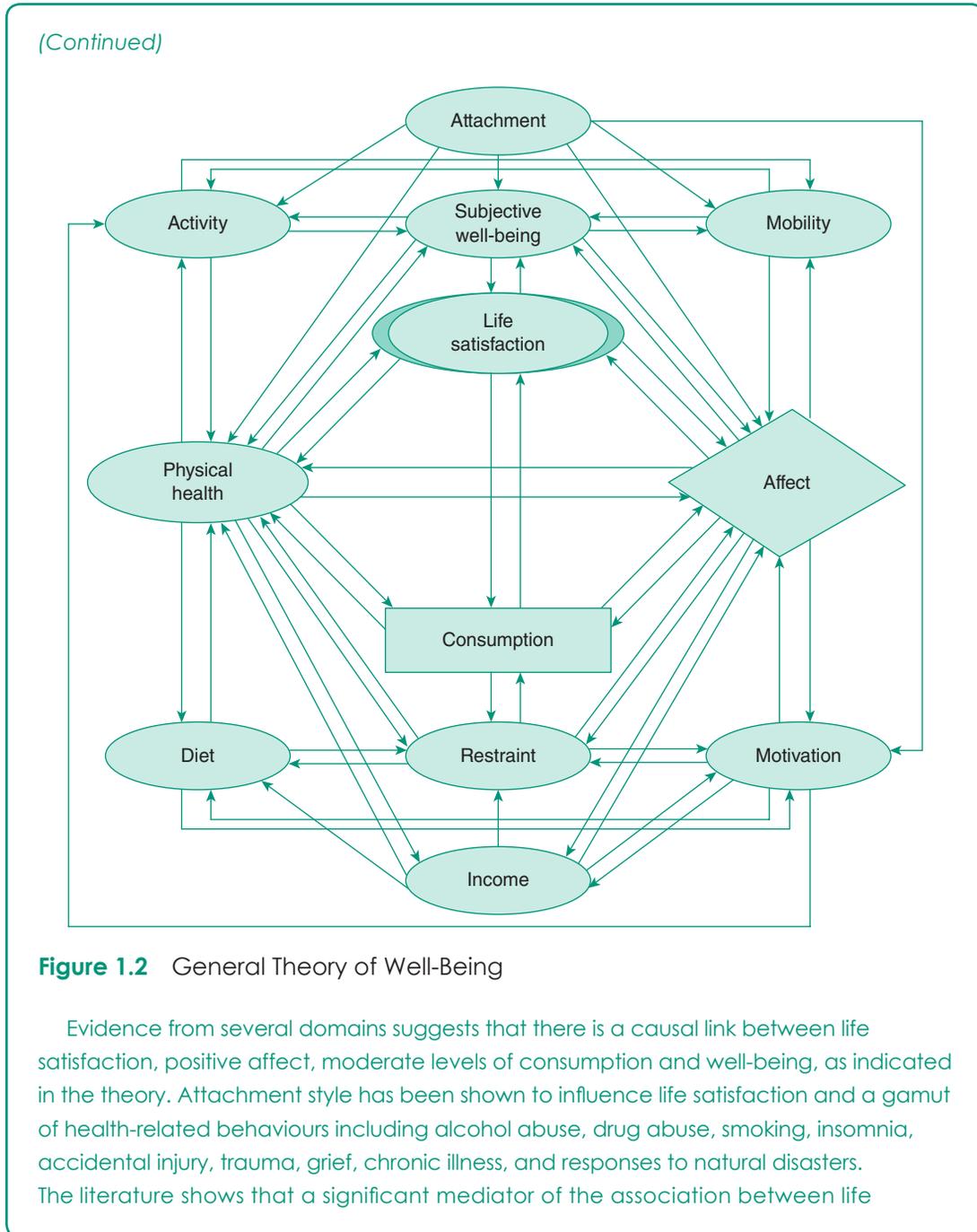
Luhmann et al. (2012) distinguished between ‘cognitive’ and ‘affective’ well-being. They carried out a meta-analysis to examine whether life events have different effects on cognitive and affective well-being and how the rate of adaptation varies across different life events. They integrated longitudinal data from 188 publications that had reported studies on 313 samples with 65,911 people to describe the reaction and adaptation to four family events (marriage, divorce, bereavement, child birth) and four work events (unemployment, re-employment, retirement, relocation/migration). The findings showed that, for most events, the effects on cognitive well-being are stronger and more consistent across samples.

Diener and Chan (2011) review evidence that *having high SWB adds four to ten years to life*. The evidence for an association between SWB and all-cause mortality is mounting. As always, there could be a mysterious third variable influencing both SWB and mortality (e.g. fetal nutrition, social support, lifestyle) and, if the relationship between SWB and mortality did prove to be causal, the possible mediating processes would be a matter for speculation. One of the principal goals of health psychology, then, is to understand the links between subjective well-being and health. A general theory of well-being, physical health and life satisfaction is summarized in Box 1.2.

BOX 1.2 THEORY OF WELL-BEING

The Theory of Well-Being (TWB) shows causal links between some significant determinants of physical and mental well-being. In addition to emotion, and the role of income, restraint and consumption, the TWB places emphasis on the developmentally important construct of attachment (Bowlby, 1969, 1973, 1980). The manner in which a baby attaches to its mother, father and/or other caregiver creates a template for life based on the infant’s need to maintain proximity to an anchor person who provides a ‘secure base’ for exploring the environment. The availability and responsiveness of the anchor person to attachment are internalized as mental models of the world that are generalized to relationships throughout life until the individual’s death (Ainsworth, Blehar, Waters & Wall, 1978). The different ways of attaching to anchor figures is termed ‘attachment style’.

(Continued)



satisfaction and positive health outcomes is a moderate level of consumption. As that well-worn cliché states: 'Anything in moderation'.

The hedonic conception of SWB of Diener and Chan (2011) can be contrasted with the **eudaimonic** approach that focuses on meaning and self-realization and defines well-being in terms of the degree to which a person is fully functioning (Ryan & Deci, 2001). Waterman (1993) has argued that eudaimonic well-being occurs when people are living in accordance with their 'daimon' or authentic self. Eudaimonia is thought to occur when people's life activities mesh with deeply held values and are fully engaged in authentic personal expression.

An important aspect of life satisfaction is the search for eudaimonic meaning. Empirical studies suggest that there exists a strong and stable relationship between meaning in life and subjective well-being (Zika & Chamberlain, 1992). People who believe that they have meaningful lives tend to be more optimistic and self-actualized (Compton et al., 1996), and experience more self-esteem (Steger et al., 2006) and positive affect (e.g. King et al., 2006), as well as less depression and anxiety (Steger et al., 2006) and less suicidal ideation (Harlow et al., 1986). The 'Salutogenic Theory' of Antonovsky (1979) also emphasized the relationship between meaning and purpose in life assessed by the Sense of Coherence scale and positive health outcomes (Eriksson & Lindström, 2006).

Source: Marks (2015).

THE NATURE OF HEALTH PSYCHOLOGY

The importance of psychosocial processes in health and illness is becoming increasingly recognized as the evidence on the role of behaviour and emotion in morbidity and mortality is steadily accumulating. Much research has been conducted to investigate the possible role of stress and psychological characteristics on the onset, course and management of physical illness. Health psychology is growing rapidly and health psychologists are in increasing demand in health care and medical settings. Psychologists have become essential members of multidisciplinary teams in rehabilitation, cardiology, paediatrics, oncology, anaesthesiology, family practice, dentistry, and other medical fields.

Although the primary focus for health psychology has been clinical settings, increasing interest is also being directed towards interventions for disease prevention, especially with reference to sexual health, nutrition, smoking, alcohol, inactivity and stress. A popular view in Western societies is that of '**individualism**' in which individuals are viewed as 'agents' who are personally responsible for their own health. From this viewpoint, a person who smokes 40 a day and develops lung cancer is held responsible for causing their own costly, disabling and terminal illness. Traditional health education has consisted of campaigns providing a mixture of exhortation, information and advice to

Health psychology in context

persuade people to change their unhealthy habits. By telling people to ‘Just say no’ policy makers have expected people to make the ‘right’ choices and change unhealthy choices into healthy ones. There has been some notable success in tobacco control that provides a benchmark for what may be achieved through health education and policy (see Chapter 9).

Against the view that keeping ourselves healthy means making responsible choices, there is little convincing evidence, beyond the example of smoking, that people who change their lifestyle actually *do* live longer or have a greater quality of life than people who ‘live and let live’ and make no real attempt to live healthily. Consider an example: a prospective study suggests that vegetarians live longer than meat eaters. But vegetarians may differ from the meat-eaters in many ways other than their choice of diet, e.g. religious beliefs, use of alcohol, social support. Also a statistical association between two variables such as a vegetarian diet and longevity can never prove causality or allow a prediction about any particular individual case. A vegetarian could still die of stomach cancer and becoming vegetarian does not necessarily lengthen the life of any specific individual. Epidemiology is a statistical science that can only provide a statistical statement to which there will always be inconvenient exceptions, such as 90-year-old smokers.

The assumption that a person must ‘live well to be well’ is prevalent in contemporary society. The moral aspect of this assumption leads to victim blaming. If people get ill it is often seen as ‘their own fault’ because they smoke, drink, eat a poor diet, fail to exercise or use screening services, do not cope with stress in a healthy way by joining a gym and so on. Health policy is run through with the blaming and shaming of individuals for their own poor health. The ‘smoking evil’ has been replaced by the ‘obesity evil’. A person who smokes, eats fatty foods, drinks alcohol and watches TV many hours every day is represented as a ‘couch potato’. Fitzpatrick (2001) compares disease with sin, and health with virtue. Medicine is portrayed as a quest against gluttony, laziness and lust. Diets are seen as moral choices, in which a ‘balanced’ and healthy diet is a moral imperative.

Health campaigns are often based on the idea that by informing people they can make responsible choices. People are presumed to be free agents with self-determination. Yet human behaviour is influenced by so many factors in the social and economic environment and especially by role models among family and friends or in the mass media. The herd instinct is as strong in humans as it is in bees, birds or sheep. Christakis and Fowler (2007) reported evidence that behaviour changes such as quitting smoking or putting on weight are associated with similar changes in networks of friends. Imitation is an important influence in human behaviour and a successful change approach, social cognitive theory, is based on this principle (Bandura, 1995).

The built environment, the sum total of objects placed in the natural world by human beings, is another influence. Included within this are the images and messages from advertisers in mass media, and the digital environment. A ‘toxic environment’ has been engineered to draw people towards unhealthy products, habits and behaviours (Brownell, 1994). The **obesogenic** environment contains affordable but nasty, fatty, salty and sugary foods that readily cause weight gain and obesity on an industrial scale. Items for sale include foods such as ‘hot dogs’ containing ‘mechanically recovered meat’ and 0% real meat, and ‘chicken nuggets’ with 0% chicken. The proliferation of such low-priced items in supermarkets and 24/7 stores offer low-income consumers an unhealthy selection of options.

Another kind of social ‘poisoning’ of the environment begins early in life. Garbarino (1997) discussed the ‘socially toxic environment’, in which ‘Children’s social world has become poisonous, due to escalating violence, the potentially lethal consequences of sex, diminishing adult supervision, and growing child poverty’ (Garbarino, 1997: 12). The potential for toxicity is extended to all of the major determinants of health and well-being.

In this book, arguments are presented on different sides of the ‘freedom and choice’ debate. It is accepted that our present understanding of health behaviour is far from definitive. However, we also adopt a critical position towards the discipline. Health psychology is still relatively young as a discipline and there are many issues to be addressed. For the most part health psychology has been formulated within an ideology of **individualism** embedded in mass culture. Yet the evidence in this book suggests that change approaches that target internalized processes in the form of hypothetical ‘social cognitions’ are ineffectual and too small-scale (Marks, 1996, 2002a, 2002b). Mass dissemination of such approaches through the health care system is unavailable and unaffordable. Although an idealized wholistic approach represented by the *biopsychosocial* model of health care is more evident, the medical model still remains the dominant foundation of health care, and is likely to remain so in the future.

Health psychologists can work at different levels of the health care system: carrying out research; systematically reviewing research; designing, implementing and evaluating health interventions; training and teaching; doing consultancy; providing and improving health services; carrying out health promotion; designing policy to improve services; and advocating social justice for people and communities to act on their own terms. In this book, we give examples of all of these activities, and suggest opportunities to make further progress.

A **communitarian** perspective to health work, instead of an individualistic approach, offers the prospect of more effective interventions. In working towards social justice and reducing inequalities, people’s rights to health and freedom from illness are, quite literally, *a life and death matter*; it is the responsibility of all planners, policy makers and leaders of people wherever they may be to fight for a fairer, more equitable system of health care (Marks, 2004; Murray, 2014).

Our definition of health psychology is given in Box 1.3. In discussing this definition, we can say that the objective of health psychology is the promotion and maintenance of well-being in individuals, communities and populations.

BOX 1.3 DEFINITION OF HEALTH PSYCHOLOGY

Health psychology is an interdisciplinary field concerned with the application of psychological knowledge and techniques to health, illness and health care.

There has been an unfortunate *medicalization* of everyday experience. Human behaviour, thoughts and feelings are given *medicalized* terminology, e.g. a love of shopping is termed as an ‘addiction’, a person worrying about their debts is said to suffer from ‘chronic anxiety’, a

Health psychology in context

person who is profoundly sad after the loss of a loved one is ‘clinically depressed’ and so on. Over millennia, the health care system has been dominated by medical doctors practising in different specializations. With the exception of nursing, the traditional ‘hand-maiden to medicine’, other health care professionals (HCPs), including health psychologists, are referred to as ‘paramedical’.

Although there are diverse points of view, health psychologists generally hold a holistic perspective on individual well-being, that all aspects of human nature are interconnected. While the primary focus of health psychology is *physical* rather than *mental* health, the latter being the province of clinical psychology, it is acknowledged that mental and physical health are actually ‘two sides of one coin’. When a person has a physical illness for a period of time then it is not surprising if they also experience worry (= anxiety) and/or sadness (= depression). If serious enough, ‘negative affect’ (sadness and/or worry) may become classified as ‘mental illness’ (severe depression and/or anxiety), and be detrimental to subjective well-being and also to aspects of physical health. Each side of the ‘well-being coin’ is bound to the other. The distinction between ‘health psychology’ and ‘clinical psychology’ is an unfortunate historical accident that is difficult to explain to non-psychologists (or even to psychologists themselves). There is also significant overlap between health and clinical psychology with ‘positive psychology’ as an integrative new field (Seligman and Csikszentmihalyi, 2000; Seligman et al., 2005) although not without critiques of exaggerated claims (Coyne and Tennen, 2010).

RATIONALE AND ROLE FOR HEALTH PSYCHOLOGY

There is a strong rationale and role for the discipline of **health psychology**. First, the behavioural basis for illness and mortality requires effective methods of behaviour change. Second, a holistic system of health care requires expert knowledge of the psychosocial needs of people.

In relation to point 1, *all* of the leading causes of illness and death are *behavioural*. This means that many deaths are preventable if effective methods of changing behaviour and/or the environment can be found. The mortality rates for different conditions in younger and older people are shown in Table 1.3.

Table 1.3 Leading causes of mortality among adults worldwide, 2002

Rank	Cause	Deaths (000)
Mortality: adults aged 15–59		
1	HIV/AIDS	2,279
2	Ischaemic heart disease	1,332
3	Tuberculosis	1,036
4	Road traffic injuries	814
5	Cerebrovascular disease	783

Rank	Cause	Deaths (000)
6	Self-inflicted injuries	672
7	Violence	473
8	Cirrhosis of the liver	382
9	Lower respiratory infections	352
10	Chronic obstructive pulmonary disease	343
Mortality: adults aged 60 and over		
1	Ischaemic heart disease	5,825
2	Cerebrovascular disease	4,689
3	Chronic obstructive pulmonary disease	2,399
4	Lower respiratory infections	1,396
5	Trachea, bronchus, lung cancers	928
6	Diabetes mellitus	754
7	Hypertensive heart disease	735
8	Stomach cancer	605
9	Tuberculosis	495
10	Colon and rectum cancers	477

Source: www.who.int/whr/2003/en/Facts_and_Figures-en.pdf

BOX 1.4

KEY STUDY: THE GLOBAL BURDEN OF DISEASE STUDY

An important epidemiological perspective comes from measures of 'disability' or 'disablement'. The Global Burden of Disease (GBD) study projected mortality and disablement over 25 years. The trends from the GBD study suggest that disablement is determined mainly by ageing, the spread of HIV, the increase in tobacco-related mortality and disablement, psychiatric and neurological conditions, and the decline in mortality from communicable, maternal, perinatal and nutritional disorders (Murray and Lopez, 1997).

(Continued)

(Continued)

The GBD study was repeated in 2010 and figures were prepared by age, sex and region for changes that had occurred between 1990 and 2010. Global figures for life expectancy show increases for all age groups (Figure 1.3).

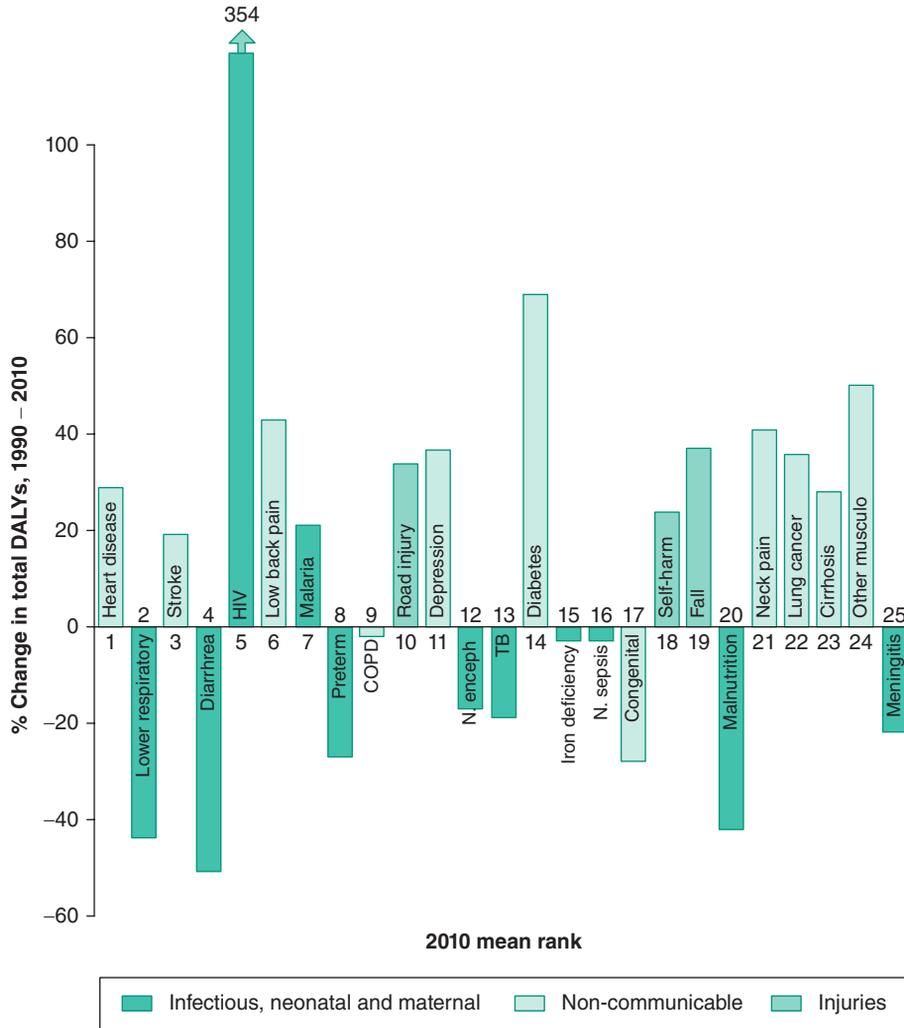


Figure 1.3 Percent change in total DALYs, 1990–2010.

Source: Institute for Health Metrics and Evaluation (2014), www.healthdata.org/infographic/percent-change-total-dalys-1990-2010

The GBD uses the **disability-adjusted life year (DALY)** as a quantitative indicator of burden of disease that reflects the total amount of healthy life lost that is attributed to all causes, whether from premature mortality or from some degree of disablement during a period of time. The DALY is the sum of years of life lost from premature mortality plus years of life with disablement, adjusted for severity of disablement from all causes, both physical and mental (Murray and Lopez, 1997).

Source: Murray and Lopez (1997)

The data in Table 1.4 indicate that nearly 30% of the total global burden of disease is attributable to five risk factors. The largest risk factor (underweight) is associated with poverty (see Chapters 2 and 3). The remaining four risk factors are discussed in Part 2 of this book (see Chapters 6–10).

There were changes in the total DALYs attributable to different causes between 1990 and 2010 as shown in Figure 1.3. Good progress is evident in DALYs for the lower respiratory tract and diarrhoea but a huge increase of 354% occurred in DALYs for HIV patients. Moderate but significant increases in DALYs occurred for heart disease, stroke, low back pain, depression and diabetes.

The statistics on death and disablement indicate the significant involvement of behaviour and therefore provide a strong rationale for the discipline of health psychology in all three of its key elements: theory, research and practice. If the major risk factors are to be addressed, there is a pressing need for effective programmes of environmental and behaviour change. This requires a sea change in policy. The dominant ideology that makes individuals responsible for their own health may not be the most helpful approach. The environment is a hugely important factor. In our opinion, a psychological approach in the absence of environmental change is like whistling in the wind.

Table 1.4 The five leading risk factors for global disease burden computed in DALYs

Risk factor	Number of DALYs (millions)	Percentage of DALYs
Childhood and maternal underweight	138	9.5
Unprotected sex	92	6.3
High blood pressure	64	4.4
Tobacco	59	4.1
Alcohol	58	4.0
Totals	411	28.3

Source: Ezzati et al. (2002)

Health psychology in context

Health psychologists are at the ‘sharp end’ of the quest to produce health behaviour change on an industrial scale. The fact that people are highly constrained by their environment and socio-economic circumstances militate against such change. In a sense, without adaptations of the environment, this effort is disabled. There are strong constraints on the ability of health care systems to influence health outcomes at a population level because of the significant social and economic determinants that structure the health of individuals and communities. The environment must change, and by that route, there can be behaviour change on a societal scale. Attempting to change behaviour without first attending to the environment is akin to ‘the tail wagging the dog’.

A second rationale for health psychology is growing recognition that a purely medical approach to health care is failing to meet the psychosocial needs of many patients. This has led to a search for an alternative perspective which values holistic care of patients and attempts to improve services through higher quality psychosocial care. In spite of their very high costs, health care systems are often perceived to be inefficient, ineffective and unfit for purpose. This is especially the case in the USA where the largest per capita expenditure is producing some unimpressive outcomes.

The dominance of the **medical model** has been criticized since the 1970s (Illich, 1976). While medical experts want to give modern medicine the credit for the decline of disease in the twentieth century, critics have suggested that health improvements are due mainly to better hygiene, education and reduced poverty (McKeown, 1979).

High costs and increasing levels of dissatisfaction, together with a growing awareness of psychosocial influences, led to concepts such as the **biopsychosocial model** (Engel, 1977), which we discuss in Chapter 3. Since that suggestion, health psychology has developed distinctive approaches. Before discussing these, we need to take a quick look at measurement.

MEASUREMENT

In the natural sciences, attributes of the physical world such as space, time, temperature, velocity and acceleration are all measured quantitatively. Psychologists, concerned with behaviour and experience, are unable to measure many of the most interesting psychological attributes in the same objective manner and have struggled to justify the discipline as a science.

Psychology’s early years as an infant science were spent developing psychophysics and ability testing. In spite of some apparent successes in these two areas, the measurement problem in psychology had not been satisfactorily resolved. In the 1950s the influential *Handbook of Experimental Psychology* was published by a professor at Harvard, S.S. Stevens (1951). Stevens proposed a solution, or so he hoped, to the measurement problem by invoking the principle of **operationism**. Since that time, psychologists have assumed that measurement is simply what Stevens said it was: the assignment of numbers to attributes according to rules. Unfortunately, Stevens’ solution is illusory.

It is apparent that numbers can be readily allocated to attributes using a non-random rule (the operational definition of measurement) that would generate ‘measurements’ that are not quantitatively meaningful. For example, numerals can be allocated to colours: red = 1, blue = 2, green = 3, etc. The rule used to allocate the numbers is clearly not random, and the allocation therefore counts as measurement, according to Stevens. However, it would be patent nonsense to assert that ‘green is $3 \times$ red’ or that ‘blue is $2 \times$ red’, or that ‘green minus blue equals red’. Intervals and ratios cannot be inferred from a simple ordering of scores along a scale. Yet this is how psychological measurement is usually carried out.

In spite of its obvious flaws, Stevens’ approach circumvented the requirement for quantitative measurement that only quantitative attributes can be measured (Michell, 1999). This is because psychological constructs such as the quality of a person’s life are nothing at all like physical variables that are quantitative in nature. However, psychometricians treated psychological constructs *as if they are quantitative in nature and as amenable to measurement as physical characteristics*. For more than 60 years psychology has been living in a make-believe world where making rules for applying numbers to attributes has been treated as if it were proper measurement. This fundamental issue cuts off at its very roots the claim that psychology is a quantitative science on a par with the natural sciences.

However, this would be a very short textbook, if we were to give up at this point! We must soldier on as if we have solid ground to walk upon rather than boggy sand ...

Measurement can be defined as the estimation of the magnitude of a quantitative attribute relative to a unit (Michell, 2003). Before quantification can happen, it is first necessary to obtain evidence that the relevant attribute is quantitative in structure. This has rarely, if ever, been carried out in psychology. Unfortunately, it is arguably the case that the definition of measurement within psychology since Stevens’ (1951) operationism is incorrect and psychologists’ claims about being able to measure psychological attributes can be questioned (Michell, 1999, 2002). Contrary to common beliefs within the discipline, psychological attributes may not actually be quantitative at all, and hence not amenable to coherent numerical measurement and statistical analyses that make unwarranted assumptions about the numbers collected as data.

The situation is akin to the ‘Emperor has no clothes’ story. Psychometricians are forced to make the inference that the ordering of scores is a reflection of an underlying quantity and therefore that psychological attributes are measurable on interval scales. Otherwise there would be no basis for quantitative measurement in psychology. Michell (2012) argued that: ‘the most plausible hypothesis is that the kinds of attributes psychometricians aspire to measure are merely ordinal attributes with impure differences of degree, a feature logically incompatible with quantitative structure. If so, psychometrics is built upon a myth’ (p. 255). This view is supported by Sijtsma (2012) who argued that the real measurement problem in psychology is the absence of well-developed theories about psychological attributes and a lack of any evidence to support the assumption that psychological attributes are continuous and quantitative in nature. This fundamental measurement problem exists within health psychology as it does within psychology as a whole.

BOX 1.5 MEASURING A PSYCHOLOGICAL ATTRIBUTE – WHAT THE MAJORITY OF TEXTBOOKS DON'T TELL YOU AND ABOUT WHICH YOU ARE NOT SUPPOSED TO ASK

A typical study requires participants to complete a set of ratings on questionnaire scales that are designed to measure a psychological attribute. The essential issue is whether the total score obtained from the numbers (ratings) provided by an individual are in any way measures of an attribute along a quantitative scale like the readings from a tape measure, which reflect the quantity of distance. Distance has an absolute zero and different objects can be placed at equal distances from each other or in fixed ratios. Now let's consider the example of Dr Ed Diener's *Satisfaction With Life Scale* (SWLS) (Table 1.2). The total scores on the SWLS are obtained by summing the seven-point ratings of each of five items. Thus a maximum score is 35 and the minimum score is 5. The scoring scheme is given here:

31–35	Extremely satisfied
26–30	Satisfied
21–25	Slightly satisfied
20	Neutral
15–19	Slightly dissatisfied
10–14	Dissatisfied
5–9	Extremely dissatisfied

Is there any basis for assuming the total scores on the SWLS are measures of a quantitative attribute 'Life Satisfaction' such that there is an absolute zero (as there would be in any ratio scale) and a person with a score of 20 has exactly double the life satisfaction of a person who has a score of 10 and/or that two people with scores of 30 and 25 have a life satisfaction that is the same 'distance' apart (5 points) as in the case of two people with scores of 20 and 15? If the 5-point differences were shown to be the same then the SWLS would be an interval scale. However, *neither of the hypotheses is plausible*. We can only infer a person's life satisfaction from their answers to items on

the SWLS. *This is because we have no independent definition of life satisfaction, and no evidence that life satisfaction is a quantitative attribute, apart from the SWLS scores themselves.* This measurement problem cuts through the entire discipline of psychology. We infer or, in truth, are forced to act on the unproven assumption that a person's score on the SWLS is a measure of her/his life satisfaction on a continuously quantitative interval scale.

The total scores on the SWLS really only allow respondents to be placed along an ordinal scale, yet it is common practice to treat the scores as if they are interval scale data that can be added together, subtracted, averaged and compared between groups using standard deviations and variance scores in statistical analyses.

[Nobody promised you a rose garden! . . . We said at the outset, we would adopt a critical stance and the measurement problem we have described here, which, for obvious reasons, is not normally talked about, is a good start. The situation is not completely hopeless, however, so please do read on ...]

Fortunately, for an intrinsically practical domain like health psychology, it is possible to 'get by' without having a solution to the measurement problem discussed above. This is because one of the main goals of health psychologists is to design interventions that are effective solutions to problems that require behaviour change. Normally we can find ways to objectively compare different interventions to see what works and what doesn't work. The associations between interventions and outcomes can be observed and measured in quantitative terms. Additionally, a patient seeking treatment for an unpleasant condition can express their thoughts, feelings and motives using plain words by answering questions or items on a questionnaire. In the vast majority of cases, psychological measures are either assumed, for the sake of convenience, to lie along an interval scale or the data are purely categorical.

Health psychologists are concerned with patient-practitioner interactions, public health promotion, or working in communities where actions are carried out, all with observable inputs and outputs. Outcomes in these various scenarios are all objectively observable and measurable, even if the measurements themselves are not shown to have an underlying quantitative attribute. In addition, it is the experiences of the actors that are important, and these are amenable to qualitative methods where the presumption of quantitative attributes and the associated measurement problem do not apply.

A CULTURAL PERSPECTIVE

There are wide variations in health beliefs between cultures and significant individual and group differences within each culture. Folk beliefs, knowledge and practices among individuals from different communities and social groups rub shoulders with each other and with those of health

Health psychology in context

care professionals in a Tower of Babel. These diverse beliefs meld with practices and lifestyles in accord with people's worldviews and values.

Theories in health psychology provide accounts of how psychosocial processes affect individual health experience. In reviewing such theories (e.g. see Chapter 6) it must be acknowledged that they are principally products of the USA and British Commonwealth, together with inputs from Continental Europe and Scandinavia. Many of health psychology's theories are adaptations of US/European cognitive and social psychology from the last 50 years. The resurgence of research in laboratory environments used structured psychometric instruments, questionnaires and performance tests designed to reveal the mechanisms underlying human behaviour. These methods lacked **ecological validity**, or, in other words, the findings could not be generalized to the world outside of the laboratory. Critics have suggested that the laboratory experiment and the questionnaire are both subject to significant biases.

Cross-cultural psychology emphasizes cultural diversity and casts a skeptical eye over the **ethnocentrism** of contemporary psychology. It considers national or large group samples as the unit of analysis rather than individuals. Research has focused primarily on mental health (e.g. Dasen et al., 1988) and relatively little attention has been paid to physical health. A truly cultural approach to health psychology is at an early stage of development. We discuss the role of culture in health in more depth in Chapter 4.

BOX 1.6 INTERNATIONAL EXAMPLE: HEALTH PSYCHOLOGY IN AFRICAN SETTINGS – A CULTURAL-PSYCHOLOGICAL ANALYSIS

This study reveals how the individualistic nature of mainstream health psychology is not applicable to settings in Africa. The mainstream Western approach assumes a worldview in which the causes of illness are attributed to atomistic, physiological processes within the individual. This construction of reality is associated with a view of a person as an individual with his/her own internalized assumptions that he/she is a separate individual. In African cultures, however, each person is seen as interconnected to other people, including living relatives and dead ancestors, and also to places and spiritual forces. Markus et al. (1997) refer to cultural assumptions about self-hood as '**selfways**'. Selfways include what it means to be a good or bad person, and what causes us to become healthy or ill.

Adams and Salter give as an example of African selfways the idea of 'enemyship' – the belief that hatred of another can lead to bad things happening to oneself. The belief

in the power of malevolent others is manifest through such practices as divination, infant seclusion, sorcery and witchcraft. They quote the following example: 'I don't know my enemies, but I know that I have them. One day something will happen to me, and then I will know that this person has been after me all along' (Adams and Salter, 2007: 541).

There are implications of selfways for health care provision. In the West we assume that social support and caregiving are generally a source of comfort and coping. Indeed, social support is a major focus for health psychology research and services. We need to consider how intimate family members could also be viewed as *a source of danger, stress, worry and sadness*. In highlighting 'enemyship', the selfways of African cultures shows social embeddedness as an 'inevitable fact of social existence' (Adams and Salter, 2007: 542).

Source: Adams and Salter (2007)

A FRAMEWORK FOR HEALTH PSYCHOLOGY

Theoretical thinking in health psychology consists of three broad types that vary according to their level of generality: **frameworks**, **theories** and **models**. Frameworks have some of the characteristics of paradigms (Kuhn, 1970) as they refer to a complete system of thinking about a field of inquiry. Paradigms explicitly state assumptions, laws and methods. Frameworks are much looser than paradigms but they are a way of organizing information about a field. Figure 1.4 shows a framework about the main influences on the health of individual human beings. It has been adapted from the work of Dahlgren and Whitehead (1991) and we call this the 'Health Onion'.

The 'Health Onion' has a multi-layered structure with the individual at its core, surrounded by four layers of influence:

Core: age, sex and hereditary factors (covered throughout this book).

Level 1: individual lifestyle (Part 2 of this book).

Level 2: social and community influences (Part 1 of this book).

Level 3: living and working conditions and health care services (covered by Parts 3 and 4 of this book).

Level 4: general socio-economic, cultural and environmental conditions (Part 1 of this book).

Health psychology in context

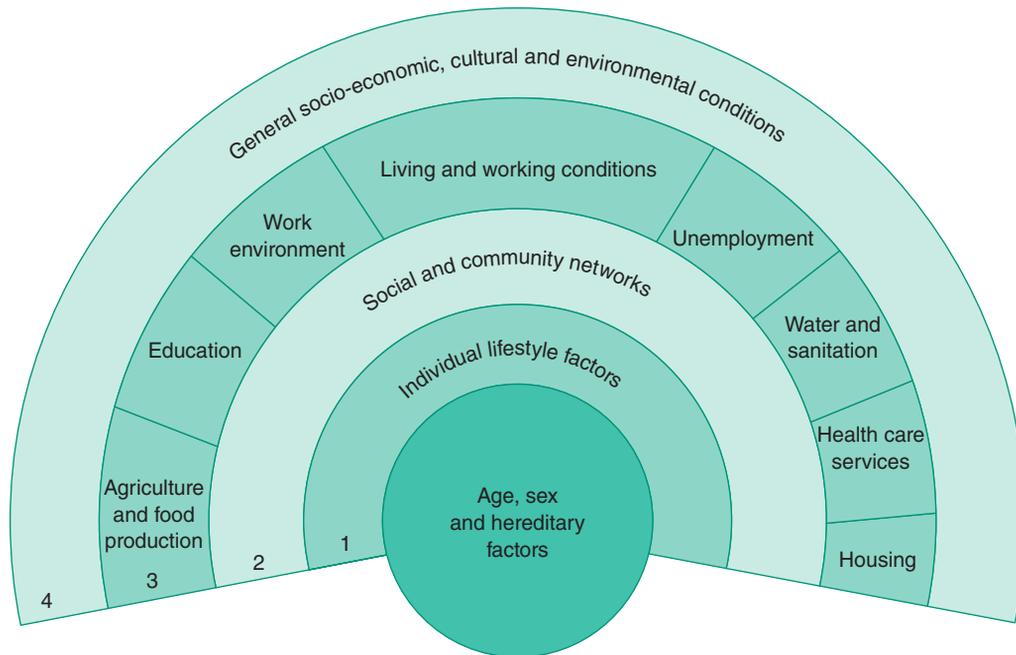


Figure 1.4 The 'Health Onion': a framework for health psychology

Source: Dahlgren and Whitehead (1991). Reproduced by permission

The Health Onion has seven characteristics:

It is holistic – all aspects of human nature are interconnected.

It is concerned with all health determinants, not simply with events during the treatment of illness.

The individual is at the core with health determinants acting through the community, living and working conditions, and the socio-economic, cultural and physical environment.

It places each layer in the context of its neighbours, including possible structural constraints upon change.

It has an interdisciplinary flavour that goes beyond a medical or quasi-medical approach.

It makes no claim for any one level being more important than others.

It acknowledges the complex nature of health determinants.

Different theories and models are needed for each setting and context. However, there is also a need for a general paradigm for individual health within which specific theories and models can

be nested. Such a paradigm should attempt to represent in an explicit, detailed and meaningful way the constraints upon and links between individual well-being, the surrounding community and the health care system (Marks, 1996). No such general paradigm exists. We are waiting for a Hippocrates, Darwin or Einstein. Or perhaps the sheer diversity of issues and perspectives makes the field non-amenable to a single paradigm?

BOX 1.7

FILTERING OF EVIDENCE IN EVIDENCE-BASED PRACTICE

Some believe we have a paradigm for all of health care in the form of evidence-based medicine or **evidence-based practice (EBP)**. In EBP, randomized controlled trials are used to produce conclusions about the effectiveness of different methods and treatments. In theory the approach sounds wonderful. In practice it is far from perfect. Evidence on effectiveness in EBP is assumed to have an objective, inviolable status that reflects 'reality'. It is given an iconic status. In some undefined ways this evidence about 'reality' not only aids decision-making, but also determines it. In truth, evidence is never absolutely certain. It consists of negotiable, value-laden and contextually dependent items of information. Evidence (= knowledge) for a technique or treatment in health care is not an accident, but the outcome of a series of 'gates' or 'filters' that must be passed before the technique is deemed to be useful (Marks, 2005).

Consider the sequence of processes from conception to application through which evidence must pass if it is to be considered admissible in EBP. The filtering is so selective that, typically, systematic reviewers will be able to find only a dozen or fewer primary studies that fulfil the inclusion criteria from a field of several thousand. Oakley (2001) described a systematic review of peer health promotion for young people that found 5,124 citations of which exactly 12 (0.234%) were judged to have carried out 'sound' outcome evaluations. She compared this search process to 'finding needles in haystacks' (Oakley, 2001: 22–4). Another analogy is making a pot of filter coffee – the stronger the filtering, the less fresh and flavourful the coffee. EBP is somewhat similar: there are no guarantees the end-product will be fit for purpose. The filtering process involved in EBP consists of seven levels listed below:

(Continued)

(Continued)

- 1 current knowledge, theory and paradigms taught in universities and schools;
- 2 funding priorities of government, industry and charities;
- 3 hypotheses considered important by the funders;
- 4 methodology approved by funders;
- 5 journal publication;
- 6 systematic reviews;
- 7 translated into EBP.

To be judged 'sound', evidence must pass through all seven of the filters that are disposed towards the preservation of existing practices, knowledge and myths. In confirming the 'sound' status of the chosen techniques that have passed through the filters, the 'unsoundness' of the unfiltered techniques is established by default. Undeniably, this filtering of evidence is systematic and evidence will be considered 'sound' or 'unsound' according to established criteria.

However, EBP is contentious on a number of grounds. First, it is wasteful that so much evidence is 'thrown away'. Many unfiltered techniques are quite possibly as effective as techniques that have been filtered. Second, the filtering process gives a high weighting to techniques that conform to beliefs and values of the knowledge establishment. For example, pharmacotherapy will be established ahead of psychological therapies (pharmaceutical industry sponsorship at filters 1–4), quantitative techniques will be preferred to qualitative techniques (filters 5–6), and patient treatment care will be about outputs and outcomes, rather than feeling they have been cared for as human beings (filters 7). Third, innovation may have difficulty breaking through.

In this book we review the results of many studies using the approach of EBP. Studies that have *not* been based on EBP are also reviewed. Many such studies have been situated in settings where EBP would be unethical, impractical or impossible. We also include qualitative studies because the information yielded illuminates the psychosocial experience of health and illness.

Source: Marks (2005, 2009)

FUTURE RESEARCH

1. Progress in health psychology requires a solution to the measurement problem: there is no evidence that psychological attributes are continuous quantitative variables, as assumed in the majority of health psychology research.

2. Trans-cultural studies of health, illness and health care are needed to facilitate communication and understanding of systems of healing among different cultural, ethnic and religious groups.
3. Apart from smoking cessation, evidence needs to be gathered to confirm the assumption that lifestyle changes cause positive changes to life expectancy and quality of life.
4. The limits of evidence-based practice require innovative evaluation methods of interventions.

SUMMARY

- 1 Health is a state of well-being with physical, cultural, psychosocial, economic and spiritual attributes, not simply the absence of illness.
- 2 The fundamental *sociality* of individual behaviour demands a social orientation to health psychology, which must be studied in the context of society and culture.
- 3 To be healthy in body and mind a person's needs to interconnect and to act autonomously as an agent must be satisfied and as well as their biological needs.
- 4 Alternative approaches to change are required that go beyond the edicts of individualism.
- 5 Behaviour is not the only necessary target for change; the toxic environment needs to be given equal priority in interventions.
- 6 Health psychology has grown rapidly with the increasing: (a) evidence that much illness and mortality are caused by behaviour; (b) awareness of the psychosocial aspects of health and illness.
- 7 The 'Health Onion' is a useful framework for the investigation of health and illness. The core of the onion is an individual's current health status with particular age, sex and hereditary factors.
- 8 Within the Health Onion, four layers of analysis that immediately surround the core are individual lifestyle (level 1), social and community influences (level 2), living and working conditions (level 3), and general socio-economic, cultural and environmental conditions (level 4).
- 9 Concepts about health and disease are embedded in culturally diverse ways, which show significant differences in health experience and behaviour between cultures and places.
- 10 Organization of knowledge in health psychology occurs at three levels: (a) frameworks; (b) theories; (c) models. It is helpful to notice the difference between these three constructs and to treat them differently.