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Health Psychology

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23.1 Health Psychology as a Scientific Discipline

The Emergence of the Field of Health Psychology

Health Psychology emerged in the 1970s as a response to a number of factors, one of them the *changing pattern of illness and death* in industrialized nations. In former times, infectious diseases such as influenza, pneumonia, tuberculosis, and gastroenteritis were the leading causes of death. Later, in the second half of the twentieth century, conditions such as heart disease, cancer, stroke, chronic obstructive pulmonary disease, as well as accidents became the leading causes of death. These are chronic diseases, illnesses, or injuries related to lifestyle. Lifestyle choices such as smoking, drinking, overeating, and underexercising cause millions of preventable deaths per year. Health psychologists have the opportunity of helping to prevent many of these deaths. Human behavior has moved into the focus of prevention and rehabilitation attempts. Behavior change is the subject of psychological, not medical, research, and therefore the new field of Health Psychology has received a great deal of attention within and outside the scientific community.

A second factor that facilitated the rise of the discipline was the escalating *costs of medical care*. It became clear that society could not, in the long run, afford public health care based on expensive advanced medical technology. At the same time, psychology succeeded in designing behavioral interventions that proved to be more cost-effective. Changing people's lifestyles to prevent the onset of illness is the preferred method.

A third factor was the emergence of a new understanding of health and illness. Health is no longer seen as the mere absence of illness, but rather as the presence of well-being, although the medical profession still largely adheres to a biomedical model. This model reduces the focus to pathology instead of the causes of well-being and regards mind and body as separate entities. A paradigm shift has taken place within the social sciences, from the biomedical model to the *biopsychosocial model* that regards health and illness as resulting from an interplay of biological, psychological, and social determinants, which implies that mind and body cannot be separated when it comes to an understanding of health-related processes. Health can now

rather be seen as an active achievement, and Health Psychology follows this new model and applies advanced research methodology to unveil the complex relationships inherent in this approach.

These three factors, among others, are believed to have contributed to the development of Health Psychology as a field within psychology. Established formally in 1978 as Division 38 within the American Psychological Association (APA), it has grown rapidly since then, as can be seen by the program and the attendance of the annual meetings. In 1986, the International Association for Applied Psychology (IAAP) has also established a Division of Health Psychology with a global focus. In the same year, the European Health Psychology Society (EHPS) was founded. EHPS holds annual meetings attended by a large number of European health psychologists and guests from abroad. Meetings have taken place in The Netherlands, Germany, the United Kingdom, Switzerland, Belgium, Spain, Norway, Ireland, France, Austria, and Italy. Activities can be monitored at the website: www.ehps.net. Most European countries have, in addition, their own professional or academic health psychology societies that also hold frequent meetings. Austria was the first country where the professional title 'Health Psychologist' was officially introduced in 1991. On a global scale, there are other health psychology societies linked to the mainstream, for example in Japan, Canada, Australia, and New Zealand. Most others, however, are less visible. In 1994, the International Society of Health Psychology Research (ISHPR) was founded, strongly influenced by Japanese leaders in this field, with the aim of integrating groups in developing parts of the world.

More evidence for the emergence of the field of Health Psychology is given by the number of new journals. The APA Division 38 flagship journal, founded in 1982, is called *Health Psychology*, and it has more than 10,000 subscribers. Its European counterpart, *Psychology and Health: An International Review*, which is linked to the EHPS, was launched in 1987. More recently, various English-language periodicals have been launched, such as *International Journal of Behavioral Medicine*, *Journal of Health Psychology*, *British Journal of Health Psychology*, *Journal of Occupational Health Psychology*, *Journal of Health Communication*, *Anxiety, Stress, and Coping*, *Japanese Health Psychology*, and *Psychology, Health and Medicine*. In addition, non-English-language periodicals are published such as *Gedrag* (in the Netherlands), *Zeitschrift für Gesundheitspsychologie* (in Germany) and *Psicologia della Salute* (in Italy).

Also, many textbooks have been produced, some of them with multiple editions within a short time (e.g., Taylor, 1998, four editions). In addition to these publications, several internet online services reflect the high demand for information about this field (e.g., www.apa.org, www.ehps.net).

In Latin America, Health Psychology has grown out of both the public health policies derived from the Pan American Health Organization (PHO) and the regional policies of local governments, universities, and so-called non-governmental organizations (NGO). Research development is a function of the priorities that these organizations consider or define.

There are also specific conditions (e.g., economic, geographic, environmental, and political) that determine the development of research programs. Therefore, not only behavioral prevention or intervention programs oriented toward reducing epidemic diseases (e.g., the spread of tropical diseases) are urgent, but also fighting against the serious impact of frequent natural disasters (e.g., earthquakes or hurricanes) or the unpredictable dynamics of an unstable political and economical system.

The theoretical and methodological development of Health Psychology in Latin America has received a strong influence from Behavioral Medicine, Psychosomatics, and transactional models of stress and coping (Lazarus, 1991). Activities and research advances can be monitored on several websites (e.g., http://www.psy.utexas.edu/psy/RLP/RLPSpanish.html).

Definition of Health Psychology and Its Relationships to Other Disciplines

Health Psychology is a field within psychology that is devoted to understanding psychological influences on health-related processes, such as why people become ill, how they respond to illness, how they recover from a disease or adjust to chronic illness, or how they stay healthy in the first place. Health Psychology deals with the etiology and correlates of health, illness, and disability, with the prevention and treatment of diseases, with readjustment during and after illness, and with health promotion.

Three basic questions are asked in Health Psychology research: (a) who becomes sick and who stays well? (b) among the sick, who recovers and why? and (c) how can illness be prevented or recovery be promoted? (Adler & Matthews, 1994). Health psychologists conduct research on the origins and correlates of diseases. They identify personality or behavioral antecedents

that influence the pathogenesis of certain illnesses. Health psychologists analyze the adoption and maintenance of health behaviors (e.g., physical exercise, good nutrition, condom use, or dental hygiene) and explore the reasons why people adhere to misbehaviors or risk behaviors (e.g., why they continue to smoke or fail to abstain from alcohol). Health promotion and the prevention of illness are, therefore, agendas for research and practice, as is the improvement of the health care system in general. A popular definition of Health Psychology is:

> Health Psychology is the aggregate of the specific educational, scientific and professional contributions of the discipline of psychology to the promotion and maintenance of health, the prevention and treatment of illness, the identification of etiologic and diagnostic correlates of health, illness, and related dysfunction and the improvement of the health care system and health policy formation. (Matarazzo, 1980, p. 815)

Before there was a formal discipline of Health Psychology, other research areas attended to some of its subject matters. For example, *Medical Psychology* used to be the main branch in charge of applying psychological knowledge to the medical profession and of providing the means for psychological assessment of patients and an evaluation of treatment outcomes. Many researchers studied psychosomatics, a paradigm strongly influenced by psychoanalysis that attempted to identify psychological precursors of illness. Today, Medical Psychology seems to become more and more integrated into Health Psychology as a subfield devoted to the study of psychological factors in the illness experience. *Behavioral Medicine*, historically based on learning theory, studied the conditions that modified and maintained health and illness behaviors. Nowadays, this has become a broad interdisciplinary collaborative effort to study all kinds of health- and illness-related phenomena. Health Psychology is one of several disciplines that contribute to this effort, along with medicine, pharmacology, epidemiology, social work, health education, sociology, and public health (Schwarzer, 1997). The major difference between Behavioral Medicine and Health Psychology is that the former is interdisciplinary, whereas the latter is a field within psychology.

23.2 Precursors of Illness and Resources for Health

An overview of factors that influence health and illness follows. Personal and social resources are described that can buffer the experience of stress. The negative impact of stress on health is well-documented today, as are the ways of coping with stress and illness. Moreover, it has been argued that some persons are more disposed than others to fall prey to certain conditions. This is discussed under the heading of disease-prone personality.

The Disease-Prone Personality

The onset of diseases such as cancer or coronary heart disease is caused by a number of factors, including a genetic predisposition. In the absence of the major predictors, such as a family history of that particular disease, personality characteristics assume greater importance. There is evidence that a disposition for maladaptive coping with stress, the chronic expression of negative emotions, and poor social relations play a role in the development of illness and in the impairment of recovery from illness (Friedman, 1990). Depression, hostility, anger expression, and cynical distrust have been related to morbidity. It is important to note, however, that negative emotions need not necessarily be only the precursors of illness, but they can also be the consequence of illness. An association between depression and cancer, for example, does not come as a surprise since almost everyone becomes depressed to some extent after learning that he or she has cancer. Prospective studies, nevertheless, have found that stressed, depressed, or helpless people are somewhat more at risk than joyful or enthusiastic persons, which is due to the fact that the former tend to develop a compromised immune system that cannot cope well with infectious agents and tumor cells (Cohen & Herbert, 1996).

Cancer

Research on the association between personality and cancer has pointed to the possibility that anti-emotional, repressed, defensive, and conflict-avoiding individuals may be especially prone to developing cancer. Eysenck (1994) hypothesized that a risk behavior such as smoking might interact with personality, which would imply that smokers are not directly at risk for lung cancer unless their personality predisposes them for this disease. While this is a controversial issue, other research has confirmed some association between a personality profile, labeled Type C, and cancer (Temoshok & Dreher, 1992). It is argued that a strong need for harmonious social relationships and a tendency not to express emotions might, over a period of decades, facilitate the onset of tumors. A recent study in Spain, although cross-sectional, illustrates this relationship (Fernandez-Ballesteros, Ruiz, & Garde, 1998). The authors compared healthy

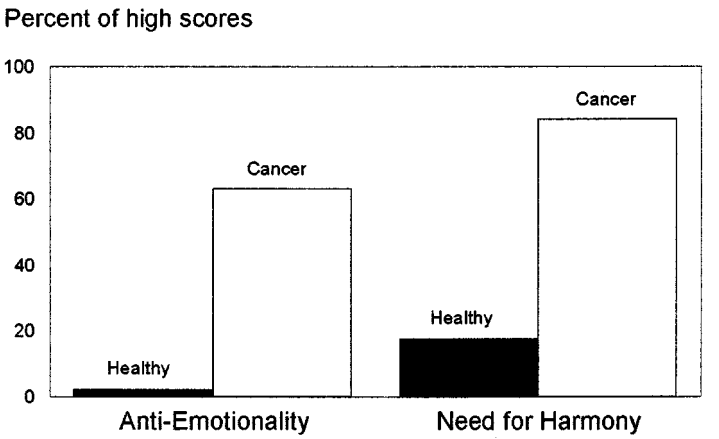

Figure 23.1 *Personality characteristics of breast cancer patients (Fernandez-Ballesteros et al., 1998)*

women with breast cancer patients. Figure 23.1 shows that healthy women tend to have lower scores on anti-emotionality and need for harmony than women diagnosed with breast cancer.

This study cannot uncover the cause–effect relationship because cancer develops slowly over many years. It might be possible that personality dispositions follow the pathogenesis instead of preceding it. It is of note, however, that some of the breast cancer patients were questioned before they knew about their diagnosis, which means that their high anti-emotionality scores cannot constitute a mere response to the threatening diagnosis.

Cardiac Disease

Another pathogenic pathway to morbidity and mortality lies in coronary-prone attitudes and behaviors. It was found as early as in the 1970s that ambitious, hard-driving, competitive, hostile, impatient, and aggressive persons, labeled Type A individuals, were more likely to suffer from a myocardial infarct than their counterparts, labeled Type B individuals. In two long-term prospective studies with thousands of participants, the Western Collaborative Group Study in California and the Framingham Study on the East Coast of the United States, empirical evidence emerged that Type A individuals were about twice as likely to die from a heart attack than their counterparts, after controlling for age, blood pressure, cholesterol levels, and smoking. This convinced the National Heart, Lung, and Blood Institute in 1981 to confirm publicly that Type A is associated with heart disease, which was the first time that the medical profession acknowledged the existence of a psychosocial risk factor for physical illness. This event created much enthusiasm in the young discipline of Health Psychology and stimulated further research. However, soon afterwards, several other independent studies were unable to replicate the previous findings, among them the Multiple Risk Factor Intervention Trial, the Multicenter Post-Infarction Program, and the Aspirin Myocardial Infarct Study (see Matthews & Haynes, 1986, for details).

Nevertheless, further research has convinced investigators that coronary diseases are influenced by psychosocial risk factors such as personality dispositions and coping behaviors (Siegrist, 1996). Hostility, anger expression, and cynical distrust appear to be the prime candidates, instead of the Type A construct. Taking this for granted, the next step was to identify the physiological mediators that convert personality and behavioral risk factors into physical illness. Hostile individuals, for example, have been found to have more elevated cholesterol levels than others, which might be one reason for their increased morbidity risk. The mediating mechanisms are subject to further research.

In general, behaviors can be seen as responses to life stress. If someone is ambitious, hard-driving, competitive, hostile, impatient, and aggressive, this is based on one's appraisal of the situation and one's perceived resources to cope with the situational demands. Hostile behaviors and cynicism are particular coping behaviors of individuals who are vulnerable to stress in a unique way. A thorough study of stress and coping, therefore, is a prerequisite for our understanding of health-compromising behaviors as well as of personality precursors of illness.

Stress, Coping, and Health

Cognitive-Transactional Stress Theory

Stress has been defined as a particular relationship between a person and the environment that this person appraises as taxing or exceeding his or her resources and endangering his or her well-being (Lazarus, 1991; Lazarus & Folkman, 1984). Appraisals are determined by perceiving environmental demands and personal resources simultaneously. They can change over time due to coping effectiveness, altered requirements, or improvements in personal abilities. This cognitive-relational theory emphasizes the continuous, reciprocal nature of the interaction between the person and the environment.

Cognitive appraisals include two component processes, called by Lazarus (1991) primary and secondary appraisals. *Primary appraisal* refers to the stakes a person has in a certain encounter. In primary appraisals, a situation is perceived as being either irrelevant, benign-positive, or stressful. Those events classified as stressful can be further subdivided into the categories of benefit, challenge, threat, and harm/loss. A stress-relevant situation is appraised as challenging when it mobilizes physical and psychological activity and involvement. In the appraisal of *challenge*, a person may see an opportunity to prove herself or himself, anticipating gain, mastery, or personal growth from the venture. The situation is experienced as pleasant, exciting, and interesting, and the person is hopeful, eager, and confident to meet the demands. *Threat* is experienced when future harm or loss is anticipated. In the experience of *harm/loss*, some damage to the person has already occurred. Damages can be injury, illness, or loss of valued persons, important objects, self-worth, or social standing.

Primary appraisals are mirrored simultaneously by *secondary appraisals* that refer to one's available coping options for dealing with stress, that is, one's perceived resources to cope with the demands at hand. The individual evaluates the competence, social support, and material or other resources required to adapt to the circumstances and to establish an equilibrium between person and environment. A patient who has suffered a myocardial infarct, for example, might perceive his spouse as the best resource to readjust from the event. Instead of primary and secondary appraisal, the terms 'demand appraisal' and 'resource appraisal' might be more meaningful (Schwarzer, 1992). Hobfoll (1989) has expanded the stress and coping theory with respect to the conservation of resources as the main human motive in the struggle with stressful encounters.

Coping With Stress

Different ways of coping have been found to be more or less adaptive. In a meta-analysis, Suls and Fletcher (1985) have compiled studies that examined the effects of various coping modes on several measures of adjustment to illness. The authors conclude that *avoidance* coping strategies seem to be more adaptive in the short run, whereas *attentive-confrontative* coping is more adaptive in the long run. It remains unclear, however, how the specific coping responses of a patient struggling with a disease can be classified into broader categories. There are many attempts to reduce the total of possible coping responses to a parsimonious set of coping dimensions. Some researchers have come up with two basic dimensions, such as *instrumental, attentive, vigilant,* or *confrontative coping* on the one hand, in contrast to *avoidance, palliative,* and *emotional coping* on the other (for an overview, see Schwarzer & Schwarzer, 1996). A well-known approach has been put forward by Lazarus and Folkman (1984), who discriminate between *problem-focused* and *emotion-focused* coping. Another conceptual distinction has been suggested between *assimilative* and *accommodative* coping, the former aiming at an alteration of the environment to oneself, and the latter aiming at an alteration of oneself to the environment. This pair has also been coined '*mastery* versus *meaning*' or '*primary control* versus *secondary control*'. These coping preferences may occur in a certain time order, for example when individuals first try to alter the demands that are at stake, and, after failing, turn inward to reinterpret their plight and find subjective meaning in it.

Coping also has a temporal aspect. One can cope before a stressful event takes place, while it is happening (e.g., during the progress of a disease), or afterwards. Beehr and McGrath (1996) distinguish five situations that create a particular temporal context: (a) *preventive coping*: long before the stressful event occurs or might occur; for example, a smoker might quit well in time to avoid the risk of lung cancer; (b) *anticipatory coping*: when the event is anticipated soon; for example, someone might take a tranquilizer while waiting for surgery; (c) *dynamic coping*: while the event is ongoing; for example, diverting attention to reduce chronic pain; (d) *reactive coping*: after the event has happened; for example, changing one's life after losing a limb; and (e) *residual coping*: long afterwards, by contending with long-run effects; for example, controlling one's intrusive thoughts years after a traumatic accident has happened.

There are many other attempts to conceptualize coping dimensions, and those mentioned

above may serve as examples. Which of the above dimensions is suitable for a valid description of an actual coping process depends on a number of factors, among them the particular stress situation, one's history of coping with similar situations, and one's personal and social coping resources, or the opposite, one's specific vulnerability.

Personality Resources and Health

Some people become sick and others stay healthy because they differ in resources associated with specific personality characteristics. It has been found that some individuals can cope better with life and resist illness due to a pattern of personality characteristics such as hardiness (a profile of challenge, commitment, and control), sense of coherence, and optimism. In the following, three kinds of optimism are described in more detail. It is hypothesized that such beliefs may buffer pathogenesis and prevent or alleviate diseases through complex mechanisms, either by altering physiological parameters (such as immune parameters) or by altering health behaviors. Some individuals have been found to be 'self-healing personalities' (Friedman, 1990).

Optimistic Explanatory Style

People develop depression if they acquire a depressive attributional response style (Seligman, 1991). This style is composed of three dimensions: locus of control (internal versus external), stability (stable versus variable), and globality (global versus specific). Habitual responses to negative events in terms of internal, stable, and global attributions ('I am a loser and always will be') are coded as indicators for depressive affect. Nondepressives tend to attribute negative events rather to external, variable and specific factors ('The circumstances have recently been unfortunate'). This is called an *optimistic explanatory style* that counts as a protective factor against stress and illness. Optimists attribute good events rather to internal, stable, and global causes, that is, optimists make self-serving causal attributions.

In many studies, optimistic explanatory style has been related positively to health and negatively to illness. But the causal link between optimism and health is not well established. One assumption is that people with an optimistic explanatory style take control of their lives and adopt healthy practices that, in turn, lead to positive health outcomes in the long run. Another assumption is that optimists show different physiological reactions than pessimists. Kamen-Siegel, Rodin, Seligman, and Dwyer (1991) have studied the relationship between explanatory style and immune response in older adults. They found that pessimistic explanatory style was related to poorer immune function. Health behaviors, however, were almost uncorrelated with explanatory style. This result points to the possibility that the missing link between optimism and health might be rather of a physiological than a behavioral nature. This finding is in line with earlier studies that found a compromised immune status among humans and animals who had been made helpless or who were hopeless and depressed. In spite of impressive research that underscores the close association between explanatory style and health, it is not clear how this construct would fit as an integral part of a health behavior theory. Explanatory style seems to be a moderate predictor of health, except when it comes to preventive behaviors. It offers little guidance on how to change health behaviors.

Dispositional Optimism

The common-sense notion of optimism can be expressed in statements such as 'I'm always optimistic about my future,' a sample item taken from a psychometric scale developed by Scheier and Carver (1985). In contrast to explanatory style, this view of optimism explicitly pertains to expectancies and reflects a positive outlook on the future. The scientific concept is derived from a comprehensive theory of behavioral self-regulation that uses outcome expectancies as major ingredients. According to this theory, people strive for goals as long as they see them as attainable and as long as they believe that their actions will produce the desired outcome. Expectancies can be generalized across a variety of situations and can remain stable over time. Therefore, the label 'dispositional optimism' was chosen, defined as a stable tendency to believe that one will generally experience good outcomes in life. People who have a favorable outlook on life are considered to cope better with stress and illness, to invest more effort to prevent harm, and to enjoy better health than those with negative generalized outcome expectancies.

Indeed, there is ample evidence that dispositional optimism is associated with improved coping. Scheier et al. (1989) followed up a group of male heart patients who underwent bypass surgery. At four points in time, optimists were compared with pessimists, having been identified before surgery. In the first week after surgery, the optimists recovered faster and were quicker to get up and ambulate. After six months, the life of the optimists had almost normalized in terms of work and exercise,

whereas this process took longer for the pessimists. After five years, optimists reported superior quality of life, better sleep, less pain, and more frequent health behaviors. The authors explain these benign effects of optimism with a more adaptive coping style. Even before the operation, the optimistic patients made plans and set goals for the time to come, whereas the pessimists paid more heed to their current emotions.

Another study among breast cancer patients yielded similar results (Carver et al., 1993). Dispositional optimism turned out to be a good predictor for recovery and adaptation. Most studies report positive associations between optimism and psychological as well as physical well-being, and preliminary data also point to a relationship with health habits.

Perceived Self-Efficacy

Numerous research studies have found that a strong sense of personal efficacy is related to better health, higher achievement, and more social integration. Perceived self-efficacy represents the key construct in social cognitive theory (Bandura, 1997). It has been applied to such diverse areas as school achievement, emotional disorders, mental and physical health, career choice, and sociopolitical change.

Behavioral change is facilitated by a personal sense of control. If people believe that they can take action to solve a problem instrumentally, they become more inclined to do so and feel more committed to this decision. While outcome expectancies refer to the perception of the possible consequences of one's action, perceived self-efficacy pertains to personal action control or agency. A person who believes in being able to make an event happen can conduct a healthier and self-determined life course. This 'can do'-cognition mirrors a sense of control over one's environment. It reflects the belief of being able to master challenging demands by means of adaptive action. It can also be regarded as an optimistic view of one's capability to deal with stress.

The relationship between self-efficacy and specific health outcomes, such as recovery from surgery or adaptation to chronic disease, has been studied. Patients with high efficacy beliefs are better able to control pain than those with low self-efficacy. Self-efficacy has been shown to affect blood pressure, heart rate, and serum catecholamine levels in coping with challenging or threatening situations. Cognitive-behavioral treatment of patients with rheumatoid arthritis enhanced their efficacy beliefs, reduced pain and joint inflammation, and improved psychosocial functioning. Optimistic self-beliefs have turned out to be influential in the rehabilitation of chronic obstructive pulmonary disease patients. Recovery of cardiovascular function in post-coronary patients is similarly enhanced by beliefs in one's physical and cardiac efficacy. Obviously, perceived self-efficacy predicts the degree of therapeutic change in a variety of settings (Bandura, 1997).

These three kinds of optimistic beliefs were described here in some detail because they reflect the current thinking about personal resources and the mind–body relationship. Firm beliefs in oneself and the world guide emotions and behaviors and may have long-lasting effects on health and illness.

Social Resources and Health

Social support can assist coping and exert beneficial effects on various health outcomes. Social support has been defined in various ways, for example as resources provided by others, as coping assistance, or as an exchange of resources intended to enhance the well-being of the recipient. Several types of social support have been investigated, such as instrumental support (e.g., assist with a problem), tangible support (e.g., donate goods), informational support (e.g., give advice), emotional support (e.g., give reassurance), among others.

Social support has been found to be advantageous for patients during recovery from heart surgery. Kulik and Mahler (1989) studied men who underwent coronary artery bypass surgery. On the average, those who were often visited by their spouses were released somewhat earlier from the hospital than those who received only a few visits. In a longitudinal study, the same authors also found positive effects of emotional support after surgery. Schröder, Schwarzer, and Endler (1997) studied cardiac patients and their spouses over a half-year period before and after heart surgery, and they found that resourceful spouses seemed to transfer their resilient personality to the patients as part of a dyadic coping process.

The extent to which individuals are integrated in their communities and to which their social relationships are strong and supportive is associated with health. Maintaining close personal relationships to others can be a social resource factor that can, to a certain degree, protect against illness and premature death. There is a large body of empirical evidence that indicates such a beneficial influence of *social integration* on health. Starting with the well-known Alameda County Study (Berkman & Breslow, 1983), eight community-based prospective epidemiological investigations have documented a link

between lack of social integration on the one hand and morbidity and all-cause mortality on the other. Those who are the most isolated socially are at the highest risk for a variety of diseases and fatal outcomes.

There is also growing evidence about the causal pathways that involve social factors in the development of disease, although further research is needed to understand the mechanisms that render social ties beneficial for the organism. Social embeddedness, or the lack of it, can influence the onset, progression, or recovery from illness. For example, several major studies have found a link between social integration and survival rates of patients who had experienced a myocardial infarct (MI). Ruberman, Weinblatt, Goldberg, and Chaudhary (1984) studied male survivors of an acute MI and found that cardiac patients who were socially isolated were more than twice as likely to die over a three-year period than those who were socially integrated. In a Swedish study of cardiac patients, it was found that those who were socially isolated had a three times higher ten-year mortality rate than those who were socially integrated (Orth-Gomer, Unden, & Edwards, 1988). Diagnosis of coronary artery disease and subsequent death was linked to marital status (Williams et al., 1992). Those who were single or lacked a confidant were more than three times as likely to die within five years compared with those who had a close confidant or who were married. Marital status and recurrent cardiac events were also linked in a study by Case et al. (1992), who identified a higher risk of cardiac deaths and nonfatal infarctions among those who lived alone. In another prospective study among MI patients, it was found that mortality rates within a six-month period were related to the social support reported by these patients (Berkman, Leo-Summers, & Horwitz, 1992). They identified the number of persons representing major sources of emotional support. In analyzing the data, the researchers distinguished men and women with one, two, and more than two such sources. There was a consistent pattern of death rates, the highest of which was associated with social isolation and the lowest of which pertained to two or more sources of emotional support, independent of age, gender, comorbidity, and severity of MI.

These five studies have focused on the *survival time* after a critical event. Obviously, the recovery process can be modified by the presence of a supportive social network. A sense of belonging and intimacy is able to facilitate the coping process one way or the other. Physiological or behavioral mechanisms have been mentioned as potential pathways for this facilitation. Among the multiple physiological pathways, an immunological and a neuroendocrine link have been investigated. It is known that losses and bereavement are followed by *immune depression*, which compromises in particular natural killer cell activity and cellular immunity. This, in turn, reduces overall host resistance, so that the individual becomes more susceptible to a variety of diseases, including infections and cancer. The quality of social relationships, for example marital quality, has been found a predictor of immune functioning. Social stress, in general, tends to suppress immune functioning (Cohen & Herbert, 1996).

The neuroendocrine system is closely related to high *cardiovascular reactivity* and physiological arousal, which are seen as antecedents of cardiac events. In a study by Seeman et al. (1994), emotional support was associated with neuroendocrine parameters, such as urinary levels of epinephrine, norepinephrine, and cortisol in a sample of elderly people. The link with emotional support was stronger than the link with instrumental support or mere social integration.

The behavioral pathway has been suggested by studies where social networks were stimulating health behaviors that prevented the onset of illness, slowed its progression, or influenced the recovery process. For example, abstinence after *smoking cessation* was facilitated by social support (Mermelstein, Cohen, Lichtenstein, Baer, & Kamarck, 1986). *Alcohol consumption* was lower in socially embedded persons (Berkman & Breslow, 1983), although other studies have found that social reference groups can trigger more risky behaviors, including alcohol consumption (Schwarzer, Jerusalem, & Kleine, 1990). Participation in *cancer screenings* can also be promoted by social ties (Suarez et al., 1994).

Physical exercise is among the health behaviors that have a close link to social integration and social support. Perceived support by family and friends can help in developing the intention to exercise as well as initiating the behavior (Sallis, Hovell, & Hofstetter, 1992). Long-term participation in exercise programs or the maintenance of self-directed exercise is probably more strongly determined by actual instrumental support than by perceived and informational support (Fuchs, 1997). Duncan and McAuley (1993) have found that social support influences exercise behaviors indirectly by improving one's self-efficacy, which might be an important mediator in this process. The reason could be that not only a sense of belonging and intimacy

is perceived as supportive, but also being verbally persuaded that one is competent or the social modeling of competent behaviors.

23.3 Health Behaviors

Risky Lifestyles and Addictive Behaviors

Many health conditions are caused by behaviors, for example problem drinking, substance use, smoking, reckless driving, overeating, or unprotected sexual intercourse. Health Psychology research has identified a number of risk factors for such behaviors. A risk factor is a personal, social, or environmental characteristic that is related to a higher rate of the critical behavior. *Substance use or abuse*, in studies in the US, was associated with the following 15 factors (Wills, 1998): (1) male gender, (2) white ethnicity, (3) lower socioeconomic status, (4) family history of substance abuse, (5) temperament (high activity level, negative emotionality), (6) poor parental relationship and supervision, (7) early onset of substance use, (8) poor self-control, (9) novelty seeking and risk taking, (10) anger, hostility, and aggression, (11) avoidance and helpless coping, (12) tolerance for deviance, (13) conduct disorder and antisocial personality disorder, (14) negative life events, and (15) affiliation with peer users. Obviously, there is no single cause, which makes it difficult to predict the onset and course of risk behaviors.

Each of the health-compromising behaviors can be a target for interventions. However, a single behavior cannot be easily removed from one's life without replacing it by something else. Specific health-enhancing behaviors need to be adopted, such as physical exercise, weight control, preventive nutrition, dental hygiene, condom use, or accident-preventive measures. Moreover, a particular behavior constitutes an integral part of one's lifestyle. Thus, risky and healthy lifestyles should be the units of analyses. *Coronary-prone behavior*, for example, describes a pattern that consists of a sedentary lifestyle, a high-fat, high-cholesterol diet, overeating, smoking, and a maladaptive way of coping with stress (the latter is also a characteristic of the Type A personality). The *adolescent lifestyle*, for example, is characterized by risk-taking, such as careless driving, unprotected sex, and the exploration of drugs. There are *gay lifestyles*, *senior citizen lifestyles*, and so on, which reflect clusters of behaviors that are more frequent in these subgroups than in others. Behavioral epidemiology describes the frequencies and modalities of all health-compromising and health-enhancing behaviors, and their hazards and benefits are well-documented in the research literature. The major challenge for Health Psychology is the systematic modification of such behaviors.

Self-Regulated Health Behavior Change

The adoption of health behaviors (e.g., physical exercise, condom use, not smoking, dieting, etc.) is often viewed too simplistically as an individual's response to a health threat. Individuals become aware that their lifestyle puts them at risk for a life-threatening disease. Consequently, they are believed to make a deliberate decision to refrain from risk behaviors in favor of recommended precautions. This commonsense view of behavioral change is based on the questionable belief that humans are rational beings who perceive a risk and then respond to it in the most reasonable manner. In fact, studies show that risk perception is a poor predictor of behavioral change (Hahn & Renner, 1998). This state of affairs has encouraged psychologists to design more complex prediction models that include a number of determinants of action (for reviews, see Schwarzer, 1992; Wallston, 1994; Weinstein, 1993). Changing one's health behavior is considered to be a difficult self-regulation process. In Health Psychology research, attempts are being made to model such processes with the aim to understand the mechanisms of how people are motivated to change their risk behaviors, and how they become encouraged to cope with barriers and setbacks. Health behavior models are designed to predict and explain the adoption of novel or difficult health behaviors and the adherence to medical regimens. In the past, the focus has been on identifying an optimal set of predictors that included constructs such as attitude, social norm, disease severity, personal vulnerability, behavioral intention, etc. The most prominent approaches were the Health Belief Model, the Theory of Reasoned Action, the Theory of Planned Behavior, and Protection Motivation Theory (for an overview of these models, see Conner & Norman, 1996). It is a common understanding that there are several necessary ingredients for all health behavior models, among them (a) behavioral intentions, (b) perceived self-efficacy, and (c) outcome expectancies.

However, the focus on static prediction cannot account for changes during the course of time. Thus, many theorists have made an attempt to consider process characteristics that might add substantially to the predictive power of such constructs. The *Transtheoretical Model of Behavior Change* (DiClemente & Prochaska, 1982) has become the most popular stage model. Its main feature is the implication that different types of

cognitions may be important at different stages of the health behavior change process. It includes five discrete stages of health behavior change that are defined in terms of one's past behavior and future plans (precontemplation, contemplation, preparation, action, maintenance). For example, at the *precontemplation stage*, a drinker does not intend to stop consuming alcohol in the future. At the *contemplation stage*, a drinker thinks about quitting sometime within the next six months, but does not make any specific plans for behavior change. At the *preparation stage*, the drinker resolves to quit within the next six months. The *action stage* includes individuals who have taken successful action for any period of time. If this abstinence has lasted for more than six months, the person is categorized as being in the *maintenance stage*. The model, which also includes self-efficacy and other relevant features, has been applied successfully to a broad range of health behaviors, with particular success for smoking cessation. However, it has been argued that the notion of stages within this theory might be flawed or circular, in that the stages are not genuinely qualitative, but are rather arbitrary distinctions within a continuous process (Weinstein, Rothman, & Sutton, 1998). Instead, these 'stages' might be better understood as 'process heuristics' to underscore the nature of the entire model. That is, the model can serve as a useful heuristic that describes a health behavior change process, which has not been the major focus of health behavior theories so far. In redirecting the attention to a self-regulatory process, the transtheoretical model has served an important purpose for applied settings. The postintentional, preactional phase ('preparation') may be the most challenging stage for researchers and professionals because it is exactly in this phase where an intention is or is not translated into an action – depending on the circumstances. Planning and initiative, but also volatility, hesitation, and procrastination characterize this phase.

Intervention research in The Netherlands has dwelt on the stage approach in conjunction with social-cognitive theory. One recent finding on *smoking cessation* will be cited here as a good example (Dijkstra, De Vries, Roijackers, & Breukelen, 1998). In an experimental study, several groups of smokers who were identified as 'immotives', 'precontemplators', 'contemplators', or 'preparers' were given health messages ('immotives' are those who are absolutely determined to remain smokers). One group received *information on outcomes* of quitting, and another group received *self-efficacy-enhancing information*. Within each group, there were smokers in all four stages. Ten weeks later, their abstinence was assessed by the questionnaire item 'Have you smoked in the last seven days (even one puff)?' Participants were told that there would be biochemical verification of their responses. It turned out that quite a few had quit smoking. This was true for the two intervention groups and for all four stages within these conditions. Figure 23.2 decomposes the percentages of ex-smokers. As expected, the number of quitters increased with stages. Moreover, at the preparation stage, self-efficacy information provided the best means to motivate smokers to quit, whereas at the previous stages there was no significant difference between the two treatment conditions. The idea was to identify the optimal intervention strategy by matching individuals at different stages to different conditions designed to stimulate either outcome beliefs or optimistic

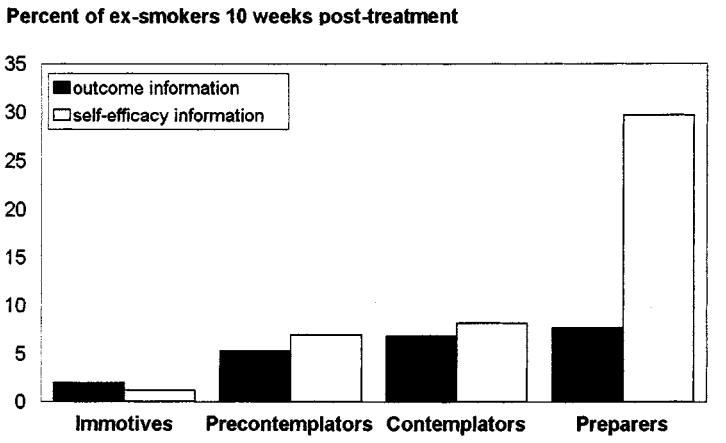

Figure 23.2 *Effects of different health messages at different levels of readiness for change on smoking cessation (Dijkstra et al., 1998)*

self-beliefs. The results are promising in this direction.

Other modern health behavior theories pay more attention to postintentional processes, which is in line with action theories (e.g., Kuhl, 1992). The *Health Action Process Approach* (HAPA; Schwarzer, 1992, 1999; Schwarzer & Fuchs, 1996), for example, represents a generic framework, also based on social cognitive theory and an explicit self-regulation process view. Health behavior change is subdivided into two processes: (a) the motivation phase, where intentions are developed, and (b) the volition phase, where these intentions are translated into action. The development of an intention or goal is a motivational process quite different from the subsequent preparation, performance, and evaluation of the desired action. In fact, the translation of intention into action appears to be the most challenging research issue. In the *motivation phase*, the question is how to move people to enter into the necessary contemplation process. Risk communication is still the technique practiced most often in health education. Making people believe that they are at risk for a certain disease is expected to bring about change. However, risk perception can backfire if individuals feel overwhelmed by the threat. Instead, they may choose to respond with defense or reactance. Some degree of risk perception can set the stage for subsequent contemplation and motivation to change, but it must be accompanied by other cognitions, in particular by outcome expectancies and perceived self-efficacy (Bandura, 1997). In the motivation phase, people choose which actions to take, whereas in the action or *volition phase* they plan the details, act, persist, possibly fail, and then recover. When a preference for a particular health behavior has been shaped, the intention needs to be transformed into detailed instructions on how to perform the desired action. Mental process simulation can bring people on track and ease them into the desired but difficult activity. Self-efficacy beliefs influence the cognitive construction of specific action plans, for example by visualizing scenarios that may guide goal attainment (Bandura, 1997). These postdecisional, preactional cognitions are necessary because otherwise the person would act impulsively in a trial-and-error fashion and would not know where to allocate the available resources.

When an action is being performed, self-efficacy determines the amount of effort invested and the level of perseverance. People who harbor self-doubts are more inclined to anticipate failure scenarios, worry about possible performance deficiencies, and abort their attempts prematurely. People with an optimistic sense of self-efficacy, on the other hand, visualize success scenarios that guide the action and let them persevere, even in the face of obstacles. They recover quickly when running into unforeseen difficulties.

This health behavior change model is regarded as a heuristic to better understand the complex mechanisms that operate when people become motivated to change and when they attempt to resist temptations. It applies to all health-compromising and health-enhancing behaviors.

Health Promotion and Health Education

'An ounce of prevention is worth a pound of cure.' It is a truism that an investment in prevention pays off. Yet many people rely on expensive cures by health care providers because they do not feel responsible for their own health. They believe that there will be effective treatments for all ailments and do not realize that the cure, if possible at all, will be costly in terms of discomfort, time, money, and other resources. Since most chronic diseases, including the major killers heart disease and cancer, are at least partially caused by lifestyles, preventive health behaviors can make a difference. This is true even more so if the preventive focus is on quality of life, not just length of life. Therefore, people must be convinced to make informed and responsible choices that lead to improved health.

Health promotion is an umbrella term that includes all educational and political measures to assist people in modifying their lifestyle toward a state of optimal health. For example, public health efforts can aim at the creation of supportive environments or at limitations to the access of health-compromising foods or drugs. In comparison, *health education* represents a more narrow concept. It comprises all teaching and learning arrangements that facilitate voluntary health behavior change. By this, individuals and groups are offered opportunities, knowledge, skills, and resources to help them refrain from risk behaviors and adopt health behaviors in order to pursue a continuous improvement of their health and wellness. Health education can take place in a variety of settings, including schools and workplaces, and it can be best performed by Health Psychologists or by educators with training in Health Psychology.

Four modalities of health promotion are distinguished: (a) one-to-one approach, (b) small group intervention, (c) community-wide campaign, and (d) public policy measures. The wider the approach, the broader and more cost-effective the impact can be. However, each of the four modalities can be the most appropriate

one, depending on the particular problem and the target population. For an addicted smoker who suffers from a physical condition, a clinical, individual setting might be most efficient, but when it comes to reducing the average cholesterol intake of the entire population, for example, community-wide or other broad-range public health approaches (such as media campaigns) are preferred. It is also important to find cost-effective ways of targeting mainly those people who are most responsive to interventions at the right point in time ('teachable moments'). Moreover, risk populations, where interventions would be most effective, need to be identified. For example, gays constitute a risk population for HIV infection, teenagers are at risk for developing smoking and drug use habits, and the elderly are a risk population for a sedentary lifestyle. On the other hand, research resources need to be allocated to uncover the reasons for nonresponsiveness of some target groups.

Seen from a global perspective, it is not affordable to choose one-to-one interventions to change risk behaviors in millions of people in countries where health services are undeveloped. The primary role of Health Psychologists in Third World countries is at the level of designing and evaluating theory-based interventions by using the mass media or other educational means that reach larger groups. There is a particular challenge to reach also those who are refractory to any behavior changes. There is, for example, remarkable progress in the habitual condom use of risk populations in some parts of Asia (e.g., Thailand), after major educational efforts had been undertaken.

23.4 Summary and Outlook

During its short history, Health Psychology has made substantial progress in establishing itself as a discipline. In particular, coping with chronic illness, behavioral etiology of certain diseases, and adoption and maintenance of health behaviors have been targets for research and practice. However, there is no magic bullet available that could serve as an immediate remedy to alter risk behaviors because human cognitions, emotions, and behaviors are highly complex and cannot be changed by a quick-fix approach.

The emergence of dynamic health behavior theories that describe the processes of behavior change is promising. These theories aim to identify the most powerful components within programs intended to bring about change and to tailor the intervention to a particular phase where the individual is optimally predisposed for health messages and social influence. Modern change programs consider the cognitive and emotional prerequisites and barriers, and they help people set ambitious health goals, make realistic action plans, support strategies for maintenance, and facilitate recovery from setbacks. Health habits or risk behaviors should not be seen as isolated phenomena, but should be regarded as part of one's lifestyle that may have a functional value in coping with life. Simply applying a technology to remove a bad habit does not account for the fact that the habit is embedded in one's lifestyle and may fulfill an important role. Further, intervention models should be long-lasting, comprehensive, and cost-effective.

Life is in general more or less stressful, and continuous stress may eventually result in acute or chronic illness or in physical dysfunction. Stress compromises the immune system, among others, and renders people more vulnerable toward infections and neoplastic diseases. Exposure to environmental or social stressors (e.g., job stress) is one aspect, individual differences in coping with stress is another ('It's not the load that breaks you down, it's the way you carry it'). Health Psychology deals with the various pathways that translate the experience of stress into physiological malfunctioning and physical illness. It also investigates the resources that may buffer stress, for instance competence, beliefs, and social support. Improving social networks along with the individual's skills to mobilize them and use them becomes an important agenda for Health Psychology.

Coping with chronic illness is also a resource-driven process. It has been found that resourceful patients recover more quickly after surgery and readjust better to long-term disability or terminal disease (Schröder et al., 1997). Health Psychology can provide the knowledge of critical mechanisms, help people prepare for stressful medical interventions, and guide them through a difficult life course. If recovery is not possible, the focus needs to be on quality of life. If life is unbearable, there must be ways to allow patients, doctors, and relatives to collaborate on the ethically controversial issue of dignified dying by one's own will.

It is important to nurture and develop further communication and collaboration between the various disciplines involved, such as Health Psychology, medicine, and public health, as well as health services. The particular contribution that Health Psychology is able to make has not yet been fully recognized and acknowledged. Health Psychology is deeply rooted in promising and powerful psychological theories, and it adheres to high methodological standards that

make it especially suitable for the advancement of health sciences and health practice.

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