CHAPTER 19

Positive Psychology and Health Psychology: A Fruitful Liaison

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POSITIVE PSYCHOLOGY HAS been a highly generative initiative, both in its implications for basic theory and laboratory research and in its implications for practice. There is perhaps no field as clearly a beneficiary of this thrust than health psychology. Health psychology and its intellectual antecedent, behavioral medicine, began in earnest in the 1970s, although there was related research before that time. Virtually from its inception, health psychology has been an arena in which the contributions of positive psychology have been evident, yielding insights that, in turn, have helped to refine the theories that give birth to applications. In this chapter, we pursue this theme with reference to several subfields within health psychology: health behaviors, social support, psychological control, adjustment to illness, and psychological cofactors in the course of illness.

HEALTH BEHAVIORS

Health behaviors are important, not only because they directly affect health, but because they can become habitual and influence susceptibility to the course of illness across the lifespan. Accordingly, health psychologists have been concerned with the factors that influence the practice of health behaviors, especially those factors that may help people change behaviors known to compromise health, such as smoking, poor diet, and lack of exercise.

Not surprisingly, some of the earliest approaches to this problem emphasized the negative incentives that may lead people to change their behaviors. An impressive program of research examined the role of fear and feelings of vulnerability on changing health habits, the underlying assumption being that as fear

increases, people will be increasingly motivated to make necessary behavior changes. Research drawing on fear appeals demonstrated only modest relations to health behavior change, however (Becker & Janz, 1987; H. Leventhal, 1970). Persuasive messages that elicit too much fear may actually undermine health behavior change (Becker & Janz, 1987). Moreover, fear may not produce long-lasting change in health habits unless it is coupled with recommendations for action or information about the efficacy of the health behavior for eliminating threat (Self & Rogers, 1990). Building on this research, the Health Belief Model (Rosenstock, 1966), as well as related models (e.g., Ajzen & Madden, 1986), proposed that feelings of vulnerability, coupled with beliefs about the efficacy of a particular health behavior for reducing vulnerability, were among the key variables needed to motivate people to engage in behavior change. While there is manifold evidence for this approach, positive psychology has suggested a very different way of addressing the same issues.

Research on the self has been brought to bear on understanding health habits and has yielded a particularly significant insight: Positive beliefs may actually help people come to grips with health threats and adopt better health behaviors. This counterintuitive observation was originally made in research on optimism. In the past, researchers had expressed the fear that optimism about one's health might interfere with the ability to process negative health-related information appropriately (e.g., Weinstein, 1984). Aspinwall and her colleagues, however, found that optimistic college students were actually *more* receptive to negative information about the risks of health behaviors in which they were currently engaging than less optimistic students (e.g., Aspinwall & Brunhart, 1996). In one study, female sunbathers were given information about skin cancer that was either highly relevant (the average skin cancer patient was someone their age) or less highly relevant (the average skin cancer patient was much older). Optimists were more accepting of the highly relevant health information than the pessimists, and were less likely to argue against the health information (Aspinwall & Brunhart, 1996; see Armor & Taylor, 1998, for a review).

Situations that make people feel more secure and positive about themselves can also lead to greater acceptance of threatening health information. This is an important insight, because people are often resistant to highly relevant health information suggesting that they should change their behavior (Ditto & Lopez, 1992; Liberman & Chaiken, 1992). In fact, people who have the most to gain from health communications are often the least likely to accept them. For example, studies have found that coffee drinkers are more critical than noncoffee drinkers of scientific evidence linking caffeine to breast cancer, and they are much more accepting of information disconfirming that link (Kunda, 1987).

In a series of studies, Sherman and colleagues have found that leading people to engage in self-affirming experiences, such as reflecting on important values, helps decrease defensiveness about health risks, and motivates people to change their health behaviors (Sherman, Nelson, & Steele, 2000; see Sherman & Cohen, 2002, for a review). In one study, women who were either coffee drinkers or noncoffee drinkers reviewed a scientific report linking caffeine consumption to breast cancer. The article strongly urged women to reduce their caffeine consumption to avoid breast cancer. As in earlier research (e.g., Kunda, 1987), coffee drinkers were more critical of the health information and thus more resistant to the message as a whole than were noncoffee drinkers. Yet, among self-affirmed participants, who

had reflected upon a personally important value, coffee drinkers were more open to the information contained in the report than were noncoffee drinkers, and they intended to reduce their coffee drinking accordingly. When people who would otherwise feel threatened by a health message affirmed an alternative source of self-worth, their responses to the self-relevant threatening information proved more balanced and open than was true for people who had not self-affirmed (see also Raghunathan & Trope, 2002; M. B. Reed & Aspinwall, 1998).

Health information about AIDS can be particularly threatening because the disease is highly stigmatized, and people do not want to think that they have put themselves and their partners at risk for the disease by their sexual behavior. Consequently, people are often very resistant to AIDS-educational messages. One study found that sexually active college students saw themselves as being less at risk for HIV after seeing an AIDS-educational video (Morris & Swann, 1996), suggesting that the educational message may have prompted a defensive response. However, research has shown self-affirmations can reduce this defensiveness and promote positive health behaviors. In one study, sexually active undergraduates completed a self-affirmation prior to viewing an AIDS-educational video. Relative to participants in a control condition, students who wrote an essay about an important value, thereby affirming a valued self-image, were more likely to see themselves as being at risk for HIV and were also more likely to purchase condoms (Sherman et al., 2000).

Positive beliefs about the self among optimists have also been shown to promote AIDS preventive behaviors. One longitudinal study of gay, HIV-seropositive men found that those men who were optimistic about not developing AIDS reported greater efforts to maintain their health through diet and exercise (Taylor et al., 1992; see also Carver et al., 1993). These positive health habits in the face of disease can reinforce individuals' optimism, thereby creating a positive feedback loop.

Given the benefits of being optimistic in the face of health threats (Scheier & Carver, 1985), an important issue is whether social psychological interventions can make pessimistic people more optimistic. A study by Mann (2001) addressed this topic in a sample of HIV-infected women on combination therapies that required them to take many medications. The women in the study wrote about a positive future in which their medical treatment was simpler than their current reality. They wrote on this topic in a journal twice a week for four weeks. Compared to pessimists in a nonwriting control group, pessimists who wrote about a positive future had greater optimism, increased self-report adherence to medications, and reduced distress from the side effects of the medicine (Mann, 2001). Writing about a positive future in the face of a serious health threat, then, conferred on the pessimists the health benefits of being optimistic.

Why do positive experiences like self-affirmation or positive qualities like optimism help people to confront negative health information and promote positive health behaviors? Several models have proposed that positive experiences and self-affirmations work as a resource upon which individuals can draw in time of need (M. B. Reed & Aspinwall, 1998; Sherman & Cohen, 2002; Steele, 1988; Taylor, Lerner, Sherman, Sage, & McDowell, 2003a, 2003b; Trope & Pomerantz, 1998). People rely on their strengths in one domain to deal with potential weaknesses in other domains. At an affective level, when people are in a more positive affective state, they can confront information and events that might otherwise put them into a more negative mood (Carver, 2003; Isen, 2000). In this

view, positive self-feelings serve as a psychological resource from which people can draw to confront negative health information (Raghunathan & Trope, 2002).

SOCIAL SUPPORT

The role of close relationships in health behavior change and in adjustment to illness has been an important topic within health psychology. Much of the early work focused on the potential problems or complications that can arise when social relationships are adversely affected by the looming threat of advancing illness. For example, early work on cardiovascular disease and the rehabilitative process emphasized many of the strains that can arise in families when the heart patient returns home from the hospital and discussed ways to anticipate and head off these adverse developments (Croog & Levine, 1977). Similarly, research on the interpersonal relationships experienced by cancer patients focused on experiences of "victimization," that is, rejection and avoidance from acquaintances, friends, and even intimates (e.g., Wortman & Dunkel-Schetter, 1979). A strong emphasis within the clinical literature on family relationships and illness stressed the potential maladaptive dynamics of family systems that could exacerbate or prolong illness experiences (Minuchen, 1977). The risks to interpersonal relationships that illness poses are undeniably important and merit investigation and clinical intervention when warranted. Such a focus, however, can obscure the important and growing recognition that social relationships play a positive critical role in the illness experience as well.

Social support is defined as the perception or experience that one is loved and cared for by others, esteemed and valued, and part of a social network of mutual assistance and obligations (Wills, 1991). Social support may involve specific transactions whereby one person receives advice, instrumental support, or emotional solace from another, or it may be experienced primarily via the perception that help and support is potentially available from those with whom one is close.

A substantial body of research has examined the relation of perceived and actual social support to mental health and health outcomes and found strongly positive associations (e.g., Thoits, 1995). Social support consistently reduces psychological distress, such as depression and anxiety, during times of stress, and it promotes psychological adjustment to chronically stressful conditions, including coronary artery disease (Holahan, Moos, Holahan, & Brennen, 1997), diabetes, HIV infection (Turner-Cobb et al., 2002), cancer (Stone, Mezzacappa, Donatone, & Gonder, 1999), rheumatoid arthritis (Goodenow, Reisine, & Grady, 1990), and many more disorders.

Social support contributes to physical health and survival as well. For example, in a classic study by Berkman and Syme (1979), social contacts predicted an average 2.8 years increased longevity among women and 2.3 years among men. Most significant is the fact that the positive impact of social ties on morbidity and mortality is as powerful or more powerful a predictor of health and longevity than well-established risk factors for chronic diseases and mortality, such as smoking, blood pressure, lipids, obesity, and physical activity (House, Landis, & Umberson, 1988). Studying the process of how social support serves as a resource for positive health has, as a result, been an important priority for health psychology.

The benefits of social support for health appear to operate at all points in the health/illness experience. Many forms of social support are helpful for encouraging

good health behaviors (Taylor, 2003). Social support may help people to stave off illness altogether. For example, Cohen, Doyle, Skoner, Rabin, and Gwaltney (1997) intentionally infected healthy community volunteers with a cold or flu virus by swabbing the inside of their nasal passages with virus-soaked cotton swabs. They found that people who had more social ties were less likely to become ill following exposure to the virus and, if they did become ill, they were able to recover more quickly than those with fewer social ties. Indeed, the impact of social support on course of illness and recovery shows consistent beneficial effects.

More recently, research has examined the connection between interpersonal relationships and indicators of allostatic load, that is, the accumulating adverse changes in biological stress regulatory systems that can result from long-term exposure to chronic or recurring stress (McEwen & Steller, 1993). Allostatic load is, in essence, a preclinical state with implications for health later in life. A study by Ryff and colleagues (Ryff, Singer, Wing, & Love, 2001) examined adults in mid-life and their relationships with close others. Using a longitudinal methodology, they compared adults who had positive and negative relationship pathways. Negative relationship pathways were operationalized as having a negative evaluation of both mother and father in childhood or of having a negative evaluation in important domains (intellectual, sexual, recreational) of a person's ties to a spouse. Positive relationship pathways were defined as having at least one positive relationship with a parent or at least one positive evaluation of an important domain of ties with a person's spouse. Adults who had positive relationship pathways were less likely to have high allostatic load (as assessed by a composite including blood pressure, waist-hip ratio, total and cholesterol levels, and levels of cortisol, epinephrine, norepinephrine, and DHEA-S; Seeman, Singer, Horwitz, & McEwen, 1997).

In response to evidence like this, a broad array of clinical interventions have arisen, both to close gaps in social support that people with chronic stressors may experience, and to supplement supportive relationships with education and stressor-specific types of social support that may provide additional benefits. Experimental research that has provided social support to hospitalized people, for example, has found it to be associated with better adjustment and/or faster recovery (e.g., Kulik & Mahler, 1993). Specifically, Kulik and Mahler (1987) developed a social support intervention for patients about to experience cardiac surgery. Some of the patients were assigned to a roommate who was also awaiting surgery, whereas others were assigned to a roommate who had already had surgery. The surgery was either similar or dissimilar to their own. They found that patients who had a postoperative roommate profited from these contacts, whether the surgery was the same or different from the patients' own surgeries. The patients were less anxious preoperatively, were more ambulatory postoperatively, and were released more quickly from the hospital than were patients who were paired with a roommate who was awaiting surgery. This subtle social support manipulation may have provided patients with relevant information about the postoperative period, and/or the roommate may have acted as a role model for how one might feel and react postoperatively. Alternately, those awaiting surgery may simply have been relieved to see someone who had gone through the surgery and come out all right. Nonetheless, the benefits were clear, providing a strong basis for intervention.

Social support can also be critical for helping patients manage chronic conditions. For example, when a person has been diagnosed with a chronic disability or

illness, the family's participation in an intervention may be enlisted to improve the diagnosed patient's adjustment. Involving the family in health behavior change, such as dietary change that may be required for the management of heart disease, is often beneficial for the effective management of chronic disorders, and it can also be educational and soothing for family members.

Social support groups have arisen as low-cost, efficient vehicles for supplementing social support needs that may be generated by specific stressors. Recent estimates are that about 25 million individuals participate in support groups at some point during their life (Kessler, Mickelson, & Zhao, 1997). Such groups can be a vital resource for the chronically ill and for helping people manage chronic stressors, such as obesity, alcoholism, or a family member's illness. They provide a format for discussions of mutual concern, provide specific information for how others have dealt with similar problems, and provide people with the opportunity to share their emotional responses with others who are going through the same problem (Gottlieb, 1988). A large number of studies have evaluated the efficacy of social support groups by comparing participants with those who have been waitlisted for participation, and these studies find beneficial effects (Hogan & Najarian, 2002).

So beneficial have self-help groups proven to be, that such groups are now available on the Internet (Davison, Pennebaker, & Dickerson, 2000). Although virtual support groups do not provide the benefits of face-to-face social contact, they are logistically easy to access, they are inexpensive, they provide opportunities to come and go at will and at times of personal need, and they offer answers to many specific questions. As such, Internet-based support groups are a rapidly growing means of providing social support, especially to individuals with chronic conditions or to those who are socially isolated from others like themselves, by virtue of disability or geography. Internet social support has also proven to be a valuable intervention for children (Hazzard, Celano, Collins, & Markov, 2002).

Thus, across the lifespan, nurturant, supportive contact with others, a sense of belonging or mattering, and participation in social groups have been tied to a broad array of mental health and health benefits. Perhaps no field better exemplifies the tangible benefits to health and longevity that positive resources can provide.

PSYCHOLOGICAL CONTROL

The experience of illness and its treatment can be disorienting and frightening. At one time, these adverse changes were accepted as simply part of the unfortunate consequences of the illness experience. Relatively early in health psychology's history, however, researchers learned that it is possible to harness the intrinsic psychologically adaptive qualities of the person in the service of adjustment to treatment and its aftermath.

Psychologist Irving Janis (1958) conducted a landmark study that changed completely how patients awaiting surgery were treated. Janis observed that patients varied in how well they understood and used the information that the hospital staff gave them to help them cope with the after-effects of surgery. Patients who were highly fearful and anxious showed many adverse effects of surgery, including vomiting, pain, urinary retention, and the inability to eat. Patients who were

initially low in fear also showed unfavorable reactions after surgery, often becoming angry or upset or complaining, because of the unexpected problems they encountered. Moderately fearful patients, however, coped with postoperative distress most favorably. Janis reasoned that this group was vigilant enough by virtue of their fearfulness, but not overwhelmed by their fear so that they were able to develop realistic expectations of what their postsurgery reactions would be. When they later encountered these sensations and reactions, they expected them and were ready to deal with them.

Janis's seminal work sparked an interest in enlisting patient cooperation in the procedures that they would undergo, through enhanced understanding and participation. These interventions articulated and drew on the concept of *psychological control*, that is, the sense that one is prepared for and has psychological or behavioral measures one can undertake to cope with an impending stressful event. An early example of research drawing on this principle was conducted with patients facing intra-abdominal surgery (Egbert, Battit, Weleb, & Bartlett, 1964). Half the patients were alerted to the likelihood of postoperative pain and were given information about its normality, duration, and severity. They were also taught breathing exercises that would help them control the pain. The other half of the patients received no such instructions. When evaluated postoperatively, patients in the instruction group showed better postoperative adjustment, required fewer narcotics, and were able to leave the hospital sooner than were the patients who had not received the preparatory instructions. Many subsequent studies have examined the role of preparatory information and coping techniques and adjustment to surgery, and the effects are consistently beneficial.

The fact that patients who feel prepared and somewhat in control do so well has led to automated interventions for patients to prepare them for upcoming procedures. In one study (Mahler & Kulik, 1998), patients awaiting coronary artery bypass graft (CABG) were exposed to one of three preparatory videotapes or to no information. One videotape contained information about the procedure conveyed by a health care expert; the second videotape featured the health care expert and also included clips of interviews with patients who reported on their progress; a third videotape presented information from a health care expert coupled with patients who reported on their recovery, both its ups and its downs. Overall, patients who saw the videotapes—any videotape—felt significantly better prepared for the recovery period, reported higher self-efficacy during that period, and were more adherent to recommended dietary and exercise changes during their recovery. They were also released from the hospital sooner, compared to patients who did not receive videotape preparation. Similar interventions have been employed successfully for patients awaiting other medical procedures (e.g., Doering et al., 2000) including gastroendoscopic examinations (e.g., Johnson & Leventhal, 1974), childbirth (e.g., E. A. Leventhal, Leventhal, Shacham, & Easterling, 1989), the management of peptic ulcers (e.g., Putt, 1970), and chemotherapy (Burish & Lyles, 1979), with similar success.

Reviews of this literature have suggested that the combination of information, relaxation, and modest cognitive behavioral interventions, such as learning to think differently about the unpleasant sensations of a procedure, or developing behavioral coping techniques, such as breathing exercises, account for the success in reducing anxiety, improving coping, and fostering recovery (e.g., Ludwick-Rosenthal & Neufeld, 1988). The beneficial effects of interventions based on

psychological control do have limits. People who have a high desire for control in their lives may especially benefit from control-based interventions (e.g., Burger, 1989), but control may be aversive to people who prefer to put themselves in the hands of others when awaiting distressing medical procedures. It is possible to give people too much control, such as multiple coping techniques to undertake or too much information (e.g., Mills & Krantz, 1979; Thompson, Cheek, & Graham, 1988). Nonetheless, the field of psychological control remains a particular achievement of health psychology. Interventions that have drawn on psychological control have recognized the great potential for recruiting and harnessing a latent and often untapped resource that most people have: the resilient capacity to grapple with and adjust to the stressful aspects of their lives.

ADJUSTMENT TO THE ILLNESS EXPERIENCE

For decades, psychologists and medical researchers have explored the factors that influence illness-related quality of life. For the most part, this research has been heavily oriented toward measuring survival, course of disease, compliance with medications, and determinants of psychological distress (Taylor & Aspinwall, 1990). Psychological research has focused disproportionately on the negative fallout from acute and chronic illness. Much attention, for example, has been paid to the factors associated with denial, anxiety, and depression in response to illness (Taylor, 2003). Clinical interventions have addressed the adverse consequences of illness as well, including physical and psychosocial rehabilitation, problems in body image, and vocational issues.

Although many people experience at least short-term anxiety and depression in response to the diagnosis of a chronic illness or disorder, very commonly and perhaps surprisingly, people find benefits in these experiences and report an improved quality of life, better relationships, and positive changes in their values and priorities (e.g., Affleck & Tennen, 1996; Linley & Joseph, 2004; Taylor, 1983; Tedeschi, Park, & Calhoun, 1998; Updegraff & Taylor, 2000). Evidence of benefit-finding, meaning, positive illusions, and growth in the wake of chronic and terminal illness has been found in populations as diverse as cancer patients (e.g., Taylor, 1983), low-income women infected with HIV (e.g., Updegraff, Taylor, Kemeny, & Wyatt, 2002), caregivers of the terminally ill (e.g., Folkman, 1997), and people coping with traumatic events (e.g., Wortman & Silver, 1987).

In their studies of adjustment to chronic conditions, Petrie, Buick, Weinman, and Booth (1999), for example, found considerable evidence of positive changes following a myocardial infarction or diagnosis of cancer. As Figure 19.1 shows, many benefits were experienced by both of these patient groups, although their specific nature varied somewhat. Most of the benefits reported by the myocardial infarction patients reflected lifestyle changes, perhaps indicative of the fact that the course of heart disease is directly tied to changes in personal health habits. The cancer patients, in contrast, reported more changes in their social relationships and in the meaning they attached to their life activities, perhaps because cancer may not be as directly influenced by health habit changes as is true of heart disease, but may be amenable to finding purpose or meaning in life.

In the past, the benefits reported by patients in response to illness experiences have sometimes been dismissed by researchers and practitioners as inconsequential, short-lived, or trivial (Aspinwall & Clark, in press). However, psychological
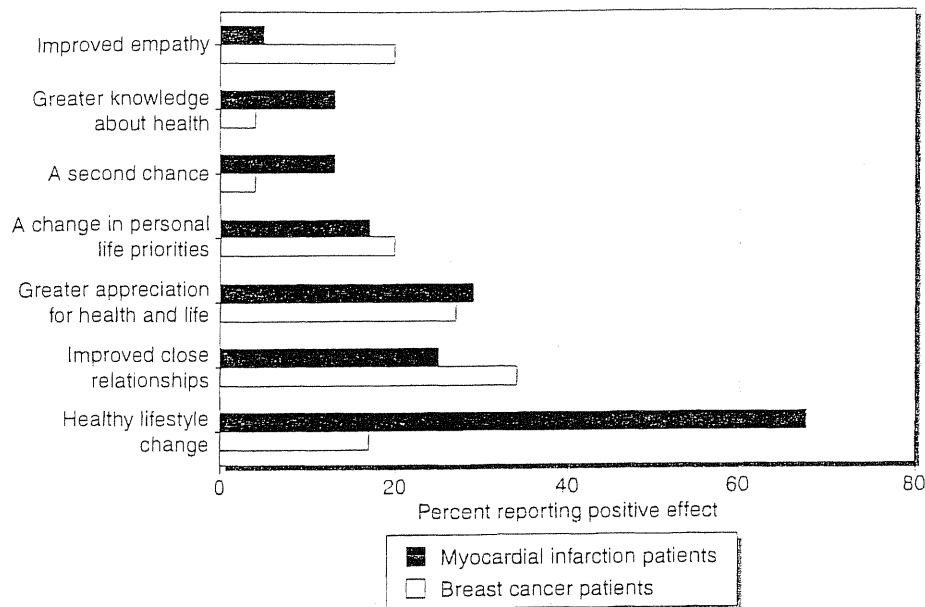
Figure 19.1 This Figure Shows the Positive Life Changes Experienced by Patients Who Survived a Myocardial Infarction and by Cancer Patients in Response to Their Illness. *Source:* "Positive Effects of Illness Reported by Myocardial Infarction and Breast Cancer Patients," by K. J. Petrie, D. L. Buick, J. Weinman, and R. J. Booth, 1999, *Journal of Psychosomatic Research, 47*, pp. 537–543. Reprinted with permission from Elsevier.

theories that emphasize the benefits of these positive experiences have provided a basis for viewing these insights not only as real, but as critical for subsequent adjustment. Research has now verified that benefit-finding in chronic and terminal illness is common and associated with lower levels of psychological distress (e.g., Folkman, 1997; see Updegraff & Taylor, 2000, for a review) and with greater attentiveness to actions that may improve health (e.g., Carver et al., 1993; Taylor et al., 1992). Such work provides a yield to practitioners, as they observe and attempt to respond to the often paradoxical positive changes they see in their patients' responses to illness. Rather than feeling concern that their patients may be defensively ignoring the legitimate risks their health problems pose, practitioners may have some assurance that these positive perceptions are adaptive, fostering psychological adjustment and attentive self-care.

In addition, how people cope with disease can affect their subsequent psychological health and illness-related behavior. For example, Annette Stanton's program of research has examined the relationship between finding benefits in medical illness and subsequent well-being. In one study with women who had breast cancer, Stanton and colleagues found that benefit-finding in the cancer experience was associated with better adjustment (Stanton & Snider, 1993). Subsequent research examined whether an intervention that promoted benefit finding would lead to more positive physical and psychological outcomes. In this study (Stanton & Danoff-Burg, 2002), women with early-stage breast cancer were randomly assigned to one of three writing conditions: (1) an emotional expression condition in which they wrote about their deepest thoughts and feelings regarding

breast cancer; (2) a condition emphasizing positive thoughts and feelings, in which they wrote about benefits that they had found in the experience; and (3) a control group in which they wrote about their psychological and physical symptoms. In terms of psychological outcomes, women (particularly those who were high in avoidance) who wrote about the benefits they found in their cancer experience reported less psychological distress. Further, both the emotional writing group and the positive experiences writing group made significantly fewer visits to the doctor for cancer-related morbidities at a three-month check up. This research demonstrates a causal link between finding benefits in illness and psychological and health-related outcomes.

PSYCHOLOGICAL COFACTORS IN THE COURSE OF ILLNESS

The yield of positive psychology for health issues has expanded to include a consideration of psychological cofactors in the course of illness. Considered preposterous at one time, the idea that positive states of mind may slow the course of illness and facilitate recovery is coming to be widely acknowledged.

Positive beliefs, such as the ability to find meaning in threatening events, have been tied to a slower course of illness among people infected with HIV (Bower, Kemeny, Taylor, & Fahey, 1998). Positive affect is associated with lower risk of AIDS mortality (Moskowitz, in press). Optimism, even unrealistic optimism (G. M. Reed, Kemeny, Taylor, & Visscher, 1999; G. M. Reed, Kemeny, Taylor, Wang, & Visscher, 1994; G. M. Reed, Taylor, & Kemeny, 1993) has been associated with a slower course of illness among people infected with HIV. Among men and women recovering from coronary heart disease, those with greater self-esteem and optimism were less likely to suffer from an additional heart attack or need additional angioplasty (Helgeson & Fritz, 1999). A study by Levy, Slade, Kunkel, and Kasl (2002) found that older individuals who held more positive self-perceptions of aging (measured 23 years earlier) lived seven and a half years longer than those with less positive self-perceptions of aging in earlier life. The advantages associated with these positive beliefs remained in place after controlling for potential demographic and health-related confounds.

Such findings have led to an interest in the biopsychosocial pathways by which such impressive effects may be mediated. Positive beliefs may have beneficial effects on the cardiovascular, endocrine, and immune systems (e.g., Seeman & McEwen, 1996; Taylor et al., 2003b; Uchino, Cacioppo, & Kiecolt-Glaser, 1996) and these effects, in turn, may moderate disease course. Helgeson and Fritz (1999) for example, suggest that self-esteem and optimism may promote better health outcomes among coronary heart disease patients because they are associated with reduced neuroendocrine and autonomic responses to stress. Evidence consistent with this pathway comes from laboratory research examining whether extremely positive self views (self-enhancement) are associated with positive or negative biological responses to stress (Taylor et al., 2003b). They found that participants who were high self-enhancers, that is, who saw themselves as possessing many positive characteristics and traits, responded to a stressful task with lower autonomic activity, as assessed by heart rate and blood pressure, relative to low self-enhancers. In addition, high self-enhancers had lower baseline cortisol levels than

low self-enhancers, which suggests that their hypothalamic-pituitary-adrenocortical axis may be less chronically activated or less recurrently activated in response to stress as well.

Insights from positive psychology have been invaluable in bringing to light the mechanisms whereby psychosocial cofactors affect the course of illness, and without these insights, such knowledge would have been slow to develop. Although the intervention implications of these findings have yet to be fully explored, the strong empirical basis for relating positive states of mind to illness progression suggests considerable intervention potential (cf. Stanton & Danoff-Burg, 2002).

CONCLUSION

We have focused on only a few of the rich and varied examples of how insights from positive psychology provide both a scientific understanding of health, illness, and their determinants and course, as well as a theoretical basis for clinical intervention and practice. Numerous other examples are actively being pursued by health psychologists. As such, the bridges between positive psychology and health psychology are manifold, robust, and extremely fruitful.

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