

The Value of Positive Psychology for Health Psychology: Progress and Pitfalls in Examining the Relation of Positive Phenomena to Health

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Abstract The growth of the “positive psychology” movement reflects increased scientific and lay interest in the relation of positive phenomena to mental and physical health and the corresponding potential for interventions that promote positive feelings, thoughts, and experiences to improve health and well-being. In this article, we (1) consider research on optimism, sense of coherence, and posttraumatic growth that predates the contemporary emphasis on positive psychology, but has clear and increasingly well-supported connections to health psychology, (2) examine several potential mechanisms through which such positive phenomena may influence the etiology, progression, and management of illness, (3) identify four pervasive but misleading assumptions about positive phenomena that may limit both scientific research and practical application, and (4) caution against serious pitfalls of popular views of positive thinking, such as its promotion as a cure for cancer and other diseases. We conclude with recommendations for the balanced scientific investigation and application of positive phenomena.

Keywords Positive psychology · Cancer · Meaning · Optimism · Posttraumatic growth

Introduction

The explosion of research on “positive psychology” includes multiple theoretical and research areas that share a common focus on positive human functioning, psychological health, and adaptation to illness and other forms of adversity [1–5]. Although many of these lines of research predate the use of the term “positive psychology” [2], this increased emphasis on positive phenomena has generated a corresponding upswing in scientific and lay interest in such topics as positive affect, meaning, mastery, personal growth, forgiveness, gratitude, hope, optimism, and spirituality, their relation to mental and physical health, and their potential for applications to promote well-being and health.

When we consider the contribution of these perspectives to health psychology, we find many ideas that may lead to interventions that promote healing and health. In this article, we (1) consider research on such concepts as optimism, meaning, and growth that predate the current emphasis on positive psychology, but have clear and increasingly well-supported connections to health psychology, (2) examine multiple mechanisms through which these and other positive phenomena may be related to health outcomes, including the etiology, progression, and management of illness, (3) identify pervasive but misleading assumptions about positive beliefs and states that may limit both scientific research and practical application, and (4) outline strategies for avoiding some pernicious popular views of positive thinking in order to pursue the balanced scientific investigation and application of positive phenomena to promote human health and well-being. This article is not an exhaustive review of any of these issues, but rather an illustrative one that we hope will contribute to the ongoing debate about the value of positive phenomena for promoting health and managing illness.

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The Original Positive Psychology

Much of the work that may be considered to fall within “positive psychology” originated before the use of the term in 2000 when Seligman and Csikszentmihalyi [2] organized the field around three themes: positive experience, positive personality, and positive communities and institutions. Psychologists have long been concerned with understanding how people respond to adversity (captured by such concepts as adaptation, resilience, thriving, and growth [6–9]) and whether particular personal, social, and developmental factors may be protective of long-term mental and physical health [10–14]. Some key contributions to this effort— notably, cognitive adaptation theory [6] and dispositional optimism [15, 16]—originated within health psychology itself in studies of diseases such as breast cancer and heart disease. It is beyond the scope of this article to review many of the positive psychology constructs that are related to health, so we will consider some representative and well-developed areas of study: sense of coherence [9, 17], optimism [15, 16], and benefit-finding and posttraumatic growth [18–20]. In each case, health psychology has already benefited from these perspectives and the field is likely to draw on them in useful ways in the future. We will highlight some of the work that makes this case. However, we caution that we should not conceptualize these variables that have a “positive flavor” as *contained* within something we call positive psychology. If we divide the world into positive psychology and not and designate specific concepts as “positive” or “negative,” we may create artificial barriers in our communications, the development of our theoretical models, and our decisions about variables to include in our research and interventions (cf. [21, 22]).

Sense of Coherence

Antonovsky [17] attempted to understand the question of how some persons stay healthy while others develop stress-related disorders. The focus in this work was “salutogenic” as opposed to pathogenic, and this certainly brings it into the realm of positive psychology that was to be promoted by Seligman and others in later years. Antonovsky described three elements of sense of coherence: comprehensibility, manageability, and meaningfulness. Events that are stressful or traumatic may appear to be chaotic, random, and inexplicable and thus pose a challenge to these elements of people's lives. Events that are undesirable can be made less stressful to the degree that people can comprehend them. Events will also be less stressful, even if undesirable, if people perceive that they have the resources necessary to cope with or manage these events. The resources can be internal or they may be controlled by

others who have good intentions. This leads to a belief that, somehow, the things that are happening will be tolerable. Finally, meaningfulness may be found in even the most unfortunate circumstances and certain people may be more able to approach events in a way that allows meaning to be found. Antonovsky sees meaningfulness as driving people to understand and manage events, and therefore, playing a role as the most important aspect of sense of coherence (see also [23–25]). It is important in order that people stay healthy for meaningfulness to be found in one or more crucial areas of life functioning: inner feelings, interpersonal relationships, one's major activity, and existential issues.

Optimism

Optimism is a generalized expectancy for positive outcomes that appears to be trait-like and predicts how people cope with stress. The robust literature on optimism in relation to health psychology has been recently reviewed [26, 27]. Dispositional optimists tend to engage more frequently in approach-oriented forms of coping, to be flexible in their use of adaptive coping strategies in regard to controllability of stressors [28], and to have greater perceived capability to manage potentially traumatic events [29]. Optimism has been associated with better coping with a variety of health problems (e.g., breast cancer [30, 31] and human immunodeficiency virus [HIV] infection [32]). Optimism is also associated with positive health behaviors [32, 33], better recovery from certain medical procedures [16], positive changes in immune system functioning [34], and improved survival rates [33, 35].

Benefit-finding and Growth

Benefit-finding and posttraumatic or stress-related growth have assumed an important place in health psychology in recent years [36, 37], and these related concepts appear to dovetail with the themes of positive psychology. Finding benefit in adversity or experiencing personal growth as one deals with the aftermath of stress and trauma has been recognized as common among people experiencing a variety of negative events, including physical illnesses (e.g., [38]). These concepts are distinct from sense of coherence or resilience, which emphasize how people resist adversity or bounce back from it [12, 14]. Posttraumatic growth, in particular, emphasizes a transformation of people in the aftermath of traumatic events that may shatter the assumptive world of those experiencing them [39], requiring a reconceptualization of fundamental beliefs about self, others, and the future [9], producing personal growth. This growth may include a greater sense of personal strength, a greater appreciation of life, improved

relationships with others, spiritual change and development, and new life opportunities [40, 41]. A less pervasive change may also be seen in those who may not reorder their basic beliefs, but nevertheless make important changes in behaviors such as smoking and diet in the aftermath of major illness [42]. Of particular interest, a recent review of the qualitative literature on posttraumatic growth and life-threatening illness found that only 17 of the 57 studies identified specifically focused on posttraumatic growth, while the rest uncovered reports of growth rather serendipitously [43], suggesting that researchers can easily miss reports of positive changes if they do not specifically ask about them. Most of these unsolicited reports were obtained in studies of cancer patients who reported the domains of posttraumatic growth described by Tedeschi and Calhoun [40], as well as positive changes in health behaviors.

Potential Mechanisms Linking Positive Phenomena with Positive Health Outcomes

Cumulative Evidence for a Prospective Independent Link between Positive Phenomena and Multiple Health Outcomes

In order to be convinced of the value of such positive phenomena as sense of coherence, optimism, benefit-finding, and posttraumatic growth to the field of health psychology, we need data to support the relationship of these variables to favorable health status or outcomes and ways to demonstrate how any such relationships might have biological, behavioral, or social processes mediating them. Such evidence is accumulating—three recent meta-analyses have concluded that optimism and/or subjective well-being (typically assessed by measures of positive affect) have a reliable, positive, and prospective relationship to multiple short-term and long-term health outcomes in both healthy and ill samples [27, 44, 45]. Importantly, the relation between positive states and health outcomes is not explained by the detrimental effects of either pessimistic expectations or state or trait forms of negative affect, such as distress, depression, or anger, and the benefits associated with positive states are comparable in magnitude to the deleterious effects of these widely studied negative states [27, 45]. With respect to studies of mortality, it is important to note that the evidence for the protective benefits of positive thoughts and feelings seems to be stronger for healthy samples than for ill samples and that the strength of the findings seems to vary by disease. In particular, specific results for cancer mortality, unlike those for cardiovascular disease, renal failure, or HIV, were either weaker [27] or nonsignificant [44].

Multiple and Potentially Interrelated Pathways Through Which Positive Phenomena May Influence Health

Researchers are increasingly recognizing that concepts with a “positive flavor” have links to multiple processes likely to influence health outcomes including biological processes, such as neuroendocrine and immune function, that may be directly related to disease progression and symptoms [27, 45–47] and behavioral and social processes, such as preventive behaviors, risk behaviors, social support, appraisals of potential stressors, coping, and attention to health risks [48–50]. For example, optimism predicts multiple forms of preventive health behavior and self-care, including greater exercise, healthier diet, and not smoking [32, 33, 51], whereas fatalism shows consistent prospective and reciprocal associations with multiple serious health-compromising behaviors, such as unsafe sexual activity, suicide attempts, and fight-related injuries [52]. Optimism and positive affect are also associated with greater perceived social support and more frequent, higher-quality social interactions [46, 53–55]. Finally, although such effects have received considerably less research attention, positive beliefs and expectations may also promote medical adherence, including participation in rehabilitation efforts [56]. Indeed, randomized controlled interventions to improve specific illness perceptions among myocardial infarction (MI) patients regarding the timeline, consequences, and control of heart disease (for example, belief that one's heart attack had created irrevocable damage and that one would need to reduce his or her activities significantly over the long-term) have been shown to speed return to work and improve symptoms [57].

It is important to recognize not only that there are multiple pathways through which positive phenomena may influence health outcomes, but that these pathways may have important reciprocal relations over time. In their examination of psychosocial factors that may influence health among women with breast cancer, Antoni, Carver, and Lechner [58] cite dispositional optimism, benefit-finding, social support, and anxiety reduction as resilience factors and also construct a model to account for how these variables might affect stress physiology [59, 60]. They suggest that such psychosocial variables relate to neuroendocrine and immune system regulation and, in turn, affect tumor growth through stress-induced dysregulation. Accordingly, they suggest that development of more approach-focused coping strategies, anxiety reduction techniques, and social skills training that improves ability to utilize social support could have a salutary effect on immune system functioning. A study of a group intervention that involved teaching these types of strategies to breast cancer patients found reductions in cortisol that were associated with increases in benefit-finding among participants [58].

Similarly, Epel, McEwen, and Ickovics [8] reported that women scoring higher on posttraumatic growth, particularly appreciation of life and spiritual change, habituated more quickly to a laboratory-induced stressor as measured by cortisol levels.

As suggested by the above findings, an important development in the study of positive phenomena and health has been the study of positive beliefs and states within the laboratory stress challenge paradigm. While such designs cannot, of course, replicate the experience of managing cancer or other serious illnesses, they do provide precise experimental control of positive phenomena and objective measurement of physiological outcomes. Thus far, such research suggests that both preexisting and experimentally induced forms of positive thinking (self-enhancement and self-affirmation, respectively) have similar salutary effects on stress physiology. Specifically, a laboratory stress challenge paradigm demonstrated that high self-enhancers—people who view themselves in a more positive light than others view them—had lower cardiovascular responses to stress and more rapid recovery, as well as lower baseline cortisol levels [61]. Self-enhancers appear to have higher self-esteem, optimism, and belief in their ability to master situations, and this, in turn, may lower hypothalamic–pituitary axis activity. Importantly, similar findings have been obtained for experimental manipulations of various forms of self-affirmation among people managing both laboratory [62] and naturalistic stressors [63], suggesting that the benefits of self-affirmation may be obtained by people with lower levels of resources. Indeed, the physiological benefits of experimentally induced self-affirmation were strongest in the naturalistic stressor study [63] among the most psychologically vulnerable participants.

Taken together, results from interventions with cancer patients and experiments in which positive beliefs are induced suggest that adaptive capability on the psychological and physiological levels may be linked and that further scientific investigation of such links may improve our understanding of the multiple pathways involved. For example, such links may occur through appraisal and coping mechanisms whereby those who are more optimistic and more able to find benefit or experience growth are more able to use challenge rather than threat appraisals of adverse events [64, 65] and to process their experiences with adverse events using deliberate, reflective rumination mechanisms [66]. In this way, illness may be transformed from a miserable, frightening event to be endured to one that has meaning [67]. When this occurs, there may be more of a focus on intrinsic goals [68], leading to a reduction in anxiety and more positive affect. Both intrinsic goals and positive affect, in turn, have been associated with more robust immune system responses [64].

The study of such links may be profitably extended to the other important pathways through which positive phenomena may be related to health outcomes, notably better health behaviors and improved social support. Although these pathways may not be as amenable to experimental investigation, as they rely on longer-term patterns of preventive health behavior and the maintenance of close and satisfying social ties, increasing evidence suggests that these key behavioral and social processes may be linked to such positive phenomena as benefit-finding and other efforts to find meaning in adversity. For example, MI and breast cancer patients exhibited different kinds of positive effects of their diseases—the MI patients (mostly men) engaged in healthy lifestyle change and the cancer patients reported increased empathy and improved relationships [69]. Research is also starting to uncover links between religious or spiritual efforts to find meaning in adversity and important behavioral and social pathways linked to health outcomes. For example, in a small exploratory study of high-risk familial melanoma patients and their family members, finding religious or spiritual meaning in one's familial cancer history and/or melanoma genetic test result predicted greater concurrent adherence to recommended photo-protective behaviors and lower reports of sunburns and tans [70]. Religious participation has also been linked to greater perceived social support and greater meaning found in loss [71].

It appears that in order to understand the relationships between positive psychology constructs and positive health outcomes, researchers must be open to exploring a number of pathways of influence on these outcomes. Some pathways may involve profound changes in perspectives on living that will promote changes in health and social behavior that yield better health outcomes. Others may involve changed life perspectives that reduce stress responses and have effects on immune system functioning. Other pathways to better health outcomes might proceed from more specific changes in health or social behavior that yield health benefits, without more general personal transformations. Prospective designs that are sensitive to these various pathways and trajectories and that consider important reciprocal links among changes in health behaviors, social processes, appraisals, coping strategies, and disease-relevant biomarkers will continue to elucidate the ways in which positive phenomena may be related to health outcomes over time.

Pervasive and Limiting Assumptions about Positive Beliefs and States

Continuing process-oriented efforts to understand multiple, interrelated pathways through which positive states—

emotions, expectations, appraisals, and other beliefs—may influence health can only improve our science and practice. However, we suggest that progress in understanding these links may be unnecessarily limited by a set of pervasive and likely unwarranted assumptions about the nature and function of positive phenomena in general [48, 72–75], specifically that positive thoughts and feelings (1) undermine systematic and efficient thinking, especially for negative information; (2) cannot coexist with negative thoughts and feelings; (3) have effects that are symmetrical and opposite to those of negative thoughts and feelings; and (4) are pleasant, but trivial, having few lasting effects. In the following sections, we briefly examine these assumptions and their likely impact on research and practice at the interface of positive psychology and health psychology.

Positive Thoughts and Feelings Undermine Decision-making, Especially for Negative Information

Multiple accounts of the effects of positive mood on judgment suggest that positive beliefs and states decrease the quality of attention to information, in general, and to negative information, in particular, either through mood-congruent processing, motivations to maintain a positive mood, and information that the environment is safe and one can relax vigilance to negative information or through distraction caused by the large and diverse set of associations primed by positive mood (for review, see [72]). These accounts share the central assumption that positive beliefs and states have an unwavering deleterious main effect on cognitive processes: they make people less systematic and discerning thinkers, especially for negative information, and as a result, they promote risky judgments and behaviors. This assumption has an especially pervasive corollary—that positive beliefs and states promote appraisals of virtually anything as positive, favorable, or likely through mood-congruent processing. Therefore, optimists, for example, should be prone either to ignoring health risks entirely or to appraising them as less serious and less likely.

This assumption persists despite more than three decades of evidence that induced positive affect promotes more careful, systematic, and efficient decision-making. Programmatic research by Isen and her colleagues shows, for example, that induced positive affect, compared to a neutral condition, promotes more thorough and efficient medical decision-making, greater flexibility in judgment, and better management of real versus hypothetical risks [75, 76]. Importantly, although positive affect does promote engagement in pleasant activities, such as play and exploration, it does not do so at the expense of concurrent task demands [73, 77]. That is, when some other goal is relevant, people in a positive mood readily forgo pleasant activities in order

to focus on necessary tasks. Thus, positive affect rarely has an unwavering and deleterious effect on cognitive processes; instead, positive beliefs and states seem to be quite responsive to situations that call for increased scrutiny of personally relevant information, even when such information is negative or unfavorable. Furthermore, positive affect seems to improve the ability to switch set [78], which may account for many of the findings regarding improved decision-making under conditions of induced positive affect.

The conclusion that positive states promote adaptive responses to new and potentially useful negative information is further supported by two independent lines of research, one examining the relation of dispositionally held or experimentally induced positive beliefs to the processing of health risk information [79–85] and the other examining the effect of induced positive moods on interest in information about one's weaknesses [86–88]. Both lines of work have obtained similar findings: positive beliefs and states predict greater selection of and attention to personally relevant negative information. Notably, these findings are obtained even when selection of the negative information comes at the expense of an opportunity to learn positive or favorable information about the self. Furthermore, none of these studies found that positive beliefs and states resulted in more favorable appraisals of the negative information presented. Instead, when the health risk or personal liability information was described as self-relevant or selected to be self-relevant based on participants' health behaviors, participants appraised the information as negative and devoted attention to acquiring additional information about it in an unbiased and nondefensive manner. Thus, there is little evidence that being happy or optimistic makes people oblivious to important negative information.

Positive and Negative Thoughts and Feelings Cannot Coexist

The next assumption—that positive and negative feelings cannot coexist and, therefore, that people who are experiencing a negative life event or serious illness cannot and *should not* simultaneously experience positive feelings or expectations—is one that was identified early in the scientific study of psychological responses to such negative life events as bereavement and physical disability [89–91]. This assumption may lead researchers and clinicians to omit measures of positive thoughts and feelings from their questionnaires and interview protocols. It may also influence the interpretation of such thoughts and feelings when they are expressed by patients and their loved ones. Specifically, the expression of positive thoughts and expectations by people facing threats to their own or others' health are often seen not as indications of a person's efforts to find meaning in

adversity, but instead as indications that the person is not coming to terms with the gravity of his or her situation [46]. Thus, according to this view, an important goal should be to disabuse people of such expectations.

This assumption, too, persists in the face of a great deal of counterevidence. It is now well-established that life-threatening illnesses and other negative life events can create both positive and negative thoughts and feelings [92], that people experiencing severe losses report daily positive affect [89, 90], and that there are multiple “normal” trajectories for the experience of negative thoughts and feelings following loss, including patterns in which intense negative feelings either are not experienced or do not persist [93]. Furthermore, the “failure” to experience intense distress early does not predispose people to experiencing greater distress later. With respect to favorable expectations reported by people managing illness and other forms of adversity, it is now recognized that optimistic beliefs are not only common among people managing life-threatening illnesses, but also frequently associated with better psychological adaptation, better health practices, and better immune function [47].

These findings suggest that research at the interface of positive psychology and health psychology should focus not only on the presence of positive thoughts and feelings among people managing serious illness, but also on the precise role that such feelings may play in managing both the illness itself and the psychological and social demands it may create. For example, the joint activation of positive and negative thoughts and feelings may allow people to process the negative thoughts and feelings surrounding a severe stressor ([94]; see also [95]). In this view, consistent with the ideas noted earlier, the experience of positive thoughts and feelings is central to the effective management of negative thoughts and feelings, not simply a distraction or a nicety. An important implication of this line of reasoning is that interventions that seek to promote positive emotions, expectations, or life changes among people managing serious illness or loss may do more than distract people from their troubles: they may play an important role in the effective management of their situation.

Positive and Negative States are Symmetrical and Opposite in Their Effects

A third assumption that limits research and practice is the assumption that positive and negative states are symmetrical and opposite in their effects; that is, if negative emotions and expectations have one effect (for example, alerting people to danger), then positive emotions and expectations *must* have the opposite effect (decreasing vigilance to potential dangers). This assumption has been notably disproven in several research areas, including decision-making and

attention to risk information, as reviewed earlier, and also helping behavior. In these lines of research, it has been demonstrated that both induced positive and negative states have effects that are distinct from neutral conditions, and that they can have similar effects on judgment and behavior, but for different reasons [74].

There are several implications of this point for the design of research and intervention. First, many experiments test positive versus negative states without the inclusion of a neutral condition. Such designs preclude a determination of the independent effects of positive and negative states—the effects obtained may be due to changes created by positive states, changes created by negative states, or both. As but one example of the conceptual advances that may result from avoiding assumptions about the symmetrical and opposing effects of positive and negative states, consider King and Miner's extension [96] of Pennebaker's therapeutic writing paradigm [97]. Most accounts of the health benefits obtained from therapeutic writing suggest that they derive from emotional catharsis and intense sustained efforts to find meaning from previously undisclosed trauma. However, King and Miner found that participants randomly assigned to write about perceived benefits from a traumatic experience experienced the same lasting decrease in doctor visits over the next several months as participants instructed to write about a traumatic event. That is, both groups obtained benefits, compared to control participants. Interestingly, the essays written by participants instructed to focus on perceived benefits not only included a higher proportion of positive emotion words (as would be expected), but also included a higher proportion of cognitive mechanism words related to insight and causation than essays written in the other conditions, and the use of these insight-related terms predicted fewer health center visits for illness 3 months later. Consistent with the ideas presented earlier, King and Miner suggested that benefit-finding may foster effective self-regulation of the negative emotions caused by the traumatic experience and efforts to find meaning in it.

Second, with respect to studies of coping and mental and physical health outcomes, the need to test whether positive constructs (e.g., positive affect, dispositional optimism) have unique effects over and above—or simply different from—those of related negative constructs (e.g., negative affect, neuroticism, pessimism) remains acute. Progress on this score is being made [27, 44, 45, 95, 98–101], but more remains to be done to understand the unique health effects of positive thoughts, feelings, and expectations [46]. This is perhaps where a greater effort to develop laboratory analogs to test induced positive states—for example, Fredrickson and colleagues' work on physiological undoing [102]—may aid our understanding of their unique effects. However, Pressman and Cohen [46] caution that positive affect inductions that are particularly activating or engaging may

differ from the naturalistic experience of positive emotion not only in duration, but also in intensity and may, therefore, have different physiological effects.

A third implication of this assumption is that the measurement strategies employed in many studies are likely to fail to capture unique aspects of positive thoughts, feelings, and expectations. Many studies, including those said to evaluate the effects of positive thinking on health outcomes, include only measures of negative thoughts, feelings, and outcomes and assume that low scores on such instruments represent the presence of positive thoughts and feelings. It is beyond the scope of this article to discuss the lively debate concerning the separability of positive and negative affect as independent dimensions of experience (for reviews and divergent perspectives on the bipolarity of affect, see [103–106]); however, a simple example may suffice: just as there may be more to be healthy than not being ill, there is likely to be more to being happy or fulfilled than not being depressed or anxious [107]. An intriguing recent analysis by Ryff and colleagues [108] examining the relationship between multiple aspects of psychological well-being and ill-being and diverse biomarkers found more evidence consistent with the idea that positive and negative mental health outcomes have distinct associations with neuroendocrine and cardiovascular biomarkers than that such effects are mirror opposites. Accordingly, research designed to evaluate the association of positive thoughts and feelings with subsequent health outcomes should include measures specifically designed to assess the presence of those thoughts and feelings, not just the absence of negative thoughts and feelings, and symmetrical and opposing relations (i.e., bipolarity) should not be assumed. Additionally, researchers and practitioners should be aware of important efforts to conceptualize psychological well-being as more than the presence of positive affect (e.g., dimensions other than happiness [109, 110]) and to delineate cultural differences in the kinds of positive emotional experience that people seek (again, dimensions other than happiness [111]).

Positive States are Trivial Niceties, Incapable of Creating Any Lasting Benefit

The last assumption we wish to discuss follows in part from the first three, namely, that positive thoughts and feelings and, by extension, efforts to promote them are ultimately trivial. In this view, positive feelings are seen as pleasant, but incapable of creating any lasting benefit, especially for people managing serious illness or loss. Accordingly, efforts to promote positive thoughts and feelings not only encourage false hope for benefit, but also may take resources away from the important work of managing negative realities. We suggest that many of the lines of

research and intervention that we have highlighted in this article present viable counterpoints to this assumption, but also that much work remains to be done to test these ideas and the potential mechanisms through which positive states may improve health outcomes. To the extent that positive beliefs and states improve immune function and provide other physiological benefits, such as decreased cardiac reactivity; promote social support-seeking and receipt; promote more active forms of coping; improve attention to health risk information and subsequent medical decision-making; and foster better health practices, they may play an important role in the longer-term management of health risks and serious illness [47, 48, 50, 112]. In these ways, positive beliefs and states may do more than make us feel good in the short-term: they may also build personal and social resources in ways that promote better long-term outcomes [54, 113, 114].

A Prescription for Advancing Science and Practice, While Avoiding the “Tyranny of Optimism”

Thus far, we have identified several lines of research with direct implications for human health and well-being and we have identified several pervasive and likely unwarranted assumptions concerning the role of positive thoughts, feelings, and expectations in the management of serious illness and other forms of adversity. At this point, it may be appropriate to directly address some of the obvious dangers of promoting positive thoughts and feelings for either the prevention or management of illness. Perhaps, the principal danger of popular versions of positive psychology, namely, those with a seemingly relentless emphasis on mandating optimism, individual happiness, and personal growth no matter the circumstances, is that the general public may come to believe that one can conquer cancer by thinking positively and that if one is not getting a good response, one is not thinking positively enough, not laughing enough, or not being spiritual enough. Indeed, the explicit blame of people with serious illness for their failure to cure themselves in best-selling popular treatments of positive thinking [115] is shocking and reprehensible (for discussion, see [116–118]).

Concerns about such “tyranny of positive thinking” [118]—that is, mandating positive thinking and the suppression of negative thoughts and feelings as the best way to manage serious illness—were also raised in the 1950s in response to the success of Norman Vincent Peale’s books and lectures ([119]; for discussion, see [120]). Specifically, the leap from the New Thought Movement mantra, “Change your thinking, change your life,” to blaming people who get sick (and avoiding them and their negative thoughts) was identified several decades ago. So, too, were

concerns that an emphasis on the potential benefits of positive thinking would inevitably come at the expense of recognizing real problems in the world:

With saccharine terrorism Mr. Peale refuses to allow his followers to hear, speak or see any evil. For him real human suffering does not exist; there is no such thing as murderous rage, suicidal despair, cruelty, lust, greed, mass poverty, or illiteracy. All these things he would dismiss as trivial mental processes which will evaporate if thoughts are simply turned into more cheerful channels ([120], p. 399).

Saccharine terrorism, victim-blaming, and the promotion of mindless versions of positive thinking for personal gain (e.g., *The Secret's* “Ask. Believe. Receive.”) are no less problems today, but they are not caused by scientific efforts to understand the neurobiological, cognitive, social, developmental, and structural underpinnings of positive phenomena or to develop interventions to provide potential benefits to those who seek them. Nevertheless, to avoid promoting false hope to patients and their families and contributing to a new generation of “saccharine terrorism,” health psychologists may need to become more proactive in countering exaggerated popular claims based on their own and others' work (see, e.g., [121]). At the same time, however, we should not prematurely abandon scientific efforts to understand a more complete picture of adaptive functioning that includes elements that promote successful management of illness and, in some cases, restoration of health.

By focusing on concepts such as sense of coherence, meaning, optimism, positive affect, benefit-finding, cognitive adaptation, and growth that have been adopted by the field of health psychology (or, in some cases, have originated in it), we can see ways in which our discipline can become better informed about the role that these constructs play in resistance to illness, managing illness, and healing processes. The use of prospective, process-oriented, and where possible, experimental designs to examine the relation of positive phenomena to multiple health outcomes will be essential to advancing our understanding of these processes. There are initial indications in the work of Antoni and his colleagues [58] that effective interventions based on these constructs (e.g., benefit-finding, anxiety reduction, and social support) might be designed to improve health and quality of life in seriously ill patients. To the extent that researchers move beyond cross-sectional studies and anecdotal reports of positive outcomes in people with serious illness, continue to demonstrate direct links with mechanisms related to immune system functioning, cardiac reactivity, and other aspects of stress physiology, and broaden their investigations to examine a comprehensive set of potential pathways through which positive phenomena may influence health

(e.g., through social behavior, health-promoting and health risk behaviors, coping with adversity, and health-related decision-making), positive phenomena are likely to assume a more prominent role in health psychology.

An important part of such developments will be openness to debate. The efforts of researchers who pose constructive challenges to core assumptions and findings—for example, whether benefit-finding and perceived gains following adversity are real [122, 123] and whether there are some circumstances that defy efforts to find meaning or benefit [124]—advance the field by identifying new explanations and potential limiting conditions [125]. The same is true in the study of positive thinking in which efforts to identify different forms of positive thinking and to determine which forms promote goal attainment and health and which do not [126–131] similarly advance the field and offer the promise of more effective interventions. Critics who identify some of the potential pitfalls that may occur in the application of research findings, for example, those involving spirituality and health, to medical practice [132] make an important contribution, as do those who question whether the strength of research evidence for particular interventions warrants their use [133, 134]. Finally, researchers who spur debate about whether positive beliefs like optimism have a meaningful and independent conceptual status in their own right as opposed to being the flipside of neuroticism ([135], but see [101]), who seek to identify the “active ingredient” in measures linked to health outcomes [46, 136], and who question the relation of newly identified concepts, theories, and approaches to existing ones [22, 137] raise the conceptual challenges necessary to a cumulative science.

Conclusion

As research at the interface of positive psychology and health proceeds, we believe that researchers and practitioners should avoid contributing to the “tyranny of positive thinking” by rejecting a singular focus on positive outcomes of illness and by actively debunking spurious claims about the curative power of positive beliefs. At the same time, however, researchers and practitioners should also avoid the premature rejection of systematic scientific efforts to elucidate the role of positive thoughts and feelings in human health and to develop interventions to promote those that provide benefit. Much remains to be done to elucidate the specific mechanisms through which different positive phenomena may be related to the etiology and progression of cancer and other diseases and to understand how these processes may operate differently for different diseases, including different forms of cancer. In considering the concept of benefit to health, we suggest that it will be important to recognize that interventions that promote

psychological well-being have benefit in their own right, even if they have modest or no demonstrable influence on disease progression. To the extent that our research is designed to assess both positive and negative phenomena, to examine how they may be related over time, to examine multiple pathways through which each may prospectively influence health, and to provide a fair test of positive phenomena by assessing them in their own right, continued research at the interface of health psychology and positive psychology has the potential to illuminate the potential benefits and liabilities of positive phenomena in the etiology, progression, and management of illness.

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