

The Role of Positive Thinking in Health and Healing: A Literature Review

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ABSTRACT

Objective:

Positive thinking is touted as very powerful both as a component of overall well being and an influence in therapeutic treatment outcomes. The purpose of this review is to investigate the scientific and clinical efficacy of these postulations. This review provides an overview and analysis of the most recent literature, including published papers, articles, and research data, concerning the role of positive thinking in health and healing. Research from the field of psychoneuroimmunology will be discussed as it elucidates the physiology of the link between one's affect and immune system through the nervous system. Additionally, the part that positive thinking plays in influencing behavior choices and patterns will be explored. Subsequently, the role of positive thinking as it relates to overall health and wellbeing will be addressed. Finally, the role that positive thinking plays in the healing process will be evaluated, with consideration taken of the power of autosuggestion and the influence of one's own beliefs and perceptions on treatment outcomes.

Data Collection:

A literature search was conducted using the PubMed and Google Scholar computerized databases and bibliographies of relevant articles. The search was limited to publications from 2000-2012. Combinations of the following keywords were searched: positive thinking, optimism, positive emotions, health, healing, recovery, psychoneuroimmunology, placebo effect, autosuggestion, and mind-body.

Conclusion:

The research points to positive thinking as a significant factor both in a person's state of health and wellbeing as well as their ability to recover and heal. Positive thinking appears to particularly influence cardiovascular and immune system health, short and long term surgery recovery, and coping with cancer.

INTRODUCTION

History

Recognition of the value of positive thinking as it relates to health has been around for centuries. It's history dates as far back as 621 BC in the writings of ancient Hebrew proverbs. One proverb, for example, reads "pleasant words are a honeycomb, sweet to the soul and healing to the bones." Around 380 BC the Greek philosopher Plato wrote in *The Republic* "he who is of calm and happy nature will hardly feel the pressure of age, but to him who is of an opposite disposition youth and age are equally a burden." While this topic has deep roots, it has experienced a recent surge in attention. The contemporary attention on positive thinking is believed to have started with the writings and teachings of the minister and author Norman Vincent Peale, whose most well-known book is *The Power of Positive Thinking*. Positive thinking and its connection to health and healing is currently growing interest among scientists, healthcare professionals, and laypeople. While self help books, charismatic speakers, and dubious internet websites preach positive thinking as a panacea for any number of conditions and diseases, whether they be psychological or somatic, researchers are exploring the science and thus validity of such claims.

Positive Thinking

Positive thinking is a well-known and generally understood term, but there is no clearly defined meaning of the idiom. For the purpose of this review, positive thinking is defined as a multifaceted entity of the cognitive state that incorporates choosing affirmative emotions and attitudes, to include joy, contentment, love, forgiveness, hope, courage, and gratitude. Emotions, then, are "short-lived experiences that produce coordinated changes in people's thoughts, actions, and physiological responses," mostly through their extensive impact on neurological pathways and biochemical composition in the brain and body.¹

Health and Healing

The World Health Organization defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”² The human body is always adapting to changes within its internal and external environment in an attempt to preserve an internal equilibrium and optimal functioning. This endeavor is known as homeostasis.

Homeostasis is characterized by a system of feedback controls that operate to stabilize health and functioning, regardless of the changing conditions.³ These changing conditions that the body responds to are also known as stressors. The most common and well understood forms of stressors on the body are psychological, nutritional or biochemical, and biomechanical. The body is able to respond to these stressors and maintain its internal equilibrium and functioning without any signs of imbalance or degeneration until it reaches a certain threshold. When the stress put on the body exceeds the body’s resources or capacity to adapt fluidly, the body defaults into a state of adaptive physiology in order to preserve priority organs and functions. Thus, many signs and symptoms of supposed illnesses or diseases are actually manifestations of the body’s attempt to manage the stresses placed on it. The study of health and healing, then, must be based on providing the body with the nutrients it needs in order to restore and maintain homeostasis. Simply studying the characteristics of disease processes cannot elucidate the path of health or healing. Perhaps part of the current interest in positive thinking stems from a growing disappointment and disenchantment with a health care system that tends to focus on studying disease and illness instead studying that which creates true health. This is precisely where positive thinking comes into play, as positive thoughts and the associated emotions are necessary for optimal brain functioning and thus optimal functioning in the body as a whole.

DISCUSSION

Psychoneuroimmunology

Positive thinking affects health and healing directly through physiological systems.

Psychoneuroimmunology is a branch of medicine that deals with the influence of psychological or emotional states and nervous system activities on immune function, especially in relation to the onset and progression of disease.⁴ This connection is manifested as “brain thoughts influence physiological states via the prefrontal cortex-amygdala-locus ceruleus-hypothalamic-pituitary-adrenal axis.”⁵ The basic notion is that brain thoughts can either be positive, coming from the left prefrontal cortex and promoting homeostatic physiology and inhibiting stress and adaptive physiology via inhibiting the amygdala-locus ceruleus-hypothalamic-pituitary-adrenal axis, or they can be negative, coming from the right prefrontal cortex and promoting stress and adaptive physiology and inhibiting homeostatic physiology via firing the amygdala-locus ceruleus-hypothalamic-pituitary-adrenal axis.⁵ These pathways are constantly stimulated depending on the brain thoughts that are taking place. They continue to be stimulated even in chronic states of thought processes, whether they be positive or negative. One study on immune modulation in response to stress and relaxation found that “acute, brief naturalistic, and chronic stress have difference immune modulatory activities which are harmful to one’s homeostasis, and relaxation can help to maintain that homeostasis.”⁶ Rozanski et al found that “chronic stress and negative emotional states can both invoke a ‘chronic stress response’ characterized by increased stimulations of the sympathetic nervous system and hypothalamic-pituitary-adrenal axis, with resultant peripheral effects.”⁷ On the other hand, they also uncovered data suggesting “that positive psychologic factors, including positive emotions, optimism, and social support, may diminish psychological hyperresponsiveness and/or reduce adverse clinical event rates.”⁷ In addition, Ong et al noted that there is increasing evidence suggesting that positive emotion may

alter disease risk via dampening chronic activation of neuroendocrine, immune, and cardiovascular systems.⁸

Health Behaviors

Positive thinking also influences health and healing through various indirect pathways that lead to health behaviors. The first pathway comprises simply thoughts, emotions, and health behavior. Both positive and negative thoughts elicit specific emotions, and these emotions “exist in the service of motivating behavior, or promoting what are referred to as action tendencies.”⁹

In other words, thoughts produce emotions and emotions direct behaviors. Consequently, thoughts have the ability to influence health habits and lifestyle choices, such as physical activity, diet, substance use, and social engagement.⁹ There is no doubt that health habits, or lifestyle choices, influence health and the healing process. Lifestyle choices determine whether or not the body is provided with the nutrients it needs to restore and maintain homeostasis. Indeed, research shows that “individual differences in positive emotion may afford protection from health risks by affecting the initiation and maintenance of positive health practices over time.”⁸

Continuing along this conduit, Psychologist Barbara Fredrickson has developed the *broaden and build* theory of positive emotions, which describes the form and function of positive emotions such as joy, interest, contentment and love. One of the main premises of the theory is that emotions are not just a signal of optimal functioning, but that they actually produce optimal functioning, both in the present moment and over the long-term. Dr. Fredrickson’s research supports the notion that positive emotions broaden a person’s momentary thought-action repertoire. For example, “joy sparks the urge to play, interest sparks the urge to explore, contentment sparks the urge to savour and integrate, and love sparks a recurring cycle of each of

these urges within safe, close relationships.”¹⁰ The domino effect of these continue in that “by broadening an individual’s momentary thought-action repertoire...positive emotions promote discovery of novel and creative actions, ideas and social bonds, which in turn build that individual’s resources; ranging from physical and intellectual resources, to social and psychological resources. Importantly, these resources function as reserves that can be drawn on later to improve the odds of successful coping and survival.”¹⁰ Not only do positive emotions facilitate healthy functioning, evidence also shows that they may “function as efficient antidotes for the lingering effects of negative emotions;” this is known as the *undo hypothesis*.¹⁰ “In short, the theory suggests that positive emotions fuel human flourishing. Flourishing describes a state of optimal human functioning, one that simultaneously implies growth and longevity, beauty and goodness, robustness and resilience, and generativity and complexity.”¹⁰

Another way that positive thinking indirectly affects health and healing through its influence on health behaviors lies in the mechanism that translates thoughts into physiological states. One such example of this is how thoughts affect sleep, a necessary activity for the promotion of health and healing. Negative mind thoughts activate the amygdala and subsequently fire the sympathetic nervous system through the hypothalamic-pituitary-adrenal axis, resulting in decreased ability to sleep, whereas positive mind thoughts inhibit the amygdala and sympathetic nervous system, resulting in increased ability to sleep.⁵ Sleep deprivation studies support this connection as they have indicated that sleep loss is associated with increases in inflammatory cytokines associated with the stress response.¹¹ Interestingly, “studies in clinical populations with sleep problems, such as primary insomnia patients and those diagnosed with major depression, also show elevations in these same cytokines.” as compared to individuals who do not demonstrate sleep problems.¹¹

Positive Thinking and Health

A plethora of research exists on the topic of positive thinking and its relation to health.

One of the largest areas of research conducted in this field has concentrated on cardiovascular health. For example, one study conducted exploring the role of positive emotions in hypertension in older adults found that “for individuals not on antihypertensive medication, increasing positive emotion score was significantly associated with lower systolic and diastolic blood pressure, [and] for those on antihypertensive medication, increasing positive emotion score was significantly associated with a lower diastolic blood pressure.”¹² Miller et al conducted an even more extensive study on positive affect and the cardiovascular system. They observed the effect of mirthful laughter on the human cardiovascular system. One particular focus was on endothelium as a primary link between emotions and the vascular system. Their study demonstrated significant opposing effects on endothelial vasoreactivity between mirthful laughter and mental stress induced by negative visual and/or auditory stimuli.¹³ Miller et al also studied the effect of laughter on blood pressure, observing that the onset of mirthful laughter causes a rise in intra-arterial pressure, followed by a fluctuation to a more modest elevation in gross coordination with intensity fluctuations of continuing laughter, and finally, at cessation of laughter, a brief decrease of pressure to varying levels slightly below the pre-laughter baseline.¹³ The physiology conjectured to explain the beneficial effects of positive emotions such as those created from laughter on the vasculature is that vascular endothelium expresses μ_3 opiate receptors, and because mirthful laughter induces the release of β endorphins, which in turn have a high affinity for μ_3 opiate receptors, positive emotions may lead to the direct release of nitric oxide.¹³ Nitric oxide has been found to exert “a variety of cardioprotective cellular processes via cellular signaling pathways that include a cGMP-dependent pathway responsible for vasodilation

and reduced platelet aggregation as well as inhibition of leukocyte trafficking for reduction of vascular inflammation.”¹³ Brummett et al also conducted an extensive study on positive affect and its association with cardiovascular reactivity as well as various endocrine markers. As with the previous studies described, they found a significant relationship between positive affect and blood pressure. In their study they found that systolic blood pressure and diastolic blood pressure reactivity were both inversely related to positive affect during sadness recall.⁹ Next they observed the relation between positive affect and the adrenal gland catecholamines, discovering that “positive affect was inversely related to the mean level of norepinephrine.”⁹ Finally, they examined the impact of positive affect on diurnal salivary cortisol levels. The study revealed that “positive affect was inversely related to the increase in cortisol 30 min post awakening.”⁹

The next aspect of health that researchers have focused on in regards to connection to positive thinking is the immune system. One study was conducted investigating emotional style and susceptibility to the common cold. The study found that increased positive emotional style was associated with lower risk of developing a cold, as well as reporting fewer unfounded symptoms.¹⁴ Another study was conducted on forgiveness and immune function. Forgiveness, defined as “a freely made choice to move away from negative cognitive, emotional, and behavioral responses toward a person who caused a hurt and work towards developing positive cognitive emotional and behavioral responses toward that person,” significantly correlated with higher CD4 cell percentages.¹⁵

Positive Thinking and Healing

There is also ample research on the topic of positive thinking and its relation to healing.

One of the primary ways this has been evaluated is studying post surgical patients response to treatment. There is convincing evidence indicating more favorable outcomes both short and long term in patients who demonstrate positive thinking. In a systematic review of the effect of psychological variables on early surgical recovery, “almost all studies found a psychological variable to have a statistically significant effect on one of the examined outcomes.”¹⁶ Specifically, “trait and state anxiety, state anger, active coping, subclinical depression, and intramarital hostility appeared to complicate recovery, while dispositional optimism, religiousness, anger control, low pain expectations, and external locus of control seemed to promote healing.”¹⁶ Another study on psychological factors in postoperative recovery investigated the effect of mood on postoperative fatigue. The research indicated that “postoperative fatigue showed significant associations with negative mood at each stage of follow-up and was significantly predicted by history of mood disorder at 2 days postoperatively.”¹⁷ The study also looked at expectations of the surgical outcome and found that “higher fatigue expectations were self-fulfilling at 3 weeks after surgery, whereas preoperative belief in physical activity [were] beneficial to recovery predicted reduced fatigue at 6 months.”¹⁷ Yet another study on surgery outcomes found that preoperative fear of the long-term consequences of the operation was associated with more pain, poor global recovery, and worse quality of life six months later, while optimism was associated with better recovery and higher quality of life.¹⁸

One way to explain these results involves going back to Fredrickson’s *broaden and build* theory of positive emotions. The theory explains that “the relationship between positive meaning and positive emotions is considered reciprocal: finding positive meaning not only triggers positive emotion, but also positive emotions—because they broaden thinking—should increase the

likelihood of finding positive meaning in subsequent events. These suspected reciprocal relations among positive emotions, broadened thinking and positive meaning suggest that, over time, the effects of positive emotions should accumulate and compound: the broadened attention and cognition triggered by earlier experiences of positive emotion should facilitate coping with adversity, and this improved coping should predict future experiences of positive emotions.”¹⁰

Another way to explain the results is based on the hypothesis put forth that expectations of treatment effects may reduce symptoms normally experienced, particularly pain. The term describing this phenomenon is placebo analgesia. Research shows the mechanism of this process lies in the activity in the descending pain-inhibitory opioid system in the brain and spinal cord that takes place during placebo analgesia.¹⁹ There seems to be significant interconnectedness between opioid activity and positive thoughts and emotions. Studies show that placebo analgesia increases positive emotions and is mediated via opioid activity, and that relaxation and positive emotions increase opioid activity.¹⁹

One more area of study that researchers studying positive thinking and healing have prioritized is cancer.

There is mixed data regarding the efficacy of positive thinking for patients with cancer. For example, Petticrew et al conducted a systematic review and “found little evidence that coping styles play an important part in survival from cancer.”²⁰ The researchers posed several arguments against encouraging positive thinking in cancer patients exist. For one, if positive thinking is seen to influence the outcomes of the illness, then if the outcome is poor the patient may assume an unfair sense of responsibility and guilt.²⁰ Secondly, the challenges faced by cancer patients are monumental, and it is unreasonable to demand patients to be consistently upbeat in this context.²⁰ Finally, patients who feel compelled to think positively may also feel

pressure to control negative feelings, making them unable to express their true experiences.²⁰ While these defenses are valid concerns, they do not apply to all patients, especially those who choose to think positively subconsciously, not out of coercion or obligation. Furthermore, Aspinwall et al found that “positive emotions and beliefs seem not only to be associated with good outcomes among people experiencing adversity, but also to play a role in realizing them.”²¹ The researchers addressed several pervasive assumptions about positive emotions and beliefs that hinder progress in understanding and promoting resilience among survivors of cancer. The first is that positive emotions and beliefs are absent from the experience of patients with severe illnesses or conditions. This has been debunked by a ample research. For example, young adults recently disabled by spinal cord injuries reported positive emotions (e.g., happiness) at higher levels than negative emotions (e.g., anxiety, depression, and anger) within in 3 weeks of their injuries.²¹ Even more so, this notion that positive beliefs and emotions are absent from patients in grave circumstances is incongruent with the finding that “large proportions of people who have experienced cancer and other life-threatening illnesses appear to find benefit in the experience, reporting such positive outcomes as improved quality of life, better interpersonal relationships, and changes in values and priorities (e.g., a greater appreciation of each day, changes in spirituality) as a result of the experience.”²¹ Another assumption is that positive emotions and beliefs are dangerous in that they cause people to tune out or distort negative information. On the contrary, all the studies reviewed found that “optimism predicted greater attention to negative information, especially as the information became more negative and/or more personally relevant.”²¹ It was discovered that “positive beliefs and states, far from interfering with the acquisition and understanding of negative information, seem instead to serve as resources that allow people to manage the emotional costs of considering negative

information, such as health risks and personal failures.”²¹ In further support of positive thinking, Vigore et al studied the psychoneuroendocrine modulation of the regulatory T lymphocyte system in cancer patients. They found that melatonin induced a decline in mean T-reg cell numbers in patients who achieved disease control, whereas no effect was seen in those who had progressed.²² The findings suggest that melatonin “may counteract T-reg cell generation in vivo by inhibiting macrophage activity which is involved in stimulating T-reg cell production.”²² This inhibitory action on T-reg cell generation is associated with a control of the neoplastic progression.²² Melatonin is secreted by the pineal gland, an endocrine gland controlled by the central nervous system. Positive brain thoughts drive the central nervous system towards homeostatic functioning and thus facilitate appropriate release of this regulatory hormone.

CONCLUSION

The research points to positive thinking as a powerful factor both in a person’s state of health and wellbeing as well as their ability to recover and heal. In regards to health, positive thinking appears to particularly influence cardiovascular and immune system health. Concerning healing, positive thinking seems to benefit short and long term surgery recovery and cancer experience. As one researcher concluded, “there is a problem when the medical personnel ignore the way patients react from an emotional point of view...This lack of interest in the emotional reality of an illness neglects something obvious which shows that the emotional state of people can play a significant role as to their vulnerability towards illness and during the recovery process.”²³

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