CHAPTER

51

Optimism, Pessimism, and Stress

L. Solberg Nes
Oslo University Hospital, Oslo, Norway

OUTLINE

<table>
<thead>
<tr>
<th>Dispositional Optimism</th>
<th>405</th>
<th>Mental Well-Being</th>
<th>408</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimism and Stress</td>
<td>406</td>
<td>Physical Well-Being</td>
<td>408</td>
</tr>
<tr>
<td>Goal Engagement</td>
<td>406</td>
<td>How to Improve Optimism</td>
<td>409</td>
</tr>
<tr>
<td>Coping</td>
<td>407</td>
<td>Conclusion</td>
<td>410</td>
</tr>
<tr>
<td>Self-Regulation</td>
<td>408</td>
<td>References</td>
<td>410</td>
</tr>
</tbody>
</table>

Abstract

Dispositional optimists expect more good things to happen to them than bad. Optimism is linked with goal engagement and persistence, and optimists tend to adjust better to stressor exposure than pessimists. Dispositional optimism is also positively associated with approach coping strategies seeking to solve or manage stressors, and negatively associated with avoidance coping strategies. There is flexibility in this concept as optimists tend to choose coping strategies depending on the stressor and stressor controllability. In the context of stressor exposure, a solid link exists between dispositional optimism and psychological and physiological well-being. Some findings indicate short-term physiological costs for optimists in this process, potentially due to persistent goal engagement and approach coping. However, the short-term costs are expected to be outweighed by long-term benefits involving goal achievement and associated positive psychological and physiological well-being.

People differ in how they approach challenges, experiences, and expectations. Some are optimistic in their outlook and tend to expect more positive than bad things to happen to them, while others are pessimistic and expect more negative outcomes. Even though the thought that “optimism is good” is rooted in folk wisdom, scientific approaches have linked the concepts of optimism and pessimism to expectancy models of motivation. The optimism construct is grounded in decades of theory and research, and a large body of research has shown optimists, compared with pessimists, to adjust better to challenges. In particular, optimists tend to adjust better to stress and stressor exposure than pessimists, experiencing less psychological distress and less negative impact on long-term physical well-being.

DISPOSITIONAL OPTIMISM

Optimism has been conceptualized in several ways. This chapter focuses on dispositional optimism, generalized positive outcome expectancies, one of the most recognized contemporary theories of optimism. Other approaches to optimism include attributional or explanatory style, which assumes that expectancies are based on individual interpretations of previous experiences. Optimism can also be situational or state related, referring to positive outlook about a specific situation such as a sports task or an academic test.

Dispositional optimism is considered an individual difference or a trait, with people high in dispositional optimism displaying a generalized positive outlook on their future that is stable and applies more or less across a person’s entire life span. Dispositional optimism is measured by the Life Orientation Test-Revised (LOT-R), a revised version of the Life Orientation Test. The LOT-R consists of six items worded positively as well as negatively (e.g., “In uncertain times, I usually expect the best” and “If something can go wrong for me, it will”), and also four filler items. The LOT-R has acceptable internal consistency (0.78) and construct validity with regard to related constructs.
KEY POINTS

- Dispositional optimism entails generalized positive outcome expectancies and is associated with adaptive adjustment during stressor exposure.
- Likely based on the generalized belief in positive outcomes, dispositional optimists tend to engage in approach coping strategies seeking to overcome or manage challenges, while their more pessimistic counterparts tend to engage in avoidance coping strategies seeking to avoid or disengage from challenges.
- The goal engagement and persistence displayed by optimists is linked to better chance of goal achievement, which again relates to positive well-being.
- Dispositional optimism has been linked to better psychological as well as physiological well-being during and after stressor exposure.
- There are, however, some indications that dispositional optimists may pay a short-term physiological cost during stressor exposure. This is likely due to their tendency to engage and persist despite stress, however, and in the long-term their persistence is expected to pay off, leading to goal achievement and positive psychological as well as physiological well-being.

Despite the verbal convenience of being able to categorize people as either optimistic or pessimistic, using a cut-off point between optimism and pessimism may not be completely representative and measuring optimism along a continuum, that is, from high to low dispositional optimism, rather than either optimism or pessimism, may be most accurate. This is also how the LOT-R is mainly used, measuring optimism along a 1-5 score continuum (from "strongly agree" to "strongly disagree"). In this chapter, optimism is subsequently discussed along a continuum from high optimism (i.e., dispositional optimist) to low optimist (i.e., dispositional pessimist).

Generally being considered a fairly stable personality trait, there are indications that the degree of dispositional optimism may vary some across time. There is also flexibility in the outlook of optimists and despite generally expecting more good than bad things to happen to them, degree of optimism may vary depending on the situation at hand.

OPTIMISM AND STRESS

When someone describes "feeling stressed," it usually means that the person meets demands that are perceived to exceed his or her available resources. The term stress is used to describe overwhelming or threatening situations, or the pressure that people encounter when experiencing such circumstances. Stress can elicit a complex array of psychological and physiological reactions, and the sources of stress can be infinite. Stress can be physical or psychological, controllable or uncontrollable, acute or chronic, and the word stress is often used imprecisely referring either to a stressor or a stress response.

It is possible that stress and the consequences of stress may arise from how people appraise the events rather than from the events themselves. As dispositional optimists are defined by a generalized positive outlook on the future, this may impact how they appraise and approach stressors. In fact, dispositional optimists generally report experiencing less distress during stressor exposure compared to their more pessimistic counterparts, and a large body of research suggests that dispositional optimism can have a protective role during stressor exposure, potentially "buffering" from the adverse impact of stressful events. Dispositional optimism has been linked to better psychological adjustment to stressors ranging from academic stressors to health-related challenges and even extreme trauma.4-10 Similarly, dispositional optimism has been associated with better physiological well-being as reflected in cardiovascular and immune functioning.11,12 Seeking to identify underlying and contributing components to this phenomenon, a number of optimism-related factors have been explored. As it appears, goal engagement and choice of coping strategies are essential factors in this concept.

GOAL ENGAGEMENT

The construct of dispositional optimism arose from a general self-regulatory framework.1 According to this framework, people have two options when encountering challenges: engage to overcome challenges and achieve goals, or disengage to avoid challenges and give up on their goals. The decision may depend on whether or not they see their desired outcome as attainable. Because optimists see positive outcomes as attainable, they are more likely to invest continued effort in order to achieve their goals, instead of disengaging and giving up, as pessimists might do.13,14 So, if a person's outcome expectancy is positive (i.e., optimism) he/she may decide to engage and persist in order to overcome the challenge and attain the goal, but if a positive outcome is not expected (i.e., pessimism), he/she may decide to disengage from the challenge.

A number of studies have shown how dispositional optimists persist longer on tasks compared with pessimists; in some cases particularly when self-awareness was high, as awareness tends to highlight own goals.15-17 For example, in two studies examining optimism's effect during a brief
mental effort stressor, both undergraduate students and adults with or without chronic pain conditions displayed longer persistence/goal engagement when high in dispositional optimism.\textsuperscript{14,15} The tendency for optimists to expect positive outcomes and remain engaged in challenges creates a self-fulfilling prophecy in which positive outcomes and success can be actualized. For pessimists on the other hand, the tendency to expect negative outcomes and give up on challenges creates a self-fulfilling prophecy of failure.

Although persistent goal pursuit can be associated with goal attainment, which again is linked to well-being, the tendency of dispositional optimists to expect positive outcomes and persist in their efforts is also linked to a greater likelihood of experiencing goal conflict.\textsuperscript{16} When experiencing goals that conflict (e.g., “work more” and “spend more time with family and friends”), the obvious solution may be to give up on one of the goals in order to achieve the other. However, dispositional optimists are less likely to give up on goals than their pessimistic counterparts,\textsuperscript{14,15} and hence are more likely to experience goal conflict. For example, in one cross-sectional and one longitudinal study, optimism associated with higher goal conflict.\textsuperscript{5} However, the goal conflict experienced did not impact adjustment. Other studies have supported the notion of higher likelihood of goal conflict for optimists, but have also shown a physiological cost (i.e., lower in vivo cellular immunity\textsuperscript{17}). The issue of potential short-term physiological costs related to goal engagement will be discussed in the Physical Well-being section.

**COPING**

Coping is central to how people seek to manage internal or external demands, making choice of coping strategies essential in stress management. The concept of coping is well researched, and even though different types of coping models have been proposed, the most recognized and used conceptualizations are the problem-focused versus emotion-focused (i.e., addressing external vs. internal demands of stressors)\textsuperscript{18} and the approach versus avoidance (approaching vs. avoiding or disengaging from the demands presented by a stressor)\textsuperscript{19} coping strategy distinctions.

Coping also plays a major role in the link between dispositional optimism and better adjustment to stressor exposure. Because of their positive outlook, optimists are more likely to appraise goals as achievable and hence more likely to approach challenges and strive to achieve their goals. Pessimists on the other hand, who are more likely to appraise goals as unachievable, are more likely to avoid or disengage from demanding challenges and give up. A large body of research supports this notion, showing dispositional optimism to be associated with more approach (i.e., aiming to reduce, eliminate, or manage the demands of the stressors) and problem-focused (i.e., aiming to change or eliminate the specific stressor) coping, and negatively associated with avoidance (i.e., aiming to ignore, avoid, or withdraw from stressor and related consequences) and emotion-focused (aiming to reduce or manage the emotional consequences related to the stressor) coping.\textsuperscript{20}

Stressor controllability may also play a significant role in the effectiveness and choice of coping strategies.\textsuperscript{21} If facing an academic test, for example, the stressor is controllable and utilizing an approach problem-focused coping strategy such as preparing well for the test will be a proper choice of action. If surviving a traumatic event, or experiencing fear of cancer recurrence, on the other hand, the stressor is less controllable and engaging in a problem-focused approach will likely be less beneficial. This suggests that flexibility in choice of coping strategies, depending on stressor type and controllability of the stressor at hand, is the most adaptive coping approach. As optimists appear to engage more in problem-focused rather than emotion-focused coping strategies, could this mean that dispositional optimists cope effectively with controllable, but inappropriately with uncontrollable, stressors?

Examining this issue, meta-analytic findings showed that there is considerable flexibility involved and that optimists likely adjust their choice of coping strategy depending on the stressor at hand.\textsuperscript{22} Rather than consistently choosing approach problem-focused coping strategies, optimists tend to choose approach problem-focused coping strategies when the stressors are controllable, yet approach emotion-focused coping strategies when the stressors are less controllable.\textsuperscript{20}

This suggests that a combination of the well known coping conceptualizations (i.e., approach problem/emotion and avoidance problem/emotion) may capture finer nuances and be more informative than the conceptualizations used so far.\textsuperscript{20} Following this approach, high dispositional optimism is, for example, positively correlated with problem approach (e.g., planning) and emotion approach (e.g., acceptance) coping, but negatively correlated with problem avoidance (e.g., behavioral disengagement) and emotion avoidance (e.g., denial).\textsuperscript{20} Considering this, dispositional optimists appear to cope well with controllable as well as uncontrollable stressors as they display flexibility in their response to the demands of the stressor, and in their approach of either seeking to overcome or modify their response to the stressor.

One note of caution: In the meta-analysis noted above,\textsuperscript{20} studies conducted in the United States and in English-speaking countries had significantly larger effect sizes in terms of coping categories compared with studies conducted in non-USA and non-English-speaking
countries. As most research examining the relationship between dispositional optimism, coping, and adjustment has been conducted with U.S. and English-speaking participants so far, one should be careful about generalizing findings to other populations without further research.

**SELF-REGULATION**

Given the way optimism seems to impact how people approach tasks, goals, and challenges, it has been hypothesized that dispositional optimism also might play a role in the mechanisms of self-regulation. Self-regulation involves any effort to control internal or external, mental or physical activities. The capacity to self-regulate appears to vary, however, and self-regulatory efforts, such as having to control thoughts, feelings, and behavior seem to depend on a limited source that can be depleted or fatigued. Identifying underlying mechanisms in this, exploring potential components and finding ways to improve or maintain self-regulatory capacity and prevent self-regulatory fatigue could contribute to a better understanding of adjustment, and adjustment to stressor exposure in particular.

In a study examining potential impact of dispositional optimism on self-regulatory capacity, it was hypothesized that optimism would buffer the depleting effects from self-regulatory effort. Supporting previous research, higher dispositional optimism did predict goal engagement in the study. However, contrary to predictions, optimists persisted more than pessimists only when self-regulatory effort was not required, and in fact persisted less than pessimists when self-regulatory effort was required. Contrary to expectations, this indicates that the positive relationship between dispositional optimism and engagement may be decreased and perhaps even reversed in the presence of self-regulatory fatigue. It is possible that these results may be indicative of optimist's focus on conserving effort rather than overcoming self-regulatory fatigue, but this needs to be determined by future research. The study results also suggest that people with chronic multisymptom illnesses may benefit less from dispositional optimism in stressful situations compared with healthy controls. The dispositional optimism/self-regulation area is clearly where further research is warranted.

**MENTAL WELL-BEING**

Dispositional optimism has consistently been associated with higher levels of psychological well-being, while pessimism has been associated with lower psychological well-being. Optimism has shown significant links to better mood and emotional adjustment, better life satisfaction and social support, and optimists also seem less likely to experience mental health problems, especially related to stressor exposure.

The link between dispositional optimism and psychological well-being appears robust, with significant findings in a wide variety of settings. For example, dispositional optimists in their first year of college described experiencing less stress, depression, and loneliness as well as feeling more socially supported than their more pessimistic counterparts. Dispositional optimism has also been associated with better adjustment to major life event stressors, such as life threatening illness and trauma. In early-stage breast cancer patients, for example, higher optimism at diagnosis was indicative of lower distress at 3, 6, and 12 months post diagnosis, regardless of medical variables and history of distress. Also, in patients 6 months or more, post bone marrow transplantation, higher dispositional optimism was linked with higher life satisfaction and lower negative mood.

For people having experienced trauma or life threatening situations, pessimistic disaster victims appear more at risk for severe depression and obsessive-compulsive symptoms than their more optimistic counterparts, and among healthy adult men in the Veterans Administration, dispositional optimism has been linked with less depression and overall better mental health and vitality. Considering the large body of research supporting the notion, it should not be controversial at this point to claim a buffering role for dispositional optimism in the stress-distress relationship.

**PHYSICAL WELL-BEING**

A number of studies have suggested that dispositional optimism has a positive link not only to psychological, but also physiological well-being. Optimism has, for example, been associated with better physiological well-being in terms of cardiovascular and immune functioning. Compared with pessimists, optimists have also been seen to report less pain, better physical functioning, and also to experience fewer physical symptoms. A meta-analysis examining results from 84 studies testing the relationship between optimism and physical health supported this notion, revealing a small but significant effect size pointing to optimism as a significant predictor of physical health.

Despite evidence of a link between dispositional optimism and better physiological adjustment to stressors, some contradictory findings exist, suggesting that the engagement and persistence derived from positive expectancies may have, at least temporary, physiological costs. For example, optimists exposed to uncontrollable noise experienced reduction in natural killer cell cytotoxicity, and optimists engaging in increasingly difficult mental arithmetic tasks have experienced smaller delayed-type hypersensitivity reactions compared with pessimists.
indicating worse cellular immunity. In fact, several studies have found dispositional optimism in combination with high challenge to correlate with lower cellular immunity. Similarly, in a study exposing participants to a stressful mental effort task, optimists were found to display goal engagement, persisting longer than pessimists on the task, but were also found to experience short-term physiological costs in the form of increased salivary cortisol and skin conductance level post task. There are also indications that the positive connection between dispositional optimists and goal engagement may entail higher likelihood of goal conflict for optimists, which again has been linked to physiological cost through lower in vivo cellular immunity.

These results indicate that the engagement displayed by optimists in the face of stressors may be taxing, and the engagement model proposes that although the goal engagement displayed by optimists is likely to be beneficial in the long run, there may be short-term physiological costs. Despite potential short-term physiological costs, the persistence demonstrated by dispositional optimists is likely to be beneficial in the long run, resulting in goal achievement and related positive physical and psychological well-being (see Figure 1).

HOW TO IMPROVE OPTIMISM

Given the many positive links between optimism and goal engagement, coping, adjustment, and well-being, establishing ways in which optimism can be increased would be of benefit. As a personality trait and an individual difference, however, dispositional optimism is mainly considered stable, with test-retest correlations ranging from $r = 0.58$ to $r = 0.79$ for up to 3 years. Also, a 25% heritability is estimated for optimism, and financial security as well as warmth and attention from parents in childhood may also predict adult degree of optimism.

Despite being considered a fairly stable personality trait, there are some indications that degree of optimism may change over time. In a study examining links among dispositional optimism, resources and health, test-retest correlations for optimism was only $r = 0.35$ after 10 years. Also, some interventions have found, although unintentional, increases in dispositional optimism over time. For example, following a 10-week cognitive-behavioral stress management intervention for women recently treated for breast cancer, dispositional optimism levels were significantly increased immediately and 3 and 9 months post intervention. In the study, the women who were initially the least optimistic appeared to experience most

FIGURE 1 Optimism, pessimism, and stress. The stress management model displayed by dispositional optimists is based on positive outcome expectancies, goal engagement, and approach coping strategies, may entail short-term physiological costs, but is associated with goal achievement and positive mental and/or physical well-being. Illustrated by Trude Noctby Bee.
improvement in optimism, suggesting that providing people with coping skills/stress management skills might have potential in helping them improve their outcome expectancies for the future.

As stated, optimists engage and persist in goal pursuit based on their belief in positive outcomes, but the positive association between optimism, adjustment, and well-being is likely based on how optimists approach and cope with stressors. Rather than pushing people to "pull themselves together and become more optimistic," it seems giving people the knowledge and tools to better cope with specific challenges, as in the stress management study above, may be the best solution. That way, coping skills may in fact contribute to a more positive outlook, and subsequently a better approach in how to cope with stress and stressor exposure, or vice versa.

CONCLUSION

Dispositional optimism plays an important role in how people respond in the face of stressful situations. While pessimists tend to expect more bad things to happen to them than good, dispositional optimists expect more good things to happen to them and when exposed to stressors, they believe in positive outcomes, persist at goal engagement, and use approach coping strategies to deal with the stressor at hand. Optimism is positively linked with use of approach coping strategies seeking to eliminate, reduce or manage stressors, or the emotional impact of stressors, and negatively linked to use of avoidance coping strategies seeking to avoid, ignore, or withdraw from stressors or the emotional impact of such. The persistent goal engagement and approach coping strategies used by optimists may help them adjust better to stressful situations.

Dispositional optimism has been associated with better psychological and physiological well-being, including less distress, better life satisfaction, and social support, as well as better cardiovascular and immune functioning. The persistent engagement and approach coping strategies displayed by optimists may entail short-term physiological costs, however, including lower cellular immunity and increased salivary cortisol and sympathetic activity during stressor exposure. Nevertheless, these short-term costs are expected to be outweighed by long-term benefits involving goal achievement and associated positive psychological and physiological well-being.

References

7. Segerstrom SC. Optimism and resources: effects on each other and on health over 10 years. J Res Pers. 2007;41:772-786.
REFERENCES


