

GRATITUDE and WELL-BEING

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Many centuries ago, Cicero (106-143 B.C.E.) wrote, "gratitude is not only the greatest of the virtues, but the parent of all" (Luccarelli, 2018, p. 206).

Course Objective

The purpose of this course is to provide an understanding of the cognitive-affective process of gratitude and its relationship to well-being. This construct refers to the general predisposition to feel and express grateful feelings upon experiencing positive outcomes as well as possessing a broader life orientation toward observing and being grateful for the good and positive in the world at large. Major topics include: current experimental findings, the causal relationship between gratitude and subjective well-being, sample gratitude therapeutic interventions, gratitude predicts hope and happiness, relationship between state gratitude and positive emotions, gratitude age differences and effects upon subjective well-being, effects of gratitude upon relational dynamics and prosocial behavior, and gratitude for one's life after an acute coronary syndrome.

Accreditation

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Learning Objectives

Upon completion, the participant will be able to:

1. Discuss current research on gratitude and its effect upon well-being.
2. Acknowledge the causal relationship between gratitude and well-being.
3. Recognize the cognitive and psycho-social frameworks of gratitude.
4. Utilize gratitude therapeutic interventions.
5. Understand the relationship between gratitude, hope, and happiness.
6. Consider the association between state gratitude and positive emotions.
7. Identify gratitude age differences and effects upon subjective well-being.
8. Realize gratitude's effects on relational dynamics and prosocial behavior.
9. Comprehend gratitude changes in one's life after an acute coronary syndrome.

Mission Statement

Continuing Psychology Education Inc. provides the highest quality continuing education designed to fulfill the professional needs and interests of mental health professionals. Resources are offered to improve professional competency, maintain knowledge of the latest advancements, and meet continuing education requirements mandated by the profession.

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GRATITUDE: EXPERIMENTAL FINDINGS

Gratitude is conceptualized as a state and a trait. State gratitude occurs in response to assistance that is understood to be costly to the benefactor (the giver), valuable to the receiver, with intent of altruism and empathy rather than ulterior motivation. This temporary emotional experience also refers to appreciating the positive in a given moment, the positive aspects in one's life, a feeling of momentary thankfulness, or appreciation for someone or something at a specific moment in time. It is a certain moment of acknowledging and valuing what one has received or already possesses. Trait gratitude, in comparison, refers to a general, consistent, long-term predisposition or positive character trait to appreciate things in life. Trait gratitude encompasses a wider life orientation toward observing and being grateful for the positives that exist in the world. It includes the predisposition to both recognize gratitude-eliciting events and respond with grateful emotion (McCullough et al., 2002). Trait gratitude elicits a feeling of sufficiency, appreciation of the little things of life, and to other people (Thomas & Watkins, 2003). Individuals with a grateful perspective on life tend to display more prosocial behaviors (Wood et al., 2010), which is theorized to partly support association between gratitude and health-related outcomes. The grateful emotion stimulates (upstream) reciprocity, and prosocial behavior (Bartlett & DeSteno, 2006). Experimental studies suggest state and trait gratitude are beneficial to physical and mental health resulting in development of gratitude interventions designed to reduce psychological symptoms and enhance physical and mental well-being.

Gratitude interventions are implemented to induce or increase levels of gratitude and common interventions include gratitude journaling, writing a gratitude letter, and the Three Good Things (TGT) exercise. Gratitude journaling involves writing about people, events, and things one feels decidedly grateful for, on a regular basis; the frequency ranges from writing a single time to daily. The gratitude letter consists of writing and addressing a letter to someone the individual is grateful for but was not properly thanked. The composed letter may be read aloud to the intended recipient or it may remain undelivered. The TGT exercise (Seligman et al., 2005) is comparable to gratitude journaling, except the person writes three good things that happened in a specified time period, ranging from once daily to once weekly (Krentzman et al., 2015). Additionally, various experimentally devised gratitude-inducement methods have been used in a laboratory context (Yu et al., 2016).

The World Health Organization, since 1948, defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." Over time, this definition has been challenged due to chronic illnesses commonly accompanying the aging process. In contrast, Huber et al. (2011) advanced a new general concept of health: "Health is the ability to adapt and to self-manage, in the face of social, physical and emotional challenges," and termed it 'positive health.' This general concept presents a broader view of health allowing a dynamic ability to

accommodate to life's challenges utilizing resilience, and to independently manage one's own well-being. The two definitions differ but both acknowledge that health broadly includes a physical and mental component.

Physical health relates to the well-functioning body, the body systems and processes, the perception of physical fitness, acceptance that external factors (i.e., viruses, bacteria, malfunction) can be harmful, and physiological processes (e.g., sleep, pain) can be disrupted, initiating physical constraints or degeneration of subjectively perceived physical fitness.

Mental health, based on the dual-continua model of Keyes (2002, 2005) consists of two dimensions: the presence or absence of psychopathological symptoms, and the presence or absence of well-being. In the psychopathological measure, individuals indicate their level of psychopathological symptoms experienced, for example, depression or anxiety. The well-being continuum consists of emotional, psychological, and social components of well-being. Aspects of emotional well-being include feelings of happiness, joy, and contentment. Psychological well-being attends to, for instance, the experience of autonomy, competence, and meaning in life. Social well-being encompasses relationships with others, feeling accepted by others, and belonging. The above physical and mental well-being factors construct a holistic concept of human health.

Meyer and Stutts (2024) examined the value of a single-session gratitude intervention in lowering state stress (as opposed to trait stress) and improving mood that could be implemented as a tool in the future. The domain-specific gratitude group listed three things they were grateful for in seven specific domains: health, work and/or responsibilities, relationships, money and/or resources, leisure/recreation activities, nature/personal environment, and small, daily pleasures (i.e., a cup of coffee). This group experienced decreased stress and improved affect from pre-to post-intervention. This result aligns with other studies that observed similar benefits of general gratitude lists (e.g., Fekete & Deichert, 2022). In interpreting the results, Meyer and Stutts (2024) suggest the benefits of gratitude may be due to people being more mindful and aware of their positive life experiences and/or because gratitude functions as a coping strategy for negative thoughts (Wood et al., 2010). Additionally, studies have found the practice of gratitude uses areas of the brain linked with moral cognition and positive emotion (Fox et al., 2015). These brain areas are known to be activated when experiencing rewards from social situations and removing stressors. Meyer and Stutts (2024) conclude that domain-specific gratitude is an effective method in lowering state stress and improving state affect.

Kim et al. (2024) investigated the effect of indirect gratitude on life satisfaction and perceived social support. The researchers operationally defined an indirect experience of gratitude as "feeling gratitude after seeing or hearing about the gratitude experiences of others as a third party." Studies have shown that third party witnesses, who did not

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participate in the situation involving gratitude nor knew the grateful persons or their benefactors, displayed greater willingness to perform social support behaviors by affiliating more with the grateful individuals and their benefactors (e.g., Algoe et al., 2020). Participants in the Kim et al. (2024) study were assigned to a direct gratitude, an indirect gratitude or a control group for a 6-day writing intervention. Direct gratitude participants wrote about topics such as "looking back on my life" which involves re-exploring gratitude experienced in one's life, and "appreciating things and people around me," a process of contemplating people and things for which gratitude is felt. Indirect gratitude participants read an article about the "gratitude experiences of others" and wrote questions about the article during the six days. The control group read stories/articles unrelated to the study that were emotionally neutral and wrote the storyline and their thoughts on the material.

Results showed the direct and indirect treatment groups exhibited significantly increased life satisfaction and perceived social support compared to the control group. Raw score increases of life satisfaction and perceived social support were greater in the direct versus indirect gratitude group but not at a statistically significant level. Thus, indirectly observing and savoring the gratitude experience of others may potentially increase one's personal level of gratitude. Clinically, indirect gratitude treatment can lead to observational learning by perceiving the gratitude experienced by others, which could influence feelings of gratitude without need of direct experience. Supportively, study participants often mentioned they recalled people and times in their own life similar to the reading material and experienced comparable grateful emotion to the writer of the story. The results suggest indirect gratitude interventions could serve for gratitude therapy in various settings.

Research clarifies that gratitude is one of the significant keys to promote a happy life (Watkins et al., 2003). In interpreting their study findings, Kim et al. (2024) profess that gratitude is a positive emotion that can 'broaden and build' for the individual directly experiencing it and to others indirectly encountering the experience, hence, various clinical interventions employing direct and indirect gratitude could facilitate attaining a happy life. Due to hedonic adaptation, we often take our happiness for granted, and the more we adapt to our environment, the less satisfied we become with it (Frijda, 1988). All told, Kim et al. (2024) conclude, "Reminding ourselves of gratitude directly and indirectly might be helpful to feel more grateful and happy in our daily lives."

Hartanto et al. (2023) studied the effect of a gratitude contemplation intervention on multiple well-being outcomes using a daily diary approach. Participants in the gratitude intervention condition received these instructions: "There are many things in our lives, both large and small, that we might be grateful for. Think back over the past day and write down in detail three things that you are grateful or thankful for today. Furthermore, please elaborate on why you feel

grateful or thankful and provide contextual information where necessary. Try to think of new ideas that you have not focused on in the past.' The instructions for the control group read as follows: 'During the day, there are events, both large and small, that occur on a daily basis. Think back over the past day and write down in detail three events that occurred today. Please only write about the objective event that happened today.'

The results indicated the gratitude contemplation intervention had a significant effect on multiple well-being outcomes, specifically, participants experienced less negative affect, perceived stress, anxiety, and depressive symptoms compared to control group participants.

Shi et al. (2023) tested whether gratitude, as a stable or induced state, could decrease objectification of general others (i.e., non-benefactors). Objectification involves treating others solely as things or tools while denying their personhood or mind (Fredrickson & Roberts, 1997). Objectification can lead to interpersonal indifference, reduced empathy and helping, aggression, bullying, and even killing and genocide (i.e., Viki et al., 2013). Given such harmful outcomes, finding interventions that alleviate objectification would be beneficial.

Shi et al. (2023) studied the effect of gratitude on objectification from three perspectives. Study 1 had participants complete a test for gratitude, and objectification. The well-established Gratitude Questionnaire contains questions such as, 'I have so much in life to be thankful for,' and, 'If I had to list everything that I felt grateful for, it would be a very long list.' As expected, those who have dispositional gratitude exhibit a reduced tendency to perceive and treat others instrumentally.

Study 2 instructed participants to write a gratitude letter to someone to whom they were grateful while control condition participants wrote about their typical activities on Tuesdays. This induced state gratitude condition revealed individuals reporting reduced levels of objectification, thus supporting the prediction that feeling grateful decreases state objectification of general others.

Study 3 tested whether gratitude could be applied to an imagined factory-working environment, a context where objectification is more likely. Participants read a brief description of a factory worker who supposedly helped the research study participants complete a task which required study participants to write a thank-you letter to the factory worker. The control group participants wrote a personal, general introduction to the factory worker. Participants who wrote a thank-you letter felt more grateful compared to those who wrote a general introduction, and central to the hypothesis, individuals in the gratitude condition reported a significantly lower level of objectification of factory workers than the control condition, thus showing gratitude decreases objectification in a work setting.

Shi et al. (2023) conclude that people can reduce objectification by applying dispositional or state gratitude, further, organizations can create a less objectifying environment by encouraging people to convey gratitude

toward others. Gratitude stimulates prosocial behavior and also lowers negative interaction; this beneficial effect extends to individuals not involved in the initial interaction (e.g., general others), which supports the concept of upstream reciprocity. Pay-it-forward reciprocity, also called upstream reciprocity, occurs when a person who received help is more likely to help someone else, even if that help is unrelated to the initial act of kindness. This social phenomenon is activated by gratitude and an interest to perpetuate the cycle of helpfulness, similar to a ripple effect of kindness.

Li et al., (2022) determined that leaders with high levels of trait gratitude are more likely to display ethical leadership toward their work team and form individualized high quality leader-member exchange relationships, which leads to individuals' psychological safety and eventually member creativity. The study results presented two practical implications. First, organizations that are identifying and selecting future leaders might seek candidates high in trait gratitude because they have the tendency to become ethical leaders and can establish high-quality functional relationships with individual followers, which generates their creativity. Second, organizations might benefit from offering gratitude training in conjunction with their leadership development efforts. Research in positive psychology asserts that gratitude is a learnable skill (Martinuzzi & Freeman, 2009). Li et al., (2022) recommend leaders and followers exercise gratitude in the workplace. Grateful leaders assist followers to flourish because followers who work for grateful leaders are more apt to perceive their leaders as ethical, enjoy high-quality leader-member relationships, and ultimately feel the psychological safety to indulge in creative behaviors.

Gratitude precipitates a number of beneficial social outcomes because expressing gratitude reflects, motivates, and reinforces advantageous social actions in the giver and recipient (McCullough et al., 2001), as well as in onlookers who simply witness such interactions (Walsh et al., 2022).

Yang et al. (2024) found that daily gratitude relates to subsequent well-being in a positive direction. Specifically, daily resilience and daily social support are important mediating mechanisms that associate gratitude and daily well-being. These researchers concluded that daily gratitude can connect with daily well-being through resilience, which supports the broaden-and-build theory (Fredrickson et al., 2013). Within this theory, gratitude is a positive emotion that can broaden one's momentary thought-action repertoires and facilitate development of coping strategies, which further develops resources that contribute to greater well-being. As such, Yang et al. (2024) note that individuals with high daily gratitude may broaden their momentary thought-action repertoires and utilize more coping strategies and skills to adapt to daily life.

Yang et al. (2024) observed that daily gratitude was correlated with daily well-being via daily social support. This connection is described by the broaden-and-build theory (Fredrickson et al., 2013) in that gratitude broadens momentary thought-action repertoires and creates more ways

to repay others who offered assistance in some way. This process helps to establish positive relationships with others and daily social support, further linking with higher daily well-being. This suggests that those with greater levels of daily resilience and daily social support are more apt to experience positive emotions, which contributes to well-being.

The research by Yang et al. (2024) found no significant difference between the mediating effect of social support and resilience in the gratitude-well-being connection; daily social support and daily resilience displayed an equal mediating role in the correlation. This finding was supported by Kong et al. (2021) who observed both social support and resilience were independent mediators in the link between trait gratitude and subjective well-being.

Clinically, Yang et al. (2024) recommend interventions designed to cultivate and maintain daily social networks and daily social support which may improve well-being for individuals with low daily gratitude. Further, they recommend activities that reinforce daily resilience. Improving ability to adapt and thrive amidst daily challenges and stressors may buffer against the effect of low daily gratitude on well-being.

THE CAUSAL RELATIONSHIP BETWEEN GRATITUDE AND SUBJECTIVE WELL-BEING

The following section reviews research by Alkozei et al. (2018) which asserts two causal frameworks (a cognitive and a psycho-social framework) that explain the probable mechanisms by which gratitude affects subjective well-being. Research shows a relationship between gratitude and subjective well-being (SWB) with reference to reduced psychopathology symptoms, enhanced interpersonal relationships, and improved physical health. Though gratitude interventions are a relatively new technique, Alkozei et al. (2018) present research evidence revealing they may be an effective intervention complementing current therapeutic approaches for improving SWB in healthy individuals and those with psychopathology symptoms. The application of gratitude interventions in clinical populations and the underlying mechanisms driving the positive effects of gratitude interventions in enhancing SWB warrants additional research attention.

Gratitude has many features, including the concrete experience of feeling thankful for receiving something of need or value, and the abstract experience of appreciating positive aspects of life such as observing the beauty of nature. Gratitude can be understood "as part of a wider life orientation towards noticing and appreciating the positive in the world" (Wood et al., 2010). Trait gratitude involves the consistent feelings of gratitude that people experience in life; it is a stable personality trait reflecting being naturally inclined to notice and appreciate the positive aspects of life. Many studies show higher levels of trait gratitude are associated with life satisfaction, vitality, happiness, optimism, hope, positive affect, greater empathy, and fewer anxiety and depression symptoms (Lambert et al., 2012).

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State gratitude is the temporary or situational feeling of gratitude arising from receiving a benefit or experiencing a positive event. State gratitude may depend on events of a given day while trait gratitude is a stable affective characteristic mainly unaffected by single events. The two gratitude types are only moderately correlated with one another ($r = .37$).

Subjective well-being is defined in varied ways, such as "high levels of life satisfaction and positive affect," "a global assessment of a person's quality of life," and "feeling happy, satisfied and fulfilled" (Dodge et al., 2012). A synonymous term for SWB is "hedonic" well-being which includes pleasure maximization and pain minimization, and is generally assessed with measures of life satisfaction, presence of positive mood, and absence of negative mood. SWB has been differentiated from more "objective" or "eudemonic" constructs of well-being that include factors such as living congruently with one's values and concentrating on personal growth and development. Ryan and Deci (2001) believe SWB is related to eudemonic well-being because positive emotions are often experienced via striving for personal goals and abiding with one's values.

Some theoreticians conceptualize gratitude as a cognitive-emotional process that broadens thought-action repertoires and builds lasting personal resources and coping skills which produce long-term benefits of a personal and social nature (Fredrickson, 2004). This theory was named the "broaden-and-build" theory by (Fredrickson, 2004).

The first of two causal frameworks proposed by Alkozei et al. (2018) explaining how gratitude affects subjective well-being is the *Cognitive Framework*, which uses Fredrickson's model as a foundation. This framework believes gratitude may *broaden* the mind via: a) interpreting negative or ambiguous situations in a more positive manner; b) possessing more positive memories of past events; and c) attending to positive rather than negative stimuli within the environment. These tendencies may *build* emotional and physical resources applicable to managing stressors, leading to enhanced emotional health and well-being. Heightened SWB as a result will then lead to greater experience of gratitude, thus creating a feedback loop.

The second causal frameworks proposed by Alkozei et al. (2018) explaining how gratitude affects subjective well-being is the *Psycho-Social Framework*, which is also related to Fredrickson's "broaden-and-build" theory. In this framework, gratitude may *broaden* the mind by leading people to creatively contemplate a range of different options regarding how to repay a benefactor, thus potentially *building* more positive relationships and increasing social support, leading to improved psychological and physical health. As such, greater well-being will then increase the experience of gratitude in the individual's life.

Cognitive Framework - The experience of gratitude is comprised of cognitive and affective processes. Gratitude involves active cognitive appraisal of appreciating that something of value was brought into one's life, for example, due to a specific benefactor (e.g., feeling grateful for a gift received by a friend), or due to a general source (i.e., feeling

grateful for admiring a sunset). Alkozei et al. (2018) advocate that the regular practice of gratitude (e.g., greater conscious awareness and appreciation for the positive things and experiences extant in one's life) results in a shift in different aspects of cognition. Specifically, highly grateful people will be viewed as having a positive cognitive style relative to interpreting (positive interpretation bias), attending to (positive attention bias), and remembering events (positive memory bias) in a positive rather than negative manner. These cognitive biases reflect physiological and neural changes within the brain/body, that taken together, will lead to greater SWB. Enhanced well-being will then evoke higher gratitude levels, hence, creating a positive feedback loop.

THE COGNITIVE FRAMEWORK: UNDERLYING MECHANISMS

Gratitude and Interpretation Bias: Negative Bias Reduction -

Negative cognitive biases, which predispose interpreting the world in a negative or threatening manner, underlie various psychopathologies, including anxiety and depression (Huppert et al., 2007). Research results support a model whereby gratitude promotes reduced negative cognitive interpretation biases, which then would foster enhanced SWB. Studies show that individuals with higher trait gratitude levels report lower anxious and depressive symptoms (i.e., Ruini & Vescovelli, 2013), and practicing gratitude (e.g., writing a list of items one is grateful for daily) can produce a reduction in these symptoms (Toepfer et al., 2012).

Gratitude interventions have been effective in decreasing cognitive symptoms, such as worry (e.g., ruminative anxious cognitions) and body dissatisfaction (i.e., negative cognitions regarding one's physical appearance), compared to conventional cognitive therapy approaches (Geraghty et al., 2010a,b). This supports the hypothesis that cognition changes due to increased gratitude practice can lead to enhanced SWB. Further, test subjects in the gratitude conditions were more than twice as likely to complete the intervention as subjects in the cognitive therapy conditions. This finding may be because gratitude and well-being seem to be mutually reinforcing, since even a brief 5-minute gratitude intervention has experimentally lead to immediate positive affect increases and negative affect decreases (Watkins et al., 2003).

A 14-day gratitude intervention in people with various self-reported types of psychopathology (i.e., depression, anxiety, substance/drug abuse, relational difficulties) awaiting treatment, led to more satisfaction in life and lower anxiety levels compared to a waitlist control group (Kerr et al., 2015). This proposes such gratitude interventions may serve as an effective pre-treatment intervention for such individuals.

Gratitude and Interpretation Bias: Positive Reframing -

Lambert et al. (2009a,b, 2012) found that individuals with high levels of gratitude experience a heightened sense of coherence by experiencing life as being more manageable,

meaningful, and comprehensible compared to people with lower gratitude. This positive association between gratitude and sense of coherence was mediated by a self-reported positive reframing capability (e.g., re-interpreting an experience previously perceived as negative in a positive way) (Lambert et al., 2009). A separate study by Lambert et al. (2012) expanded these results by determining if positive reframing could explain the association between gratitude and depressive symptoms. The researchers examined possible pathways whereby gratitude may lead to lower depressive symptoms. The pathways included a direct pathway (i.e., gratitude directly leads to lower depression levels), and indirect pathways (e.g., positive reframing mediates the connection between increased gratitude and decreased depressive symptoms). Results revealed a direct pathway between greater gratitude and fewer depressive symptoms, and self-reported ability to positively reframe negative situations (i.e., perceiving challenges as opportunities) and positive emotions both partially mediated the relationship between gratitude and depressive symptoms. Further, when requested to write about the positive aspects of a negative situation, individuals reported higher gratitude levels for the event and saw the event as marginally less negative.

These results imply that greater gratitude levels can lead to a shift in assessing negative situations. An increased sense of gratitude may lead to "seeing the glass half full rather than half empty."

Additionally, research has shown that higher trait gratitude levels are predictive of lower suicidal risk over a 1-6-month period (Li et al., 2012). Kleiman et al. (2013) found this predictive correlation was mediated by a third cognitive variable: greater perceived meaning of life. This finding also suggests gratitude may lower depressive symptoms by stimulating positive emotions.

Gratitude and Interpretation Bias: Associations with Self-Esteem -

Along with assessing external stimuli, situations, or experiences in a more positive manner, experiencing high trait gratitude levels may be associated with positive internalized self-perceptions and higher self-esteem (Emmons & Mishra, 2011). Trait gratitude positively predicted self-esteem among student athletes (Chen & Wu, 2014), and among Vietnam war veterans (Kashdan et al., 2006). Also, a 4-week gratitude intervention led to increases in self-esteem (Rash et al., 2011). Given these findings, Alkozei et al. (2018) suggest greater gratitude levels may lead to positive changes in the way we perceive ourselves (e.g., an enhanced self-related interpretation bias), which can foster higher SWB.

Alkozei et al. (2018) examined the Cognitive Framework model in relation to coping strategies, stressful life events, and materialism. First, coping strategies (emotion regulation strategies) are varied but all have the goal of changing cognitions or behaviors to decrease negative emotions and maintain or increase positive emotions. Coping skills include positive reframing, emotion suppression, problem solving,

etc., and failing to utilize these skills may culminate in self-blame, catastrophizing, and rumination which associate with depression and anxiety (Martin & Dahlen, 2005). Individuals with higher trait gratitude levels reported more effective coping styles/strategies than those lower in trait gratitude (Wood et al., 2007). Specifically, high trait gratitude correlated positively with using several emotion regulation skills (e.g., positive interpretation and growth, active coping, and planning), and correlated negatively with using several maladaptive strategies (i.e., behavioral disengagement, self-blame, substance use, and denial). Alkozei et al. (2018) note that adaptive coping strategies involve re-interpreting negative events in a positive way, or attending to positive aspects of negative events, thus, some of the mechanisms previously described may account for the research findings.

Second, Alkozei et al. (2018) express that positive attentional, interpretation and memory biases, and perhaps other emotion regulation strategies, resulting from increased gratitude, may explain why experimental studies suggested that gratitude protects people from experiencing high stress levels after a traumatic event. For example, after the terrorist attacks on September 11, 2001, a study revealed that more frequent experiences of positive emotions after the attack, such as gratitude, love, and interest, fully accounted for the connection between pre-crisis emotional resilience and a lower probability for later depressive symptoms (Fredrickson et al., 2003). Additionally, two retrospective studies (Vernon, 2009, 2012) asked individuals who reported a trauma to ponder their immediate post-trauma experience after the event; higher post-trauma gratitude levels were negatively correlated with current PTSD symptom severity, even when controlling for the degree of threat to life.

In interpreting the aforementioned traumatic event studies, Alkozei et al. (2018) conclude that to feel gratitude after a traumatic event one will need to attend to aspects of one's life that are positive and meaningful, interpret the traumatic event in a decreased catastrophic way, and/or remember past events in a more positive fashion. This supports the Cognitive Framework model because grateful individuals will experience greater SWB (and reduced emotional distress), even during an emotional crisis, via maintaining a positive cognitive style.

Third, just as gratitude correlates with a positivity bias, some research shows that individuals with high gratitude levels display a different cognitive style toward their definition of wealth, resulting in greater need fulfillment, which leads to SWB. Supportively, those with high levels of trait gratitude report more willingness to relinquish their possessions, are less envious of the monetary wealth of others, believe less in the notion that material wealth is linked with success or happiness in life, and report a greater sense of abundance (Polak, 2005).

Self-determination theory (Ryan & Deci, 2000) asserts that people have three innate needs that are vital for SWB, which are competence (e.g., the drive to shape the events in one's environment), autonomy (i.e., the motive to use one's strengths), and relatedness (e.g., wanting to feel connected with others). The theory stresses that individuals striving for

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material goods over participating in activities that fulfill the three aforementioned innate needs may experience less SWB. Higher levels of materialism have been associated with increased chance to develop depression (Mueller et al., 2011), and adolescents who engaged in personally meaningful activities and helping others reported higher levels of gratitude and were less likely to report depressive and antisocial symptoms (Froh et al., 2010).

These research findings uphold Self-Determination Theory, which advises ability to produce change around us (greater competence), while utilizing one's strengths (greater autonomy) in a meaningful activity while helping others (relatedness) will promote greater psychological need fulfillment. Additionally, participants who were asked to consider everything for which they felt deep appreciation (high gratitude) displayed an increase in satisfaction with life and a subsequent decrease in materialism compared to a low gratitude induction, suggesting a directional relationship such that gratitude leads to decreased materialism (Lambert et al., 2009a, b). In interpreting these findings, Alkozei et al. (2018) believe that gratitude may be associated with perceiving material goods as less important than non-material goods, resulting in more psychological need fulfillment and subsequently enhanced SWB. This refers to and possibly advances the interpretation bias mechanism in the Cognitive Framework model.

GRATITUDE'S PHYSIOLOGICAL and NEURAL CORRELATES

Alkozei et al. (2018) revealed how changes in cognitions resulting from increased gratitude lead to greater SWB. An additional factor to consider within this construct is that cognitions are mediated by neural/physiological processes, and cognitive style differences are related to physiological and neural changes within the brain and body, thus affecting physical health and ultimately SWB. Below, Alkozei et al. (2018) illustrate how neural/physiological correlates support the Cognitive Framework model.

Some empirical evidence has shown gratitude is associated with several aspects of better physical health, including greater energy levels, less pain, and better sleep quality (Hill et al., 2013). An adolescent sample found that higher levels of gratitude were associated with fewer physical symptoms, such as headaches, stomach pains, nausea, etc. (Froh et al., 2009). In addition, after a gratitude intervention, individuals reported fewer physical illnesses, increased exercise, and improved sleep (Emmons & McCullough, 2003). Alkozei et al. (2018) believe these changes in physical health behaviors (i.e., increased exercise) result from changes in cognitions, for example, reduced negative cognitions precipitates fewer depressive symptoms which generates more energy and better sleep.

Yu et al. (2016) examined pain perception through a pain induction experiment in which participants interacted virtually with an anonymous partner that intentionally (gratitude condition) or unintentionally bore some of their

pain. Participants rated their perceived pain intensity and interpersonal closeness to the partner, and/or demonstrated reciprocity by transferring a sum of money. Results showed that pain was perceived as being less intense when received help was viewed as intentional compared to unintentional.

The gratitude intervention study by Jackowska et al. (2015) included assessing sleep quality and sleep disturbance. The daily sleep quality of participants improved slightly but significantly after two weeks of gratitude journaling compared to a no-treatment control condition. A randomized pilot trial by Digdon and Koble (2011) suggests that focusing on something positive for a short amount of time each evening before bedtime (gratitude intervention) lowers pre-sleep arousal, enhances sleep quality, and sleep duration.

Beyond changes in health behaviors, some empirical evidence shows the experience of gratitude is associated with better autonomic regulation, and neural changes within the brain, which ultimately may precipitate improved SWB. By example, the experience of positive emotions, including gratitude and appreciation, is associated with improved regulation of the autonomic nervous system as demonstrated by heart regulation measures (Thayer et al., 2012).

Heart rhythm patterns have been shown to be erratic and disorganized during the experience of negative emotions like anger, whereas while experiencing appreciation, heart rate patterns shift to a coherent sine-wave pattern, implying greater cardiac coherence (McCraty et al., 1995). For example, participants in a 4-week gratitude intervention displayed greater cardiac coherence (approximated by the ratio of sympathetic/parasympathetic activity) during a 5-minute gratitude induction compared to a placebo control intervention (Rash et al., 2011). This study's results suggests that practicing gratitude regularly (twice a week for four weeks) can influence cardiac activity by altering heart rhythm toward an enhanced coherent pattern.

One study regarding the neural correlates of gratitude in relation to SWB demonstrated that 'gratitude proneness,' defined as the tendency to feel grateful after benefiting from someone's generosity, uniquely associated with greater gray matter volume in the right inferior temporal lobe (Zahn et al., 2014), a brain area associated with ability to interpret the intentions of others (Lewis et al., 2011). Another study found higher state gratitude levels associated with increased activation in the medial prefrontal cortex and insula (Fox et al., 2015), regions involved in various cognitive and emotional processes, such as subjective value judgments and reward processing (Kringelbach, 2005), self-referential processes (Denny et al., 2012), and body perception/regulation (Barrett & Simmons, 2015). This finding reinforces the idea that gratitude may produce changes in cognition about external events as well as internal attributions. It is predictable that the cognitive processes that underlie gratitude influence vagal control over autonomic emotion systems and functional brain responses, and future research will likely map these mechanisms (Alkozei et al., 2018).

PSYCHO-SOCIAL FRAMEWORK

In the last section, Alkozei et al. (2018) described the intervening role of cognitions in interpreting how gratitude affects SWB, the following reviews an alternative Psycho-Social Framework that can elucidate the association as well. These researchers indicate the alternative framework may also work interactively with elements of the Cognitive Framework, thus, they are not competing models.

High quality interpersonal relationships are crucial for SWB (Diener & Seligman, 2002). Generally, those with higher trait gratitude levels report greater levels of social support (Wood et al., 2008a,b), and greater tendency to support others (Naito et al., 2005). One evolutionary model proposes gratitude evolved as a survival adaptive mechanism to increase reciprocal altruism and upstream altruism (e.g., giving benefits to the benefactor and to a third party, respectively), and research theorizes that gratitude may be pivotal in forming and sustaining close relationships with others (Algoe, 2012). In turn, Alkozei et al. (2018) believe that gratitude can also lead to well-being via psycho-social mechanisms, whereby gratitude increases the amount of social support received and offered, which positively influences relationship quality, leading eventually to improved physical health and higher SWB; these well-being increases may also foster additional increases in gratitude, which leads to a self-reinforcing feedback loop.

Further, Bartlett and DeSteno (2006) demonstrated that after a gratitude induction, individuals delegated more time to helping a benefactor, and separately a stranger, despite receiving no previous help from either, even if helping was likely to culminate in decrease in mood (i.e., completing a list of tedious cognitive tasks). Conversely, positive mood is known to produce an increased propensity to help others (George, 1991), but only when the helping task is not hedonically costly (e.g., when it will not yield a negative mood state) (Bartlett & DeSteno, 2006). Hence, gratitude is different from a mood state to this extent, because grateful people will undertake prosocial behavior despite expectation of experiencing short-term mood decreases as a result (Bartlett & DeSteno, 2006). This type of altruistic behavior may have long-term benefits relative to establishing or maintaining long-term relationships. Altruistic behavior may help to explain why grateful individuals receive a greater amount of social support, as individuals are more apt to offer support to a person who previously helped them (Kurzban et al., 2015). Moreover, reciprocity of social support is associated with increased relationship satisfaction and well-being (Kubacka et al., 2011).

Increased gratitude in close relationships correlates with greater relationship satisfaction, relationship strength, and personal well-being. Algoe (2008) introduced the *find-mind-and-bind theory* as the reason gratitude leads to close relationships. Gratitude can assist individuals to *find* (identify) potential partners who display responsiveness and care; Gratitude helps to *remind* (focus) individuals to value their current relationships and appreciate the people who are

already important to them; Through expressing and receiving gratitude, individuals are more likely to *bind* (maintain and invest) in their relationships which further strengthens the bonds between them.

Algoe (2012) indicates that closer social (or communal) relationships, that are predicated on care and concern, lead to greater SWB because they are more fulfilling and secure than "exchange-based" relationships (which are more impersonal and founded on "debt" and "repayment"). Gratitude requires behavioral expression, for example, Lambert et al. (2010) found that expressing gratitude to a romantic partner or friend correlated with greater relationship strength, while only thinking grateful thoughts about the person did not associate. This finding implies that inability to express gratitude to one's partner may result in less connection between benefactor and recipient. Algoe et al. (2013) observed that openly expressing gratitude informs the benefactor that the recipient is responsive to (and cares about) the benefactor, and this can predict improvements in relationship quality over a 6-month period. Algoe (2012) maintains that expressed gratitude serves as a psychological reward for remaining in a communal relationship, which leads to increased relationship quality. Gratitude in close relationships informs recipients their needs are valued, and allows benefactors to feel their effort is appreciated; this makes both parties aware (will remind them) that a high quality relationship exists thus binding them closer together.

Alkozei et al. (2018) hypothesize that the potential increases in social support resulting from increases in gratitude, predictably will promote a positive effect on physical health, which may enhance SWB. Conversely, low social support levels are associated with high mortality rates from various diseases (especially cardiovascular disorders), higher concentrations of stress hormones (e.g., cortisol), and worse immune function (Uchino, 2009). As such, it is hypothesized that if social support is associated with improved immune function, lower stress hormones, and disease resistance, then increased gratitude may improve overall well-being due to gratitude's positive impact on social support. Given the connection between gratitude and social support, coupled with the fact that greater gratitude is associated with improved cardiovascular regulation (Rash et al., 2011), the hypothesis by Alkozei et al. (2018) has foundational support. The mechanisms between social support, health, gratitude, and overall SWB, including possible genetic, autonomic, and hormonal changes, warrant further study.

Alkozei et al. (2018) introduced the Cognitive and Psycho-social Frameworks to explain the connection between gratitude and SWB and they add that separate factors may also moderate the relationships, including gender, personality traits, low baseline positive affect and trait gratitude, and culture. Research has shown that gender differences in the experience of expressing gratitude exist. For example, Kashdan et al., (2009) demonstrated that men report more burden and obligation, and less gratitude, after receipt of something of need or value compared to women; women reported the experience of gratitude as less novel, uncertain,

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and conflicting, and more exciting and interesting than men. Further, over a 3 month interval, women with greater gratitude levels exhibited more satisfaction regarding feeling connected to, and cared for, by others, and also indicated increased feelings of freedom to act in a manner conforming with their core values whereas these relationships were not extant for men.

Men, as Witvliet et al. (2019) inform, report the expression of gratitude as more conflicting and uncertain than women; they also express less intense feelings of gratitude along with more burden and obligation when thinking about a time they felt intensely grateful. Gender stereotypes stress that men are expected to exhibit high levels of agency, including autonomy, independence, and competence, while women are expected to display high levels of communion, including warmth and concern for the welfare of others. These engrained gender roles may lead an observer to expect that men will possibly question their personal competence and independence when receiving help, culminating in men's more conflicting emotions, cognitive dissonance, and less positive self-referential cognitions. The male's conclusion might be, "I am grateful that my friend hooked-up my stereo receiver to the CD player but does this mean I could not have figured it out myself?" The experience of gratitude, after receipt of something of need or value (as opposed to appreciating various aspects in one's life, or being grateful for the positives that exist in the world, etc.), therefore, may not routinely lead to increased self-esteem in men.

Comparatively, women reveal fewer conflicting emotions than men upon receiving something of value or need. Women with high trait gratitude may report higher levels of self-esteem because the experience of gratitude may result in more positive interpretations about themselves (e.g., the thought could be, "Someone cared enough about me to offer help in my time of need which means I am a worthy person.").

It is possible that women benefit more from gratitude interventions than men; further research is needed to assess the role of gender in the link between gratitude and SWB to allow prediction whether gratitude interventions will offer equal efficacy for men and women.

Various studies have illustrated that gratitude is associated with SWB, regardless of personality traits (e.g., Wood et al., 2008a, b), and some research shows that certain personality traits may influence the efficacy of gratitude interventions. For instance, a study of individuals with depressive symptoms revealed that those who reported being highly self-critical benefitted more from a daily gratitude intervention lasting one week compared to individuals who reported being highly dependent on others (Sergeant & Mongrain, 2011). The researchers surmised that for individuals who rely on secure personal relationships, a gratitude exercise of expressing thanks to others will be more beneficial.

Studies have shown that those with low baseline levels of positive affect and trait gratitude may benefit from gratitude interventions. Rash et al. (2011) had individuals recall, and intensely think about, all the things they felt grateful for and then write their grateful experiences in a journal twice a week

for 4 weeks; the control group was asked to recall, think about, and write about a past week memorable event. The gratitude condition participants reported higher life satisfaction, self-esteem, and lower negative affect compared to the control group.

Research has shown that culture may influence the relationship between gratitude practice and SWB. Layous et al. (2013), for example, revealed that participants from South Korea benefitted less than individuals from the United States from a gratitude intervention; effort moderated the connection between gratitude and SWB in U.S. participants but this relationship was less strong for the South Koreans. The researchers thought the South Koreans experienced more mixed emotions than the Americans, such as feelings of indebtedness combined with gratitude. Future research may determine the effect of different cultures (e.g., individualistic versus collectivist) upon gratitude intervention efficacy.

Alkozei et al. (2018) summarize their findings as follows:

1. Research continues to show that the experience of gratitude is associated with increased psychological and physical health, as evidenced by decreased depression symptoms, increased feelings of positive affect, and life satisfaction, higher quality sleep, and more involvement in health behaviors.
2. Empirical evidence demonstrates that gratitude can affect well-being through cognitive mechanisms such as promoting greater attention to positive events, and interpreting and remembering events in a positive, not negative way, which may be accompanied by corresponding brain and body changes.
3. Gratitude can increase social support, which positively effects relationship quality, and physical health.
4. The cognitive and psycho-social aspects of gratitude interact with one another in relevant ways.
5. Additional research is needed to identify the specific types of gratitude interventions, their frequency of administration, and the treatment duration that are most affective at improving well-being in clinical and healthy populations.
6. Gratitude interventions are a relatively new approach to enhancing mental health, and evidence is continuing to suggest they may ultimately offer an effective clinical intervention to complement standard therapy approaches for addressing depression and anxiety symptoms, and improve the well-being, happiness, and health of individuals.

SAMPLE GRATITUDE THERAPEUTIC INTERVENTIONS

Robert Emmons, a University of California, Davis psychology professor collaborated with the Greater Good Science Center on a project entitled, Expanding the Science and Practice of Gratitude which was funded by the John Templeton Foundation in 2014. Researchers across America received nearly 4 million dollars in funding to investigate the benefits of gratitude on the brain as an impetus to building

resilience, a meaningful life, and a stronger community. The research revealed individuals who practice gratitude report fewer depression and illness symptoms, experience more optimism and happiness, and have stronger, more positive relationships (Smith et al., 2023).

Emmons and McCullough (2018) define gratitude as a two-step process: 1. The individual recognizes and appreciates a positive outcome or event, and 2. Acknowledgment of the goodness in one's life and recognition that a considerable amount of this goodness resulted from forces beyond oneself and through the efforts of others. Gratitude stimulates a person to "pay it forward," which promotes happiness and strengthens relationships (Smith et al., 2023).

Desai (2024) provided healthcare professionals with a weekly gratitude podcast and a short newsletter document via email which presented information and role-played on two or three gratitude practices. Participants were asked to practice one or more of the gratitude practices during the week. One source for the podcast discussions and practices was: Gratitude practice for nurses: A toolkit for wellbeing by the American Nurses Foundation and Greater Good Science Center (accessed July 27, 2023). Several of the gratitude practices are presented below verbatim from the toolkit, for gratitude therapeutic application instructional purposes:

1. Gratitude - Saying a "thank you" to someone else with three important components: a) Describing what that other person did for you. b) Acknowledging the effort their actions required and the admirable quality their efforts exemplify. c) Explaining how their actions helped or benefitted you.

2. Gratitude Letter - Call to mind someone who did something for you for which you are extremely grateful but to whom you never expressed your deep gratitude. This could be a relative, friend, teacher, or colleague. Try to pick someone who is still alive and could meet you face-to-face in the next week. It may be most helpful to select a person or act you haven't thought about for a while—something that isn't always on your mind. If physical distance keeps you from making a visit, you may choose to arrange a phone or video chat. Now, write a letter to one of these people, guided by the following steps: 1) Write as though you are addressing this person directly ("Dear _____"). 2) Don't worry about perfect grammar or spelling. 3) Describe in specific terms what this person did, why you are grateful to this person, and how this person's behavior affected your life. Try to be as concrete as possible. 4) Describe what you are doing in your life now and how you often remember his or her efforts. 5) Try to keep your letter to roughly one page (~300 words). Next, you should try, if at all possible, to deliver your letter in person, following these steps: 1) Plan a visit with the recipient. Let that person know you'd like to see them and have something special to share, but don't reveal the exact purpose of the meeting. 2) When you meet, let the person know that you are grateful to them and would like to read a letter expressing your gratitude; ask that they refrain from interrupting until you're done. 3) Take your time reading the

letter. While you read, pay attention to their reaction and yours. 4) After you finish reading, be receptive to their reaction and discuss your feelings together. 5) Remember to give the letter to the person when you leave.

3. Gratitude Journal - There's no wrong way to keep a gratitude journal, but here are some general guidelines. Write down up to five things for which you feel grateful. The physical record is important—don't just do this exercise in your head. The things you list can be relatively small in importance ("The tasty sandwich I had for lunch today.") or relatively large ("My sister gave birth to a healthy baby boy."). The goal of the exercise is to remember a good event, experience, person, or thing in your life, then enjoy the good emotions that come with it. As you write, here are nine important tips: 1) Be as specific as possible—specificity is key to fostering gratitude. "I'm grateful that my co-workers brought me soup when I was sick on Tuesday" will be more effective than "I'm grateful for my co-workers." 2) Go for depth over breadth. Elaborating in detail about a particular person or thing for which you're grateful carries more benefits than a superficial list of many things. 3) Get personal. Focusing on people to whom you are grateful has more of an impact than focusing on things for which you are grateful. 4) Try subtraction, not just addition. Consider what your life would be like without certain people or things, rather than just tallying up all the good stuff. Be grateful for the negative outcomes you avoided, escaped, prevented, or turned into something positive—try not to take that good fortune for granted. 5) See good things as "gifts." Thinking of the good things in your life as gifts guards against taking them for granted. Try to relish and savor the gifts you've received. 6) Savor surprises. Try to record events that were unexpected or surprising, as these tend to elicit stronger levels of gratitude. 7) Revise if you repeat. Writing about some of the same people and things is OK, but zero in on a different aspect in detail. 8) Write regularly. Keep your gratitude journal open along with a pen in a conspicuous space as a reminder. Whether you write every other day or once a week, commit to a regular time to journal, then honor that commitment. But... 9) Don't overdo it. Evidence suggests writing occasionally (1-3 times per week) is more beneficial than daily journaling. That might be because we adapt to positive events and can soon become numb to them—that's why it helps to savor surprises.

4. Savoring Walk - Set aside 20 minutes to take a walk outside by yourself every day for a week. You might explore ways to do this on your way to/from work, after work, or on a lunch break. Try to stick to this schedule unless the weather is extremely bad. You can still do this exercise in a light rain, provided you have a decent umbrella and rain jacket. As you walk, try to notice as many positive things around you as you can. These can be sights, sounds, smells, or other sensations. For example, you could focus on the breathtaking height of a tree you never really noticed before, the intricate architecture of a building on your block, the dance of sunshine off a window or puddle, the smell of grass or

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flowers, or the way other people look out for each other as they navigate crowded streets. As you notice each of these positive things, acknowledge each one in your mind—don't just let them slip past you. Pause for a moment as you hear or see each thing and make sure it registers with your conscious awareness, really hearing the intricacies of each sound and object. Try to identify what makes that thing pleasurable to you. Let the sensations around you conjure up feelings of gratitude for the gift of life and living that they represent. Explore ways you can respond in gratitude, perhaps with a small or a silent return of positive thought directed at whom and what you see. Try to walk a different route each day so you don't become too accustomed to any of these things and start to take them for granted.

5. Gratitude Huddle - A gratitude huddle provides a great opportunity for colleagues to gather and share things for which they are grateful in a group setting. When done in a work environment, it can help build a sense of community and team connection that carries throughout the workday.

- 1) One at a time, as people feel so moved (rather than going around in a circle), encourage them to say out loud one thing they are grateful for at work or one thing they appreciate about working with a colleague. It's helpful to keep the gratitude focused on work, to center gratitude in the work environment.
- 2) When someone is thanked by a colleague, their response can be a simple, "You're welcome." Note that it isn't necessary everyone participate each time you have a Gratitude Huddle or that everyone receive acknowledgement every time.
- 3) Close the practice by mentioning that we seldom get to know about these everyday moments of goodness or kindness because of the busyness of our work, but they are going on around us all the time. Acknowledging them reminds us to make time and offer each other gratitude.
- 4) When members of the huddle want to say "thank you" to someone else, invite them to: 1) describe what that other person did for them, 2) acknowledge the effort that was demonstrated, and 3) explain how the other person's actions helped or benefitted them.

6. Gratitude Wall - Create a space where colleagues can acknowledge the positive contributions, work-related achievements, and meaningful efforts of others. Hang a large bulletin board or large blank paper in a conspicuous location, along with post-it notes (or notepaper with thumbtacks) and markers nearby. Invite colleagues to add positive notes and expressions of gratitude onto the bulletin board. In your instructions, you could invite people to pause and take a moment to reflect on a kind or selfless act they witnessed or experienced. As the notes fill up the bulletin board, find opportunities during shift breaks and workday meetings to read a few of the notes out loud or in small groups, or invite teams to silently reflect on the expressions.

7. "Heart and Soul" Award - Give an inspirational individual in your department a "Heart and Soul" award because she or

he naturally spreads positivity and appreciation throughout your organization. Once a month, invite everyone to reflect on and nominate someone who they believe encompasses the giving spirit of the organization or department. Be sure to consider various ways that people with different personalities might express the giving spirit (e.g., some may express themselves more quietly than others or do things "behind the scenes" that contribute to the positivity of the work environment. Don't forget to recognize them, too, and spread the recognition around to different individuals.) Designate this individual as the "Heart and Soul" and feature that individual in some special way—for instance, on a visible wall or bulletin board posting, in a newsletter, on your organization's intranet, or in a department-wide email. On the first workday of the month, rally your department or team together in shouting out that month's Heart and Soul awardee. Make sure to express the special qualities that make this person wonderful. Offer a verbal or written note of gratitude on behalf of the department or organization for the many ways this person exemplifies goodness and generosity. Consider holding a small Heart and Soul reception to bring the team together to honor the awardee.

Participants reported the above-mentioned gratitude practices helped with "recalibrating" and would be utilized in the future during difficult moments. The qualitative analysis revealed the gratitude practice had a positive influence in that participants indicated feelings of calm, feeling less reactive, and improved relationships demonstrated by spending time and sharing gratitude with family members.

GRATITUDE PREDICTS HOPE and HAPPINESS

Gratitude is the stable tendency to regularly recognize and appreciate valued aspects of one's life; it is a cognitive-affective process involving conscious appraisal and acknowledgement of many different life domains. This construct refers to the general predisposition to feel and express grateful feelings upon experiencing positive outcomes as well as possessing a broader life orientation toward observing and being grateful for the good and positive in the world at large. The grateful emotion emerges when appraising a particular benefit as a positive outcome and identifying that the source of the outcome resides outside the self. Gratitude also occurs with the awareness that one is the recipient of a good gift that was intended to be benevolent by the benefactor; it is an experience of abundance. Whereas gratitude can be experienced without an identifiable benefactor (i.e., when feeling grateful of one's health), often it is experienced when receiving something of need or value. The object prompting gratitude can be a concrete gift (e.g., an anniversary present) as well as more abstract types of receiving help (i.e., a friend offers assistance in a time of need).

Witvliet et al. (2019) examined the relationship between gratitude, hope, and happiness in terms of whether awareness of good outcomes already existing in one's life stimulate hope for a future good outcome while also heightening

happiness. Gratitude, hope, and happiness possess positive affective qualities that can manifest as states (i.e. temporarily feeling grateful, hopeful, or happy in the present moment), as well as dispositional traits (e.g. an individual who generally displays the tendency of being grateful, hopeful, or happy). In contrast, gratitude, hope, and happiness are unique given their different orientations in time: gratitude is directed toward the past (valuing a bestowed gift and a benevolent giver from some time ago), hope is oriented toward the future (desiring a positive future outcome), and happiness focuses on the here and now (enjoying the benefit in the present moment). Further, gratitude and happiness are related to abundance while hope is aligned to obtain abundance, address a deficiency, or lessen trouble in the near or distant future. Witvliet et al. (2019) sensed a possible bridge between being grateful for a past good outcome which was hoped for and the two variables of hope for a future good outcome, along with happiness.

Relationships exist between gratitude, hope, and happiness as Witvliet et al. (2019) remind us: a) Hope and gratitude are among the top 3 of 24 strengths positively correlated with life satisfaction in the Values in Action Inventory of Strengths; b) Adolescents who endorsed higher social engagement levels scored higher on gratitude, hope, happiness, along with personal and academic well-being measures; c) College students' well-being was related to gratitude, hope, and happiness, and d) Across cultures, hedonia and eudaimonia have been shown to be positively related to each other and to gratitude and hope.

Gratitude can be experienced across many diverse situations, including difficult circumstances. In the midst of trauma, some individuals can find benefits, and such people are better able to flourish. After being victimized by an interpersonal offense, when victims reflect upon benefits they experienced by objectively confronting/assessing the offense (i.e. personal growth obtained, learned lessons, increased self-esteem due to demonstrated resilience), they exhibit greater positivity, joy, and improved cardiovascular responding. Such 'benefit-focused reappraisal' leads to a focus on acceptance and integration of the adverse experience which, in turn, activates positive emotion as revealed by self-report and neurophysiological late positive potential (LPP) amplitude findings (LPP is a powerful neuroscientific method used to assess emotional processing in the human brain. The LPP is regulated by the emotional intensity of a stimulus such that positive or negative emotional intensity evokes a larger (i.e., more positive) LPP than neutral stimuli. For instance, more arousing neutral pictures, such as scenes that include people, elicit a larger LPP than less arousing neutral pictures that include scenes without people. The assumption of the LPP is that it reflects a temporary increase in attention that facilitates the processing of the affective stimulus that elicited the LPP).

Across cultures, languages, and religions, Witvliet et al. (2019) agree that gratitude is identified as a social and positive construct via people recognizing a gift from a giver or deep appreciation for a valued possession rendering thankfulness and joy in response. The relationship between

gratitude and hope may be the result of attentive awareness of meaning in the individual's life, based on the kindness of others and the pursuit of goals.

Hope comprises the positive anticipation of receiving a future desired outcome while gratitude pertains to the appreciation of benefits already received. The future that one is hoping for may include acquiring a positive outcome or escape from a present circumstance. The fruition of a hope may necessitate taking action or awaiting the actions of others. Witvliet et al. (2019) express that hope can be operationally defined in several ways. First, hope is generative and goal-directed, which highlights the individual's level of agency (motivation) and pathways (seeking ways) to fulfill goals. Second, hope is a positive and anticipatory emotion that focuses on valued outcomes that are not completely under the individual's control. Third, hope is multidimensional as it integrates cognition, emotion, motivation, relationships, and spirituality. Hope has an inverse relationship with depressive symptoms and anxiety, and it is associated with better psychological adjustment, life satisfaction, and well-being. Mindful attentiveness is theorized to connect hope and gratitude in that hopeful and grateful people savor their lives by appreciating past positive outcomes or pursuing important future goals. In addition, appreciating the generosity of others, which involves the social orientation of gratitude, may increase one's level of hope.

When considering the connection between gratitude and happiness, Witvliet et al. (2019) note that gratitude is often rendered as a moral emotion that is strongly associated with positive affect. As such, gratitude operates like other positive emotions by broadening the potential range of thought-action possibilities and building lasting personal resources. Given these associations, developing gratitude may increase happiness while simultaneously creating hope.

Trait gratitude is shown to be positively correlated with life satisfaction, positive affectivity, and happiness. The typical response patterns of trait gratitude account for happiness (more than personality as measured by the Big Five personality traits) based on self-reports and informants. Further, gratitude and forgivingness traits have each been found to account for well-being when controlling for the other.

Witvliet et al. (2019) indicate that other morally and socially-oriented strengths correlate with hope and happiness, including forgiveness, patience, and self-control. Interpersonal forgiveness lessens effects of the past upon the future by focusing on a more benevolent future, which is related to hope and happiness. Those scoring higher in trait self-control are more focused on pursuing positive future goals and reveal higher happiness scores. Patience is shown to be positively associated with trait cognitive hope and life satisfaction.

Gratitude enhancing therapeutic approaches include counting blessings, writing gratitude letters (without need to send the letter), facilitating gratitude group sessions in schools, and gratitude diary writing. The results, as elaborated by Witvliet et al. (2019), reveal gratitude

interventions promoted greater well-being than control and alternative activities groups.

Witvliet et al. (2019) conducted two studies to test whether gratitude is meaningfully related to hope and happiness. In Study 1, these researchers hypothesized that trait gratitude would significantly predict hope and happiness beyond the traits of forgivingness, patience, and self-control. In Study 2, it was hypothesized that engaging in a specific gratitude practice - gratefully reflecting on a hope from the past that was fulfilled (compared to a control condition) - would generate increased state hope for a meaningful outcome that participants desired in their life and greater happiness.

Based on participant completed measures of gratitude, hope, happiness (during the past month), forgivingness, patience, and self-control, Study 1 results showed that trait gratitude significantly predicted trait hope and happiness. Trait hope was divided into trait cognitive hope and trait integrative hope. Trait cognitive hope highlights cognitive approaches to goal pursuit consisting of the ability to contemplate multiple pathways to attain a goal coupled with the required motivation to achieve the goal. For trait cognitive hope, gratitude accounted for an additional 10% of variance beyond the combination of forgivingness, patience, and self-control. Trait integrative hope integrates cognitive behavioral, affective, relational, and spiritual aspects of dispositional hope, and for this model of hope, gratitude accounted for more than twice the amount of variance in scores beyond the combination of forgivingness, patience, and self-control. In predicting happiness over the past month, gratitude accounted for significantly more of the variance in happiness scores than was predicted by the combined scores of forgivingness, patience, and self-control. Also, participants who revealed a greater disposition to being grateful for benefits and benefactors in their lives were happier.

Study 2 results showed more positive emotion, social, religious insight, and gratitude language words were used by participants in the grateful remembering condition of a past hope that was successfully fulfilled compared to the control condition. As predicted, participants in the grateful remembering condition of a past hope that was successfully fulfilled indicated significant increases from pre- to post-intervention for state hope ($p = 0.003$), and state happiness ($p < 0.001$).

In interpreting the data, Witvliet et al. (2019) believe that positive emotions have an effect upon gratitude, and in this study, the grateful remembering induction may have activated positive emotion which broadened and built participants' current hope for a desired outcome yet to be attained. They acknowledge that another possibility is the effect of the grateful remembering condition was not a result of positive affect per se, rather, this condition, which fostered more social language, also produced more hope. Further, these researchers conceive that the act of meaningful reflection may connect gratitude to hope, and the linguistic variable most closely correlated to this process demonstrated that insight word usage was higher in the condition of gratefully remembering a past hope that was fulfilled.

Witvliet et al. (2019) suggest there may be clinical application of gratefully remembering a past positive outcome yielding increased current hope and happiness to other populations such as individuals experiencing a loss of hope or those in a temporary state of limbo awaiting relief. Gratitude writing has been effective with distressed people awaiting therapy to begin, similarly, these researchers believe that the grateful remembering process may have pre-therapeutic utility since it may offer affective benefits and reinforce hope, and hope is a common variable in successful therapy.

Gratitude tends to stimulate past temporal reflection while hope often elicits future temporal reflection, and this temporality partly explains their relationship. In this study, the condition which had participants gratefully remember a past hope fulfilled involved reflecting back in time with acknowledgement that one once looked ahead with aspiring hope.

Upon analysis of this study's findings, Witvliet et al. (2019) resolve that life presents many hopes for the future that are relevant, desired, plausible, and not completely within our control. To assist us in goal-pursuit, we can exert cognitive energy toward maintaining motivation and finding alternate pathways, along with utilizing our emotions, relationships, and spirituality. Trait gratitude seems to contribute to both cognitive and integrative hope, and happiness. At the state (as opposed to dispositional) level, the act of reflecting upon a past similar hope that was fulfilled can elicit a heightened experience of hope and happiness. Perhaps future research will examine whether state gratitude interventions can be practiced to nurture dispositional (trait) gratitude, cognitive goal-pursuit hope, integrative hope, and sustainable happiness.

RELATIONSHIPS BETWEEN STATE GRATITUDE AND POSITIVE EMOTIONS

Positive emotions fundamentally contribute to optimal functioning as they promote physical health, subjective well-being, and psychological resilience. The positive emotion of gratitude is notably impressive due to its ability to build numerous and enduring personal and social resources impacting various domains of health and well-being. Gratitude is studied in terms of the trait and state level; trait gratitude constitutes the relatively stable personality tendency to express grateful feelings when encountering positivity while state gratitude refers to a temporary and momentary state of mind/emotional reaction in response to a positive outcome along with its associated positive thought and action tendencies.

The broaden-and-build theory articulates that positive emotions, such as gratitude, can trigger an upward spiral toward positive mental health due to the 'broadening' effect on momentary thought-action repertoires. Positive emotions such as enjoyment/happiness/joy, and possibly interest/anticipation may broaden an individual's awareness and foster novel, varied, and exploratory thoughts and actions. These positive emotions enable us to abandon our

routine, automatic responses and instead identify creative, flexible, and unpredictably imaginative new ways of thinking and acting. In time, these broadened perspectives and actions often build psychological, physical, intellectual, and social skills and resources, which our ancestors may have utilized toward the benefit of enhanced survival. The effect of positive emotions has been shown to broaden attention, cultivate a more global form of visual processing, and increase creative cognitive processing as evidenced by creating more connections and inclusive categories among seemingly unrelated items. The broaden-and-build theory suggests that positive emotions may assist in processing lingering effects of negative emotions. For example, heart rate typically rises after experiencing a negative emotion and experiencing positive emotions thereafter allows the return to a calmer heart pace. This pattern implies that positive emotions may help in protecting physical and mental well-being.

While negative emotions generally narrow one's behavioral repertoire with a focus on immediate survival (i.e., extreme fear in the presence of an aggressive animal), positive emotions initiate a tendency to relax, and become non-defensive, and spontaneous. The ensuing broadened thought and action patterns such as playful and exploratory behavior seemingly lack immediate survival value, however, upon deeper inspection, positive emotions continue to survive within the human experience because their broadening effect facilitates the building of stable personal resources (e.g., social play builds social skills and resulting social bonds whereas exploration builds knowledge, courage, and self-expansion) - offering indirect survival benefits for the long-term.

Positive emotional states can be high-arousal (i.e., excitement, elation, thrill) or low-arousal (e.g., contentment, complacent, satisfied) and attentional broadening (enhancing focus and concentration) may be increased more in low-arousal contexts. Gratitude is classified as a low-arousal as well as an other-directed or empathic positive emotion. Several of the broadening effects of gratitude include the inspiration of prosocial behavior toward benefactors and others, greater creativity in the expression of gratitude (e.g., displaying love and appreciation), and enhanced quality of reciprocity in returning the favor to the benefactor or to others which transcends basic 'tit-for-tat' responses. Such thought-action tendencies nurture our well-being and that of others and aid in developing enduring relationships and friendships through reciprocal responsiveness. Jans-Beken et al. (2019) believe that the broadening effects of gratitude as a low-arousal emotion help to build personal, social, and societal important resources which promote resilience and mental health.

The broaden-and-build theory suggests that positive emotions, due to their broadening effects on thought and action, increase the probability of finding positive meaning in future events, which in turn, creates future positive emotional states. Jans-Beken et al. (2019) acknowledge that experiencing positive emotions is correlated with future

positive emotional experiences over the course of months, weeks, and day-to-day. Despite emotional experience being generally short-lived and momentary in nature, it is uncertain whether positive emotions usually engage in self-sustaining cycles through a single day, and whether gratitude interacts reciprocally with other positive emotional states at the momentary, daily life experience level.

Another implication of the broaden-and-build theory is that reciprocal relationships between positive emotions promote a resilience mechanism that contributes to positive mental health and the absence of psychopathology.

Jans-Beken et al. (2019) investigated the moment-to-moment dynamics of state gratitude and other positive emotional states as they operate in daily life by examining a) whether momentary states of gratitude and high- and low-arousal positive affect are generally reciprocally associated in daily living, and b) whether the reciprocal relationships between positive emotional states at the moment-to-moment level of daily life experience are related to inter-individual differences in general positive mental health and psychopathology. Based on the broaden-and-build theory, these researchers hypothesized that 1) state gratitude and high- and, in particular, low-arousal positive affect will reciprocally and prospectively predict one another from moment-to-moment, and 2) such a reciprocal relationship in daily living will be stronger for individuals with higher rather than lower positive mental health levels, and for individuals with lower rather than higher psychopathology levels.

Participants were instructed to install a mobile application on their smartphone that collected experience sampling data over seven consecutive days in each of ten 90-minute time blocks that prompted the individual to rate items related to gratitude, affect, current situation context, and the appraisal thereof. The experience sampling was a structured diary technique that assessed participants' thoughts, feelings, and the appraisal of contexts in daily life.

Momentary affect (emotional state) was measured with Likert scale responses to the items of 'I feel cheerful' for high-arousal positive affect, and 'I feel satisfied' for low-arousal positive affect. Negative affect was measured with Likert scale responses to the items of 'I feel insecure', 'I feel anxious', 'I feel down', and 'I feel guilty'. State gratitude was assessed by Likert scale responses to the single-item measure of 'I feel grateful'. Positive mental health was measured by Likert scale responses to different factors related to emotional well-being (i.e., '...did you feel satisfied with life?'), psychological well-being (e.g., '...did you feel that your life has a sense of direction or meaning to it?'), and social well-being (i.e., '...did you feel that you belonged to a community?') during the past month. Psychopathology was measured by Likert scale response to symptoms of psychopathology covering various domains such as depression, anxiety, cognitive problems, social phobia, overall lack of vitality, work-related stress, aggression, agoraphobia, and somatization. Participants indicated how often each symptom (e.g., 'I felt down or depressed') occurred over the past week. Trait gratitude measurement consisted of Likert scale responses to questionnaire items such as, 'I have

so much in life to be thankful for'.

Higher levels of state gratitude were followed by higher levels of cheerfulness ($p < .001$, 95% CI) and higher levels of cheerfulness were followed by higher levels of state gratitude ($p = .002$, 95% CI). Likewise, higher levels of state gratitude were followed by higher levels of feeling satisfied ($p < .001$, 95% CI), and higher levels of feeling satisfied were followed by higher levels of state gratitude ($p < .001$, 95% CI).

The results showed a significant moderating effect of positive mental health on the association between cheerfulness and state gratitude ($p = .017$, 95% CI), thus, participants with relatively higher positive mental health scores exhibited a stronger association between cheerfulness and state gratitude than those who scored relatively lower on positive mental health.

Individuals with higher psychopathology scores revealed a weaker association between cheerfulness and state gratitude compared to those who scored relatively lower on psychopathology. Similarly, individuals with higher psychopathology scores revealed a weaker association between feeling satisfied and state gratitude compared to those who scored relatively lower on psychopathology.

Analysis of the data shows that state gratitude, cheerfulness, and feeling satisfied, as hypothesized, reciprocally predict one another from minute to minute with small effects. Second, the predictive relationships between state gratitude and both cheerfulness and feeling satisfied did not vary as a function of differences in positive mental health and psychopathology. Third, the predictive capability (the positive prospective effect) of both cheerfulness and feeling satisfied upon state gratitude, however, were significantly stronger for individuals with relatively lower versus higher psychopathology levels. Fourth, the predictive capability of cheerfulness on state gratitude was significantly stronger for those with relatively high versus low positive mental health, but the predictive capability of feeling satisfied upon state gratitude did not differ between those with different positive mental health levels. The findings, collectively assessed, support the hypothesis that the positive emotional states of gratitude, positive high arousal affect of cheerfulness, and positive low arousal affect of feeling satisfied tend to be positively and reciprocally related over time at the moment-to-moment level of daily life experience.

This study was based on the hypothesis that positive emotions, especially low-arousal states, given their broadening effects on thought and action, increase the probability of identifying positive meaning in future events, thus facilitating positive emotional experience in the future. This premise was supported by Jans-Beken et al. (2019) as positive emotional states were shown to be temporally associated over, on average, 90-minute intervals through the day, and there were bidirectional associations between gratitude and both high- and low-arousal positive affects in daily living. The findings showed a small reciprocal relationship on a moment-to-moment level between gratitude and positive affects such that experiencing positive affect may increase the likelihood of later gratitude via broadened thought-action patterns which stimulates the appreciation of

that which is deemed positive, relevant, and meaningful in future events. High- and low-arousal positive affects may create a general state of thankfulness and appreciation along with promoting awareness of environmental experiences for which we can be appreciative. Moreover, the data suggests that gratitude, as a low-arousal positive affect, which feels pleasant in and of itself, may orient attention to interactions, events, and experiences that are stimulating and emotionally worthy for the individual, and such gratitude-initiated interest in being a better person and helping those in need may culminate in the individual's self-improvement, enhanced relationships, and overall well-being.

Participants with higher mental health levels revealed, on average, stronger prospective associations between daily life high-arousal positive affect and subsequent state gratitude compared to those with lower positive mental health levels. Jans-Beken et al. (2019) agree that this supports the view that the 'flourishing' phenotype (individuals displaying positive mental health), relative to the 'non-flourishing' phenotype, may exhibit increased sensitivity toward positive experiences along with a greater tendency to respond to these positive experiences with thought-action patterns that emphasize the value and worthiness of such interaction with the environment, thus promoting personal resource building. While flourishers experience stronger positive emotional reactivity to pleasant events, they also display mindful acceptance of distressing thoughts and feelings, and more attentiveness to their internal and external surroundings in contrast to non-flourishers and depressed individuals.

This study noted weaker temporal associations between high- and low-arousal positive affects and state gratitude in participants with higher versus lower psychopathology levels which fits the profile of depressed individuals who show decreased ability to generate and maintain positive emotions. Further, experiencing daily positive affect and positive events is lessened by anxiety in persons with anxiety disorder, and neuroticism (a risk factor for psychopathology) is associated with faster decay of positive emotions over time. The capacity for 'positive potentiation' (displaying positive emotional sensitivity, activity, and reactivity), which is regarded as essential to flourishing may be less evident in those with risk for psychopathology. Mindful acceptance of emotional experiences may positively counteract reduced hedonic capacity and partially revive reward experience in people with depression and anxiety. Hedonic capacity is defined as reward responsiveness, for example, a measure of an individual's tendency to modulate behavior as a function of prior reinforcements. Major depressives are characterized by blunted reward responsiveness leading to impairment at integrating reinforcement history over time - it is a selective impairment. The process of positive potentiation is congruent with the broaden-and-build concept in that being receptive and accepting of the present moment (being mindful) toward internal and external events increases the probability of positive emotional experiences while a dearth of broadened thinking may restrict sensing positivity, and subsequently, experiencing grateful emotions. Mood disorders, along with evoking diminished positive

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potentiation, display increased negative emotional sensitivity connected to the onset and persistence of depressive symptoms over time and interact with positive emotional experiences. Temporal associations between positive emotional states are thereby partly created by the interaction of positive and negative potentiation tendencies, which may be affected in those exhibiting psychopathology.

The Jans-Beken et al. (2019) study infers that the prospective effect of state gratitude on high- and low-arousal positive affect in everyday life is similar among people with different levels of positive mental health and psychopathology. An explanation for this finding is that gratitude differs from other positive mood states because it is a moral affect that is oriented toward others, beyond the self, which stimulates prosocial efforts, indifferent to possible positive or negative emotional consequences. The broaden and build effects of gratitude may, as a result, surface at the cognitive or behavioral rather than emotional level, manifesting as prosocial thoughts and actions that subsequently connect with flourishing due to social resource building. Despite high- or low-arousal positive affect not differentiating individuals with high versus low levels of positive mental health or psychopathology, these individuals may show differences in their response to grateful experiences with prosocial thoughts and actions.

The Jans-Beken et al. (2019) research reveals that state gratitude and high- and low-arousal positive affect reciprocally predict each other in daily life, specifically, higher levels of state gratitude are followed by higher levels of high- and low-arousal positive affect, and higher levels of high- and low-arousal positive affect are followed by higher levels of state gratitude. Further, the positive prospective affect of state gratitude upon high- and low-arousal positive affect was small and similar for those with different levels of positive mental health and psychopathology. Conversely, the prospective affect of high- and low-arousal positive affect on state gratitude did vary, notably between people with different psychopathology levels, and less significantly between individuals with different positive mental health levels. These researchers conclude that the everyday dynamics of state gratitude and high- and low-arousal positive affect are connected to optimal functioning.

GRATITUDE AGE DIFFERENCES and EFFECTS UPON SUBJECTIVE WELL-BEING

Acknowledging, experiencing, and expressing gratitude is associated with numerous healthy emotional, relational, and health outcomes. Uncertainty abounds, however, regarding whether gratitude differs across the life span and if any benefits vary with age.

In addressing the question of the effect of age upon the presence and experience of gratitude, Chopik et al. (2019) notes that upon investigating the frequency of the word 'grateful' in a sample of nearly 75,000 Facebook users' statuses, older adults used 'grateful' more than younger adults. Likewise, older adults often display higher levels of

psychological characteristics that are conceptually related to gratitude such as forgiveness, attachment security, optimism, and other interpersonal character strengths. In contrast, null associations between age and trait gratitude have also been found.

Chopik et al. (2019) acknowledge that theories of developmental and evolutionary psychology infer reasons exist for a link between age and gratitude because gratitude appears to represent an adaptive evolutionary mechanism that functions to unite people into dyads and groups. This process unfolds as gratitude promotes the reciprocal formation of close relationships. For instance, the beneficiary of a gift or benefit from a benefactor often feels grateful which may motivate the beneficiary to behave in considerate, prosocial ways to others in actions or words. When this beneficiary gratitude is directed toward the benefactor then pleasure is experienced by both parties, stimulating further benevolent acts.

Chopik et al. (2019) agree that aging and adult development theories suggest an association between age and gratitude given the known link between gratitude and the maintenance of social relationships. For instance, Socioemotional Selectivity Theory indicates that people become increasingly more aware that time is limited as they age, and this awareness of finite time often guides individuals to prioritize personally meaningful events over the experience of novelty, growth, and curiosity. One way that older adults assert such preferences is by socially interacting with close, significant others and attempting to maintain intimate, healthy relationships. Those with limited time opt to spend more time with close relationship partners and less time with acquaintances.

Additionally, Socioemotional Selectivity Theory explains that older adults generally present more positive evaluations of their lives and emotional states, and they attend to and remember more positively valenced stimuli relative to younger adults. This supports the observation that older adults focus on social relationships that provide and maintain enhanced well-being. The effect of these socio-emotional decisions on social relationships and well-being positively impact emotion regulation, cognitive and functional decline, memory, attention, happiness, health, and mortality over the lifespan.

Displaying gratitude contributes to the maintenance of close bonds with others, hence, gratitude may impact similar age-related variables that improve well-being. Gratitude is considered important in predicting well-being in older adults because they highly value close relationships and maintaining well-being. Socioemotional Selectivity Theory professes that those with the disposition to establish and nurture close relationships may experience greater well-being in later life. Gratitude is possibly one of the dispositions that foster the socio-emotional mechanisms that lead to well-being over the lifespan. In contrast, gratitude might be so related to socio-emotional processes and well-being throughout the lifespan that age does not affect the association between gratitude and well-being. Accordingly, gratitude and well-being could be co-developing in parallel. This analysis would predict that

higher levels of gratitude are always recommended to improve well-being. Chopik et al. (2019) observed that studies in this domain have yielded mixed results: gratitude predicts physical health in older adults more so than younger adults, but the association between gratitude and well-being may be invariant over the lifespan.

Gratitude involves recognizing the value and strengthening of close relationships, and older adults display strong motivation for maintaining meaningful social relationships, hence, Chopik et al. (2019) hypothesized that gratitude would be highest among older adults compared to middle-aged and younger adults. These researchers also tested whether links between gratitude and well-being vary across age, but they did not make a hypothesis given the literature's mixed results in this construct.

Chopik et al. (2019) used three different gratitude measuring instruments that included Likert-scale responses to items such as, 'I have so much in life to be thankful for' and 'I am grateful to a wide variety of people.' Subjective well-being was assessed by two measuring instruments that included Likert-scale responses to items such as, 'I am satisfied with my current life,' and 'In most ways my life is close to ideal.'

The findings revealed that a) gratitude was higher among older adults compared to middle-aged and younger adults, b) women were higher in gratitude than men and this effect was not moderated by age, c) gratitude reached a plateau in older adults, d) gratitude was lower among the oldest old at a marginally significant level, e) gender did not moderate any of the associations between age and gratitude, and f) the association between gratitude and subjective well-being did not vary across the adult lifespan.

The preliminary evidence for gratitude being lower among the oldest old has been previously shown as evidenced by a pattern of late life declines in related personality variables such as optimism and subjective well-being.

The preliminary evidence that older adults may reach a plateau in gratitude is supported by observations of the aging process which necessitates sustaining optimal functioning while managing losses. Older adults experience many losses including personal (i.e., physical health and cognition) and interpersonal (e.g., friend and spouse bereavement). Gratitude facilitates the focus and appreciation of life's positive features, even during times of great loss and difficulty. Possibly, continued encounters with significant losses may challenge levels of hope, optimism, and well-being in older adults resulting in a plateau in gratitude. Chopik et al. (2019) recommend that researchers investigate ways older adults can preserve high levels of appreciation for life and others in the midst of declines and losses.

In highlighting a key finding, Chopik et al. (2019) specify that associations between gratitude and subjective well-being did not considerably vary over the adult lifespan. Gratitude is thereby linked to higher subjective well-being at all ages, to a similar extent. Accordingly, this finding suggests that people of all ages might benefit from gratitude's positive effect on well-being.

EFFECTS OF GRATITUDE UPON RELATIONAL DYNAMICS AND PROSOCIAL BEHAVIOR

Gratitude can inspire cooperation, social harmony, and maintenance of the relationships needed for physical survival and mental health. Tsang and Martin (2019) observed little research on the relationship dynamics and prosocial consequences associated with gratitude, hence, they conducted four experiments utilizing experimental inductions of gratitude and behavioral measures of grateful prosociality. The research investigated two aspects of the relational function of gratitude by probing these questions: a) How can the relationship-worthiness of the benefactor, such as benefactor similarity and benevolent intention evoke gratitude and grateful behavior in the recipient, and b) Are the recipient's prosocial responses designed to promote the welfare of the benefactor or to be self-serving through acquiring future benefits or maintaining a positive self-presentation.

Gratitude may have evolved to increase the chance that prosocial behaviors would be reciprocated and thereby sustain reciprocal altruism and its associated benefits, as such, gratitude impacts social exchange. Tsang & Martin (2019) agree that gratitude represents a moral or prosocial barometer informing the recipient of a gift from a benefactor that the benefactor intentionally put forth effort to reward the recipient with a valued benefit, and this awareness motivated the recipient to react prosocially toward the benefactor in exchange. People exhibit a greater tendency to experience gratitude when the favor is intentional, valuable, and costly. According to Tsang & Martin (2019), "gratitude may promote and maintain an economy of exchangeable prosocial actions."

Along with stimulating reciprocity, gratitude serves to create and maintain close relationships, in fact, gratitude may have evolved to signal individuals of quality relationship partners who care about their well-being. This relational theory of gratitude, Tsang & Martin (2019) reminds us, is supported by research between strangers such that grateful recipient strangers prefer the company of the benefactor, are more willing to give their contact information to the benefactor, and report greater communal feelings toward their benefactor. The link between gratitude and close relationships reveals greater relationship satisfaction, taking the partner's perspective, relationship closeness and commitment, partner responsiveness, gratitude and appreciation toward the partner, relationship maintenance behavior and stability, and relationship strength.

Given that gratitude involves relationships between people, then individuals may feel more gratitude if the benefactor has greater relationship potential. Specifically, characteristics of the giver might also influence gratitude suggesting that characteristics of the gift, such as cost and value, are not alone in determining the level of gratitude. Tsang & Martin (2019) support this hypothesis by indicating that videotapes of hypothetical interactions between strangers show correlations between gratitude and liking along with attraction, and research using vignettes and recalled favors

reveal correlations between closeness to the benefactor and gratitude. Additionally, couples with higher marital satisfaction report more gratitude toward one another, and perceptions of benefactor thoughtfulness predict gratitude more than the cost and value assigned to the gift.

The first of four studies by Tsang & Martin (2019) examined the benefactor characteristic of similarity to the recipient. Since individuals are more attracted to similar than dissimilar targets, these researchers hypothesized that individuals will sense similar others as attractive, be more willing to start a close relationship with them, and ultimately experience more gratitude for similar than dissimilar benefactors.

These researchers found that receiving a favor caused an increase in grateful emotion and prosocial behavior but this effect was not affected by the similarity of the benefactor. The relationship between receiving a favor and prosocial behavior was mediated by the motive to express gratitude and by grateful emotions. Similarity of benefactor to recipient was not shown to be a significant moderator of this relationship. It is believed that grateful prosociality generalizes beyond being attitudinally similar to others since the prosocial effects of gratitude did not differ based on the similarity of benefactor to the grateful recipient.

The second of four studies by Tsang & Martin (2019) investigated how benefactor intention may affect recipient experience of gratitude. Participants were told either the benefactor gave them a gift out of sympathy or due to a selfish motive to make recipient reciprocate the favor. Results showed that participants encountering a benevolent benefactor felt more gratitude compared to participants encountering a selfish benefactor; benefactor intention did not affect prosocial behavior. The conclusion is that some benefactor aspects, specifically benefactor motivation, may affect the experience of gratitude.

The third of four studies by Tsang & Martin (2019) assessed the grateful recipients' motivation by examining whether grateful prosocial behaviors are motivated by egoistic, self-oriented concerns, or by altruistic, other-oriented concerns. Expressions of gratitude can be a prosocial reinforcer to receive more benefactor benefits, hence, the researchers examined the recipient egoistic motivation of obtaining benefactor future benefits. Experimentally, some participants believed the benefactor would, once again, be capable of offering a particular benefit while other participants believed the benefactor would not have opportunity to offer a particular benefit, thus eliminating the recipient egoistic motivation. Results revealed that neither grateful emotion/motivation or grateful prosocial behaviors were affected by the possibility of receiving future benefactor benefits, implying that egoistic motivation did not cause recipients' grateful behaviors. Grateful behaviors, however, were not necessarily motivated by altruism because grateful recipients could have acted prosocially to enhance their positive reputation and receive benefactor praise.

The fourth of four studies by Tsang & Martin (2019)

predicted that if gratitude associates with an egoistic motive to positively self-present to the benefactor, then grateful recipients will be more prosocial when their benefactor will know they acted prosocially, compared to their benefactor being unaware they acted prosocially. Similarly, if gratitude associates with an altruistic motive, then grateful recipients will behave prosocially given their benefactor not knowing they acted prosocially. Results indicated that the anonymous prosocial behavior decreased prosociality, however, the prosocial behavior that did occur anonymously appeared to be motivated by gratitude, thus suggesting an altruistic aspect to gratitude, at least in certain situations.

Tsang & Martin (2019) conclude that the relational function of gratitude may highlight motivations intended for the welfare of others rather than only for the self. Gratitude may facilitate our helping benefactors given their inability to help us again in the future, or when the benefactor will not know the source of our help. Thus, gratitude may foster unsung acts of caring that can assist in creating and strengthening relevant social relationships.

GRATITUDE FOR ONE'S LIFE AFTER AN ACUTE CORONARY SYNDROME

Approximately 1.1 million Americans annually are hospitalized with acute coronary syndrome (ACS) of which 20% will be rehospitalized for ischemic heart disease or die within the next year (Benjamin et al., 2017). Identifying modifiable protective factors that lower ACS recurrence and mortality is important.

Psychological functioning is becoming accepted as a relevant factor in post-ACS recovery. Related to ACS individuals, depression and anxiety disorders have been associated with ongoing cardiac events and death, independent of socio-demographic factors and traditional cardiac risk factors (Huffman et al., 2013). Supportively, the American Heart Association stated depression is a formal risk factor for poor prognosis following ACS.

In contrast, positive affect and optimism have been linked to reduced cardiovascular disease, independent of traditional risk factors and ill-being (Boehm & Kubzansky, 2012). Psychological well-being may promote improved cardiac outcomes due to stricter adherence to significant cardiac health behaviors, especially physical activity (Huffman et al., 2016) which has been correlated with better outcomes and lower mortality in people with and without heart disease.

Legler et al., (2019) hypothesize that gratitude may facilitate cardiac health given that gratitude is commonly expressed by people after an acute medical event such as ACS, in fact, 50% of individuals experience increased gratitude for being alive after ACS (Laerum et al., 1988). Further, gratitude has been associated with various psychological outcomes that may affect cardiac recovery, including lower psychopathology, enhanced adaptive personality characteristics, and increased positive relationships/social support.

Positive emotions, including gratitude, have been shown to build an array of social and psychological resources.

Expressions of gratitude are theorized to have social benefits that help to strengthen high quality relationships and predict increased psychological resources (Algoe, 2012). Expression of gratitude was found to predict psychological well-being outcomes on a daily basis, including greater life satisfaction, resilience, positive emotions, and decreased negative emotions (Algoe & Zhaoyang, 2016). This research suggests that expressions of gratitude foster increases in psychological resources that will benefit physical health.

Emmons and McCullough (2003) observed a direct relationship between gratitude and health in that individuals induced to feel more grateful revealed reduced illness symptoms and increased hours of exercise. Generalized gratitude predicted enhanced subjective psychological well-being, physical health, and healthy behavior, manifested by the tendency to eat healthy and exercise (Hill, Allemand, & Roberts, 2013). People induced to feel grateful or who are naturally more grateful exhibit fewer negative physical symptoms (i.e., pain), display healthier behaviors (e.g., consume nutritious foods), have better physiological outcomes such as reduced blood pressure (Jackowska et al., 2015), and report increased sleep quality (Wood et al., 2009).

Research on gratitude is identifying psychological mechanisms that connect gratitude and physical health. By example, more grateful people report reduced loneliness, consequentially, better physical health (O'Connell et al., 2016). Additionally, Wood et al. (2009) noted that positive cognitions, (e.g., relishing recently experienced positive events) before sleeping mediated the link between generalized gratitude and improved sleep.

The American Heart Association set a goal to improve the cardiovascular health of all Americans by 20% and reduce death by cardiovascular disease by 20% utilizing means such as positive psychological functioning (Benjamin et al., 2019). Hernandez et al. (2018) observed greater psychological functioning associated with improved cardiovascular health outcomes.

Millstein et al. (2016) determined that optimism and gratitude after an ACS were related to increased self-reported adherence to important cardiac health behaviors, including diet, exercise, medication adherence, and stress reduction. Further, a study used a positive psychological intervention that increased gratitude and found reduced coronary heart disease symptoms (based on a symptom check list) which suggests that patients were exhibiting recommended cardiac health behaviors culminating in fewer symptoms (Sultan et al., 2018).

Labarthe et al. (2016) reports that positive cardiovascular health is composed of positive affect and cardiovascular health which reinforces the role that psychological functioning may exert on the life course of cardiovascular disease (CVD).

Depression and anxiety are known to be negative psychological stressors that can exacerbate CVD. Various gratitude interventions performed in non-clinical populations and in people without chronic diseases has shown gratitude significantly predicts less depression and anxiety symptoms

(Wood et al., 2008). Gratitude is negatively correlated with depressive symptoms and continues over time to predict lower depressive symptoms longitudinally (Sirois & Wood, 2017). Individuals who experience better physical health due to better mental health exhibit greater tendency for healthy behaviors, such as physical activity, avoiding unhealthy practices (e.g., dysfunctional eating), and healthier sleeping patterns (Hill et al., 2013; Wolfe & Patterson, 2017).

Positive psychological behaviors, such as gratitude, increase perceived self-efficacy and then increase well-being (Bandura, 2008). The relationship between self-efficacy and gratitude is supported by Bandura's (1986) agentic model of self-efficacy theory, specifically, greater self-efficacy and gratitude is linked with improved well-being, and lower self-efficacy and ingratitude serve as an obstacle to healthier behaviors. In sum, gratitude experiences broaden the individual's mindset that in time may accrue to build biological resources, such as reduced inflammatory biomarkers, lower blood pressure, and lower heart rate, along with improved resources, including enhanced self-efficacy and medication adherence.

Legler et al. (2019) researched gratitude's effects on relevant health behaviors and subsequent outcomes in acute medical periods, in this case, following an ACS. The effects of gratitude upon participant physical activity, medical adherence, and rates of cardiac readmission were measured 2 weeks post-ACS and at 6-month follow-up via four questions. The questions were based on literature review on gratitude scales and by joint consensus of psychiatrists, cardiologists, psychologists, and social workers who routinely work with patients during the post-ACS period. Participants rated their agreement with each question on a Likert scale ranging from strongly disagree to strongly agree. The questions were:

- 1) Over the past week, in general, I have been feeling thankful about my life.
- 2) Over the past week, I have been feeling thankful toward my family and friends.
- 3) Over the past week, I have been feeling thankful about my health.
- 4) Over the past week, I have been feeling thankful about the doctors, nurses, and other staff who helped me when I was in the hospital and afterwards.

The results showed, as expected, gratitude for life and health were significantly positively correlated with dispositional gratitude (a generalized tendency to recognize and respond with grateful emotion to people's benevolence); ($p < 0.001$), health ($p < 0.001$), and optimism ($p < 0.001$), and significantly negatively correlated with depression ($p = 0.010$). There was a significant negative correlation between health gratitude and anxiety ($p = 0.038$). Men and women were essentially identical in gratitude for health (95% confidence interval).

During the 6-month study, gratitude for life increased significantly ($p = 0.013$) as well as gratitude for health ($p < 0.001$). There were no significant changes in dispositional gratitude, dispositional optimism, or anxiety

during the 6-month study. Depression decreased significantly over the 6-month interval ($p = 0.001$).

Change in physical activity was measured by the mean number of steps taken per day and gratitude for life was associated with a larger number of steps taken, controlling for age, sex, medical and social variables. Participants with the highest rated gratitude for their life compared to those with less gratitude two weeks after hospitalization walked an average of 944 more steps per day at 6 months, controlling for key medical and demographic variables ($p = 0.027$).

Gratitude for health also associated with greater physical activity, controlling for age, sex, medical and social factors, depression, anxiety, and optimism. Participants with the highest rated gratitude for their health compared to those with less gratitude two weeks after hospitalization walked an average of 1542 more steps per day at 6 months, adjusting for key demographic, social, medical, and psychological factors ($p = 0.001$).

Gratitude for life was associated with greater medical adherence (self-reported health behavior adherence) at 6 months ($p = 0.008$), likewise, dispositional gratitude was linked to greater medical adherence ($p = 0.050$). Gratitude for health was not associated with medical adherence.

State gratitude (an affect that occurs after a person has been helped and that motivates returning the favor) for life and health, assessed 2 weeks post-ACS, were not associated with reduced non-elective cardiac rehospitalizations at 6 months, nor was dispositional gratitude.

The findings of the association between gratitude and health-related outcomes are consistent with the limited prior research pertaining to gratitude and health (Legler et al., 2019). Supportively, a study in patients with neuromuscular diseases found that a gratitude intervention yielded improved sleep quality, increased life satisfaction, and reduced pain (Emmons & McCullough, 2003). Similarly, research on patients with Stage B asymptomatic heart failure showed gratitude was associated with better mood and sleep, less fatigue, greater self-efficacy, and reduced levels of inflammatory biomarkers (Mills et al., 2015). A follow-up study to the Mills research on Stage B heart failure patients revealed gratitude journaling was associated with improved dispositional gratitude scores, reduced inflammatory biomarker index score over time, and increased heart rate variability relative to a control group (Redwine et al., 2016).

Jackowska et al. (2016) found that a brief gratitude intervention in a group of healthy women was linked to a greater decrease in diastolic blood pressure.

Legler et al. (2019) indicate the expression of gratitude after an ACS is common and may positively affect recovery factors relevant to a life-threatening event. For instance, gratitude has been linked to many related constructs, including self-esteem (Kashdan, Uswatte, & Julian, 2006); dutifulness, achievement striving and self-discipline (Wood et al., 2009); and enhanced functional status (Emmons & McCullough, 2003). These factors could initiate meaningful health behavior change and improved medical outcomes in an acute medical event. Additionally, gratitude toward one's health could promote heightened focus and behavioral

change upon health-related factors such as physical activity (Legler et al., 2019).

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TRUE/FALSE: A = True and B = False

1. **The benefits of gratitude may be due to people being more mindful and aware of their positive life experiences and/or because gratitude functions as a coping strategy for negative thoughts.**
A) True B) False
2. **Research has revealed individuals who practice gratitude report fewer depression and illness symptoms, experience more optimism and happiness, and have stronger, more positive relationships.**
A) True B) False
3. **Indirectly observing and savoring the gratitude experience of others may potentially increase one's personal level of gratitude.**
A) True B) False
4. **Research clarifies that gratitude is one of the significant keys to promote a happy life.**
A) True B) False
5. **Research in positive psychology does not assert that gratitude is a learnable skill**
A) True B) False
6. **Many studies show higher levels of trait gratitude are not associated with life satisfaction, vitality, happiness, optimism, hope, positive affect, greater empathy, and fewer anxiety and depression symptoms.**
A) True B) False
7. **Individuals with high levels of gratitude experience a heightened sense of coherence by experiencing life as being more manageable, meaningful, and comprehensible compared to people with lower gratitude.**
A) True B) False
8. **Research suggests gratitude may lower depressive symptoms by stimulating positive emotions.**
A) True B) False
9. **A study revealed that individuals with higher trait gratitude levels reported more effective coping styles/strategies than those lower in trait gratitude.**
A) True B) False
10. **Empirical evidence has shown gratitude is associated with several aspects of better physical health, including greater energy levels, less pain, and better sleep quality.**
A) True B) False
11. **The experience of positive emotions, including gratitude and appreciation, is associated with improved regulation of the autonomic nervous system as demonstrated by heart regulation measures.**
A) True B) False
12. **Research suggests that practicing gratitude regularly (twice a week for four weeks) can influence cardiac activity by altering heart rhythm toward an enhanced coherent pattern.**
A) True B) False
13. **Research suggests that focusing on something positive for a short amount of time each evening before bedtime (gratitude intervention) does not lower pre-sleep arousal, enhance sleep quality, and sleep duration.**
A) True B) False
14. **Gratitude interventions are a relatively new approach to enhancing mental health, and evidence is continuing to suggest they may ultimately offer an effective clinical intervention to complement standard therapy approaches for addressing depression and anxiety symptoms, and improve the well-being, happiness, and health of individuals.**
A) True B) False
15. **Gratitude can be experienced across many diverse situations, including difficult circumstances.**
A) True B) False

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16. **The broaden-and-build theory articulates that positive emotions, such as gratitude, can trigger an upward spiral toward positive mental health due to the 'broadening' effect on momentary thought-action repertoires.**
A) True B) False
17. **Along with stimulating reciprocity, gratitude serves to create and maintain close relationships, in fact, gratitude may have evolved to signal individuals of quality relationship partners who care about their well-being.**
A) True B) False
18. **Expression of gratitude was not found to predict psychological well-being outcomes on a daily basis, including greater life satisfaction, resilience, positive emotions, and decreased negative emotions.**
A) True B) False
19. **Empirical evidence demonstrates that gratitude can affect well-being through cognitive mechanisms such as promoting greater attention to positive events, and interpreting and remembering events in a positive, not negative way, which may be accompanied by corresponding brain and body changes.**
A) True B) False
20. **Gratitude is negatively correlated with depressive symptoms and continues over time to predict lower depressive symptoms longitudinally.**
A) True B) False

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