Can Expressing Gratitude Make You Happier & Healthier?

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Abstract

The human brain consistently receives stimuli and adjusts accordingly. From social cues and emotions to memory consolidation for your studies, the brain is a moving part that is shaped by the environment and its inputs. One of these inputs is gratitude which can lead to changes in the brain's molecular and chemical structure leading to outcomes such as increased confidence, less anxiety and depression, increased resilience, motivation, and productivity. This paper focuses on the power of gratitude and positive self-talk and how that can be harnessed in applications in the real world and to improve overall mental health.

Introduction

Gratitude: the quality of being thankful and showing appreciation. From learning as little children to practicing saying "thank you," to the popular holiday celebration, Thanksgiving, to the high sale of gratitude journals, there is no doubt that showing appreciation for what we have is a cornerstone ideal of society. Showing gratitude in society is considered a marker of social and emotional intelligence, but what if it also impacts our neural plasticity? Expressing gratitude could help us boost our brain health, motivation pathways, productivity, happiness levels, resilience, and more. The objective of this paper is to delve deeper into the neurochemical and structural changes our brain undergoes when we express gratitude and how humans can harness this to improve mental health.

Power of Gratitude

Gratitude not only impacts central nervous system functioning but also changes the brain's molecular structure. Firstly, according to UCLA's mindfulness awareness research center, gratitude keeps the gray matter functioning, making us healthier and happier (Moran, 2013). Gray matter plays a large role in emotional functioning in addition to memory as well as movement. With that being said, even just a few minutes of daily recognition of gratitude can create an environment of positivity and boost your mental state. On a more rudimentary neuroscience level, when we express gratitude or receive it, the brain releases dopamine and serotonin (Chowdhury, 2019). Both are considered 'feel good' neurotransmitters that play key roles in our emotions, mood enhancement, and extending happiness as shown in Figure 1. When gratitude is practiced consistently and daily, these neural pathways that release these neurotransmitters can be strengthened to create a stable sense of positivity within us.

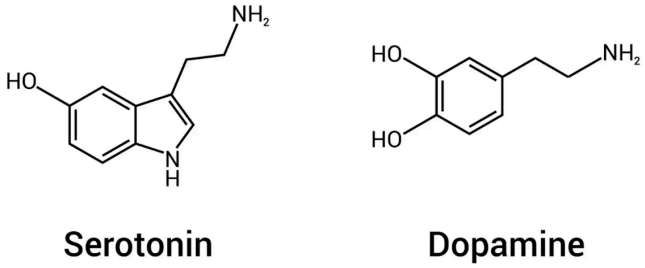

Fig 1. Serotonin & Dopamine Chemical Structures (Guy-Evans, 2023)

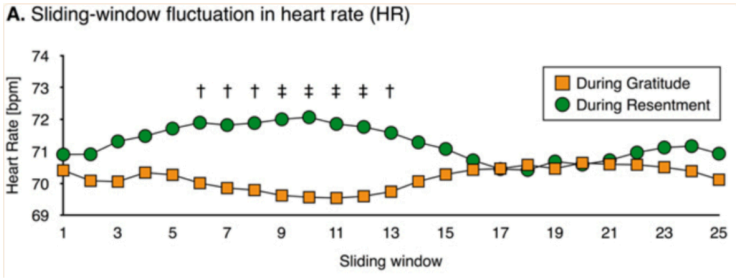

Fig 2. Heart Rate Fluctuations (Kyeong et al., 2017**)**

There are many studies and scenarios that can be examined to see this in action. One study from the National Library of Medicine demonstrated that those who showed gratitude as opposed to resentment had lower heart rates, as shown in Figure 2 (Kyeong et al., 2017). This response is due to the parasympathetic and sympathetic systems respectively. Previous studies have shown that heart rate is decreased among those with high self-esteem and increased in those with high stress and anxiety. The results of this study suggest that gratitude changes heart rhythms in a way that enhances mental health as well as self-confidence. Another study published in the Brain, Behavior, and Immunity Journal looked at gratitude among women in an online six-week program. They were instructed to do a gratitude writing intervention with a control group present to see if there were effects on neural activity (Hazlett et al., 2021). It was observed at the end that gratitude reduces inflammatory responses and increases support-giving. With that being said, gratitude is not just a social-moral emotion but is a neural correlate with cognitive implications.

Positive Self-Talk & Cognition

Language can impact how we think, feel, and behave under social stress. It can also improve cognition performance (Kim et al., 2021). Prior research has confirmed that self-talk has positive effects on attention, emotional regulation, performance enhancement in sports, academic engagement, and regulating anxiety and depression. When we engage in positive self-talk, it promotes positive psychological states, and the reverse is true with negative self-talk. Furthermore, neuroscience studies have found that positive self-talk promotes functional connectivity in the reward-motivation network ("Clinical Depression, n.d.").

The reward motivation network is responsible for pleasure, motivation, and learning. The basis of the reward pathway is that neurons release dopamine to allow you to feel pleasure. The brain makes associations between the source of pleasure and the pleasurable feeling. Then, the brain continues to make this connection stronger over time and encourages the repetition of behaviors that bring pleasure.The pathway is outlined in Figure 3. Positive self-talk increases motivation, cognitive fatigue-related inattention, and self-respect. Additionally, it can help individuals cope with difficult situations. A real-life example of this is people who use self-talk before a presentation are less anxious than those who say negative words to themselves. It can also help athletes as they compete.

Real-World Applications & Improved Mental Health Benefits

There are many practical applications of the aforementioned teachings and ways we can harness gratitude, positivity, and positive self-talk to increase neural plasticity as well as improve our mental health and productivity. Firstly, we can use these principles to help neutralize self-talk, which has poor effects on cognition, self-esteem, and goals (Raina, 2021). When we self-criticize and engage in negative self-talk, this has a high correlation with stress and anxiety as well as subsequent clinical diagnoses such as depression. When our brains criticize, emotional systems related to punishment and behavioral inhibition are activated. The brain sees this as a threat and creates a hyperfocus to not let something repeat. This leads to physical and mental stress and leads to mental exhaustion from overthinking. Some strategies we can take to mitigate this based on the practice of gratitude are to notice negative self-talk, reassure ourselves, and show compassion. By practicing self-kindness, normalizing the experience, and being mindful, we can motivate ourselves to improve and do better while being cognizant of our well-being and happiness.

In the same way, positive self-talk can also make you feel better and raise your productivity levels ("How Positive"). Experts at Mayo Clinic, ranked as one of the top hospitals in the country, say to harness these effects we must not say anything to ourselves that we wouldn't say to someone else. Mayo Clinic further states that redirecting negative thoughts to a positive manner may lead to increased life span,

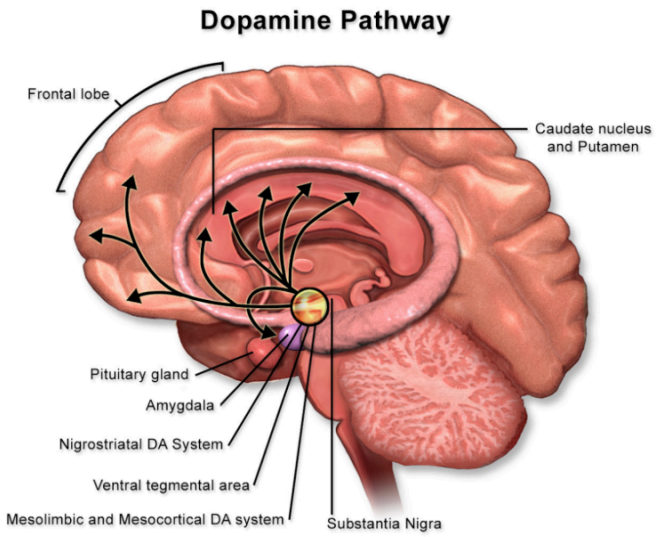

Fig. 3. Dopamine Reward Pathway (Guy-Evans. 2023)

lower depression rates, lower levels of distress, better psychological and physical well-being, better cardiovascular health and reduced cardiovascular disease, and better coping skills during hardship and stressful times. One technique that can be tried is changing the self-talk point of view. A Harvard Business Review recently shared that referring to yourself in the second or third person can make a grand difference and lead to being calmer and more confident as opposed to using 'I' or 'me.'

Limitations & Future Directions

It is important to note that research in this field is quite new, and there is much that is left to be further known, especially in conducting studies and looking at the nervous system response. There is no doubt that bigger studies can be funded with a greater sample size and looking at diverse patient populations. There are so many limitations as it is difficult to just pinpoint gratitude as the sole source for some of these changes. The brain is stimulated by a multitude of factors and many things can cause the release of "feel-good" neurotransmitters. With that being said, some future directions for this area of study would be to do larger-scale studies that are able to limit confounding factors to study the effects of gratitude and positive self-talk.

Concluding Statements

Gratitude is not only a social and emotional component of our lives but remains integrated with our neural systems. Over time, practicing gratitude can alter the circuitry of our brain to become more resilient, and productive, and dampen demotivating negative sentiments. Humans can harness the powerful effects of gratitude such as neurotransmitter release and the calming effects of positive self-talk to live happier and healthier lives. Even just small acts of gratitude a day can tremendously improve brain health.

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