Journal of Education Psychometrics and Bibliometric Studies (JEPSY)
Vol.01, No.01 (2026)
pp.035-049

Article Type: Review Article

Article Information:
Received: 10/09/2025
Accepted: 03/12/2025
Published: 05/02/2026



Vyom Hans Publications

Achieving the Happiness Threshold: A Scientific Approach

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Abstract

Happiness is a basic source of overall well-being and satisfaction. However, research suggests that a minimum threshold of happiness (5/10 on a subjective well-being scale) is necessary for maintaining a meaningful and functional life. This paper elaborates the biological, psychological, behavioral, and neurological considerations of happiness, integrating research findings from neuroscience, positive psychology, and behavioral economics. It outlines evidence-based strategies to help individuals in attaining and sustaining this minimum level of happiness, thereby ensuring long-term well-being and cognitive strength.

Keywords: Happiness, minimum threshold of happiness, well-being, behavioral economics

INTRODUCTION

Happiness, as a multidimensional construct, exerts a profound influence on cognitive function, productivity, physiological health, and social relationships. Empirical studies suggest that individuals who score below 4–5 on a 10-point subjective well-being scale are at an elevated risk of experiencing chronic stress, burnout, and psychological distress (Diener, 2002). While external determinants such as socioeconomic status and environmental conditions contribute to happiness levels, scientific interventions offer a means to enhance subjective well-being through targeted strategies.

This paper explores four pivotal scientific domains that contribute to achieving and sustaining the happiness threshold:

i. *Biological Science*: Examining the role of neurotransmitters in mood regulation and homeostasis. This includes understanding the biochemical processes that govern emotional stability, motivation, and stress resilience. By investigating the functions of dopamine, serotonin, oxytocin, and

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endorphins, researchers can identify pharmacological and behavioral interventions to optimize neurotransmitter balance for sustained well-being.

ii. *Psychological Science:* Utilizing cognitive behavioral strategies to restructure maladaptive thought patterns. This involves employing evidence-based psychological interventions such as cognitive behavioral therapy (CBT), positive psychology practices, and mindfulness-based stress reduction to enhance emotional resilience. These strategies aim to mitigate the impact of negative cognitive distortions and foster a constructive mindset conducive to happiness.

iii. *Behavioral Science:* Implementing habit formation and decision-making principles to reinforce happiness. Behavioral science explores how individuals can cultivate sustainable happiness through the establishment of positive habits, reinforcement learning, and behavioral economics principles. By leveraging strategies such as the "20-second rule," investing in experiences, and reinforcement scheduling, individuals can adopt long-term behaviors that contribute to subjective well-being.

iv. *Neuroscience:* Investigating brain plasticity and mindfulness-based techniques for sustained happiness augmentation. Advances in neuroscience reveal that neuro-plasticity enables individuals to rewire their brains toward positive thought patterns and emotional regulation. Techniques such as visualization, and performing acts of kindness have been shown to strengthen neural circuits associated with happiness. This section explores how mindfulness interventions can enhance long-term happiness by modulating neural activity in key brain regions such as the prefrontal cortex, amygdala, and hippocampus.

BIOLOGICAL SCIENCE

Neurochemical Modulation of Happiness

Happiness is largely modulated by four principal neurotransmitters—dopamine, serotonin, oxytocin, and endorphins—which regulate mood, motivation, and social bonding (Feldman,2017).

Dopamine: The Motivation and Reward Molecule

Dopamine is a crucial neuromodulator involved in reward processing, motivation, and reinforcement learning. Deficits in dopaminergic activity are associated with anhedonia and reduced goal-directed behavior (Volkow, 2011).

Scientific Interventions:

Micro-Goal Setting

Breaking down larger tasks into small, manageable goals fosters a sense of accomplishment, triggering dopamine release. This process, often referred to as the "progress principle," reinforces motivation and enhances focus. Completing simple tasks—such as making the bed, finishing a short workout, or checking off items from a to-do list—provides a sense of reward, promoting a positive feedback loop that strengthens goal-directed behavior.

- Neuroscientific Basis: Dopamine is released in the mesolimbic pathway, particularly in the nucleus accumbens, reinforcing the behavior and encouraging continued effort.
- Practical Applications: Keeping a habit tracker, setting achievable daily goals, and celebrating small wins can sustain motivation over time.

Exposure to Novelty

Engaging in new experiences and learning novel skills enhances dopaminergic neurotransmission by stimulating curiosity and reward-seeking behavior. The brain is wired to respond to novelty because unexpected stimuli demand attention and often signal potential rewards.

- Neuroscientific Basis: The ventral tegmental area (VTA), a key region for dopamine production, is highly responsive to novel stimuli. Novel experiences activate the hippocampus and prefrontal cortex, which work together to strengthen learning and memory formation.
- Practical Applications: Trying new hobbies, traveling to unfamiliar places, learning a new language, or even taking a different route to work can improve dopamine production and boost motivation.

Nutritional Modulation

Dopamine synthesis depends on the availability of its precursors, particularly tyrosine, an amino acid found in protein-rich foods. Ensuring adequate intake of foods rich in tyrosine can support optimal dopamine levels, influencing mood and cognitive function.

- Key Nutrients for Dopamine Synthesis:
  - Tyrosine and Phenylalanine: Found in almonds, eggs, bananas, dairy, lean meats, and soy products, these amino acids serve as the primary building blocks for dopamine.
  - Vitamin B6, Folate, and Iron: Essential co-factors for enzymatic conversion of tyrosine to dopamine. Foods like leafy greens, lentils, and fish contribute to this process.
  - Omega-3 Fatty Acids: Found in fatty fish and flaxseeds, omega-3s enhance dopamine receptor sensitivity, improving its efficiency in the brain.
- Neuroscientific Basis: Dopamine is synthesized from L-DOPA, which is derived from tyrosine through enzymatic reactions. A deficiency in tyrosine or co-factors can impair dopamine production, leading to symptoms like fatigue, low motivation, and anhedonia.
- Practical Applications: A diet rich in protein and essential nutrients, combined with proper hydration and balanced blood sugar levels, can help maintain optimal dopaminergic function.

Serotonin: The Mood Stabilizer

Serotonin (5-hydroxytryptamine, or 5-HT) plays a fundamental role in mood regulation, emotional stability, and overall mental well-being. It is primarily produced in the brainstem's raphe nuclei and synthesized from tryptophan, an essential amino acid. Deficient serotonergic activity has been strongly linked to major depressive disorder (MDD), anxiety disorders, and mood dysregulation (Young, 2007). Scientific interventions that enhance serotonin production and function can contribute to greater emotional resilience, reduced stress, and improved mood stability.

Scientific Interventions:

Sunlight Exposure

Natural light is a powerful regulator of serotonin synthesis. Exposure to sunlight for 10–15 minutes daily helps maintain optimal serotonin levels through retinal stimulation.

- Neuroscientific Basis: Sunlight exposure activates intrinsically photosensitive retinal ganglion cells (ipRGCs), which signal the brain's suprachiasmatic nucleus (SCN) to regulate circadian rhythms and stimulate serotonin production. Additionally, sunlight increases vitamin D synthesis, which plays a role in serotonin receptor function.
- Practical Applications:
  - Spending time outdoors in the morning or midday enhances serotonin release.
  - Sitting near a window with natural light exposure can have mood-boosting effects.
  - Light therapy (for individuals with Seasonal Affective Disorder, SAD) mimics natural sunlight and helps regulate serotonin levels.

Aerobic Physical Activity

Engaging in regular aerobic exercise (such as running, cycling, swimming and brisk walking) increases central serotonin levels and improves emotional well-being.

- Neuroscientific Basis:
  Exercise improves serotonin availability in several ways:
  - Increases tryptophan transport to the brain, promoting serotonin biosynthesis.
  - Upregulates serotonin receptors, making neurons more responsive to serotonergic signaling.
  - Boosts neuroplasticity by increasing brain-derived neurotrophic factor (BDNF), which supports neuronal health and serotonin transmission.
- Practical Applications:
  - Moderate intensity aerobic exercises (30–45 minutes, 3–5 times a week) provide significant serotonin boosts.
  - Activities like dancing, swimming, and hiking also combine movement with novelty, enhancing mood benefits.
  - Yoga and tai chi incorporate both movement and breath control, further promoting serotonin regulation.

Mindful Breathing Techniques

Controlled diaphragmatic breathing influences serotonin regulation and vagal tone, promoting relaxation and emotional stability.

- Neuroscientific Basis:
  - Deep, slow breathing (such as diaphragmatic breathing and alternate nostril breathing) stimulates the vagus nerve, which enhances parasympathetic nervous system activity and promotes serotonin release.
  - Increases oxygen supply to the brain, optimizing neuronal function and neurotransmitter balance.
  - Reduces cortisol (stress hormone) levels, indirectly supporting serotonin pathways by minimizing stress-induced depletion.

- Practical Applications:
  - Box breathing (4-4-4-4 method): Inhale for 4 seconds, hold for 4 seconds, exhale for 4 seconds, hold for 4 seconds.
  - Diaphragmatic breathing: Slow, deep breaths focusing on belly expansion rather than shallow chest breathing.
  - Alternate nostril breathing (Nadi Shodhana): A yogic technique that balances serotonin and promotes emotional stability.

Oxytocin: The Bonding Hormone

Oxytocin, often referred to as the "love hormone" or "bonding hormone", plays a key role in fostering trust, empathy, social bonding, and emotional well-being. It is synthesized in the hypothalamus and released by the posterior pituitary gland, significantly influencing interpersonal relationships, stress regulation, and overall happiness (Zak, 2012).

By enhancing oxytocin levels, individuals can improve their emotional resilience, deepen social connections, and foster a greater sense of belonging. Here's an elaboration on effective scientific interventions that naturally boost oxytocin.

Scientific Interventions

Social Bonding

Regular, meaningful interactions with loved ones are powerful triggers for oxytocin release, strengthening emotional connections and promoting feelings of trust and security.

- Neuroscientific Basis: Positive social interactions activate the limbic system, particularly the amygdala and hypothalamus, where oxytocin is produced. This process encourages prosocial behaviors, reinforcing social bonds.
- Practical Applications:
  - Spending quality time with family, friends, or pets stimulates oxytocin production.
  - Group activities such as playing games, cooking together, or engaging in shared hobbies enhance social connection.
  - Engaging in meaningful conversations that promote vulnerability and trust further boosts oxytocin levels.
  - Even virtual interactions (e.g., video calls with loved ones) can have positive oxytocin effects, though face-to-face contact is generally more potent.

Acts of Kindness

Engaging in selfless, compassionate behaviors significantly enhances oxytocin release. Acts of generosity, gratitude, and empathy foster positive social connections and emotional well-being.

- Neuroscientific Basis:
  Performing kind actions activates the ventromedial prefrontal cortex, linked to reward pathways, which in turn stimulates oxytocin release. Additionally, gratitude expression has been shown to enhance parasympathetic activity, promoting calmness and social bonding.
- Practical Applications:

  - Volunteering at community events, shelters, or schools encourages social interaction and emotional connection.
  - Expressing gratitude through written notes, verbal appreciation, or small gestures strengthens relational bonds.
  - Random acts of kindness, such as offering compliments, helping a stranger, or giving thoughtful gifts, are simple yet effective ways to stimulate oxytocin.

Physical Touch

Touch is one of the most powerful stimuli for oxytocin release, reinforcing trust, bonding, and feelings of security.

- Neuroscientific Basis: Physical touch activates mechanoreceptors in the skin, which signal the hypothalamus to release oxytocin. This not only strengthens social connections but also reduces cortisol levels, alleviating stress.
- Practical Applications:
  - Hugs, cuddling, and hand-holding with loved ones foster oxytocin release. Studies suggest that a 20-second hug can significantly increase oxytocin levels.
  - Massage therapy promotes relaxation and emotional connection by stimulating oxytocin pathways.
  - Petting animals (particularly dogs and cats) is another effective way to enhance oxytocin, promoting calmness and trust.

Endorphins: The Natural Painkiller

Endorphins are powerful neurotransmitters that act as the body's natural painkillers and mood enhancers. Released by the pituitary gland and central nervous system, endorphins play a crucial role in reducing stress, alleviating pain, and promoting feelings of euphoria (Boecker, 2008). These chemicals interact with the brain's opioid receptors, producing effects similar to morphine — but naturally and without harmful side effects.

By implementing targeted activities that stimulate endorphin release, individuals can experience improved mood, reduced anxiety, and enhanced well-being.

Scientific Interventions

Laughter Therapy

Laughter is a powerful trigger for endorphin release, promoting emotional well-being and social bonding. Engaging in humor — whether through comedy shows, funny movies, or shared jokes — stimulates both the mind and body, enhancing mood and reducing stress.

- Neuroscientific Basis: Laughter activates regions such as the hypothalamus, amygdala, and nucleus accumbens, all involved in mood regulation and reward processing. This activation triggers the release of endorphins, which promote relaxation and euphoria.
- Practical Applications:
  - Watching comedy films, stand-up specials, or sitcoms can create an immediate endorphin boost.

  - Engaging in social laughter (e.g., with friends or family) enhances both oxytocin and endorphin release, reinforcing social bonds.
  - Participating in laughter yoga — a practice that combines intentional laughter with breathing exercises — is a structured yet effective method for endorphin stimulation.

Physical Exercise

Exercise is one of the most effective ways to stimulate endorphin production, often linked to the well-known "runner's high." Activities that involve rhythmic, sustained movement tend to maximize endorphin release.

- Neuroscientific Basis:
  During prolonged physical activity, the body responds to stress by releasing endorphins to modulate pain perception and promote feelings of euphoria. Endorphins also interact with the endocannabinoid system, further enhancing mood stability.
- Practical Applications:
  - Cardio exercises like running, swimming, and cycling are especially effective for endorphin release.
  - Dancing combines rhythmic movement with music, providing a dual boost to endorphins and dopamine.
  - Yoga integrates breath control, stretching, and meditation — a combination that enhances both endorphins and serotonin. Tip: Exercising in a group setting (e.g., dance classes, team sports) can further amplify endorphin release by combining physical activity with social bonding.

Listening to Music

Music has a profound effect on mood regulation, with certain types of music shown to enhance endorphin production. Upbeat, emotionally engaging music often triggers this response most effectively.

- Neuroscientific Basis: Listening to pleasurable music stimulates the brain's mesolimbic reward system, including the ventral tegmental area (VTA) and nucleus accumbens. This activation prompts endorphin release, promoting feelings of pleasure and relaxation.
- Practical Applications:
  - Listening to uplifting, energetic music can quickly improve mood.
  - Singing, dancing, or playing musical instruments enhances the effect by combining movement and social interaction.
  - Curating a "feel-good" playlist filled with nostalgic or emotionally resonant tracks can provide a natural endorphin boost.

PSYCHOLOGICAL SCIENCE

Cognitive Strategies for Happiness

Psychological research emphasizes that cognitive restructuring and behavior modification are pivotal in sustaining long-term happiness and emotional well-being (Seligman, 2011). Grounded in scientific

principles, these strategies offer practical interventions to enhance mental health and promote positive emotions.

Cognitive Behavioral Therapy (CBT) Techniques

Cognitive Behavioral Therapy (CBT) is a widely studied and evidence-based psychological approach that targets maladaptive thinking patterns and behaviors. Developed by Aaron Beck (1976), CBT empowers individuals to identify and challenge negative thought patterns, fostering healthier emotional responses and improved coping strategies (Beck, 1976).

Scientific Interventions

Reframing Exercises

Reframing is a core CBT technique that involves identifying distorted thoughts and replacing them with constructive perspectives. This cognitive shift encourages individuals to adopt more balanced and rational interpretations of events.

- Neuroscientific Basis: Reframing engages the prefrontal cortex, the brain region responsible for executive functioning and rational thought. By repeatedly practicing cognitive restructuring, individuals can strengthen neural pathways that promote adaptive thinking.
- Practical Applications:
  - Cognitive Journaling: Writing down negative thoughts and challenging their accuracy. For example, transforming "I always fail at tasks" into "I sometimes struggle, but I have succeeded before and can improve with practice."
  - Thought Record Sheets: Used in CBT to track triggering situations, emotional responses, and alternative perspectives, reinforcing healthier cognitive patterns.

"Three Good Things" Exercise

Proposed by Martin Seligman as part of Positive Psychology, this exercise encourages individuals to reflect on three positive experiences each day, reinforcing gratitude and optimism.

- Neuroscientific Basis: Documenting positive moments strengthens the brain's dopaminergic pathways, reinforcing a mindset oriented toward positive experiences. This process helps counteract the negativity bias, a psychological tendency to dwell on negative events.
- Practical Applications: At the end of each day, individuals write down:
  - Three positive events that occurred.
  - Why those events happened.
  - How they contributed to personal well-being.

  This reflective practice fosters long-term happiness by shifting focus toward positive emotions and reinforcing gratitude.

The Hedonic Adaptation Theory

Hedonic Adaptation, proposed by Frederick & Loewenstein, suggests that individuals tend to return to a baseline level of happiness despite positive or negative life changes. While major events (e.g., promotions or hardships) may temporarily alter emotional states, the mind's tendency to adapt often diminishes long-term impact (Frederick, 1999).

Scientific Interventions

Engaging in New Experiences

Novelty and variety counteract hedonic adaptation by maintaining excitement and preventing emotional stagnation.

- Neuroscientific Basis: Engaging in new activities activates the ventral tegmental area (VTA), a key region in the brain's reward system responsible for dopamine release. Novel experiences stimulate curiosity, excitement, and sustained happiness.
- Practical Applications:
  - Exploring new hobbies such as painting, dancing, or learning a language.
  - Visiting new places or changing routines to break habitual patterns.

Practicing Gratitude

Gratitude practice has been shown to increase happiness by promoting an appreciative mindset rather than fixating on material gains.

- Neuroscientific Basis: Gratitude activates the hypothalamus, enhancing positive emotions and regulating stress hormones. It also strengthens connections in the medial prefrontal cortex, supporting long-term well-being.
- Practical Applications: At the end of each day, individuals write down:
  - Maintaining a gratitude journal to list things one is thankful for.
  - Expressing appreciation directly to others strengthens social bonds and enhances emotional fulfillment.

  This reflective practice fosters long-term happiness by shifting focus toward positive emotions and reinforcing gratitude.

The 40% Happiness Rule

Lyubomirsky proposed a well-known framework in positive psychology that highlights the key factors influencing an individual's overall happiness. According to their research, approximately 50% of happiness is determined by genetic predisposition, while 10% is shaped by life circumstances such as socioeconomic status, health, and environmental factors. The remaining 40% is influenced by intentional activities and cognitive strategies — elements that individuals can actively control to enhance their emotional well-being (Lyubomirsky, 2005).

This 40% suggests that people have considerable power over their mental state through deliberate actions and mindset adjustments.

For example, students preparing for exams may experience anxiety and stress. While these emotions are natural, their impact largely depends on how students perceive the situation. If students view exams as an overwhelming threat a test of their worth or a moment of potential failure they are likely to experience heightened stress, which can impair focus and performance. Conversely, if students adopt a growth mindset and treat exams as an opportunity to demonstrate their learning, improve their skills, or challenge themselves, they are more likely to engage positively with their preparation. This shift in perception can reduce anxiety and enhance motivation, ultimately improving both their emotional well-being and academic outcomes.

By consciously reframing stressful situations as challenges rather than threats, individuals can leverage cognitive strategies to manage their emotions and promote resilience.

Scientific Interventions

Mindfulness & Meditation

Mindfulness meditation is a proven method for training the mind to focus on the present, fostering self-awareness and emotional regulation.

- Neuroscientific Basis:Regular mindfulness practice enhances the anterior cingulate cortex and hippocampus, promoting improved attention, memory, and emotional stability. It also reduces activity in the amygdala, mitigating stress responses.
- Practical Applications:
  - Practicing guided meditation, body scans, or mindful breathing for 10–20 minutes daily improves focus and positive thinking.
  - Mindful eating, walking, or journaling are additional strategies that promote awareness and gratitude.

BEHAVIORAL SCIENCE: THE ROLE OF HABITS AND DECISION-MAKING

Research in behavioral economics and positive psychology has revealed that sustainable happiness can be cultivated through intentional behavior patterns and strategic habit formation (Thaler, 2008). By leveraging insights from cognitive biases and decision-making theories, individuals can establish habits that support long-term well-being.

The "20-Second Rule"

The "20-Second Rule", introduced by Shawn Achor in The Happiness Advantage, is a simple technique to help build good habits and break bad ones. The idea is to make positive behaviors easier to start by reducing the effort needed by just 20 seconds (Achor, 2010). For example, if you want to start reading more, placing a book on your pillow makes it easier to pick up at bedtime. On the other hand, making unwanted behaviors harder — like putting your TV remote in another room — creates just enough resistance to discourage the habit. By adding or removing small barriers like these, you can guide yourself toward healthier and more productive routines.

Scientific Interventions:

Behavioral research highlights that habit formation depends heavily on cue accessibility and friction control. The brain tends to favor behaviors that require minimal effort and avoids those that demand additional energy. By strategically adjusting the environment to reduce resistance, desired behaviors become easier to sustain.

- Neuroscientific Basis:
  - The basal ganglia, responsible for habit formation, is highly sensitive to cues. Reducing friction primes the basal ganglia to initiate automatic, desirable behaviors.
  - The dorsolateral prefrontal cortex plays a key role in executive control and decision-making. By minimizing decision fatigue, individuals reduce cognitive overload, reinforcing positive habits.

- Practical Applications:
  - Increasing Positive Behaviors: Placing a book beside the bed encourages nightly reading.
  - Reducing Negative Behaviors: Removing social media apps from the phone's home screen reduces impulsive scrolling.

Investing in Experiences Over Possessions

Research by Gilovich demonstrates that experiences, rather than material possessions, provide longer-lasting and more meaningful contributions to happiness. Unlike physical goods, experiences foster memories, strengthen relationships, and contribute to personal growth (Gilovich, 2015).

Scientific Interventions

Experiences are less prone to hedonic adaptation, meaning their positive impact persists longer than material acquisitions. They foster social bonds, which are key predictors of long-term happiness.

- Neuroscientific Basis:
  - Experiences activate the hippocampus, enhancing memory consolidation and emotional significance.
  - Socially rewarding experiences stimulate the ventral striatum and dopaminergic system, reinforcing feelings of pleasure and connection.
- Practical Applications:
  - Prioritize travel, which exposes individuals to new environments, enhancing neuroplasticity.
  - Invest in learning opportunities that stimulate the prefrontal cortex and enhance cognitive flexibility.

Goal Setting and Reward Systems

The Progress Principle, introduced by Amabile & Kramer, emphasizes that small, frequent achievements create a sustained sense of accomplishment and motivation (Amabile, 2011).

Scientific Interventions

Goal-setting leverages the brain's dopaminergic system, which responds positively to progress markers. Each milestone releases dopamine, reinforcing motivation and promoting continued effort.

- Neuroscientific Basis:
  - Dopamine is regulated by the ventral tegmental area (VTA), which strengthens motivation and learning.
  - The nucleus accumbens processes reward anticipation, reinforcing habits aligned with positive outcomes.
- Practical Applications:
  - Break large tasks into manageable steps to create consistent dopamine release.
  - Use visual progress trackers (e.g., checklists) to maintain momentum.

NEUROSCIENCE: REWIRING THE BRAIN FOR LONG-TERM HAPPINESS

The concept of neuroplasticity the brain's ability to reorganize itself by forming new neural connections underpins modern approaches to cultivating happiness (Davidson, 2012). Through intentional practices, individuals can reshape their mental frameworks and emotional responses.

Neuroplasticity and the 21-Day Rule

Research by Lazar highlights that consistent mindfulness and gratitude practices can physically alter neural pathways within just 21 days, fostering long-term improvements in mood, focus, and emotional regulation (Lazar, 2005).

Scientific Interventions

Mindfulness and gratitude practices foster emotional awareness and cognitive control, improving well-being.

- Neuroscientific Basis:
  - Meditation strengthens the prefrontal cortex, enhancing self-regulation and emotional control.
  - Gratitude activates the ventromedial prefrontal cortex, reinforcing positive thought patterns.
  - The amygdala shows reduced activity with consistent meditation, lowering stress responses.
- Practical Applications:
  - Commit to a 21-day gratitude challenge, writing down 3–5 positive reflections daily.
  - Practice guided meditation for 10–15 minutes each morning to develop calmness and focus.

Visualization and Positive Psychology

The "Best Possible Self" Exercise, introduced by Sheldon & Lyubomirsky, encourages individuals to visualize themselves achieving their most desired future outcomes. This powerful exercise fosters optimism and goal-directed behavior (Sheldon, 2006).

Scientific Interventions

Visualization enhances goal clarity, motivating individuals to pursue meaningful objectives.

- Neuroscientific Basis:
  - Visualization activates the anterior cingulate cortex, a region linked to cognitive flexibility and goal persistence.
  - The ventromedial prefrontal cortex strengthens self-belief by reinforcing positive self-image.
- Practical Applications:
  - Spend 10–15 minutes daily visualizing your ideal future in vivid detail.
  - Combine visualization with affirmations to strengthen belief in achievable outcomes.

Acts of Kindness and Social Bonds

Engaging in altruistic behaviors has profound neurological effects, activating the brain's mesolimbic reward system — the same network stimulated by pleasurable activities like food or music (Moll, 2006).

Scientific Interventions

Acts of kindness improve emotional regulation, fostering positive mood and well-being.

- Neuroscientific Basis:
  - Altruistic actions stimulate the release of dopamine, oxytocin, and endorphins, enhancing emotional warmth and social bonding.
  - The hypothalamus plays a central role in oxytocin release, reinforcing trust and connection.
- Practical Applications:
  - Perform random acts of kindness, such as buying coffee for a stranger or sending a thoughtful note.
  - Dedicate time to volunteering, which enhances empathy circuits in the insula and anterior cingulate cortex.

SOCIETAL IMPACT

By understanding the scientific foundations of happiness and the practical interventions that promote emotional well-being, individuals, communities, and institutions can implement strategies to improve overall life satisfaction. Educational systems can integrate mindfulness practices, cognitive behavioral techniques, and goal-setting strategies to enhance students' emotional resilience and academic performance. Similarly, workplaces can adopt strategies that foster positive social interactions, encourage acts of kindness, and promote healthy lifestyle choices to improve employee well-being and productivity.

Furthermore, public health initiatives can leverage insights from this research to design programs that address mental health challenges, emphasizing preventive measures such as mindfulness training, gratitude practices, and social bonding activities. By promoting these evidence-based strategies, society can reduce the prevalence of stress, anxiety, and depression while fostering a culture that values emotional well-being and resilience.

CONCLUSION

Achieving and maintaining a minimum threshold of happiness is essential for sustaining cognitive resilience, emotional stability, and overall well-being. By integrating scientific strategies grounded in biology, psychology, behavior, and neuroscience, individuals can actively cultivate happiness despite genetic predispositions or challenging life circumstances. Implementing practices such as micro-goal setting, mindfulness meditation, social bonding, and cognitive reframing empowers individuals to adopt positive habits that reinforce long-term well-being. Embracing these methods can contribute to a more emotionally resilient society, where individuals are equipped with the tools to navigate stress, improve interpersonal connections, and lead more fulfilling lives.

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HOW TO CITE?

Modi, M. (2026). Achieving the Happiness Threshold: A Scientific Approach. *Journal of Education Psychometrics and Bibliometric Studies*, 01(01), 035-049.