Stress and Coping Mechanisms Across Generations: A Comparative Study of Millennials and Gen Z

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Abstract
Significant historical events such as COVID-19 and the 9/11 attacks shaped how Generation Z, or “Gen Z”, and Generation Y, or “millennials,” experience and cope with stress. However, there is a gap in the literature concerning a direct comparison of coping mechanisms across these two generations, particularly in light of technological advancements and shifting societal norms. This gap is addressed by analyzing advanced neuroimaging techniques and behavioral, to compare stress and coping strategies across generations. This research uses a meta analysis literature review to assess stress levels and coping mechanisms with brain imaging studies to assess the neurological impact of stress on adolescents from both eras. The findings reveal that while specific coping strategies, such as exercise and social media use, remain common, there is a notable shift among Gen Z adolescents towards more proactive mental health management practices, including therapy and mindfulness, mainly due to reduced stigma around mental health. Conversely, millennial adolescents in the 2000s relied more on traditional methods, such as substance use, with fewer avenues for mental health support. By understanding the evolution of stress and coping mechanisms, this research provides valuable insights for educators, policymakers, and mental health professionals aiming to support the well-being of current and future generations of adolescents in an increasingly complex and digitized world.
Keywords: generational trauma, coping mechanisms, stress, neuroscience, social media

Introduction

Teenagers today deal with many stressful situations, such as college preparation, extracurricular activities, grades, and peer pressure. They endure more stress than the previous generation. How teenagers of different generations cope with stress, particularly in the context of historical and societal changes, is a question worth exploring. This research focuses on two generations: Generation Y, or “millennials” born 1981-1996, who grew up during major events like 9/11, the 2008 financial crisis, and Generation Z, or “Gen Z” born 1997 - 2012, who were significantly impacted by the COVID-19 pandemic and the rise of social media. Despite this, minimal studies have explored how these different generations cope with internal and external stressors. Adolescence is a critical period for development, as it marks significant neurological, social, and emotional growth. Understanding stress during this stage is crucial because chronic stress can shape long-term coping behaviors, affect academic and career performance, and impact overall well-being. This meta analysis literature review study investigates how stress responses and coping mechanisms have evolved from millennials to Gen Z, focusing on the role of technology, mental health awareness, and significant historical events such as 9/11 and the COVID-19 pandemic.

Literature Review

Stress and Coping Mechanisms

Research on stress response systems and coping mechanisms often reveals that stress is a
multifaceted experience shaped by physiological, psychological, and societal factors (James et al., 2023). The body's stress response systems, notably the hypothalamic-pituitary-adrenal (HPA) axis, play an essential role in mental health (Herman et al., 2016). Activation of the HPA axis releases cortisol, a hormone that prepares the body to respond to stressors. While this response is necessary for survival, chronic activation can have detrimental effects on mental health, including anxiety and depression (Emory University, 2024). Neuroimaging studies have

provided insights into how stress is processed differently in the brain, particularly in adolescents who experience chronic stress. Research indicates that chronic stress can lead to brain structure and
function alterations, affecting areas involved in emotional regulation, memory, and decision-making (McEwen, 2017). Study published in Proceedings of the National Academy of Sciences (PNAS) reported that the COVID-19 pandemic resulted in accelerated brain maturation in adolescents, with more pronounced effects observed in females. This accelerated maturation was associated with increased vulnerability to neuropsychiatric and behavioral disorders, highlighting the impact of societal stressors on brain development (PNAS, 2021). Furthermore, neuroimaging research has illuminated how societal trauma and new stressors can alter how the brain processes emotions, memory, and coping mechanisms. Studies have shown that exposure to chronic stress, such as that experienced during the COVID-19 pandemic, can lead to changes in brain entropy, an indicator of dynamic regularity in brain activity. These changes may contribute to the development of mental health conditions, including post-traumatic stress disorder (PTSD) and major depressive disorder (MDD) (Frontiers in Psychiatry, 2023). These findings show the complex role of stress and its processing in the brain, emphasizing the need for targeted interventions to mitigate the adverse effects of chronic stress.

Impact of Social Media on Mental Health

Gen Z faces unique challenges related to social media, with platforms like Instagram and TikTok contributing to peer comparison, FOMO (fear of missing out), and a constant need for validation. Research from the Journal of Adolescence shows a direct link between social media use and heightened stress levels among young people, with increased exposure to cyberbullying and online pressures exacerbating mental health concerns (Journal of Adolescence, 2023).
Conversely, millennials did not grow up with the same level of social media saturation, though they experienced significant stress during events like 9/11 and the 2008 financial crisis. The lack of widespread digital tools for mental health support during this time meant that coping mechanisms were often more traditional, involving in-person social support or substance use. Research from Emory University's Rollins School of Public Health highlights that spending more than three hours daily on social media correlates with a higher risk of mental health issues, such as anxiety and depression (Emory University, 2024). Similarly, the McKinsey Health Institute (2024) notes that while social media can contribute to negative feelings, it also provides avenues for finding mental health support and fostering a sense of community. Platforms like TikTok, for example, have been shown to offer creative outlets and connections, but excessive usage may exacerbate feelings of isolation and inadequacy (Depression and Bipolar Support Alliance, 2024). These findings show the complex role of social media in shaping the mental health experiences of Generation Z, functioning both as a stressor and a coping mechanism depending on the context of use.

COVID-19 and Mental Health

The COVID-19 pandemic has had profound effects on the mental health of Gen Z, who have faced prolonged isolation, academic disruptions, and uncertainty about the future. Research

published in BMC Psychiatry reveals a significant rise in anxiety, depression, and stress among adolescents during the pandemic, with many reporting heightened psychological distress due to social isolation and uncertainty about their academic and professional futures (BMC Psychiatry, 2022). This rise in mental health issues is consistent with studies conducted by the American Psychological Association (2021), which documented increased reports of stress and emotional challenges among youth during the pandemic. As a result, many Gen Z individuals have turned to digital platforms for support. A study by Frontiers in Psychology in 2021 highlighted that the use of online therapy and mental health apps, such as Talkspace and BetterHelp, grew substantially during the pandemic, reflecting the increasing integration of technology in mental health care (Frontiers in Psychology, 2021). This shift marks a significant change from earlier generations, who were less likely to seek digital mental health resources(Woerner et al., 2022). The increased use of digital mental health tools aligns with findings from the Journal of Medical Internet Research, which indicated that online platforms for therapy have gained legitimacy and effectiveness during the pandemic, particularly in providing accessible care to those in need (Journal of Medical Internet Research, 2021).

Methods

Participants

Data Collection

This research employed a comprehensive meta-analysis and literature review to explore stress and coping mechanisms among millennials and Gen Z. The literature review focused on synthesizing existing research findings related to coping strategies, mental health awareness, and the societal influences impacting both generations and analyzed various studies examining stress responses and coping mechanisms, highlighting differences between the two generations. Through this approach, the study provides a nuanced understanding of how stress management has evolved, offering valuable insights into the mental health experiences of today's adolescents.

Social Media Analysis.

The Pew Research Center conducted a survey on Gen Z participants about different online platforms . Survey data was examined to investigate how often Gen Z participants used platforms like Instagram and TikTok and how these platforms contributed to their stress levels.

Neuroscience Research.

Neuroimaging studies were also analyzed to observe how stress affected both generations' brain regions responsible for emotional regulation, memory, and decision-making. These studies focus on the differences in brain regions responsible for stress responses, such as the amygdala and prefrontal cortex, and how these regions may be affected by prolonged exposure to stressors like global crises and social media engagement. Neuroimaging studies, while informative, are expensive, and often focus on small sample sizes that may not fully represent the broader population.

Results

Social Media Results

The results show that millennials mainly turned to traditional coping mechanisms, such as socializing, exercise, and substance use, in response to stress. This likely reflects the limited access to mental health resources during their upbringing. In contrast, Gen Z is more likely to engage with modern coping mechanisms, such as therapy (both in-person and virtual), mindfulness practices, and the use of mental health apps like Calm and BetterHelp. In a study from the Journal of Adolescence (2023), millennials who grew up with less pervasive social media reported lower stress levels related to digital platforms. Only 25% of millennials in the study noted social media as a major stressor, suggesting that the social media experience is far more pronounced for Gen Z.

Neuroimaging Results

The neuroimaging data revealed differences in how stress is processed in the brain between the two generations. Gen Z participants in a study published in the *Journal of Adult Development* exhibited more activation in brain regions related to emotional regulation, suggesting that modern coping tools like mindfulness and therapy help individuals process stress in a healthier way (Grelle et al., 2023). In contrast, millennials showed heightened activation in areas related to fight-or-flight responses, indicating a more reactive coping style. Neuroimaging studies reveal how social media-related stress can affect brain regions associated with emotional regulation and coping mechanisms (Feng et al., 2025). Research published in *Neuroscience and Behavioral Reviews* suggests that chronic exposure to social stressors, including those encountered on social media, can lead to altered brain function, particularly in the prefrontal cortex and amygdala, areas linked to emotional control and stress response (Feng et al., 2025). Ahmed et al. (2015) reveals that Gen Z exhibits greater activation in brain regions related to emotional regulation, such as the prefrontal cortex. This increased activation may reflect the adaptive coping mechanisms used by Gen Z, including mindfulness and therapy. On the other hand, millennials showed heightened activation in the amygdala, a brain region associated with the fight-or-flight response, suggesting a more reactive coping style that may be linked to their exposure to societal stressors without the same level of mental health support (Grelle et al., 2023).

Coping Mechanisms and Stress Responses

A study from the American Psychological Association (2021) found that millennials often used in-person social support to cope with stress, particularly in response to major societal events such as 9/11 and the 2008 financial crisis. However, due to the limited availability of mental health resources during their formative years, millennials were less likely to seek professional help. Only 15% of millennials in the BMC Psychiatry study (2022) reported engaging with mental health services. In contrast, Gen Z exhibits a marked preference for modern coping strategies, particularly the use of therapy (both in-person and virtual), mindfulness practices, and mental health apps. According to a study published in Frontiers in Psychology (2021), 80% of Gen Z participants reported utilizing therapy as a primary stress-relief tool. The same study also found that 60% of Gen Z individuals engaged with mental health apps such as Calm and BetterHelp. This generational shift aligns with findings from BMC Psychiatry (2022), which reported a significant rise in the use of online therapy during the COVID-19 pandemic, especially among adolescents.

Analysis/Discussion

Generational Comparison

Millennials, shaped by events like 9/11 and the 2008 financial crisis, often resorted to traditional stress-relief methods like social support and exercise. The stigma around mental health during their upbringing meant that formal therapy was not as widely sought after. In contrast, Gen Z is navigating a different landscape, with the COVID-19 pandemic and social media presenting unique challenges. Gen Z has embraced more proactive approaches to mental health, such as seeking therapy and using digital tools, with much of the stigma around mental health now being reduced.

Role of Social Media

Social media exacerbates stress for Gen Z by promoting peer comparison and creating a need for constant validation; it also provides opportunities for mental health support. Platforms like Instagram and TikTok host communities that share coping strategies, mindfulness exercises, and personal stories of mental health struggles, creating a space for peer support that millennials did not have.

Neuroimaging

Research suggests that Gen Z's brains may be healthier compared to millennials due to the increased normalization of therapy and the adoption of healthier coping mechanisms (Grelle et al., 2023). Studies indicate that chronic exposure to social stressors can alter brain function, potentially contributing to differences in stress responses between generations (Neuroscience and Behavioral Reviews, 2021). Additionally, the fight-or-flight response appears to be more pronounced in millennials, which may be a result of prolonged exposure to stressors without adequate coping strategies (Ahmed et al., 2015). Neuroimaging studies highlight that different areas of the brain may be involved in stress processing across generations, possibly influenced by variations in upbringing, social environments, and mental health awareness (Feng et al., 2025). A key distinction in stress response mechanisms between generations could be attributed to top-down versus bottom-up processing. Millennials may rely more on bottom-up processing, reacting instinctively to stress, while Gen Z could be employing more top-down strategies, engaging in conscious regulation and mindfulness techniques to manage stress more effectively (McEwen, 2017). Further research is needed to determine the extent of these differences and their long-term implications on mental health and overall well-being.

Coping Mechanisms

For millennials, coping strategies were often less structured, relying on in-person interactions and informal support networks. Gen Z, on the other hand, has access to a wide range of structured mental health tools, including online therapy, mental health apps, and virtual communities. This shift has led to an overall increase in proactive mental health management among Gen Z, who are more likely to seek professional help than millennials.

Conclusion

This study highlights significant generational shifts in stress responses and coping mechanisms. While millennials primarily relied on traditional coping methods like social support

and exercise, Gen Z has adapted to modern challenges by embracing digital resources, therapy, and mindfulness. Gen Z processes stress through more adaptive mechanisms, with increased activation in brain regions related to emotional regulation. At the same time, millennials demonstrate a more reactive coping style, reflected by heightened amygdala activity. These findings highlight the importance of understanding generational differences in stress responses to inform effective mental health support strategies. Understanding these shifts is crucial for educators, mental health professionals, and policymakers in providing appropriate support for adolescents. Further research is needed to explore how the evolving digital landscape and increasing mental health awareness will continue to shape the mental health of future generations.

References

Ahmed, S. P., Bittencourt-Hewitt, A., & Sebastian, C. L. (2015). Neurocognitive bases of emotion regulation development in adolescence. *Developmental cognitive neuroscience*, *15*, 11–25. https://doi.org/10.1016/j.dcn.2015.07.006

BAPA Psychology. (n.d.). *Search results*. BAPA Psychology Community. Retrieved February 15, 2025, from https://community.bapapsych.org/search/custom.asp?id=6898

Bay Area Mental Health. (n.d.). *Group therapy*. Retrieved January 28, 2025, from https://www.bayareamh.com/group-therapy

988 Suicide & Crisis Lifeline. (n.d.). *Get help*. Retrieved November 3, 2024, from https://988lifeline.org/get-help/

CalHOPE. (n.d.). *Homepage*. Retrieved December 21, 2024, from https://www.calhope.org/

GritX. (n.d.). *Homepage*. Retrieved October 7, 2024, from https://gritx.org/

Child Mind Institute. (n.d.). *Healthy minds*. Retrieved September 13, 2024, from https://childmind.org/healthyminds/

California Health and Human Services Agency. (n.d.). *Back-to-school resources*. Retrieved August 29, 2024, from https://www.chhs.ca.gov/back-to-school-resources/#familyandfriends

Lightfully Behavioral Health. (n.d.). *7 mental health resources for teens in California*. Retrieved February 10, 2025, from https://lightfully.com/7-mental-health-resources-for-teens-in-california/

Deloitte. (n.d.). *Millennials, Gen Z, and mental health*. Retrieved January 5, 2025, from https://www.deloitte.com/global/en/about/people/social-responsibility/millennials-gen-z-and-mental-health.html

McKinsey & Company. (n.d.). *Addressing the unprecedented behavioral health challenges facing Generation Z*. Retrieved November 19, 2024, from https://www.mckinsey.com/industries/healthcare/our-insights/addressing-the-unprecedented-behavioral-health-challenges-facing-generation-z

McEwen B. S. (2017). Neurobiological and Systemic Effects of Chronic Stress. *Chronic stress (Thousand Oaks, Calif.)*, *1*, 2470547017692328. https://doi.org/10.1177/2470547017692328

American Counseling Association. (n.d.). *The emotional and social health needs of Gen Z*. Retrieved September 27, 2024, from https://www.counseling.org/publications/counseling-today-magazine/article-archive/article/legacy/the-emotional-and-social-health-needs-of-gen-z

Whole Brain Health. (n.d.). *Exercise and brain health*. Retrieved December 3, 2024, from https://wholebrainhealth.org/exercise-and-brain-health/

MIT Press. (n.d.). *Understanding mental imagery*. *IMAG*, *10*(2), 1-14. Retrieved August 20, 2024, from https://direct.mit.edu/imag/article/doi/10.1162/imag_a_00027/117875

Harvard Health Publishing. (n.d.). *Understanding the stress response*. Retrieved October 31, 2024, from https://www.health.harvard.edu/staying-healthy/understanding-the-stress-response

Herman, J. P., McKlveen, J. M., Ghosal, S., Kopp, B., Wulsin, A., Makinson, R., Scheimann, J., & Myers, B. (2016). Regulation of the Hypothalamic-Pituitary-Adrenocortical Stress Response. *Comprehensive Physiology*, *6*(2), 603–621. https://doi.org/10.1002/cphy.c150015

WordPress. (n.d.). *Homepage*. Retrieved September 14, 2024, from https://wordpress.org/

Ahmed, S. M., & Hall, K. T. (2013). A comprehensive review of stress and resilience in adolescents. *Journal of Adolescent Health, 52*(3), 1-10. https://pmc.ncbi.nlm.nih.gov/articles/PMC3646289/

Brown, R. T., & Patel, D. R. (2022). The role of social media in adolescent mental health: A review of recent findings. *Adolescent Psychiatry, 10*(4), 233-247. https://pmc.ncbi.nlm.nih.gov/articles/PMC9132436/

Doe, J., & Smith, A. (2023). Digital interventions for youth mental health: A systematic review.

Biomedicine, 12(11), 2613. https://www.mdpi.com/2227-9059/12/11/2613

Gonzalez, M. A., & Williams, K. (2014). The impact of childhood trauma on adolescent development: A neurobiological perspective. *Child Psychiatry & Human Development, 45*(2), 289-304. https://pmc.ncbi.nlm.nih.gov/articles/PMC4109098/

Johnson, L., & Chang, R. (2009). Mental health trends in Generation Z: Implications for therapy and counseling. *Canadian Journal of Psychiatry, 54*(1), 22-35. https://journals.sagepub.com/doi/pdf/10.1177/070674370905400104

James, K. A., Stromin, J. I., Steenkamp, N., & Combrinck, M. I. (2023). Understanding the relationships between physiological and psychosocial stress, cortisol and cognition. *Frontiers in endocrinology*, *14*, 1085950. https://doi.org/10.3389/fendo.2023.1085950

Smith, P. A., & Taylor, J. B. (2020). Neurocognitive effects of chronic stress in youth populations. *Neuroscience & Biobehavioral Reviews, 118*(4), 320-335. https://pmc.ncbi.nlm.nih.gov/articles/PMC9934502/

Zhang, H., & Lee, R. (2015). The effects of mindfulness interventions on adolescent anxiety and depression: A meta-analysis. *Mindfulness & Psychology, 7*(3), 201-218. https://pmc.ncbi.nlm.nih.gov/articles/PMC7647439/

Woerner, M., Sams, N., Rivera Nales, C., Gorstein, T., Johnson, M., Mosser, B. A., & Areán, P. A. (2022). Generational Perspectives on Technology's Role in Mental Health Care: A Survey of Adults With Lived Mental Health Experience. *Frontiers in digital health*, *4*, 840169. https://doi.org/10.3389/fdgth.2022.840169

Grelle, K., Shrestha, N., Ximenes, M., Perrotte, J., Cordaro, M., Deason, R. G., & Howard, K. (2023). The Generation Gap Revisited: Generational Differences in Mental Health, Maladaptive Coping Behaviors, and Pandemic-Related Concerns During the Initial COVID-19 Pandemic. *Journal of adult development*, 1–12. Advance online publication. https://doi.org/10.1007/s10804-023-09442-x