HIGH SCHOOL EDITION
Journal of Student Research
Volume 12 Issue 4 (2023)

Building Resilience to Reduce Mental Health Illnesses: Guidelines for Government Actions

Yixuan Mu

The Bishop Strachan School, Canada

ABSTRACT

Childhood and adolescence are crucial stages for the development of mental well-being. Despite this significance, about 20% of U.S. children experience mental health disorders. The COVID-19 pandemic has further heightened this concern. This study investigates the intricate interplay of biological, psychological, and social mechanisms in shaping resilience towards mental health disorders. It also examines the implications of this analysis for future U.S. government actions in fostering resilience among children. After an in-depth analysis, biological, psychological, and social mechanisms are all proven to have profound impacts on the development of mental health resilience. But social mechanisms (e.g., parent-child bonds) emerge as the most influential ones, as they can determine the extent to which biological (e.g., oxytocin hormone) and psychological mechanisms (e.g., optimism) play in resilience development. This discovery highlights the importance of social dimensions in bolstering mental health resilience. As a result, effective government measures should prioritize these aspects to optimize the synergistic potential of the three mechanisms (biological, psychological, and social). Potential measures include enhancing school-based mental health services and improving living standards in low-income areas.

Introduction

Mental health is crucial for the overall well-being and functioning of a country. It is a significant indicator of life satisfaction and a vital component of economic development by boosting individual productivity. Childhood and adolescence are the critical and formative stages for positive mental health development (World Health Organization, 2021). Yet, as reported by the Agency for Healthcare Research and Quality (2022), a fluctuating 20% of children and adolescents ages 3 to 17 experience mental health disorders in the U.S. The recent COVID-19 pandemic exacerbated these issues by instilling fear of death, inducing economic instability, and augmenting social isolation. In response to this youth mental health crisis, U.S. Surgeon General Vivek Murthy issued an Advisory in 2021 calling for the nation's immediate action. Among a myriad of advisories, particular emphasis was placed on implementing resilience-building programs (Office of the Surgeon General, 2021). However, maximizing the potential of these programs requires a comprehensive understanding of resilience's underlying mechanisms.

Thus, this research paper aims to analyze the degree to which biological, psychological, and social mechanisms contribute to the development of resilience, and employ the result of the analysis to determine appropriate future measures that the US government should implement in order to reduce the number of mental health illnesses in children.

Biological Mechanisms

Biological factors contribute significantly to the development of individual differences in adaptive capacities. A study of 1,116 five-year-old twin pairs exposed to socioeconomic deprivation shows that genetic effects account for approximately 46% of the variation in children's cognitive resilience and approximately 70% in behavioral resilience (Kim-

Cohen et al., 2004). This data implies that certain genotypes can influence the impact of adverse experiences, consequently alleviating or aggravating the adaptation process. For example, Professor Joan Kaufman (2004) from the Johns Hopkins School of Medicine, together with other researchers, disclosed that children with two short alleles of the serotonin transporter gene[1] have a higher risk of developing depression. Outside of genes, other biological factors, such as hormones, can also alter the impact of adversity. Oxytocin is a hormone that promotes relationship bonding. It serves as a stress-protective factor by evoking feelings of affiliation (Ordoñana et al., 2013). In fact, a study has suggested oxytocin as the focus of novel treatment approaches for mental health illnesses characterized by social dysfunction, such as autism and social anxiety disorder (Meyer-Lindenberg, 2011). This study indicates that the function of this hormone to facilitate positive interpersonal interactions can strengthen overall happiness and thus alleviate the impact of adversity. Overall, the groundbreaking findings on the impact of these biological factors on resilience can provide a foundation for new mental health interventions in children.

Nevertheless, various scientists claim that current knowledge renders firm conclusions unattainable. "Resilience to stress is unlikely to be explained by a single neurotransmitter or hormone" (p. 305), psychiatrist Fatih Ozbay (2008) and his fellow colleagues explain. However, the existing knowledge gap can be ameliorated by interpreting the link between genetic and environmental factors. Alongside other researchers, Psychology Professor Julia Kim-Cohen (2004) from the University of Illinois at Chicago has successfully identified an active gene-environment correlation: children can proactively select environments that align with their specific genetic characteristics to optimize their resilience development. An example is an extroverted child exchanging conversations more frequently with their teacher, which in turn bolsters cognitive skills that are crucial in effectively navigating setbacks (Kim-Cohen et al., 2004). Recognizing this, a prospective resilience-building action should focus on universalizing support, such as listening services, in children's neighborhoods and educational institutions to promptly augment children's learning potential when they do seek resilience-building opportunities. Overall, although the individual impact of biological factors on resilience development may be limited due to a scientific knowledge gap, their convergence with social support can amplify their influence.

Psychological Mechanisms

Among the psychological mechanisms, positive expectancies, including optimism and hope, have a positive correlation with resilience. According to Nelson Mandela (1994), who spent 27 years in prison for opposing South Africa's policy of apartheid, being optimistic was the primary reason that he did not "give [himself] up to despair" (Ch. 60, para. 16). Additionally, Haitian survivors of the 2010 earthquake acknowledge that their capacity for resilience was largely derived from the hope of receiving international aid and witnessing possible changes in national policies that an impending election would deliver (Rahill et al., 2016). Based on the two examples, positive expectancies are proven to buffer stress from traumatic events. Besides, a negative correlation is identified between the two positive expectancies and post-traumatic stress disorder (PTSD) (Gallagher, 2020). Consequently, they can be expected to reinforce resistance to mental health illnesses.

One caveat worth noting is that positive expectancies may provoke children "to become overly persistent with unattainable goals" (Chamorro-Premuzic & Lusk, 2017, para. 4). Regarding the Haitian survivors, their persistent hope for government action was not only unfulfilled but also hindered them from executing individual recovery actions (Rahill et al., 2016). For this reason, it is imperative that the deployment of optimism and hope in resilience development is not solely dependent on external forces but rather on individual control.

Yet, maintaining control should not preclude the opportunity to receive external assistance. In fact, accepting appropriate social support that is within one's control can enhance positive expectancies-derived resilience. Relationship bonding is an example of such support exhibited by Haitian earthquake survivors and Nelson Mandela. The latter

[1] a gene that produces a protein transporter responsible for moving serotonin, which modulates mood (Kaufman et al., 2004).

elucidates that the robust resilience he possessed was a result of peer support, in which everyone in prison deployed individual strength to compensate for areas of weakness, thus fostering a resilient collective (Mandela, 1994). According to researchers led by Lauren Sippel (2015) from the National Center for PTSD, the presence of a companion induces the release of oxytocin[2] to inhibit fear and stress responses. This research explains why an individual's social networks can significantly strengthen positive emotions. The research, combined with Mandela's experience, validates the necessity of emotionally responsive environments that can provide many interactive experiences for children to feel loved and supported.

Social Mechanisms

According to the Ecological Systems Theory formulated by American psychologist Urie Bronfenbrenner (1976), children's external environment has a profound impact on their development. Therefore, other than individual-oriented mechanisms such as biological and psychological, extra attention should be devoted to social mechanisms. The most substantial clusters of social factors are parent-child relationships, social support, and life quality.

As discussed previously, relationship bonding effectively buffers against the impact of adversity. Among the array of bonds, parent-child relationships are the most impactful due to their intimate nature. Ann Masten (2001), the 2014 recipient of the Bronfenbrenner award for lifetime contribution to developmental psychology, concludes that parental warmth fosters the acquisition of essential competence and minimizes the risk of developing antisocial personality disorder. Hence, dysfunctional families characterized by conflict, distant relationships, and persistent emotional neglect tend to amplify the susceptibility to mental health illnesses, whereas nurturing ones tend to reduce it. In fact, strikingly, healthy parent-child relationships have been found to modulate the expression of genetically inherited traits. Kaufman et al. (2004) demonstrate that children with two short alleles of the serotonin transport gene are at a doubled risk of developing depression when subjected to maltreatment. Thus, prospective actions to prevent mental health illnesses should revolve around promoting a caring environment during childhood.

Studies have shown that social support can effectively promote such an environment and prevent mental health illnesses at both the familial and community levels. In low-income families with newborn babies, social support that teaches infant stimulation activities moderates stress on parenting and augments children's resistance to antisocial behaviors (Kim-Cohen et al., 2004). In schools, resilience-focused interventions suggest promise for diminishing depressive and anxiety symptoms (Dray et al., 2017). But most notably, advancing social support alleviates community-scale psychological distress during a post-disaster period. For instance, a year after the 2010 Deepwater Horizon Oil Spill[3], the Centers for Disease Control and Prevention's reported number of people with poor mental health was lower in 2011 due to increased mental health services (Buttke et al., 2012). Despite this, the number of mental health illnesses remains higher than before the oil spill. The primary reason, in general, is the higher proportion of indicators that reflect low quality of life (Buttke et al., 2012, p. 1). As stated by Professor David Abramson (2010) from the New York University of Global Public Health and his fellow colleagues, children have limited capacities to independently adapt to stressful circumstances. Their resilience is highly dependent on factors that reflect a high quality of life, which include stable housing, a high level of income, and a high sense of community (Abramson et al., 2010). This alludes to a bidirectional relationship that exists between healthy communities and resilient individuals (Sippel et al., 2015). Therefore, certain social supports to bolster resilience development should prioritize elevating living conditions within communities through the provision of social resources and benefits.

Ultimately, the analysis of social mechanisms indicates that a synergistic effect of resilience building can be achieved through an integrated approach that targets not only individuals but also families and communities.

[2] A hormone that evokes feelings of affiliation, promotes relationship bonding, and reduces stress (Ordoñana et al., 2013).

[3] An industrial disaster resulted from the explosion of the Deepwater Horizon drilling unit off the coast of Louisiana. It is the largest oil spill in the history of marine oil drilling operations (Buttke et al., 2012).

Recommendations for Government Actions

The multidimensional nature of the resilience construct demonstrates an evident interacting system between biological, psychological, and social mechanisms. In particular, social mechanisms (e.g., social support, life quality) can determine the extent to which the other two can be expressed in certain situations. Hence, prospective government actions should aim to maximize the synergistic effect of the three mechanisms, with additional effort dedicated to the social aspect. Potential actions are listed below.

Firstly, the U.S. government should enhance the existing surveillance systems that monitor children's mental health trends to ensure immediate action. Such improvements should prioritize expanding the scope of surveillance to monitor more disorders and universalizing the same surveillance method across different systems to achieve data sharing (Bitsko et al., 2022). Other than age, gender, and race, the surveillance systems should also collect data such as socioeconomic background, family environment, and insurance status. Comprehensive data on children's external environment ensures appropriate treatment choices.

Secondly, the U.S. government should support and subsidize the expansion of mental health services in schools across the nation. This includes implementing regular screening, funding the expansion of school psychologists, and establishing laws that mandate mental health education sessions (Office of the Surgeon General, 2021). In fact, March 2021 marked the successful passing of Senate Bill 224 in California, which requires all school districts to include mental health education as part of the curriculum (National Alliance on Mental Illness California, n.d.). This achievement showcases the feasibility of extending mental health services throughout the nation.

Thirdly, the government should allocate resources, personnel, and funding to extended scientific research in order to completely understand the biological mechanisms of resilience and promote the realization of biological interventions.

Lastly, and most importantly, the U.S. government should address the economic and social barriers that are responsible for mental health illnesses among children and their families. Potential actions include creating job opportunities in low-income areas, providing access to education and stable housing, improving healthcare facilities, combating inequality, and facilitating neighborhood security.

Limitations

Three limitations of the four solutions require attention. To begin with, the diverse ways resilience can be constructed suggest that children may exhibit exceptional resistance to mental health illnesses in one area but not in others (Luthar et al., 2000). Therefore, all areas need to be evaluated individually during mental health support, which can result in slower treatment. Furthermore, all the solutions induce optimism that is dependent on external forces, which, as discussed with psychological mechanisms, may lead to the hope of unattainable goals that result in more severe mental health distress if the goals are not fulfilled. Another limitation is that government actions that aim to elevate life quality require a prolonged period. But fortunately, the present government family and child support services, such as Paid Parental Leave and the Low-Income Home Energy Assistance Program, can help temporarily address economic and social challenges in certain families.

Conclusion

After a thorough analysis of resilience's biological, psychological, and social mechanisms, all three are proven to have a profound impact on children's adaptive capacities to adversity. But social mechanisms are found to be the most influential as mediators of the effects produced by the other two. This analysis leads to the conclusion that future government actions should emphasize improving surveillance systems, promoting mental health services, and elevating life quality while continuing scientific research on potential biological interventions.

References

Abramson, D. M., Park, Y. S., Stehling-Ariza, T., & Redlener, I. (2010). Children as bellwethers of recovery: dysfunctional systems and the effects of parents, households, and neighborhoods on serious emotional disturbance in children after Hurricane Katrina. *Disaster medicine and public health preparedness, 4*(Suppl. 1), S17–S27. https://doi.org/10.1001/dmp.2010.7

Agency for Healthcare Research and Quality. (2022, October). *National Healthcare Quality and Disparities Reports*. Retrieved April 28, 2023, from https://www.ahrq.gov/research/findings/nhqrdr/index.html

Bitsko, R. H., Claussen, A. H., Lichstein, J., Black, L. I., Jones, S. E., Danielson, M. L., Hoenig, J. M., Davis Jack, S. P., Brody, D. J., Gyawali, S., Maenner, M. J., Warner, M., Holland, K. M., Perou, R., Crosby, A. E., Blumberg, S. J., Avenevoli, S., Kaminski, J. W., Ghandour, R. M., & Contributor (2022). Mental Health Surveillance Among Children - United States, 2013-2019. *Morbidity and Mortality Weekly Report Supplements 2022, 71*(Suppl. 2), S1–S42. https://doi.org/10.15585/mmwr.su7102a1

Bronfenbrenner, U. (1976). The Experimental Ecology of Education. *Educational Researcher*, *5*(9), 5–15. https://doi.org/10.2307/1174755

Buttke, D., Vagi, S., Schnall, A., Bayleyegn, T., Morrison, M., Allen, M., & Wolkin, A. (2012). Community Assessment for Public Health Emergency Response (CASPER) one year following the Gulf Coast oil spill: Alabama and Mississippi, 2011. *Prehospital and disaster medicine, 27*(6), 496–502. https://doi.org/10.1017/S1049023X12001380

Chamorrow-Premuzic, T., & Lusk, D., Ph.D. (2017, August 16). The dark side of resilience. *Harvard Business Review*. https://hbr.org/2017/08/the-dark-side-of-resilience

Dray, J., Bowman, J., Campbell, E., Freund, M., Wolfenden, L., Hodder, R. K., McElwaine, K., Tremain, D., Bartlem, K., Bailey, J., Small, T., Palazzi, K., Oldmeadow, C., & Wiggers, J. (2017). Systematic review of universal resilience-focused interventions targeting child and adolescent mental health in the school setting. *Journal of the American Academy of Child & Adolescent Psychiatry, 56*(10), 813–824. https://doi.org/10.1016/j.jaac.2017.07.780

Gallagher, M. W., Long, L. J., & Phillips, C. A. (2020). Hope, optimism, self-efficacy, and posttraumatic stress disorder: A meta-analytic review of the protective effects of positive expectancies. *Journal of Clinical Psychology, 76*(3), 329–355. https://doi.org/10.1002/jclp.22882

Kaufman, J., Yang, B.-Z., Douglas-Palumberi, H., Houshyar, S., Lipschitz, D., Krystal, J. H., Gelernter, J., & McEwen, B. S. (2004). Social Supports and Serotonin Transporter Gene Moderate Depression in Maltreated Children. *Proceedings of the National Academy of Sciences of the United States of America*, *101*(49), 17316–17321. http://www.jstor.org/stable/3374003

Kim-Cohen, J., Moffitt, T. E., Caspi, A., & Taylor, A. (2004). Genetic and Environmental Processes in Young Children's Resilience and Vulnerability to Socioeconomic Deprivation. *Child Development*, *75*(3), 651–668. http://www.jstor.org/stable/3696586

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The Construct of Resilience: A Critical Evaluation and Guidelines for Future Work. *Child Development*, *71*(3), 543–562. http://www.jstor.org/stable/1132374

Mandela, N. (1994). *Long walk to freedom.* Little, Brown.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*(3), 227–238. https://doi.org/10.1037/0003-066X.56.3.227

Meyer-Lindenberg, A., Domes, G., Kirsch, P., & Heinrichs, M. (2011, August 19). Oxytocin and vasopressin in the human brain: social neuropeptides for translational medicine. *Nature Reviews Neuroscience*, *12*, 524–538. https://doi.org/10.1038/nrn3044

National Alliance on Mental Illness California. (n.d.). *Legislation Spotlight: SB 224*. Retrieved May 1, 2023, from https://namica.org/legislation-spotlight-sb-224/

Office of the Surgeon General. (2021, December 6). *The U.S. Surgeon General's Advisory*. Health and Human Services. Retrieved April 28, 2023, from https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf

Ordoñana, J. R., Bartels, M., Boomsma, D. I., Cella, D., Mosing, M., Oliveira, J. R., Patrick, D. L., Veenhoven, R., Wagner, G. G., Sprangers, M. A. G., & The GENEQOL Consortium. (2013). Biological pathways and genetic mechanisms involved in social functioning. *Quality of Life Research*, *22*(6), 1189–1200. http://www.jstor.org/stable/24724306

Ozbay, F., Fitterling, H., Charney, D., & Southwick, S. (2008, October 16). Social support and resilience to stress across the life span: A neurobiologic framework. *Current Psychiatry Reports*, *10*, 304–310. SpringerLink. https://doi.org/10.1007/s11920-008-0049-7

Rahill, G. J., Ganapati, N. E., Joshi, M., Bristol, B., Molé, A., Jean-Pierre, A., Dionne, A., & Benavides, M. (2016). In their own words: Resilience among Haitian survivors of the 2010 earthquake. *Journal of Health Care for the Poor and Underserved, 27*(2), p. 580–603. https://doi.org/10.1353/hpu.2016.0100

Sippel, L. M., Pietrzak, R. H., Charney, D. S., Mayes, L. C., & Southwick, S. M. (2015). How does social support enhance resilience in the trauma-exposed individual? *Ecology and Society*, *20*(4). http://www.jstor.org/stable/26270277

World Health Organization. (2021, November 17). *Mental health of adolescents*. Retrieved May 1, 2023, from https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health