

Three Theories of Immigrant Mental Health:

Cumulative Disadvantage/Advantage, Acculturation Stress, and Culture Gene Co-Evolutionary

Theory of Mental Disorders/Dual Inheritance Theory

Angela M. Palmer

Visionary Practice and Regenerative Leadership, Southwestern College

VPRL 670: Roots and Streams

Dr. Molly Bigknife Antonio

May 12, 2024

Abstract

There are multiple theories that explain the mental health crisis in various immigrant generations. However, there is little comparative research on how theories interact with each other. This literature review examines the synergies and differences between cumulative disadvantage/advantage theory, acculturation stress, and culture gene co-evolutionary theory of mental disorders/dual inheritance theory. An analysis of peer-reviewed articles on each of the three theories was conducted and diagrammed to determine the relationship between the theories. Lived experience of the author and memoirists are included as additional evidence. Results of the analysis show a significant overlap in focus areas for all three theories and that the theories can compound upon each other, leading to potential future discoveries on the impact of the interaction between lived experience and genetic predisposition on mental health diagnoses. Future research should include quantitative and qualitative longitudinal studies of diverse and defined immigrant populations that incorporate best practices from all three theories to further investigate mental health implications.

Keywords: mental health, immigrant populations, literature review

Three Theories of Immigrant Mental Health: Cumulative Disadvantage/Advantage, Acculturation Stress, and Culture Gene Co-Evolutionary Theory of Mental Disorders/Dual Inheritance Theory

It has been projected that by the year 2030, 13% of the world's population will suffer from mental, neurological, and substance abuse disorders. Globally, it costs more than \$600 million per disorder to prevent and create interventions for these disorders (Chiao et al., 2020). With the rapid increase in these disorders in the coming years and the increase in costs that will be associated with those rising numbers, it has never been more important than it is now to thoroughly study the root causes of mental health issues.

In 2020, an estimated 281 million people or 3.6% of the world's population were international migrants (Mcauliffe & Triandafyllidou, 2021). Although a small population from a worldwide perspective, the effects of immigration on subsequent generations is exponentially larger. The immigrant paradox states that first generation immigrants are more likely to have better behavioral and mental health outcomes than non-immigrants and children in later immigrant generations (Vaughn et al., 2014). Taking the immigrant paradox in conjunction with the growing number of international migrants worldwide and the rapidly increasing prevalence of mental health disorders, it is important that researchers examine the root cause and therefore potential prevention and interventions for mental health issues within and across immigrant and immigrant generation populations.

There are three theories that attempt to explain the immigrant paradox: theory of cumulative disadvantage/advantage, acculturation stress, and culture gene co-evolutionary theory of mental disorders or dual inheritance theory. These three theories have been

developed mostly in silos, each being explored separately and never cooperatively. However, it is within the strength of the three together that future research could provide greater insight into the mental health of immigrants and subsequent generations.

Theory of Cumulative Disadvantage/Advantage

Most white Americans can only understand racial trauma as a spectacle. Right after Trump's election, the media reported on the uptick in hate crimes, tending to focus on the obvious heretical displays of hate: the white high school students parading down the hallways wearing Confederate flag capes and the graffitied swastikas. What's harder to report is not the incident itself but the stress of its anticipation. The white reign of terror can be invisible and cumulative, chipping away at one's worth until there's nothing left but self-loathing.

-Cathy Park Hong, *Minor Feelings: An Asian American reckoning*

As a child, I was born to two young biological parents. One came from a supportive family of medium socio-economic status and lived in a country where they are racially the majority. They owned property as their family had done for generations. The other came from a family that was domineering and controlling with low socio-economic status. Although raised in a country where they were racially the majority, they immigrated to the United States upon my birth, making them a racial minority and lacking the language and culture of the location to which they moved. Although their family-owned property, the family did not provide monetary support and upon immigrating, this biological parent, did not own property. Based on the theory of cumulative disadvantage/advantage, I was immediately subjected to specific

structural advantages and disadvantages that would adversely impact my mental health as I aged.

The theory of cumulative disadvantage/advantage is a theory that states that disadvantages and advantages at young ages build upon each other creating a cascading effect of advantages and disadvantages in a person's future. For example, disadvantages in health equity can compound over time, leading to an increase in health inequities as a population ages (Melo et al., 2019; Seabrook & Avison, 2012). The differences that start off small as a child become larger with age. This theory has evolved into the cumulative inequity theory and is based on the idea that structural inequities occur starting at birth (Ferraro et al., 2009).

This theory is important because in a typical study, a particular disadvantage is measured at a specific period. However, the theory of cumulative disadvantage/advantage, takes multiple disadvantages/advantages into account over time. This is particularly important because small disadvantages, can amass into a substantial difference. This is particularly true within three domains: "across generations" (e.g., parental health outcomes can impact those of children) (Blank et al. (Eds.), 2004, p. 224), "across processes within a domain" (e.g., negative experiences in elementary school can impact experiences in school at older ages) (p. 224), and "across domains" (e.g., living in a specific neighborhood may limit access to other resources) (p. 224). By identifying disadvantages early on, prevention and interventions can potentially be put in place to reverse and mitigate issues that may arise later in life (Nurius et al., 2015).

Cumulative disadvantage/advantage has been applied to many areas of research including health, quality of life, race, gender, and employment opportunities (Melo et al., 2019). Significant research has been done in the mental health field showing the youth that have

multiple disadvantages, for example, low socio-economic income and minority status, are more likely to experience various types of discrimination, which increases the chances later of mental health issues (Grollman, 2012; Nurius et al., 2015). This is especially important in immigrant populations as it has been shown that as immigrants adapt to the majority culture that they migrate to, the health disparities over time increase (Riosmena et al., 2015).

It is not just that I was born into systemic disadvantage or advantage. It was the experiences over time, ambiguous loss of a parent as an infant, racism, working multiple jobs while going to school to pay bills, and more, which all built up over time and made me more susceptible to mental health issues. For me, mental health issues developed early, with a diagnosis of separation anxiety disorder as an infant, disordered eating as a child and adolescent, post-traumatic stress disorder as a young adult, and a lifetime of clinical depression, generalized anxiety disorder, and panic attacks.

Cumulative disadvantage/advantage, however, has its flaws as the theory focuses mainly on systemic disadvantages that start from birth, which does not always include disadvantages that may begin at later ages and may not be systemic in nature. The focus has been on the systemic disadvantage and not on the perception of the disadvantage to study participants, which could change the ultimate health outcomes later in life. Many of the studies that have been done tend to be done at a macro level and do not focus on granular details, making it difficult to hone in on the specificity of interventions necessary to make long-lasting change. Finally, mixed methods research needs to be incorporated when studying this theory as much of the data focuses on the quantitative data and not on the qualitative data and the lived experience of individuals. Omitting this research focuses on the general population and does

not allow those that are historically underrepresented access to the same quality of care (*Why mixed methods?*, n.d.; Melo et al., 2019).

Acculturation Stress

I had spent my adolescence trying to blend in with my peers in suburban America, and had come of age feeling like my belonging was something to prove. Something that was always in the hands of other people to be given and never my own to take, to decide which side I was on, whom I was allowed to align with. I could never be of both worlds, only half in and half out, waiting to be ejected at will by someone with greater claim than me. Someone whole.

-Michelle Zauner, *Crying in H Mart*

As first generation on one biological parent's side, and as someone who inherently looked different from the dominant culture, acculturation stress was an ongoing issue. It was often assumed by others that I knew more about the culture that I looked like, when in fact, I had little to no exposure to that culture. I had to work hard at fitting in and acting like others to get by on a regular basis. Because of my biracial identity, I opted to veer away from anything that was considered out of the norm and denied much of my heritage to assimilate into the dominant culture.

Acculturation stress refers to the stress that is created when a person is adjusting to a new society that could conflict with the society of origin. The acculturation into a new society means changing personal behavior in the cultural and psychological realms and can take generations to complete. Aspects of acculturation can be done easily, such as changing the food that is eaten, but adaption varies amongst various groups, families, and individuals (Berry, 2005;

Ren & Jiang, 2021). There are four strategies for acculturation that include assimilation, segregation, integration, and marginalization (Berry, 2005), all of which can negatively impact health in a myriad of ways. The acculturation stress that occurs for migrants is often less than those of later generations, creating the immigrant paradox where later generations have been found to have worse health outcomes than those in earlier generations (Scholaske et al., 2021).

It is important to review acculturation stress in conjunction with the perception of racial discrimination that can directly impact individuals' level of psychological distress (Chung & Epstein, 2014). This is studied particularly in global majority populations that have migrated to countries where they are considered the ethnic minority such as Asians to the United States. Because acculturation stress can occur over generations and can be cumulative, the study of this is difficult and nuanced. Various studies have been done on acculturation and its impact on health, the majority of which focus on acculturation as a one-dimensional construct and not on multiple scales of acculturation. Additionally, the scales that are used to measure acculturation stress across studies are inconsistent, preventing true comparison of results (Scholaske et al., 2021).

Chronic or prolonged stress increases the chance of both mental health and other health issues including anxiety, depression, and pain (*Stress*, 2024). Studies have shown that not only do immigrants and subsequent generations experience prolonged stress but also that this stress has a direct impact on the mental health and that many stressors are those that are not typically considered in studies. These stressors can include fear of deportation and sociopolitical atmosphere (Chung & Epstein, 2014; Qian & Ahmed, 2023; Ren & Jiang, 2021; Verdaguer et al., 2023).

The stress that I felt when searching for belonging in society, especially when there was no place for me to belong because of my marked differences, led me to consistently be on guard, waiting for the next microaggression or moment when I needed to explain myself to others. This chronic stress led me down a path of psychological distress. I experienced insomnia and self-harm as well as false belonging as I attempted to morph myself into what society wanted me to be instead of who I truly was.

Acculturation stress research has its limitations as much of the research is based on self-reporting which can be skewed (Verdaguer et al., 2023). This theory does not consider the acculturation that happens in both directions, from the host country to the immigrant and back, so the full impact of that stress has not currently been determined. As stated in Scholaske (2021), acculturation stress research often “neglects that individuals also can develop bicultural identities” (p. 3) and only looks at one dimension of acculturation, which makes much of the current research problematic. Results from research across populations is varied, showing inconsistent results because of varied measurement tools and generalization of populations (e.g., Asians versus specific Asian subgroups). Additionally, much of the research has been done at a specific point of time and does not include longitudinal studies that show acculturation stress over time in individuals which is needed to draw adequate conclusions (Scholaske et al., 2021).

Culture Gene Co-Evolutionary Theory of Mental Disorders/Dual Inheritance Theory

I want to believe in the origin story. I want to believe we all desire to know how we came to be, who we came from. I want to know why my fingers are so long, why my mouth naturally frowns, why my back has chronic pain, why I have freckles all over my nose.

Why my mind is so restless.

-Victoria Chang, *Dear Memory*

My sister and I were not raised together, nor did we interact until I was in my late twenties and she in her late teens. With the same mother but different fathers, our genes are similar, albeit not identical. Our experiences as children were also similar but there were also significant differences. We both experienced ambiguous loss of a parent at a young age as well as significant amounts of racism and family turmoil. However, my sister was raised in a culture that had a higher population of people who were the same race as her, whereas I was not. She was inherently linked to our culture of birth as English was not her first language, and she was immersed in that culture. As we aged, our experiences became similar as we were both in and out of toxic relationships and struggled to support ourselves. When we connected as adults, the strength of our inherited genes was obvious as our mannerisms and behaviors were almost identical even though our learned cultures as children were vastly different. The genetic link can also be found in the mental disorders that we both live with, inherited directly from our shared biological mother.

Culture gene co-evolutionary theory of mental disorders or dual inheritance theory states that individual behaviors are based on the genes from biological parents and the culture that is learned (Russell & Muthukrishna, 2021), and it is the interaction between the two that explains human behaviors and personality traits (Feldman & Laland, 1996). Studies have found that cultural experiences can interact with genetic makeup and allow for predictions of later psychological outcomes. The reigning belief is that genes can be linked to neural plasticity

(current related topics include learned helplessness or grit) and that these genes could cause individuals to be more susceptible to the environment surrounding them (Chiao, 2018; Chiao et al., 2020; Chiao & Blizinsky, 2010; Crafa & Nagel, 2015; Sasaki, 2013).

Chiao & Blizinsky (2010) noted that those from individual and collectivistic societies show a difference in a specific allele frequency. This is a possible explanation as to why those from certain cultures may or may not be as susceptible to certain psychological disorders like anxiety or depression. However, it has already been shown that genetic similarity does not mean that outcomes will be similar as cultural exposure varies and vice versa (Sasaki, 2013).

My sister's and my shared society from which we are from is collectivistic, however, the societies in which we were raised were more focused on the individual. Although our exposures were similar, there were vast differences that, in theory, could have potentially changed our mental health trajectories to be completely different from each other. However, it is possible that the traumas that we both experienced as younger people triggered a reaction in both of our genetic make-ups, leading us to similar mental health diagnoses and medical treatments as adults.

Dual inheritance theory is typically used to predict how a person will exhibit specific psychological behavior over time, this is particularly useful when looking at immigrant populations and the mental health risks that could occur during the migration and settling process, however, there are significant flaws with this line of research. Currently, without further definition of several theoretical components including the adaptive quality of genes, there is no separation between this theory and that of natural selection. There is little experimental research that is being done that includes manipulation of genetic hormones, for

example, that will adequately explain how both genes and cultural experiences can influence each other (Sasaki, 2013). Additionally, this theory can be used to pit people of various genetic dispositions against each other, potentially leading to additional stress created in all societies.

Synthesis

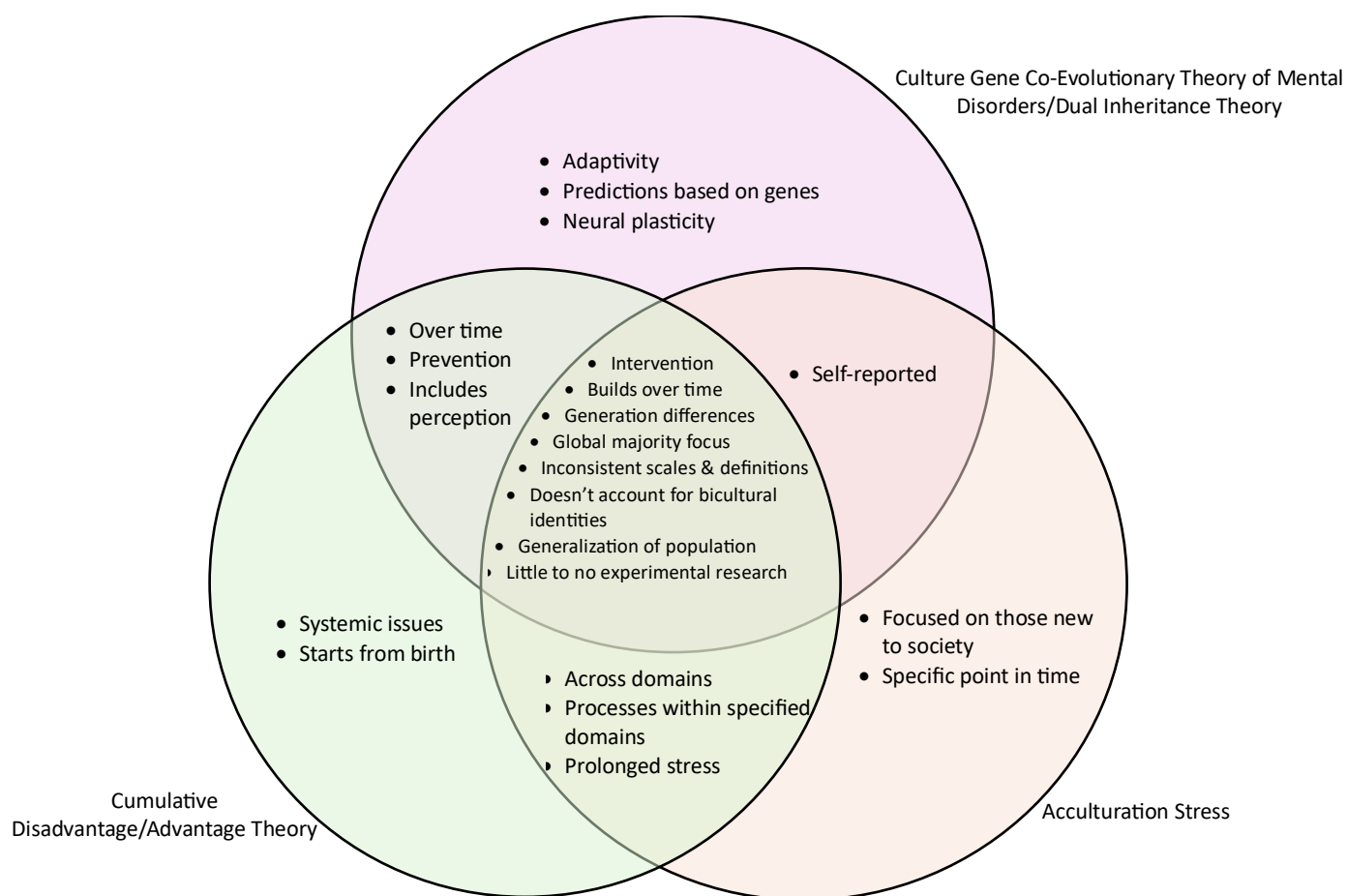
Although cumulative disadvantage/advantage theory, acculturation stress, and culture gene co-evolutionary theory of mental disorders/dual inheritance theory are all used to explain why mental health outcomes occur in some individuals and not others. It is clear, based on Figure 1, that culture gene co-evolutionary theory of mental disorders/dual inheritance theory, acculturation stress, and cumulative disadvantage/advantage theory have multiple points of overlap and several differences. Dual inheritance theory focuses on adaptivity of genes and culture, allows for predictions based on the genes presented in an individual, and relies on the idea of neural plasticity. Acculturation stress is focused only on those new to society and looks at a specific point in time. Cumulative disadvantage/advantage theory focuses on systemic issues that individuals face that begin at the time of birth.

The central part of Figure 1, where all three theories overlap, is the most interesting as this it shows that although these theories are very different, they have several points that are the same. All three theories focus on the global majority and their behaviors in cultures dissimilar to their own. Although at face value, the theories seem to show that there are significant differences in mental health outcomes of the global majority when immigrating, much of the research generalizes populations of people (e.g., Asians versus specific country of origin) and do not consider those that have bicultural identities. All three theories recognize that behaviors result as a reaction to experiences that build over time. Although the focus of

these theories is about intervention, these interventions are difficult to pinpoint as all three theories have inconsistent scales and definitions and there is little experimental research to determine if the theories are reliable and valid.

Figure 1.

Synergies and Differences Between Culture Gene Co-Evolutionary Theory of Mental Disorders/Dual Inheritance Theory, Acculturation Stress, and Cumulative Disadvantage/Advantage Theory



Ultimately, the three theories, cumulative disadvantage/advantage, acculturation stress, and culture gene co-evolutionary theory of mental disorders/dual inheritance theory, are all helpful in moving the psychological field of study further in helping to predict and prevent

negative mental health outcomes in individuals in later years. However, the theories are only as good as the research that is being done. Without increasing the specificity of the research from the population and inclusion for all to accuracy and reliability of definitions and measurement techniques, the science will stay generalized and will potentially prevent the ability to reach the goal of preventing and providing intervention to increase mental health outcomes. To do that work, however, means justifying the money and time it will take to develop and execute said research, both of which are often limited.

Conclusion

Although dual inheritance theory, acculturated stress, and cumulative disadvantage/advantage theory are considered different theories to determine mental health outcomes, it is the combination of the three theories that best explains the poor mental health outcomes for immigrants and subsequent generations. My story could help prove all three of these theories correct. However, it is the combination of the experiences that has made me who I am. My cumulative experience with systemic issues from birth, the acculturation stress that I have experienced over my life, and the genetic material that resides within both my sister and I, has led me to the mental health struggles that I have and continue to experience.

There needs to be further research on the interaction of these three theories and, if combined, the potential to prevent mental health issues at older ages, and/or provide successful interventions if prevention is not possible. This research should be longitudinal in nature to ensure that cumulative disadvantage can be measured. Research should also include both qualitative and quantitative data collection to achieve a thorough understanding of the interactions between systems of disadvantage, toxic stress, and genetic makeup.

Removing the tunnel vision of researchers focused on simply one field, could not only lead to a better understanding of trauma and how the brain processes that trauma, but could better explain the immigrant paradox that occurs. It is my theory that those migrating to a new culture don't experience as much cumulative disadvantage, and, upon arrival, stay segregated within like communities, allowing for a lesser amount of acculturated stress. These lower rates of disadvantage and stress allow genes to stay inactive, allowing migrants to not receive a mental health diagnosis in their lives. However, when the subsequent generations enter further into the dominant culture and experience the cumulative disadvantage and higher acculturation stress, genes are triggered, leading to mental health diagnoses at later ages.

References

- Berry, J. W. (2005). Acculturation: Living successfully in two cultures. *International Journal of Intercultural Relations*, 29(6), 697–712. <https://doi.org/10.1016/j.ijintrel.2005.07.013>
- Blank, R. M., Dabady, M., & Citro, C., F. (Eds.). (2004). *Measuring racial discrimination*. The National Academies Press. <https://doi.org/10.17226/10887>
- Chiao, J. Y. (2018). Developmental aspects in cultural neuroscience. *Developmental Review: DR*, 50(A), 77–89. <https://doi.org/10.1016/j.dr.2018.06.005>
- Chiao, J. Y., & Blizinsky, K. D. (2010). Culture–gene coevolution of individualism–collectivism and the serotonin transporter gene. *Proceedings of the Royal Society B: Biological Sciences*, 277(1681), 529–537. <https://doi.org/10.1098/rspb.2009.1650>
- Chiao, J. Y., Li, S.-C., Turner, R., & Lee-Tauler, S. Y. (2020). Cultural neuroscience and the research domain criteria: Implications for global mental health. *Neuroscience & Biobehavioral Reviews*, 116, 109–119. <https://doi.org/10.1016/j.neubiorev.2020.06.005>
- Chung, H., & Epstein, N. B. (2014). Perceived racial discrimination, acculturative stress, and psychological distress among Asian immigrants: The moderating effects of support and interpersonal strain from a partner. *International Journal of Intercultural Relations*, 42, 129–139. <https://doi.org/10.1016/j.ijintrel.2014.04.003>
- Crafa, D., & Nagel, S. (2015). Traces of culture: The feedback loop between behavior, brain, and disorder. *Transcultural Psychiatry*, 57. <https://doi.org/10.1177/1363461519879515>
- Feldman, M. W., & Laland, K. N. (1996). Gene-culture coevolutionary theory. *Trends in Ecology & Evolution*, 11(11), 453–457. [https://doi.org/10.1016/0169-5347\(96\)10052-5](https://doi.org/10.1016/0169-5347(96)10052-5)

- Ferraro, K., Shippee, T., & Schafer, M. (2009). Cumulative inequality theory for research on aging and the life course. In V. Bengtson, M. Silverstein, N. Putney, & D. Gans (Eds.), *Handbook of theories of aging* (pp. 415–433). Springer.
- Grollman, E. A. (2012). Multiple forms of perceived discrimination and health among adolescents and young adults. *Journal of Health and Social Behavior*, 53(2), 199–214.
<https://www.jstor.org/stable/41725210>
- Mcauliffe, M., & Triandafyllidou, A. (Eds.). (2021). *World migration report 2022*. International Organization for Migration (IOM). <https://publications.iom.int/books/world-migration-report-2022>
- Melo, S., Guedes, J., & Mendes, S. (2019). Theory of cumulative disadvantage/advantage. In D. Gu & M. E. Dupre (Eds.), *Encyclopedia of gerontology and population aging* (pp. 1–8). Springer International Publishing. https://doi.org/10.1007/978-3-319-69892-2_751-1
- Nurius, P. S., Prince, D. M., & Rocha, A. (2015). Cumulative disadvantage and youth well-being: A multi-domain examination with life course implications. *Child & Adolescent Social Work Journal: C & A*, 32(6), 567–576. <https://doi.org/10.1007/s10560-015-0396-2>
- Qian, Y., & Ahmed, R. (2023). Health acculturation of Asian migrants in the U.S. *Journal of International and Intercultural Communication*, 1–21.
<https://doi.org/10.1080/17513057.2023.2269272>
- Ren, Q., & Jiang, S. (2021). Acculturation stress, satisfaction, and frustration of basic psychological needs and mental health of Chinese migrant children: Perspective from basic psychological needs theory. *International Journal of Environmental Research and Public Health*, 18(9), 4751. <https://doi.org/10.3390/ijerph18094751>

- Riosmena, F., Everett, B. G., Rogers, R. G., & Dennis, J. A. (2015). Negative acculturation and nothing more? Cumulative disadvantage and mortality during the immigrant adaptation process among Latinos in the United States. *International Migration Review*, 49(2), 443–478. <https://doi.org/10.1111/imre.12102>
- Sasaki, J. Y. (2013). Promise and challenges surrounding culture–gene coevolution and gene–culture interactions. *Psychological Inquiry*, 24(1), 64–70. <https://doi.org/10.1080/1047840X.2013.764814>
- Scholaske, L., Wadhwa, P. D., & Entringer, S. (2021). Acculturation and biological stress markers: A systematic review. *Psychoneuroendocrinology*, 132, 105349. <https://doi.org/10.1016/j.psyneuen.2021.105349>
- Seabrook, J. A., & Avison, W. R. (2012). Socioeconomic status and cumulative disadvantage processes across the life course: Implications for health outcomes. *Canadian Review of Sociology/Revue Canadienne de Sociologie*, 49(1), 50–68. <https://doi.org/10.1111/j.1755-618X.2011.01280.x>
- Stress.. (2024). The Centre for Additction and Mental Health (CAMH). <https://www.camh.ca/en/health-info/mental-illness-and-addiction-index/stress>
- Vaughn, M. G., Salas-Wright, C. P., Maynard, B. R., Qian, Z., Terzis, L., Kusow, A. M., & DeLisi, M. (2014). Criminal epidemiology and the immigrant paradox: Intergenerational discontinuity in violence and antisocial behavior among immigrants. *Journal of Criminal Justice*, 42(6), 483–490. <https://doi.org/10.1016/j.jcrimjus.2014.09.004>
- Verdaguer, S., Ramya, R., Hernandez, M., & Florez, K. R. (2023). Examining the Independent association between acculturative stress and psychological distress among Mexican

immigrants in New York City: An exploratory study. *Health Equity*, 7.1, 197–205.

<https://doi.org/10.1089/heq.2022.0137>.

Why mixed methods? (n.d.). Johns Hopkins | Bloomberg School of Public Health.

<https://publichealth.jhu.edu/academics/academic-program-finder/training-grants/mixed-methods-research-training-program-for-the-health-sciences/about-the-program/why-mixed-methods>