Mental Health Interventions that Target the Detrimental Effects of Adverse Childhood Events in the Latino Population with the Aim of Fostering Resiliency

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11/06/2023

Adverse Childhood Events or Experiences (ACEs) can be defined as traumatic experiences that occur prior to the age of 18 and cause a lasting negative impact on physical and mental health. [1,2] ACEs are traumatic experiences in the form of physical, mental, emotional, and sexual abuse as well as intimate partner violence, parental drug abuse, parental mental illness, parental separation, and household dysfunction.[2] One of the original and most compelling studies on this subject was conducted by Felitti et al, and based at Kaiser Permanente, San Diego.[2] The original Kaiser Permanente study on ACEs included a Hispanic sample size that was only 11.2%.[2] Although the Hispanic population has historically been small in most studies, data exists that gives insight to the prevalence of ACEs among Latinos. According to Caballero et al, Hispanic children from US native families have a 30% prevalence of ACE exposure.[3] Another study on a rural Latino population found 28% had one or more ACE while 37% had three or more.[4] In fact, Hispanic youth are disproportionately affected by specific ACEs such as parental incarceration, child maltreatment, and violence exposure.[5] Furthermore, children who are exposed to ACEs are at a higher chance of legal trouble, substance use, aggression, risky behavior, and relational and interpersonal distress.[6] These studies demonstrate that Hispanic and Latino communities are more likely to engage in substance use and risky behaviors which negatively impact physical health. Likewise, these statistics provide insight as to why these numbers are prevalent within the Hispanic community. In the latest date from 2021, attempted suicide was higher among Hispanic adults at a 1.1% chance compared to 0.5% White adults, 0.3% of Asian adults, and 0.9% of Black adults.[7] And yet, in 2021 only 12.9% of Hispanic adults received mental health services compared to 22% of white adults.[7] This creates a large gap between mental health and treatment. Untreated mental health disorders create an economic burden on the U.S. healthcare system of $4 billion annually and $185.4 million in nonhealthcare-

associated costs.[8] Additionally, the leading cause of death in the U.S. is due to cardiovascular diseases which makes up $219 billion of healthcare costs.[9,10] Healthy People 2030 sets goals to promote American welfare. The select goals that will be discussed in this paper aim on improving mental health in adulthood.[11] An opportunity to realize that goal is to target the Latino community, as it is projected to grow from 19% to 28% (111.2 million) of the U.S. population by the year 2060.[12] This paper aims to demonstrate that firstly, adverse events in childhood create epigenetic changes and maladaptive responses that result in an adverse effect on mental and physical health in adulthood; and secondly possible mental health interventions that can build resilience to combat consequences and promote healthy development. For the purposes of this paper, the terms Hispanic and Latino will be used interchangeably.

ACES Impacts Mental Health

It has been well documented that ACEs is strongly associated with higher levels of anxiety disorders[13], post-traumatic stress disorder (PTSD)[14,15], obsessive compulsive disorder (OCD)[15], depression disorders[13,16], and borderline personality disorder (BPD).[17] Correspondingly, the Kaiser Permanente study established the correlation of child maltreatment and depression and suicide.[2] Equally important, Felitti et al corroborated that the consequences existed in a dose dependent fashion.[2] In brief, as ACEs increase so does the risk of depression and suicide attempts.[2] Unfortunately, ACEs rarely occur as a solitary event and are more likely to co-occur together.[2] Moreover, Teicher et al found that the depression, anxiety, and substance use that results in people with ACEs, occurs at an earlier age, is of a deeper severity, is refractory to treatment, and individuals are at greater risk for suicide.[18] Accordingly, ACEs predisposes children to grow into adults with higher rates of severe, psychiatric disorders. Recall how Latinos are disproportionately affected with parental incarceration, child maltreatment, and violence

exposure.[5] In the U.S. Latino population, the percentage of having any mental illness is 20.7%.[7] The manner by which Latinos are afflicted by ACEs and present with mental illness, is one aspect of the increased burden on the healthcare system.

ACEs can have detrimental and long-lasting effects on a person's psychological well-being. The first process by which this is done involves how our environment influences our genetics. Nurture plays a role that is far more integral than initially thought. In a first ever study, McGowan et al were able to demonstrate that there is an epigenetic role in the developing mind of a rat in respect to the variation of maternal care.[19] Their study found that lower levels of maternal care led to offspring with select hypermethylated genes which consequently affected their gene expression.[19] They were able to demonstrate that there are biological signals that trigger how much of which genes are expressed via variable levels of methylation. Their findings suggest that epigenetics occurs from a biological cue.[19] Although this study established epigenetic changes in animals, these findings are consistent in humans under the lens of ACEs. Yang et al conducted a study on persons who experienced childhood adversity, and evidenced increased methylation in normally low methylated genes and vice versa.[20] The genes with anomalous methylation, encompassed a vast number of genes involved in biological processes including those that are pertinent to psychiatric disorders.[20] Yet another study concluded that sexual abuse in childhood caused hypermethylation of the serotonin promoter leading to higher levels of antisocial behavior.[21] This truly demonstrates how much our environment influences us. At a biological level, studies have shown that there are structural differences in people who have ACEs versus those that do not.

ACES Impacts Physical Health

Currently, the biggest cause of death in the U.S. is from cardiovascular diseases.[22,10] The biggest risk factor for cardiovascular mortality was high blood pressure.[22] The second biggest risk factor was obesity and risk factors for obesity include physical inactivity, smoking, and high cholesterol.[22] Also included in the top ten causes of death are cancer, diabetes, lower respiratory diseases, and liver diseases.[10] Specifically within the Hispanic population, the most recent data from a CDC report in 2019 found the top leading cause of death to be cancer followed by heart disease.[23] As an illustration, a study on Mexican woman found a strong association between ACEs and cardiovascular risk factors such as smoking and decreased physical activity.[24] The same results were not found in Mexican women who reported no ACEs.[24] In addition, the Kaiser study also corroborated increased incidence of smoking, obesity, and physical inactivity in individuals with ACEs.[2] Lastly, among Hispanic adolescents the relationship between chronic health problems and ACEs is stronger.[5] Emphatically, there is a strong relationship between ACEs and increased risk factors that puts these individuals at risk for future health problems. As risk factors increase, so does the number of diseases. It is evident that people with ACEs are more likely to present with risk factors that leaves them susceptible to the leading causes of death.

Furthermore, the study goes on to identify a relationship between the number of reported ACEs and number of risk factors. When four or more ACEs were reported, there was a 57% higher chance of having smoked and a higher prevalence of diabetes, high cholesterol, hypertension, and obesity along with a 16% decreased chance of physical activity.[24] Whereas, women who only reported one to two ACEs had a higher prevalence of hypertension and high cholesterol.[24] That is a total of six risk factors present if greater than four ACEs exist; compared to the presence of two risk factors when only one to two ACEs exist. This study clearly

illustrates risk factors exist in a dose dependent fashion. Moreover, Felitti et al demonstrated a graded relationship between ACEs and risk factors such as obesity and physical inactivity[2] as well as leading causes of death such as ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease.[2] These are the same leading causes of death in the U.S. The presence of any risk factor is disadvantageous, but this graded relationship puts Latinos in great danger when one considers that ACEs tend to co-occur together.[2]

Studies have found that distinct types of child maltreatment affect physical health differently. Presentations are so dissimilar, and ACEs are variable but not all ACEs affect individuals the same way. Some ACEs are more closely related to health problems. For instance, emotional neglect was linked with higher incidence of hypertension, as was the violent abuse of a mother figure.[24] Household dysfunction and the presence of mental illness in a household was linked with smoking, hypertension, and high cholesterol.[24] Lastly, physical and sexual abuse were linked with regular alcohol use[24] and were at increased risk of developing type II diabetes mellitus and cardiometabolic diseases compared to other forms of abuse.[25]

Recall how ACEs influenced genetics which subsequently had an impact on mental health; a consistent trend can be observed in the realm of physical health. The affected genes were involved in biological processes such as neurogenesis, cardiac blood vessel development, hormonal, and inflammatory signaling.[20] Furthermore, an appreciable number of altered methylated genes, were implicated in breast, colon, lung, colorectal, prostatic, and ovarian neoplasms.[20] Evidently, ACEs may even have a genetically propagating role in the development of tumors. What is more, acute stress causes induction of adrenal steroids and catecholamines which increases the sensitivity of the immune system.[26] The immune system mediates inflammation. [26] As was previously mentioned, children with ACEs have higher levels of

inflammation markers, such as CRP, IL-6[27], and IL-2 even after accounting for BMI.[20] Inflammatory markers, such as CRP may contribute to atherosclerosis, a known risk factor for developing cardiovascular diseases.[28] The variation in these processes is at least partly responsible for strokes, heart diseases, respiratory diseases, diabetes, and cancer.[20] A study that recognized mortality trends among Latinos found that between 2019 and 2020, Latinos had increased mortality due to heart disease and diabetes.[29] Hispanics are at a disadvantage because they have risk factors as well as societal factors that significantly increases their chances of negative health outcomes. Nevertheless, recently immigrated Hispanics have been shown to have increased mortality overall, when compared to White Americans.[30] A phenomenon commonly known as the "Hispanic Paradox".[30] However, this paradox only applies to recently immigrated Hispanics.[30] Once in the U.S. their health levels begin to decline.[30]

ACEs Creates Maladaptive Responses

ACEs leave persistent direct and indirect impressions on a person quite often through maladaptive responses. For instance, Paulus et al found emotional dysregulation in Hispanics to be the mediator between negative affect and problematic coping mechanisms such as problematic drinking.[31] What's more, there are new studies such as that conducted by Snyder et al which found that individuals who reported a greater number of ACEs also reported problematic emotional regulation and dissociation which indirectly led to anxious and avoidant attachment traits in adulthood.[32] In this instance, the maladaptive response is inappropriate emotional regulation consequently unhelpful coping strategies such as anxious and avoidant attachment styles. The study found that people with ACEs used avoidant emotion focused coping strategies which are ineffective coping skills associated with greater stress and therefore decreased health.[33] The study found that people with ACEs have higher levels of avoidant

emotion focused coping rather than problem focused coping.[33] The difference between the two is that one focuses on solving the problem subsequently leading to fulfillment and confidence, while the avoidant emotion deals with decreasing ones negative emotion towards a stressor rather than to the stressor itself.[33] In this way the stressor is present for longer periods of time because it is ineffectively dealt with. Long-term stress keeps the person in a consistent state of stress further causing dysregulation and increase in stress hormones, inflammation markers, and hypothalamic-pituitary-axis (HPA) dysfunction.[34] Targeted interventions at coping skills in those afflicted by ACEs could help decrease the risk of health problems in the future.[31, 33]

Another example of a maladaptive response includes unhealthy coping mechanisms. Indeed, individuals with ACEs are more likely to cope with stress using maladaptive responses.[35] Latinos with three ACEs or more, were three times as likely to report mental distress and eight times as likely to have issues with substance use and/or alcohol.[4] Furthermore, a study on Hispanics found negative attitudes against people with mental illness and compensation through methods of masking and denial.[15] That increased mental distress and lack of healthy emotion processing is what drives these individuals to cope with vices. The Kaiser study found an increased risk of sexually transmitted infections, greater than 50 sexual partners as well as smoking, alcoholism, and illicit drug use including intravenous drug use.[2] Engaging in these behaviors was linked to abusive risk factors. In a Puerto Rican study, the probability that by age 14, they were drinking was 33.11%.[36] The study found emotional abuse to be the strongest risk factor, increasing the risk of drinking by 139%.[36] Other studies found that different types of abuse put one at risk for specific vices. In adolescent Latino's, verbal abuse was linked to drinking alcohol, cigarette, marijuana, and hard drug use, while physical abuse was linked to binge drinking, marijuana, and hard drug use.[37] Ultimately, ACEs was indirectly linked to health

risk behaviors such as alcohol related consequences and risky sexual behaviors through the process of emotion dysregulation.[38] Another likely culprit is negative urgency, found to be a facilitator between ACEs and substance use disorders such as alcohol and cannabis.[39] Lastly, Yang et al in their epigenetic studies also identified methylation disturbances in genetic processes that contribute to substance use disorders.[20] Treatments that target coping with negative emotions may be effective in populations with child abuse and help substance use disorders.[39] In conclusion, ACEs makes one more likely to engage in risky sexual behavior, and drug and alcohol use.

Yet another example of a maladaptive response is dissociation. Dissociation is a phenomenon where traumatic thoughts are kept out of the conscious awareness.[40] Researchers found that there is a positive relationship between dissociation and childhood ACEs.[40] Experiencing dissociation is a protective mechanism against the traumatic experience. However, it can create a disadvantage that predisposes the individuals to experience a similar situation once more. Specifically, within the frame of physical and sexual abuse experienced as a child, its victims are less likely to recognize situational danger from social cues and thus more likely to be re-victimized.[40] This sounds counterintuitive, because it is a common belief that people experience situations and learn from them. However, a person who experienced sexual and physical abuse as a child is more like to experience dissociation.[40] If traumatic thoughts are kept out, it therefore becomes impossible to learn from them. So there is actually no adaptive response when that person enters a similar situation in the future.[40] Following that same thought, a longitudinal study performed by Zamir et al found that childhood physical or sexual abuse experienced between the ages of 0-17.5 was predictive of intimate partner violence at ages 20-32.[40] This study goes on to hypothesize that the reasoning behind that is due to dissociation.

Another way emotional dysregulation manifests itself as a maladaptive response is in interpersonal regulation. Emotional dysregulation led to interpersonal difficulties in people with ACEs.[41] Women with history of physical or sexual abuse had higher incidences of difficulty with interpersonal relationships, including inability to take criticism, view other viewpoints, and difficulty standing up for themselves.[14] These types of negative interactions can drive a person to become less connected with their society causing alienation and further disconnect from their community as well as inability to form healthy close relationships. Furthermore, the added difficulty in misunderstanding mental illness within Hispanic communities creates further rejection and ostracism.[42]

Earlier, epigenetic changes as a cause of mental and physical health were discussed. In fact, there are more physiological changes that occur within the mind of a person who has undergone constant stress. A constant state of stress can go as far as creating cognitive deficits. As previously mentioned, children with ACEs had higher levels of inflammation markers, such as CRP and IL-6.[27] This state of inflammation has been linked to other forms of disease but one study also found that IL-6 is inversely related to hippocampal gray matter, which is used for attention and memory.[43] In addition, studies have found that infants exposed to maternal stress have reduced brain activity.[6] Meaning that these individuals might have more disruption in cognitive function. There are other ways that ACEs create lasting changes to the brain. In the brain an area known as the amygdala is activated as a response to threatening stimuli. [34] That activation signals to the hypothalamus to start its fight or flight response which occurs through the hypothalamic-pituitary axis (HPA) and sympathetic nervous system.[34] As a person continues to experience those triggers, that pathway is sensitized, making it easier for one to go into a state of flight or fight. Indeed, studies have found that maltreated toddlers have more of a reaction to

negative stimuli[44] and abused adolescents are more likely to respond aggressively to a provoking stimulus.[45] According to an analysis, stress dysregulates the stress response such that it changes the architecture of the developing brain.[6] Indeed the effects of long term stress could allow an individual to be inadequately armed with the tools necessary to respond to emotional hardships in the future. There seems to be a connection between adverse events and plastic changes in the brain.

Resiliency as an Intervention

The American Psychological Association (APA) defines Resiliency as the mental, emotional, and behavioral adaptation to challenging life experiences.[46] In other words, resiliency is the ability to adapt to and overcome adversity. Resiliency does not discount adversity, rather it is a protective feature against adversity. The importance of resiliency can be illustrated by the study of Dominquez et al, which discovered a link between reduced resiliency levels and psychological distress within a Hispanic community.[47] The study found reduced resiliency as the mediating factor between ACEs and mental health.[47] Meaning that lower levels of mental health were present in Hispanics with ACEs only if they had lower levels of resiliency. This study stresses the importance of building resiliency as a form of mitigating the adverse mental and emotional effects of ACEs. In brief, resiliency helps survivors overcome ACEs and protects individuals from its negative consequences. Thankfully, resiliency is not a unique quality that select individuals are born with.[48] A systematic review scanned several research articles and determined that resiliency is a characteristic that can be acquired through training.[49]

Resiliency can be cultivated in several ways. The training that most enhanced resiliency were cognitive and behavioral based therapy (CBT) and/or mindfulness-based techniques.[49] CBT is a type of psychotherapy that helps the individual recognize and modify harmful or disruptive

thought patterns that adversely impact their actions and emotions.[50] CBT has been proven useful with behavioral problems such as drug abuse, smoking, diet, exercise, and weight as well as psychological conditions such as PTSD, anxiety, depression, and other mood disturbances.[50] Meanwhile, mindfulness is the skill of awareness and experiencing of one's thoughts and emotions with an uncritical and open mind.[51] It can also include activities such as journaling, yoga, and meditation that help one focus on positive qualities in one's life.[52] A study performed on a population with chronic diseases, found modest improvements in anxiety and depression after mindfulness therapy.[51] Mindfulness also provided a buffering effect against stress, which proved protective against stress-related diseases, such as PTSD and diabetes.[53] CBT and mindfulness have been proven useful in behavioral problems, making them a great intervention to target risky behavior such as smoking, drug use, and inactivity which in turn decreases the risk of disease. They also force a person to evaluate their behaviors and recognize that they are maladaptive coping mechanisms. A systematic review found that CBT and mindfulness interventions had a positive impact on improving mental wellbeing.[54] These interventions may prove useful for both mental and physical health due to mindfulness creating better health outcomes. A study found that in a population with greater than 3 ACEs, those that most practiced mindfulness had two-thirds less health conditions compared to the group that least practiced mindfulness.[55] The impact that improved mental health has on an individual's physical state is one that cannot be understated. In fact, Broadbent et al were able to demonstrate faster wound healing times in post operative patients who had psychological pre-op intervention that included relaxation, and guided imagery with relaxation CDs.[56] This study demonstrates the impact mental health has in recovery from physical ailments. Comprehensibly, mindfulness and CBT as

interventions, target negative patterns that boost a healthy mindset which in turn can influence physical health.

The amount of time working on resiliency was also a factor. Studies that had consistent and positive findings included interventions that included therapy sessions that were 60-90 minutes long over several weeks.[49] As discussed previously, resiliency is a skill and like any other skill, is one that requires time to develop. Correspondingly, a study found significant levels of resiliency after an intense yet short four day program of mindfulness meditation that lasted up to three months.[57] Clearly, investing time in these practices has lasting effects that make it well worth it.

Qualities of Resiliency

The American Psychological Association provides enlightenment into strategies that build resiliency. These strategies include forming relationships, promoting well-being, discovering a sense of purpose, adopting positive thought patterns, and reaching out for help when needed.[52] These will be reviewed within the context of Hispanic culture to identify helpful or harmful patterns and ultimately harness resiliency.

Forming relationships comprises of compassionate, supportive, and genuine relationships with people who care for your well-being.[52] Finding a sense of community can be harnessed from romantic relationships, friendships, family, or community groups.[52] In Hispanic communities, family offer a robust network of social support.[58] Similarly, in religious Hispanic communities, churches offer a form of community that is socially and spiritually enriching.[42]

The second strategy is promoting well-being by maintaining physical health and avoiding negative coping mechanisms.[52] Nurturing physical health encompasses proper sleep, hydration,

nutrition, and activity.[52] Although, this is a difficult goal to achieve, strong social and familial ties in Hispanic communities may offer the inclination to have more positive health outcomes.[58] Because physical health is intimately intertwined with emotional health, promoting it is intentionally working on one's psychological resilience.

Negative coping mechanisms, references risky health related behaviors such as alcohol and drug use, which only focus on eliminating the bad feeling rather than managing the stress.[52] Previously, it was discussed how ACEs were associated with greater avoidant emotion-focused coping which was linked to higher incidences of health problems.[33] Ineffectively dealing with a stressor causes the stressor to be present for longer periods of time. However, an adapted coping mechanism can be replaced with a learned one. Healthy coping skills are skills that can be learned[33] and practiced to prepare for future problems. This is one modifiable pathway that can help prevent mental and physical disorders.[33] Resilient people confront stress. The same study found problem-focused coping, which focuses on solving the problem directly rather than one's emotions to it, leading to higher levels of confidence and accomplishment.[33] Effective problem-solving coping mechanisms can help decrease smoking, drinking, and other risky behavior. Effective problem-solving skills combined with CBT and/or mindfulness may further help decrease the incidence of risky behaviors. In short, resilient people focus on solving problems as a coping mechanism, in essence choosing a moment's discomfort over long-term burden.

The next strategy is discovering a sense of purpose. The first step is discovery which is an opportunity for self-reflection. [52] A purpose can motivate one to work towards a goal.[52] Breaking up that goal into small, tangible steps, yields a sense of accomplishment along the way.[52] Ultimately, finding a purpose helps give one a sense of empowerment and self-worth.[52] In Hispanic culture, religion and family are of great significance.[58] Hispanic cultures have the

concept of allocentrism, where the family's needs and goals take precedence over the individual's needs.[58] Indeed, religion and family are two considerations that may drive a sense of purpose in Hispanic communities.

Another strategy is adopting positive thought patterns such as realism, optimism, acceptance, and insight from past events.[52] Realism is staying rooted in reality and rationality and staying cognizant when one is catastrophizing or presuming the world is conspiring against the individual.[52] A phenomenon that has been observed in Hispanic culture is fatalism, or the conviction that an individual's fate is outside of their influence.[58] Fatalism, can have both positive or negative influences on health.[58] It can be a barrier that reinforces catastrophizing or conspiracy. Recognizing its existence, and knowing one is not helpless, helps one control how they react to an adverse event.[52] Adverse events cannot be changed, but ones reaction to it can be modified.[52]

Optimism empowers individuals to anticipate positive outcomes and focuses on envisioning ones desires instead of dwelling on ones anxieties.[52] In a long-term study following 97,253 women, it was determined that optimistic women were less likely to have coronary artery disease compared to pessimists.[59] Optimists were also less likely to have diabetes, hypertension, high cholesterol, depressive symptoms, high BMI, sedentary lifestyles, or smoking habits.[59] These are the very same risk factors attributing to the leading causes of death in the U.S. Optimism may be cultivated in the Hispanic population through religion. Another study performed on the elderly Mexican population found that regular church attendance was associated with higher levels of optimism in the face of adversity.[60]

Acceptance is the process of embracing unchangeable situations and directing attention to situations that one does have the power to modify.[52] This is one instance where fatalism plays a

positive role.[58] Knowing what is out of one's control helps resolve frustration and encourages invested time in productive thoughts.

Learning is looking retrospectively in the past, and finding helpful interventions that helped one overcome a challenge and using that intervention to respond in the present.[52] Although not completely related, there is a concept known as "simpatia", or the desire for harmonious and non-confrontational social exchanges, encouraging socially favorable behaviors and steering clear of interpersonal conflicts.[58] These socially acceptable standards of behavior are used to create social harmony and avoid a need for intervention in the first place. Unfortunately, they can leave one vulnerable to challenges. One way to overcome this stems from close family ties and social support[58] which can provide multiple sources of advice to overcome a challenge.

The final way to build resiliency is reaching out for help when needed. A strong social support network like those found in Hispanic communities[58] and churches,[42] can help in times of need. However, it is a fine line, given that there is mental health misunderstanding and negative attitudes in Hispanic faith-based communities.[42] These same negative attitudes can exist in families and may prevent an individuals desire to embrace positive behavioral and health related modifications.[58] However, given the statistics in attempted suicide amongst Hispanic adults, it is important to know ones limits and when one feels hopeless, it is crucial to reach out. Possible opportunities to introduce mental health literacy and anti-stigma measures include churches and familial based communities.[42]

The path to resiliency is often filled with emotional turmoil.[52] That should not be a reason to feel discouraged, rather it is a sign that one is headed in the right direction. Enhancing resiliency not only aids in navigating tough situations but also empowers individuals to grow and

enhance their lives as they progress.[52] In essence, resiliency offers one a sense of regained control of their life.

In summation, Hispanic communities are disproportionately afflicted by ACEs such as parental incarceration, child maltreatment, and violence exposure as well as mental illnesses, substance use, and crime. The aftermath following a solitary adverse event in childhood is detrimental to an individual mentally and physically and can be a vicious cycle to break. In addition, ACEs have a negative dose dependent effect on mental and physical health. The developing field of epigenetics finds that ACEs have a severe impact on an individual. Indeed, trauma at such a sensitive period causes physical changes in a developing young mind and creates cognitive and emotional challenges. It is not an excuse but a possible explanation for how trauma can live through generations.

Risky behaviors are prevalent with ACEs. There seems to be a connection between adverse events and unhealthy coping mechanisms that lead to physically damaging outcomes. Moreover, Latinos have deaths predominantly attributed to cancer, heart disease, and diabetes. Although there exists an overall decreased mortality in Latinos compared to Whites, the impact that mental illnesses and leading causes of death such as cardiovascular diseases have on the U.S. healthcare system is substantial. The burden can be lessened if we target interventions that impact the future. These interventions are resiliency training through the process of mindfulness, CBT, establishing connections, enhancing one's state of wellness, finding a sense of purpose, embracing constructive thought patterns, and seeking assistance when necessary. These interventions help target mental illnesses, physical ailments, and ineffective coping mechanisms such as smoking, risky sexual behavior, and substance use, which are often the result of ACEs.

Future direction should target resilience training by utilizing forms of CBT and mindfulness. Deliberate interventions can mitigate the severity, therapy resistance, and duration of mental illnesses, which in turn impact physical health. Families and faith-based communities are a strong source of social support. Unfortunately, the stigma that exists in some of these communities may prove to be a barrier and confer mental health misunderstandings. For this reason, they are a potential target that can be used to influence resiliency.

In the end, it is a public health issue to address ACEs. There is a great need for continued research of ACEs in Latino communities in terms of mental and physical health. It is a quickly growing population that will dramatically affect the burden of healthcare cost to the U.S. in the future. This population is therefore a good target to help reach the Healthy People 2030 goal of improving mental health and overall, well-being for adults. Undeniably, ACEs are a public issue, yet of utmost importance, it falls upon each individual to address ACEs. The power to neutralize or improve the negative impact of an adverse event initially placed upon them lies solely with the individual. Adverse childhood events never make sense; however, a resilient person finds a way to harness it and propel them into an exceptional, meaningful, and peaceful future.

Resources

1. Loveday S, Hall T, Constable L, et al. Screening for Adverse Childhood Experiences in Children: A Systematic Review. *Pediatrics*. 2022;149(2):e2021051884. doi:10.1542/peds.2021-051884

2. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. *Am J Prev Med*. 1998;14(4):245-258. doi:10.1016/S0749-3797(98)00017-8

3. Caballero TM, Johnson SB, Buchanan CRM, DeCamp LR. Adverse Childhood Experiences Among Hispanic Children in Immigrant Families Versus US-Native Families. *Pediatrics*. 2017;140(5):e20170297. doi:10.1542/peds.2017-0297

4. Barrera I, Sharma V, Aratani Y. The Prevalence of Mental Illness and Substance Abuse Among Rural Latino Adults with Multiple Adverse Childhood Experiences in California. *J Immigr Minor Health*. 2019;21(5):971-976. doi:10.1007/s10903-018-0811-9

5. Elkins J, Miller KM, Briggs HE, Kim I, Mowbray O, Orellana ER. Associations between Adverse Childhood Experiences, Major Depressive Episode and Chronic Physical Health in Adolescents: Moderation of Race/Ethnicity. *Soc Work Public Health*. 2019;34(5):444-456. doi:10.1080/19371918.2019.1617216

6. Nelson CA, Bhutta ZA, Burke Harris N, Danese A, Samara M. Adversity in childhood is linked to mental and physical health throughout life. *BMJ*. Published online October 28, 2020:m3048. doi:10.1136/bmj.m3048

7. Key Substance Use and Mental Health Indicators in the United States: Results from the 2021 National Survey on Drug Use and Health. Published online 2021.

8. Taylor HL, Menachemi N, Gilbert A, Chaudhary J, Blackburn J. Economic Burden Associated With Untreated Mental Illness in Indiana. *JAMA Health Forum*. 2023;4(10):e233535. doi:10.1001/jamahealthforum.2023.3535

9. CDC. Heart Disease. Centers for Disease Control and Prevention. Published August 17, 2021. Accessed October 23, 2023. https://www.cdc.gov/policy/polaris/healthtopics/heartdisease/index.html

10. Leading Causes of Death. Centers for Disease Control and Prevention. Published January 18, 2023. Accessed October 21, 2023. https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm

11. Mental Health and Mental Disorders - Healthy People 2030 | health.gov. Accessed October 12, 2023. https://health.gov/healthypeople/objectives-and-data/browse-objectives/mental-health-and-mental-disorders

12. Bureau UC. Hispanic Population to Reach 111 Million by 2060. Census.gov. Accessed October 23, 2023. https://www.census.gov/library/visualizations/2018/comm/hispanic-projected-pop.html

13. Lindert J, Von Ehrenstein OS, Grashow R, Gal G, Braehler E, Weisskopf MG. Sexual and physical abuse in childhood is associated with depression and anxiety over the life course: systematic review and meta-analysis. *Int J Public Health*. 2014;59(2):359-372. doi:10.1007/s00038-013-0519-5

14. Roth S, Newman E, Pelcovitz D, Van Der Kolk B, Mandel FS. Complex PTSD in victims exposed to sexual and physical abuse: results from the DSM-IV Field Trial for Posttraumatic Stress Disorder. *J Trauma Stress*. 1997;10(4):539-555. doi:10.1023/A:1024837617768

15. Scott KM, Smith DR, Ellis PM. Prospectively Ascertained Child Maltreatment and Its Association With DSM-IV Mental Disorders in Young Adults. *Arch Gen Psychiatry*. 2010;67(7):712. doi:10.1001/archgenpsychiatry.2010.71

16. Danese A, Moffitt TE, Harrington H, et al. Adverse Childhood Experiences and Adult Risk Factors for Age-Related Disease: Depression, Inflammation, and Clustering of Metabolic Risk Markers. *Arch Pediatr Adolesc Med*. 2009;163(12). doi:10.1001/archpediatrics.2009.214

17. Cattane N, Rossi R, Lanfredi M, Cattaneo A. Borderline personality disorder and childhood trauma: exploring the affected biological systems and mechanisms. *BMC Psychiatry*. 2017;17(1):221. doi:10.1186/s12888-017-1383-2

18. Teicher MH, Samson JA. Childhood Maltreatment and Psychopathology: A Case for Ecophenotypic Variants as Clinically and Neurobiologically Distinct Subtypes. *Am J Psychiatry*. 2013;170(10):1114-1133. doi:10.1176/appi.ajp.2013.12070957

19. McGowan PO, Suderman M, Sasaki A, et al. Broad Epigenetic Signature of Maternal Care in the Brain of Adult Rats. Sirigu A, ed. *PLoS ONE*. 2011;6(2):e14739. doi:10.1371/journal.pone.0014739

20. Yang BZ, Zhang H, Ge W, et al. Child Abuse and Epigenetic Mechanisms of Disease Risk. *Am J Prev Med*. 2013;44(2):101-107. doi:10.1016/j.amepre.2012.10.012

21. Beach SRH, Brody GH, Todorov AA, Gunter TD, Philibert RA. Methylation at 5HTT Mediates the Impact of Child Sex Abuse on Women's Antisocial Behavior: An Examination of the Iowa Adoptee Sample. *Psychosom Med*. 2011;73(1):83-87. doi:10.1097/PSY.0b013e3181fdd074

22. Danaei G, Ding EL, Mozaffarian D, et al. The Preventable Causes of Death in the United States: Comparative Risk Assessment of Dietary, Lifestyle, and Metabolic Risk Factors. Hales S, ed. *PLoS Med*. 2009;6(4):e1000058. doi:10.1371/journal.pmed.1000058

23. Heron M. Deaths: Leading Causes for 2019. *Natl Vital Stat Rep Cent Dis Control Prev Natl Cent Health Stat Natl Vital Stat Syst*. 2021;70(9):1-114.

24. Flores-Torres MH, Comerford E, Signorello L, et al. Impact of adverse childhood experiences on cardiovascular disease risk factors in adulthood among Mexican women. *Child Abuse Negl*. 2020;99:104175. doi:10.1016/j.chiabu.2019.104175

25. Basu A, McLaughlin KA, Misra S, Koenen KC. Childhood Maltreatment and Health Impact: The Examples of Cardiovascular Disease and Type 2 Diabetes Mellitus in Adults. *Clin Psychol Sci Pract*. 2017;24(2):125-139. doi:10.1111/cpsp.12191

26. McEwen BS. The neurobiology of stress: from serendipity to clinical relevance11Published on the World Wide Web on 22 November 2000. *Brain Res*. 2000;886(1-2):172-189. doi:10.1016/S0006-8993(00)02950-4

27. Slopen N, Kubzansky LD, McLaughlin KA, Koenen KC. Childhood adversity and inflammatory processes in youth: A prospective study. *Psychoneuroendocrinology*. 2013;38(2):188-200. doi:10.1016/j.psyneuen.2012.05.013

28. Järvisalo MJ, Harmoinen A, Hakanen M, et al. Elevated Serum C-Reactive Protein Levels and Early Arterial Changes in Healthy Children. *Arterioscler Thromb Vasc Biol*. 2002;22(8):1323-1328. doi:10.1161/01.ATV.0000024222.06463.21

29. Simon P, Ho A, Shah MD, Shetgiri R. Trends in Mortality From COVID-19 and Other Leading Causes of Death Among Latino vs White Individuals in Los Angeles County, 2011-2020. *JAMA*. 2021;326(10):973. doi:10.1001/jama.2021.11945

30. Ruiz JM, Steffen P, Smith TB. Hispanic Mortality Paradox: A Systematic Review and Meta-Analysis of the Longitudinal Literature. *Am J Public Health*. 2013;103(3):e52-e60. doi:10.2105/AJPH.2012.301103

31. Paulus DJ, Gallagher MW, Rogers AH, et al. Emotion dysregulation as a mechanism linking anxiety and hazardous drinking among Latinos in primary care: Anxiety, Emotion Dysregulation, and Drinking. *Am J Addict*. 2017;26(6):615-622. doi:10.1111/ajad.12574

32. Snyder KS, Luchner AF, Tantleff-Dunn S. Adverse childhood experiences and insecure attachment: The indirect effects of dissociation and emotion regulation difficulties. *Psychol Trauma Theory Res Pract Policy*. Published online June 12, 2023. doi:10.1037/tra0001532

33. Sheffler JL, Piazza JR, Quinn JM, Sachs-Ericsson NJ, Stanley IH. Adverse childhood experiences and coping strategies: identifying pathways to resiliency in adulthood. *Anxiety Stress Coping*. 2019;32(5):594-609. doi:10.1080/10615806.2019.1638699

34. Rodrigues SM, LeDoux JE, Sapolsky RM. The Influence of Stress Hormones on Fear Circuitry. *Annu Rev Neurosci*. 2009;32(1):289-313. doi:10.1146/annurev.neuro.051508.135620

35. Repetti RL, Taylor SE, Seeman TE. Risky families: family social environments and the mental and physical health of offspring. *Psychol Bull*. 2002;128(2):330-366.

36. Ramos-Olazagasti MA, Bird HR, Canino GJ, Duarte CS. Childhood Adversity and Early Initiation of Alcohol Use in Two Representative Samples of Puerto Rican Youth. *J Youth Adolesc*. 2017;46(1):28-44. doi:10.1007/s10964-016-0575-2

37. Allem JP, Soto DW, Baezconde-Garbanati L, Unger JB. Adverse childhood experiences and substance use among Hispanic emerging adults in Southern California. *Addict Behav*. 2015;50:199-204. doi:10.1016/j.addbeh.2015.06.038

38. Espeleta HC, Brett EI, Ridings LE, Leavens ELS, Mullins LL. Childhood adversity and adult health-risk behaviors: Examining the roles of emotion dysregulation and urgency. *Child Abuse Negl*. 2018;82:92-101. doi:10.1016/j.chiabu.2018.05.027

39. Wardell JD, Strang NM, Hendershot CS. Negative urgency mediates the relationship between childhood maltreatment and problems with alcohol and cannabis in late adolescence. *Addict Behav*. 2016;56:1-7. doi:10.1016/j.addbeh.2016.01.003

40. Zamir O, Szepsenwol O, Englund MM, Simpson JA. The role of dissociation in revictimization across the lifespan: A 32-year prospective study. *Child Abuse Negl*. 2018;79:144-153. doi:10.1016/j.chiabu.2018.02.001

41. Poole JC, Dobson KS, Pusch D. Do adverse childhood experiences predict adult interpersonal difficulties? The role of emotion dysregulation. *Child Abuse Negl*. 2018;80:123-133. doi:10.1016/j.chiabu.2018.03.006

42. Caplan S. Intersection of Cultural and Religious Beliefs About Mental Health: Latinos in the Faith-Based Setting. *Hisp Health Care Int*. 2019;17(1):4-10. doi:10.1177/1540415319828265

43. Marsland AL, Gianaros PJ, Abramowitch SM, Manuck SB, Hariri AR. Interleukin-6 Covaries Inversely with Hippocampal Grey Matter Volume in Middle-Aged Adults. *Biol Psychiatry*. 2008;64(6):484-490. doi:10.1016/j.biopsych.2008.04.016

44. Cicchetti D, Curtis WJ. An event-related potential study of the processing of affective facial expressions in young children who experienced maltreatment during the first year of life. *Dev Psychopathol*. 2005;17(03). doi:10.1017/S0954579405050315

45. Dodge KA. Translational science in action: Hostile attributional style and the development of aggressive behavior problems. *Dev Psychopathol*. 2006;18(03). doi:10.1017/S0954579406060391

46. Browse by r – APA Dictionary of Psychology. Accessed October 12, 2023. https://dictionary.apa.org/

47. Dominguez MG, Brown LD. Association Between Adverse Childhood Experiences, Resilience and Mental Health in a Hispanic Community. *J Child Adolesc Trauma*. 2022;15(3):595-604. doi:10.1007/s40653-022-00437-6

48. Masten AS. Ordinary magic: Resilience processes in development. *Am Psychol*. 2001;56(3):227-238. doi:10.1037/0003-066X.56.3.227

49. Joyce S, Shand F, Tighe J, Laurent SJ, Bryant RA, Harvey SB. Road to resilience: a systematic review and meta-analysis of resilience training programmes and interventions. *BMJ Open*. 2018;8(6):e017858. doi:10.1136/bmjopen-2017-017858

50. Nakao M, Shirotsuki K, Sugaya N. Cognitive–behavioral therapy for management of mental health and stress-related disorders: Recent advances in techniques and technologies. *Biopsychosoc Med*. 2021;15(1):16. doi:10.1186/s13030-021-00219-w

51. Bohlmeijer E, Prenger R, Taal E, Cuijpers P. The effects of mindfulness-based stress reduction therapy on mental health of adults with a chronic medical disease: A meta-analysis. *J Psychosom Res*. 2010;68(6):539-544. doi:10.1016/j.jpsychores.2009.10.005

52. Building your resilience. American Psychological Association. Accessed November 5, 2023. https://www.apa.org/topics/resilience/building-your-resilience

53. Creswell JD, Lindsay EK, Villalba DK, Chin B. Mindfulness Training and Physical Health: Mechanisms and Outcomes. *Psychosom Med*. 2019;81(3):224-232. doi:10.1097/PSY.0000000000000675

54. Van Agteren J, Iasiello M, Lo L, et al. A systematic review and meta-analysis of psychological interventions to improve mental wellbeing. *Nat Hum Behav*. 2021;5(5):631-652. doi:10.1038/s41562-021-01093-w

55. Whitaker RC, Dearth-Wesley T, Gooze RA, Becker BD, Gallagher KC, McEwen BS. Adverse childhood experiences, dispositional mindfulness, and adult health. *Prev Med*. 2014;67:147-153. doi:10.1016/j.ypmed.2014.07.029

56. Broadbent E, Kahokehr A, Booth RJ, et al. A brief relaxation intervention reduces stress and improves surgical wound healing response: A randomised trial. *Brain Behav Immun*. 2012;26(2):212-217. doi:10.1016/j.bbi.2011.06.014

57. Hwang WJ, Lee TY, Lim KO, et al. The effects of four days of intensive mindfulness meditation training (Templestay program) on resilience to stress: a randomized controlled trial. *Psychol Health Med*. 2018;23(5):497-504. doi:10.1080/13548506.2017.1363400

58. Gallo LC, Penedo FJ, Espinosa De Los Monteros K, Arguelles W. Resiliency in the Face of Disadvantage: Do Hispanic Cultural Characteristics Protect Health Outcomes? *J Pers*. 2009;77(6):1707-1746. doi:10.1111/j.1467-6494.2009.00598.x

59. Tindle HA, Chang YF, Kuller LH, et al. Optimism, Cynical Hostility, and Incident Coronary Heart Disease and Mortality in the Women's Health Initiative. *Circulation*. 2009;120(8):656-662. doi:10.1161/CIRCULATIONAHA.108.827642

60. Krause N, Bastida E. Religion, Suffering, and Self-rated Health Among Older Mexican Americans. *J Gerontol B Psychol Sci Soc Sci*. 2011;66B(2):207-216. doi:10.1093/geronb/gbq086