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Moving minds: considerations for a trauma-informed approach to welcoming immigrants

Annika Barron, *Notre Dame University*
CeSPI Intern (Summer 2023)

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Introduction

It is well established that Italy is one of the major crossroads for world migration, with thousands of migrants arriving from both Mediterranean and land routes each year and a reported migrant population of over 6.3 million people in the year 2020 - making up around 10% of the entire population in Italy^{1,2}. With issues of migration intersecting with at least 17 of the UN's Sustainable Development Goals, migration is one of the major discussions in the global development sphere. It is also at the forefront of Italian political discussions and thought, as Italy strives to be a country, “with policies to facilitate orderly, safe, regular and responsible migration and mobility of people”^{3,4}.

Behind all of the statistics, goals, discussions, and policies, however, are people. 6.3 million people with livelihoods, families, hopes, and fears. Furthermore, they are people with bodies and brains that must be cared for throughout the many challenges that they face as they move from one place to another. Unfortunately, the processes of migration and integration can often place stressors on these people and impact their capability to integrate well. The problem is amplified further if care is not taken to prevent further stress and provide support in healing from the trauma they have faced.

But what does that actually mean? Within discussions of programs and policy, it is easy to focus on outcomes, statistics, and implementation without any understanding of the science behind stress and trauma that provides the background for why these issues are important to address –

¹ “International Migration Stock 2020” (United Nations Department of Economic and Social Affairs, Population Division, 2020).

² “Country Profiles: Italy,” Integral Human Development (Dicastery for Promoting Integral Human Development), accessed July 13, 2023, <https://migrants-refugees.va/country-profile/italy/#:~:text=At%20the%20beginning%20of%202021>.

³ “Migration, Sustainable Development and the 2030 Agenda,” IOM UN Migration (International Organization for Migration, 2023), <https://www.iom.int/migration-sustainable-development-and-2030-agenda>.

⁴ “SDG Indicator 10.7.2 on Migration Policies,” United Nations, Population Division (United Nations, n.d.), <https://www.un.org/development/desa/pd/data/sdg-indicator-1072-migration-policies>.

not only for immigrant populations themselves, but for the broader community as a whole. This paper aims to briefly explain some of the basic neuroscience behind stress, trauma, and development and examine how it relates to immigration discussions and positions as they stand in Italy today. This short guide provides some tools for policymakers, researchers, migrant care workers, and civil society alike to establish a more trauma-informed approach to the many considerations and complexities within discussions of immigration.

The Neuroscience of Stress Explained

We all know what it feels like to experience fear and stress - some of the common symptoms might be sweating, a fast heartbeat, or heavy breathing. These characterize our physiological response to stressful situations, commonly referred to as the “fight-or-flight response”. What we experience externally, however, is just the tip of the iceberg of a complex biological cascade which happens when we encounter stress, more specifically when we sense potentially adverse changes or circumstances within our environment⁵. This leads to the release of a diverse set of neurotransmitters, chemicals which travel between neurons within the brain to allow for the processing of information, communication between different brain regions, and the execution of thought and actions. In addition to inducing fight-or-flight, the neurotransmitters released during stress, which are known as stress modulators, have a wide range of impacts on different areas of the brain when they are released. For example, noradrenaline (also known as norepinephrine) causes an attention shift from focused processing of sensory information such as sight or smell to scanning the environment more generally⁶. Corticotropin-Releasing Hormone (CRH) elicits a wide range of effects, just one of which enhances memory consolidation⁷. Cortisol, when released in high concentrations during stressful events, impacts areas of the brain involved in emotional and physical processing following stressful events⁸. Overall, stress modulators can impact learning and memory, decision making, and other physical and emotional responses within the brain⁹.

This stress response represents an important adaptation of our brains, one which allows us to be vigilant and make quick appraisals and decisions in the midst of stressful situations while also collecting information about the situation which can be stored as memories that might be useful in response to future stress. In fact, research has shown that moderate levels of stress are actually

⁵ Marian Joëls and Tallie Z. Baram, “The Neuro-Symphony of Stress,” *Nature Reviews Neuroscience* 10, no. 6 (April 2, 2009): 459–66, <https://doi.org/10.1038/nrn2632>.

⁶ Gary Aston-Jones and Jonathan D. Cohen, “An Integrative Theory of Locus Coeruleus-Norepinephrine Function: Adaptive Gain and Optimal Performance,” *Annual Review of Neuroscience* 28 (2005): 403–50, <https://doi.org/10.1146/annurev.neuro.28.061604.135709>.

⁷ B. Roozendaal et al., “Involvement of Stress-Released Corticotropin-Releasing Hormone in the Basolateral Amygdala in Regulating Memory Consolidation,” *Proceedings of the National Academy of Sciences* 99, no. 21 (October 2, 2002): 13908–13, <https://doi.org/10.1073/pnas.212504599>.

⁸ James L. McGaugh, “The Amygdala Modulates the Consolidation of Memories of Emotionally Arousing Experiences,” *Annual Review of Neuroscience* 27, no. 1 (July 21, 2004): 1–28, <https://doi.org/10.1146/annurev.neuro.27.070203.144157>.

⁹ Marian Joëls and Tallie Z. Baram, “The Neuro-Symphony of Stress,” *Nature Reviews Neuroscience* 10, no. 6 (April 2, 2009): 459–66, <https://doi.org/10.1038/nrn2632>.

optimal for performance, as having some healthy stress can sharpen our cognitive skills¹⁰. Even if we experience moments of high stress, our brains are trained to return to normal baselines and in most cases, exposure to stress will not have any lasting negative effects, even if in the moment stress may not be the most comfortable experience. However, very high levels of acute (one-time) stress, or enduring situations of chronic (long-lasting) stress both can lead to maladaptive changes in the brain. Acute, uncontrollable stress can inhibit cognitive abilities by impairing the prefrontal cortex, the area of our brains which controls our working memory, decision making, planning skills, attention focusing, and inhibition. This can actually hurt our ability to problem solve and overcome obstacles in extremely stressful situations, as our brains are then governed by conditioned emotional responses and habitual actions¹¹. High levels of cortisol caused by stress tend to favor more reflexive behavior and leads to less strategic decision-making¹². In some cases, intense stress exposure can even lead to lasting increased levels of the neurotransmitter glutamate and the loss of certain connections between neurons in the brain, causing actual structural changes in the way the brain is wired¹³. It is even theorized that altered memory functions and reflexive, stimulus-response associations in stress might be the underlying cause of Post-Traumatic Stress Disorder (PTSD), a disease which can have devastating impacts years after an initial traumatic event, because the disorder is characterized by memories and habits that are particularly hard to unlearn¹⁴. Considering the fact that PTSD is often caused by a singular traumatic event, it is clear that acute stress can pose a major lasting problem.

Chronic stress, which is typically defined as lasting for a week or more, can also have enduring effects on the brain and its behavior. Also known as toxic stress, long lasting activation of the brain's fight-or-flight response can provoke persistent changes to the way certain genetic material is expressed, transform the structure of neurons, and alter the connections between neurons and the way signals are sent throughout the brain, which can lead to continued deviation from the original way the brain network would function^{15,16}. Chronic stress can exacerbate the same architectural changes in the brain caused by acute stress and cause a persistent loss of prefrontal cortex function, as stress from adverse events is correlated with a decrease in neuron mass within the prefrontal cortex and less connection between the prefrontal cortex and the amygdala, the emotional center of the brain¹⁷. In other words, stress changes the brain so that it

¹⁰ Robert M. Yerkes and John D. Dodson, "The Relation of Strength of Stimulus to Rapidity of Habit-Formation," *Journal of Comparative Neurology and Psychology* 18, no. 5 (November 1908): 459–82, <https://doi.org/10.1002/cne.920180503>.

¹¹ Amy F T Arnsten, "Stress Weakens Prefrontal Networks: Molecular Insults to Higher Cognition," *Nature Neuroscience* 18, no. 10 (September 25, 2015): 1376–85, <https://doi.org/10.1038/nn.4087>.

¹² Susanne Vogel et al., "Stress Induces a Shift towards Striatum-Dependent Stimulus-Response Learning via the Mineralocorticoid Receptor," *Neuropsychopharmacology* 42, no. 6 (November 23, 2016): 1262–71, <https://doi.org/10.1038/npp.2016.262>.

¹³ Laura Musazzi et al., "What Acute Stress Protocols Can Tell Us about PTSD and Stress-Related Neuropsychiatric Disorders," *Frontiers in Pharmacology* 9 (July 12, 2018), <https://doi.org/10.3389/fphar.2018.00758>.

¹⁴ Susanne Vogel et al., "Stress Induces a Shift towards Striatum-Dependent Stimulus-Response Learning via the Mineralocorticoid Receptor," *Neuropsychopharmacology* 42, no. 6 (November 23, 2016): 1262–71, <https://doi.org/10.1038/npp.2016.262>.

¹⁵ Marian Joëls and Tallie Z. Baram, "The Neuro-Symphony of Stress," *Nature Reviews Neuroscience* 10, no. 6 (April 2, 2009): 459–66, <https://doi.org/10.1038/nrn2632>.

¹⁶ Bruce S. McEwen, "Physiology and Neurobiology of Stress and Adaptation: Central Role of the Brain," *Physiological Reviews* 87, no. 3 (July 2007): 873–904, <https://doi.org/10.1152/physrev.00041.2006>.

¹⁷ Amy F T Arnsten, "Stress Weakens Prefrontal Networks: Molecular Insults to Higher Cognition," *Nature Neuroscience* 18, no. 10 (September 25, 2015): 1376–85, <https://doi.org/10.1038/nn.4087>.

tends to rely on reflexive and habitual responses rather than higher level cognitive control (including decision making, planning, and inhibition) – in the long term. These changes occur via the mechanism of synaptic plasticity, which is a process that allows for changes in the connections between different neurons within our brains to build new pathways in response to novel experiences or eliminate communication pathways that are not used frequently. The basic principle of this system is that neurons that fire together, wire together - meaning that the brain is susceptible to change based on experiences it encounters within the external environment. In some cases, long lasting stress can also lead to perpetual genetic changes, which might alter the amount of certain proteins or other materials found within the cells - some of which can alter sensitivity to stress-induced cognitive deficits or further contribute to degeneration within certain areas of the brain¹⁸. Chronic stress exposure increases the chances of developing certain mental illnesses such as anxiety or depression¹⁹. But, even without the development of a specific mental illness, exposure to chronic stress and the alterations that it brings can make it more difficult to function within the expectations of society. It impacts abilities to make decisions, plan, make goals, manage emotions, and form social connections - all of which are essential during the transition of immigrants to living in a new country.

Vulnerabilities within Immigration Stories

While there are numerous experiences that can cause high levels of stress or ongoing stress and it is a problem which affects people all over the world, immigrants often represent a particularly vulnerable population to experiences of traumatic or chronic stress. First, many forced migrants who are seeking asylum left their home countries due to experiences of violence such as war, conflict, and torture, all of which pose threats for chronic stress because of the fear they generate and the impacts that they have on daily life²⁰. Others leave their homes in order to escape extreme poverty, which can also be a source of chronic stress and change the way the brain functions - leading to overstimulation of the stress response and creating a “scarcity mindset” in which attention to pressing needs diverts attention from higher cognitive functions such as decision making, empathy, or memory²¹.

Sources of stress do not stop when they leave their home country, however. One study focused on understanding the experiences of asylum seekers in Italy found that 60% had experienced potentially traumatic events before leaving their home country, while 89% had encountered trauma during their migration journey²². This study included mostly migrants who had arrived to

¹⁸ Amy F T Arnsten, “Stress Weakens Prefrontal Networks: Molecular Insights to Higher Cognition,” *Nature Neuroscience* 18, no. 10 (September 25, 2015): 1376–85, <https://doi.org/10.1038/nn.4087>.

¹⁹ Robert-Paul Juster et al., “A Transdisciplinary Perspective of Chronic Stress in Relation to Psychopathology throughout Life Span Development,” *Development and Psychopathology* 23, no. 3 (July 15, 2011): 725–76, <https://doi.org/10.1017/s0954579411000289>.

²⁰ Kenneth E. Miller and Andrew Rasmussen, “War Exposure, Daily Stressors, and Mental Health in Conflict and Post-Conflict Settings: Bridging the Divide between Trauma-Focused and Psychosocial Frameworks,” *Social Science & Medicine* 70, no. 1 (January 2010): 7–16, <https://doi.org/10.1016/j.socscimed.2009.09.029>.

²¹ Martha J. Farah, “The Neuroscience of Socioeconomic Status: Correlates, Causes, and Consequences,” *Neuron* 96, no. 1 (September 2017): 56–71, <https://doi.org/10.1016/j.neuron.2017.08.034>.

²² Anna Crepet et al., “Mental Health and Trauma in Asylum Seekers Landing in Sicily in 2015: A Descriptive Study of Neglected Invisible Wounds,” *Conflict and Health* 11, no. 1 (January 13, 2017), <https://doi.org/10.1186/s13031-017-0103-3>.

Italy by sea, an often harrowing experience which many times turns out to be a life-or-death battle. However, even while not at sea it is not uncommon for migrants to experience detention, kidnapping, torture, or other stressful experiences while in transit²³. Negative encounters during the migration process can compound previously felt stress or introduce new sources of toxic stress, making it even more likely that these people will be placed in a position where their brains are vulnerable to some of the maladaptive changes that can occur in response to high levels of stress.

As a result of this increased vulnerability, immigrant populations often experience higher rates of PTSD and other mental disorders. Of patients cared for in one emergency reception system in Ragusa, 27% experienced anxiety and 42% presented with PTSD - and the likelihood of having one of these psychological disorders was 3.7 times more likely for immigrants who had experienced previous traumatic events²⁴. More broadly, estimates believe that PTSD is experienced at a rate of 50-60% among immigrants who have experienced previous trauma²⁵. As a result, it is essential to ensure that immigrants have access to mental healthcare to help assess and address struggles they may be dealing with as a result of toxic stress. While asylum seekers, refugees, and those who hold subsidiary protection status are legally entitled to the same healthcare services as any Italian citizen, there are often barriers to access. Whether it is difficulty reaching medical facilities, problems with communication, individual health beliefs, or discrimination from health workers, immigrants often do not receive the level of care that they need²⁶. This difficulty is further complicated for undocumented immigrants. While they have been granted protections to access urgent healthcare without being reported, there is likely still fear associated with using this public institution that prevents these people from seeking care²⁷. Additionally, without a valid *permesso di soggiorno*, people are not able to register for the *Servizio Sanitario Nazionale (SSN)*, which makes it much more difficult to access consistent mental health services or preventative care. Even if immigrants do gain access to mental health services, communication problems and cultural differences can lead to a higher risk of misinterpretation and misdiagnosis and impact the quality of care that they receive²⁸. Several non-governmental organizations are working within Italy to accompany immigrants as they navigate and access health and mental health resources, in some cases even providing cultural and linguistic assistance for appointments. However, given continued high rates of mental illness and chronic stress, there is an urgent need to more strongly consider the impact of toxic stress on the lives of immigrants, providing specific and intentional care to address trauma and mental illness.

²³ Rocío Naranjo Sandalio, “Life after Trauma: The Mental-Health Needs of Asylum Seekers in Europe,” Migration Policy Institute, January 29, 2018, <https://www.migrationpolicy.org/article/life-after-trauma-mental-health-needs-asylum-seekers-europe#:~:text=A%20study%20in%20cooperation%20with>.

²⁴ “Neglected Trauma” (Médecins Sans Frontières, 2016).

²⁵ Antonio Ventriglio et al., “Migration, Violence, and the Role of Psychiatry in Italy,” *International Review of Psychiatry* 29, no. 4 (July 4, 2017): 327–33, <https://doi.org/10.1080/09540261.2017.1343532>.

²⁶ G. Griffiths et al., “The Provision of Mental Health Services to Immigrants and Refugees in Italy: The Barriers and Facilitating Factors Experienced by Mental Health Workers,” *Journal of Psychopathology* 23 (2017): 79–86.

²⁷ R Ravinetto et al., “Access to Health Care for Undocumented Migrants in Italy,” *The Lancet* 373, no. 9681 (June 2009): 2111–12, [https://doi.org/10.1016/s0140-6736\(09\)61151-x](https://doi.org/10.1016/s0140-6736(09)61151-x).

²⁸ Antonio Ventriglio et al., “Migration, Violence, and the Role of Psychiatry in Italy,” *International Review of Psychiatry* 29, no. 4 (July 4, 2017): 327–33, <https://doi.org/10.1080/09540261.2017.1343532>.

Continuing Stressors Upon Arrival

The story of stress doesn't end once immigrants arrive in Italy. While arrival to a destination country is sure to cause some relief, there are often many challenges which remain throughout the reception and integration processes in countries like Italy. Within reception centers, immigrants might experience overcrowded conditions, geographical and social isolation from the rest of society, long stays of an undetermined length, long periods of waiting for a permanent visa (18 months on average), difficulty with accessing healthcare or legal support, and even episodes of violence²⁹. Even after leaving a center, immigrants might have difficulties finding a job or housing and are at a greater risk of poverty than other Italian citizens³⁰. There also seems to be a “fragmentation” within immigrant communities caused by a lack of coordination between different initiatives for migrants and a lack of associations and community relationships within immigrant groups and between immigrants and the broader community, leaving immigrants in a disoriented and marginalized position in their new society³¹. The situation is exacerbated further for undocumented immigrants, who likely face even greater challenges in finding employment and accessing social services, especially considering that many of the social intervention programs for migrants in Italy are tailored to refugees and asylum seekers and have an added stressor of deportation threats that they must contend with.

Several studies have shown that these stress-inducing conditions can have a direct impact on the integration and health of refugees. One study in Switzerland found that earlier recognition of protection claims decreased the risk of PTSD and depression among asylum seekers, likely because of the decrease in stress that comes with obtaining protected legal status³². Another study focused on the post-migration living difficulties (PMLD) faced by immigrants in Italy found that 84.15% reported at least one serious PMLD, with most frequent issues being not having permission to work, not being able to find work, worries about family at home, poverty, the inability to return home in an emergency, and worries about not getting treatment for health problems³³. They found that the number of PMLD experienced by the immigrants increased the likelihood for PTSD, regardless of potentially traumatic events that occurred before arriving in Italy, suggesting that stressful conditions following migration not only can exacerbate existing risks for mental health problems, but can cause enough stress that they become an independent risk factor that all immigrants are susceptible too. The continuation of chronic stress for immigrants in their destination country is a dangerous, and often unnecessary predicament. In

²⁹ Alberto Barbieri et al., “Patterns and Predictors of PTSD in Treatment-Seeking African Refugees and Asylum Seekers: A Latent Class Analysis,” *International Journal of Social Psychiatry* 67, no. 4 (September 22, 2020): 002076402095909, <https://doi.org/10.1177/0020764020959095>.

³⁰ “2022 Annual Report on the Labour Market Situations of Immigrants in Italy | European Website on Integration,” European Website on Integration (European Commission, August 9, 2023), https://ec.europa.eu/migrant-integration/library-document/2022-annual-report-labour-market-situations-immigrants-italy_en#:~:text=30.6%25%20of%20families%20living%20in.

³¹ Sebastiano Ceschi, “Migrations of Asylum Seekers from Africa. Diaspora and Associations at Issue?,” in *From Africa to Europe: The Political Challenge of Migrations*, ed. Daniele Frigeri and Marco Zupi (Roma: Donzelli Editore, 2019), 127–36.

³² Martina Heeren et al., “Psychopathology and Resident Status – Comparing Asylum Seekers, Refugees, Illegal Migrants, Labor Migrants, and Residents,” *Comprehensive Psychiatry* 55, no. 4 (May 2014): 818–25, <https://doi.org/10.1016/j.comppsy.2014.02.003>.

³³ Massimiliano Aragona et al., “Post-Migration Living Difficulties as a Significant Risk Factor for PTSD in Immigrants: A Primary Care Study,” *Italian Journal of Public Health* 9, no. 3 (2012), <https://doi.org/10.2427/7525>.

order to create conditions where immigrants are able to thrive, programs and policies must work to eliminate sources of chronic stress within the integration process whenever possible.

The Special Case of Minors

Immigrants in Italy come from a diverse set of backgrounds, beliefs, and experiences, and they also represent a wide variety of ages. Between 2007 and 2016, the percentage of foreign immigrants entering Italy who were minors was between 15 and 17% each year³⁴. In the first half of 2022 alone, 15,595 minors entered Italy without their parents or their families³⁵. The case of minors poses a unique challenge when it comes to considering the impacts of stress and trauma, as developing brains can be particularly sensitive to stress or other changes in the external environment. Throughout development, children and adolescents go through periods of rapid brain growth followed by rapid pruning, allowing the brain to expand its cognitive capacities and strengthen the pathways that are most useful in a way that allows for very efficient and effective adult functioning. Much of this development occurs during what are called “critical periods”, which are times throughout childhood and adolescence that certain parts of the brain are rapidly changing. However, these changes are not completely random, and require the input of experiences in the world - if the brain does not receive the anticipated “species expectant experiences”, the brain will not grow in a way conducive with reaching its full potential.

One of the most important expectant experiences for young children is the presence of an attentive caregiver. Through interactions with this caregiver, children gain skills such as sensory processing, language, and social attachment. They are also able to experience a safe environment where they can encounter the world without the stress response overloading their brain’s processing systems. When these expectations are not met, it can lead to lasting changes in brain development. Repetitive activation of the stress response during childhood can alter the baseline state of arousal, leading to a constant physiological state of alarm that can be escalated quickly - which ultimately may cause these children to have a lower capacity to tolerate normal demand and stresses of school, home, work, and social life as they grow older³⁶.

Neglect, which is defined as inadequate provision for physical needs, poor protection from harm, and failure to provide for emotional or educational needs, can lead to poor emotional regulation, alterations in reward-directed behavior, problems with learning abstract knowledge, and difficulties with conflict adaptation, response inhibition, cognitive flexibility, and attentional control³⁷. Neglect can lead to an increased likelihood of developing disorders such as anxiety and depression and has also been linked to a decrease in overall brain volume in children who

³⁴ Salvatore Strozza, “Immigration and Foreign Nationals in Italy: Evolution, Characteristics and Current and Future Challenges,” in *From Africa to Europe: The Political Challenge of Migrations*, ed. Daniele Frigeri and Marco Zupi (Rome: Donzelli Editore, 2019), 297–330.

³⁵ “Italy: Report on Unaccompanied Minors,” European Website on Integration (European Commission, August 9, 2023), https://ec.europa.eu/migrant-integration/library-document/italy-report-unaccompanied-minors_en.

³⁶ Bruce D. Perry, “Maltreatment and the Developing Child: How Early Childhood Experience Shapes Child and Culture” (The Margaret McCain Lecture Series, September 23, 2004).

³⁷ Katie A. McLaughlin, Margaret A. Sheridan, and Charles A. Nelson, “Neglect as a Violation of Species-Expectant Experience: Neurodevelopmental Consequences,” *Biological Psychiatry* 82, no. 7 (October 2017): 462–71, <https://doi.org/10.1016/j.biopsych.2017.02.1096>.

experience neglectful conditions^{38,39}. Another recognized adverse childhood experience is having a parent living with mental illness⁴⁰. It has also been found that experiences of poverty can exacerbate the effects of adverse childhood experiences, which increase risk for both mental and physical health conditions later in life⁴¹. Children who experience immigration or come from immigrant families might be more likely to experience neglect or not have their species expectant experiences met, which might impact their development - something which is entirely outside of their control. A few ways to specifically work to avoid these experiences of stress and neglect is to provide education for parents recently arriving to help them understand how to meet the biological expectations that their child has for a caregiver and provide opportunities for early childhood education and enrichment activities within refugee centers, in addition to caring for the social circumstances of immigrant families at large. These types of programs are important at a broad societal level, but considering the increased vulnerability of immigrant children it might be beneficial to make them easily accessible and encouraged for immigrant children and their families.

Adolescent children are also more vulnerable to potential stressors. During adolescence, the brain is undergoing a period of pruning where it eliminates the architecture of certain communication pathways which are not used to streamline the most necessary communications within the brain. The parts of the brain that are most malleable during adolescence are also those which are most greatly affected by stress, and some preliminary research even suggests that adolescent brains are more vulnerable to stress modulators such as cortisol which could lead to changes in emotionality and cognition for adolescents⁴².

Adolescence is also an important time for the development of the social brain, the part which underlies our ability to act within social settings and form connections with others⁴³. For unaccompanied minors who have immigrated to a new place during adolescence, it is likely that the experiences their brains encounter will be more filled with stress and obstacles such as finding work and learning to live on their own rather than new social connections and the positive experiences of adolescence. It is tempting to think of adolescents as capable of being independent, because this is a time where they start to do more and more things on their own. However, for their brains to develop properly adolescents still need guidance and connection with others as they go through these new experiences, and exposure to undue stress which can occur when adolescents are left on their own can lead to maladaptive brain changes and

³⁸ Martin H. Teicher and Jacqueline A. Samson, "Annual Research Review: Enduring Neurobiological Effects of Childhood Abuse and Neglect," *Journal of Child Psychology and Psychiatry* 57, no. 3 (February 1, 2016): 241–66, <https://doi.org/10.1111/jcpp.12507>.

³⁹ Mitul A. Mehta et al., "Amygdala, Hippocampal and Corpus Callosum Size Following Severe Early Institutional Deprivation: The English and Romanian Adoptees Study Pilot," *Journal of Child Psychology and Psychiatry* 50, no. 8 (August 2009): 943–51, <https://doi.org/10.1111/j.1469-7610.2009.02084.x>.

⁴⁰ Vincent J Felitti et al., "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults," *American Journal of Preventive Medicine* 14, no. 4 (1998): 245–58, [https://doi.org/10.1016/s0749-3797\(98\)00017-8](https://doi.org/10.1016/s0749-3797(98)00017-8).

⁴¹ Michelle Hughes and Whitney Tucker, "Poverty as an Adverse Childhood Experience," *North Carolina Medical Journal* 79, no. 2 (March 2018): 124–26, <https://doi.org/10.18043/ncm.79.2.124>.

⁴² Russell D. Romeo, "The Impact of Stress on the Structure of the Adolescent Brain: Implications for Adolescent Mental Health," *Brain Research* 1654, no. Part B (January 2017): 185–91, <https://doi.org/10.1016/j.brainres.2016.03.021>.

⁴³ Diana Dow-Edwards et al., "Experience during Adolescence Shapes Brain Development: From Synapses and Networks to Normal and Pathological Behavior," *Neurotoxicology and Teratology* 76 (November 2019): 106834, <https://doi.org/10.1016/j.ntt.2019.106834>.

behaviors. Eventually, this could even be correlated with behaviors such as drug use or the development of mental health problems⁴⁴. When considering unaccompanied minors, it is essential that they are given not only a place to stay and economic stability, but also connection and mentorship to help them manage and work through some of the stresses that come with living as a fully independent adult.

Conclusion

The issue of migration is complex, and the policies and programs focused on welcoming immigrants must take a multifaceted approach to address the many challenges that this group faces. One important consideration in political and social discussions of immigration is the impact that stress and trauma have on immigrant experiences, both before they reach their destination and during their integration into their host country and communities. While this conversation will not solve every problem or address every complication that comes with immigration, fostering trauma-informed discussions has the potential for generating more conscientious solutions which allow immigrants to reach their full potential not only economically and socially, but also neurologically. Efforts to further understand the specific impact of migration experiences on stress and brains also present a powerful tool for understanding ways that immigrants can be better welcomed to their new homes. Ultimately, creating a more trauma-informed forum for discussion can benefit all of society in places like Italy where immigrants make up a large part of the community. Caring for the needs of immigrants will allow them to become more connected and integrated members of the society, making everyone feel more welcome.

⁴⁴ Christopher J. Hammond, Linda C. Mayes, and Marc N. Potenza, “Neurobiology of Adolescent Substance Use and Addictive Behaviors: Prevention and Treatment Implications,” *Adolescent Medicine: State of the Art Reviews* 25, no. 1 (April 2014): 15–32.