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ULUSLARARASI MÜLTECİ HAKLARI DERNEĞİ

# Does an Immigrant Nation Hand Down Stress to Future Generations?

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**Epigenetic research, which examines the effect of environmental factors on DNA, suggests that the stressful life experience that one generation is exposed to can be transmitted to the next generations. It is known that at least 100 million people have been forced to leave their homes in the last 10 years, and three out of every four asylum seekers have difficulty in finding accommodation. Immigrant mental health studies clearly reveal that displaced persons experience physical and psychological traumas and are exposed to intense stress. When we evaluate the psychological effects of migration within the framework of epigenetic science, can we say those nations that had to migrate hand down reduced stress tolerance to their future generations?**

The genes we inherit from our biological parents determine characteristics such as how tall we can be, what color our eyes will be, or what tempera-

## Message of Analysis

- The way to cope with stress is through awareness.
- The pains of the migration flow can inherit the stress of the migration route to future generations.
- It is necessary to develop social studies that support the stress coping mechanisms of refugee community.

ment we might have. During a child's development, DNA accumulates some chemical tags and clues. These tags determine how much of the genes in the DNA are promoted and revealed, and how much of it will be silenced and remain recessive (National Scientific, 2010). Different experiences since childhood affect these tags. We will refer to these tags as "epigenetics" later in the article. If we think of our entire DNA as the whole of a recipe, epigenetics can be defined as the tags that determine which process will take place when and how in this recipe (Guerrero-Bosagna, 2017).

In this context, this analysis will attempt to explain the link between epigenetics, migration and the stress triangle. The analysis will discuss epigenetic codes that immigrant families can transmit to their next generations through the nature of epigenetic transmission, the transferability of stress to the next generation by epigenomes, and the stress factors exposed during migration. The analysis also underlines that inherited post-migration stress is not a disaster scenario. Epigenetic transmissions can be turned into an advantage with awareness. Protective factors can be developed and it is possible to cope with post-migration stress.

## What does epigenestics indicate?

According to Moshe Szyf, one of the pioneers of epigenetic research (2013), DNA consists of two layers of information. One of them is full of codes that have been carried over from our millions of years of history to the present. It is very old, fixed and very difficult to reshape. The other layer of information, on the other hand, is epigenetics. This layer is a dynamic and ready to change with experiences. It allows us to change both ourselves and our future generations (Szyf & Bick, 2013).

Epigenetic changes by their nature can be hereditary or environmental. It is known that the epigenetic state is affected by environmental conditions, such as nutrition, toxic substances, and stress factors that can change the genetic sequence (Skinner, 2015). Epigenetic effects can lead to phenotypically differentiated cells and tissues within an organism (Pace & Blundell, 2018). It has been also proven by animal experiments

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Information

The mechanism that determines when, where and how much the genes in the DNA structure will work is called "epigenetics", which means "beyond the genetic codes" "on top of" genetic codes. It examines the diseases caused by environmental factors such as lifestyle, nutritional habits, socio-cultural development, sportive activities that decrease or increase the activity of genes. It examines the disorders that occur when environmental factors such as lifestyle, nutrition habits, socio-cultural development, sports activities decrease or increase the activity of genes.

**The war refugees can be thought of as people who have suffered or faced critical trauma, including physical, emotional, or sexual traumatic experiences.**

that the ancestors can transmit the changes they have acquired under the influence of these environmental conditions to the next generations (Stankiewicz et al., 2013). Namely, epigenetics can be shaped not only by one's own early life experiences but also by the experiences of parents or even grandparents.

One of the most important environmental factors affecting epigenetics is stress. It is known that the stress experienced by one generation causes epigenetic changes and can be transmitted to the next generations over generations. Research with laboratory rats has proven that offspring can be born with a memory of stress and fear (Kürekçi et al., 2017). It has been observed that the stress memory transmitted from the parents leads to permanent epigenetic changes in the offspring's brain and the acquired stress and anxiety phenotypes can be transmitted up to three generations (Franklin et al., 2011). In an experiment conducted with mice, the same stress phenotypes were observed in the genes of male mice exposed to chronic stress during adolescence or adulthood and their descendants who did not live in the same era with the first generation. (Kürekçi et al., 2017).

In another experiment with rats, adult rats were exposed to a certain odor with electric shock. Thus, every time the rat got that smell, it began to avoid that smell, expecting an electric shock to follow. In this way, rat acquire a learned fear. Permanent changes created by this learned fear in the olfactory centers of the brain and nose are transmitted on to the next generation (Jones et al., 2008). In other words, a rat pup that has no reason to be afraid of a particular smell can be born with that fear. This study shows us that the traumatic experience of the family can be transmitted to the children. So, from a behavioral perspective, what do these studies indicate?

## Migration and Epigenetics

These stressful life experiences, artificially created in a laboratory environment, are experienced in real life by both animals and humans. In this context, migration as a traumatic life experience is a remarkable phenomenon for the epigenetics studies. Migration action exposes immigrants to brand new experiences cognitively, emotionally and behaviorally (Acarturk, 2016). Considering the psychological and physical difficulties experienced before, during, and after migration, it can simply be said that migration is a traumatic life event. In addition to the losses they experience, immigrants also face the challenge of adapting to a new environment. Furthermore, most war refugees can be thought of as people who have suffered or faced critical trauma, including physical, emotional, or sexual traumatic experiences (Davis & Davis, 2006). Therefore, they are at risk for many psychological disorders.

As a result of a study conducted with immigrants in Australia, conditions that cause critical stress are listed as poor working conditions, poverty,

communication difficulties, the uncertainty of the future, not being able to access health services in emergencies, and situations that require long-term medical advice. Additionally, racism, conflicts with immigration authorities in the country, and the absence of traditional rituals are also cited as factors causing stress (Silove et al., 1997).

Many studies conducted in Europe, which hosts immigrants from various parts of the world, show that immigrant groups are diagnosed with psychological disorders more than local people (Carta et al., 2005; Cochrane & Bal, 1987). When the psychological disorder rates of immigrants in their own country population were analyzed, it was found that the results were not related to the predisposition of immigrants to these diseases before migration. The results show that the difficulties experienced during and after the migration process weaken the immigrants' defense mechanism against psychological disorders (McGovern & Cope, 1987). McGovern and Cope report that most of their samples in this study (1987) could speak the native language of the country they migrated to reasonably well, 92% were able to go shopping, and 65% could easily communicate with a doctor. Therefore, when analyzing the results of the study, it should be taken into account that refugee groups in every country might not have these opportunities with such high percentages.

In addition to traumatic experiences, refugees often face problems arising from cultural differences and isolation. They are exposed to various stress factors such as socioeconomic disadvantages, poverty, changes in family structure, loss of social support, difficulty in accessing education, living in crowded places, hostility, and racism (Burnett & Peel, 2001; Porter & Haslam, 2005). All these results show that migrant societies are a more vulnerable group in terms of main stress factors.

## Are New Generations Affected by the Stress of Migration?

The fact that immigrant nations' inability to return to their countries soon leads to the coming of the second and third-generation immigrants to the world. Some studies suggest that second-generation immigrants have lower integration problems because they learn the culture and language of the country at a young age. But the adaptation difficulties

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> It is necessary to emphasize the importance of awareness in order to be able to resist stress.

and cultural conflicts faced by these generations are different from their parents. The feeling of "belonging to the others in both communities" can make them vulnerable to various mental health problems (Acarturk, 2016).

It is possible to say that epigenetic information can be transmitted from generation to generation with this aspect. That means that the stressful life of a grandfather may cause a grandchild who does not even know that grandfather at all to be born with the stress gene. As a matter of fact, when we evaluate this information together with the stressful life experiences of a society that has been subjected to forced migration, we encounter the following question: Can a nation that has forced to migrate hand down the traumas they had suffered as a legacy for future generations?

Millions of people have left their country through forced migration in the last 10 years, especially due to the adverse conditions caused by unstable countries. The majority of people who have been forced to migrate have experienced physical or psychological trauma before, during, and after migration. Long-lasting epigenetic changes can occur in the brain cells that drive how the second and third generations of these individuals respond to lifelong challenges. Learned conditioning, anxiety, and stress of parents can be seen in the second and third generations. Stress tolerances of these generations might have reduced, and their stress responses might have altered.

A study conducted with Bangladeshi families (2016) shows that the children of families who are exposed to famine in the developmental period are programmed to be predisposed to obesity and diabetes in adulthood (Finer et al., 2016). This result is evaluated as the children of families exposed to famine and hunger may be born programmed to suppress the feeling of hunger. In other words, it is thought that the brain may be programmed to store every nutrient that enters the body as fat, with the assumption that it cannot always find food. The mechanism developed to protect the parents from famine in the first place may prevent the next generation from adapting to the normal life order.

On the other hand, it is also possible to deal with stress genes transmitted to us from our past. We know that epigenetic programming also happens in early life stages. In studies, it has been proven that the rats, which are licked more by their mothers after birth and shown intense care, have increased stress resistance (Szyf & Meaney, 2008). That is, the parents can reprogram their off springs' epigenetics through their behavior, care, and attention. Stress can be turned into an advantage by raising awareness and coping methods. Kelly McGonigal, in her book "The Upside of Stress: Why Stress Is Good for You, and How to Get Good at It" explains that believing that stress is harmful to health is more lethal than the stress itself. In this aspect, she states that stress is a supportive defense mechanism that is helpful when used in the right way.

## Resistance to Stress: Awareness

In conclusion, we know that stress can be transmitted from generation to generation thanks to epigenetic research. Migration is one of the most complex life experiences with the most intense exposure to stress factors. This situation puts at risk all refugees who had to leave their countries for vital reasons such as war and genocide. The negative consequences of migration do not cease with the migrating generation but can be inherited by the next generations. This means that a child may be born with the preliminary acceptance that life will be cruel to her/him. Innate codes can signal the child that "you better be anxious and stressed because you have so many challenges ahead". Even though they have food to eat every day, their brain can tell their metabolism that "you may never find food again, so whatever you find turn it into fat." They may feel under heavy stress even though they are not exposed to an intense stressor.

Yet, all this does not give us an unchangeable end. The decisions we make now are not just the results of the decisions our ancestors made years ago. The way to develop stress resistance is through awareness. The duty of every institution and individual working with refugee societies is to ensure that refugees gain opportunities to develop protective factors and psychological resistance. Social studies that support the coping mechanisms of refugee societies with stress should be developed

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by developing mindfulness. The tasks that can be carried out can be listed as informing societies with psychoeducation, enabling immigrants to be included in their social environment and being productive, ensuring them to benefit from therapy or counseling services, and improving their living standards.

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> Social studies that support the coping mechanisms of refugee societies with stress should be developed by developing mindfulness.

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*Whoever saves a life,*
***it will be as if they saved all of humanity.***

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