# An overview of child abuse in Public Institutions

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## Abstract

The physical and mental health of children, as well as the effort to ensure a safe environment for their upbringing, have been the main concern of The United Nations Convention on the Rights of the Child (UNCRC) since 1989, for many countries around the world and for many organizations formed to defend these rights. Child abuse, in all its forms, is a major public health problem, affecting millions of children each year worldwide. Many studies are carried out in order to determine scientifically that early social adversity as well as physical, sexual or emotional abuse of a child and neglect, cause alterations in DNA methylation.

## Introduction

The first years of a child's life are very important for his physical and mental development. According to The United Nations Convention on the Rights of the Child (UNCRC, 1989), every child has the right to life, survival and development and every child has the right to be protected from all forms of physical or psychological violence. Nevertheless, millions of children around the world become victims or witnesses of physical, sexual, and emotional violence on a daily basis and in some form of abuse in the first years of life and beyond, either by their family environment or by caregivers during their stay in childcare institutions. The research of Bateson et al., 2004 showed that any form of child abuse has been associated with physical, psychological, and emotional problems throughout a child's lifetime, while the effects of child abuse and maltreatment have been associated with consequent lifelong provocation.

In recent years, research data have shown that maltreatment is associated with epigenetic changes, which in turn may be associated with the occurrence of chronic mental and organic disorders. According to the Common European Guidelines for the Transition from

Institutional Care to Local Community Care, an "Institution is defined as: any form of housing structure where residents are isolated from the wider local community and / or forced to live together". Approximately 8 million children in institutions globally and 1 million children live in care / public institutions according to an overall estimate for 30 European countries (AMKE Roots Research Center; LUMOS EDDP 2015).

For a child to end up in an institution or care, there are basically three main reasons. The most common reason is for the state to remove the child from his family if the environment and family are deemed unsuitable for his raising. The second most common reason is when the child has been abandoned by his biological parents. And the third most common reason is when the child has lost both parents, is an orphan and has no other relatives to take its custody. It is important to emphasize that approximately 90% of institutionalized children in Europe are not orphans and at least 80% of institutionalized children globally are not orphans (LUMOS EDDP 2015).

The decision to remove a child from its family due to unfavorable circumstances is usually made by a prosecutor or other government service, authorized to oversee these circumstances. In order such a decision to be taken, the safety and / or life of the child must be endangered, the living conditions must be defective or dangerous, obvious and non-obvious signs of neglect, abandonment and / or abuse have to be found and they can be confirmed with a medical examination, to have serious socio-economic problems and finally to have some chronic mental illness of the biological parents.

Nevertheless, the state has the responsibility to support the effort to reconnect the family and the biological parents with their child because according to the UN Convention on the Rights of the Child (Article 18), the upbringing of the child belongs primarily to the parents and his removal from his biological family should be the last resort, and as short as possible (UNCRC, 2019). However, many children live in closed institutions which are often characterized by unsuitable conditions for the proper upbringing of a child. The following characteristics are recognized in most child hosting institutions: depersonalization, strict routine, group treatment, social distance, dependence, lack of accountability, etc. (AMKE Roots Research Center). This results in children showing reduced level of physical development, reduced brain development, function and intelligence as well as various issues of learning development and behavior (attention deficit, cognitive problems, hyperactivity, and insecure attachment) (Johnson, 2006).

Often the time that a child spends in these institutions can last from months to years. Specifically in Greece, in state institutions, the residence time of children is about 3 years (Nanou, 2011). The reasons for the long stay of children in institutions are, the small number of state institutions (4 throughout Greece), the legal obstacles that children usually face due to claims by the biological family or the inability to find the biological family to give their consent and to proceed with the adoption process, health problems that the children hosted in these places may have, the small response of the people to adoption programs and finally the lack of competent staff to initiate the adoption and adoption processes (Nanou, 2011).

Studies have shown that children who remain in care for more than 6 months may experience autism, low self-esteem, behavioral, social, and developmental issues and

learning disabilities such as attention deficit and hyperactivity disorder (Johnson, 2006). Children living in childcare institutions are 10 times more likely to be involved in adult prostitution, 40 times more likely to have a criminal record and 500 times more likely than their peers to commit suicide (Pashkina, 2001). Another study, conducted in institutions in Romania, showed that there is a serious delay in the development of the brain of the children growing up there (Beckett, 2010).

It is very important to reduce or even eliminate the time children spend in institutions and this has been a goal in the European Union. There is already a process towards the non-existence of childcare institutions, but as an alternative form of care, to place children in foster care or to become members of an extended family (AMKE Roots Research Center; Johnson, 2006). From 1 Jan 2014, EU Member States cannot spend money on renovating or building institutions and must spend money on the transition to community-based services (LUMOS EDDP 2015).

Lack of maternal care and concern in the first period of a child's life (early social deprivation), is considered a significantly negative early experience that in addition to the development of the child, seems to affect the physical and mental health of the child and have long-term outcomes (Naumova O. Y., 2019). The first evidence came from studies in mammals (such as mice), which showed that long-term exposure to unpleasant stimuli triggered epigenetic mechanisms to express various genes in the brain of neglected offspring. The unpleasant stimuli that have been studied are maternal neglect in various forms. For example, with the artificial absence of the mother in the upbringing of the offspring (Gonzalez, 2001). In studies that took place and involved mammals, it appears that the rate of maternal care delivery to a newborn is largely responsible for the epigenetic regulation of genes involved in the control of the hypothalamic-pituitary-adrenal system (HPA axis) (Gunnar, 2008).

Child maltreatment contains different types of violence such as sexual, emotional, and physical abuse and/or emotional and physical neglect (Lueger-Schuster, 2018). The numbers of exposed people to some form of abuse in the US, are very high. 35% of the population are exposed to some form of emotional abuse, 16% of them are exposed physical and 11% of sexual (Centers for Disease Control and Prevention (CDC), 2015). The World Health Organization (2017) reports that worldwide 23% of children report physical abuse, 36% of children report emotional abuse, 16% of children report neglect, 18% of girls and 8% of boys report sexual abuse, while about 41,000 children are subjected to domestic violence. All forms of child abuse, both inside and outside institutions, are closely linked to adverse outcomes throughout a person's lifetime.

More specifically, studies have shown that, for example, sexual abuse of children in institutions can lead to aggressive behavior, difficulty in interpersonal relationships, low levels of education and income, as well as prone to delinquency and re-victimization or as children, or as adults (Fisher et al., 2017).

It is also known from other studies in human samples, that some facts might result in epigenetic changes in children's genome. Some of these facts are, when a child has experienced abuse and maltreatment as early adverse experience (McGowan, 2009) or parental stress, especially in infancy and preschool phases (Essex, 2011) the cesarean

section due to the change of the time of delivery and the procedures that precede it (Schlinzig, 2009) or reduced mother–child interactions (Naumova, 2016).

## Epigenetic effects of child abuse

In recent years, more and more evidence show that maltreatment is related with epigenetic changes that may be associated in the long term with the onset of chronic mental and organic diseases (Essex, 2011). Early social adversity as well as physical, sexual, or emotional abuse of a child and neglect, cause alterations in DNA methylation and this seems to be able to be detected in some tissues and cells, such as brain tissue (McGowan, 2009), the cells of the oral cavity (Non, 2016) and peripheral lymphocytes (Naumova, 2016). In this review study, two versions are formulated on how early adversity in the epigenome is regulated. According to the first version, simultaneous and independent epigenetic programming takes place of various systems in the body, such as the endocrine system, the nervous system, the immune system, and others, when the body undergoes some adversity in early life. According to the second version, the organism that accepts an adversity in its early life, first activates the stress response mechanism and then other systems such as the immune system get affected.

Environmental factors affect our body through epigenetic processes through making chemical modifications, by changing the expression of genes, but at the same time, without changing the DNA sequence. In their systematic review, Stephanie H. Parade (2021), gather evidence linking child abuse to changes in DNA methylation in humans. They pointed out that in the studies that have been carried out so far (until March 2020), concerning the connection of child maltreatment and methylation of candidate genes in children, saliva DNA was mainly used, in just one sample DNA was taken from oral cells and in the rest, DNA was tested from blood. Also, the most frequently studied genes are those that regulate glucocorticoid signaling including NR3C1 which encodes the glucocorticoid receptor (GR) and FKBP5 which modulates the sensitivity of the GR (Parade S. H., 2021).

An analysis of 29 children who grew up in an institution from infants up to about 4 years old and 29 children who grew up with their biological family, showed that according to the STRING network, six genes that were centrally located in the network MAPK14, ENO1, GNB1, RB1, SOCS3, HSPA8. Five of these genes, all except MAPK14, were found to be hypomethylated in the group of children raised in the institution. Also, all of them involved in the crucial of important pathways in the function of immune cells function with special emphasis on cytokine signaling (Arintcina et al., 2019).

## Conclusion

It is found through these studies that the placement of children in an institutional environment from a very young age and for a period of more than 6 months, changes are made in the methylation profile of the entire genome of a child. It would be for the best, for all the children around the world, to speed up the process of direct assignment of babies who are born and are unable to be with their biological parents, to foster families or expended families. Even a short time in an institutional setting is harmful to a child.

Further study of the adverse effects that the living conditions of children growing up in care institutions, may be considered necessary at the level of analysis of the genome involved in epigenetic influences. Our evidence so far shows that maltreatment is directly related with the long-term appearance of organic and mental dysfunctions.

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