STUDIA UBB BIOETHICA, LXIII, 1-2, 2018 (p. 27-46)
(RECOMMENDED CITATION)
doi:10.24193/subbbioethica.2018.02

ETHICAL ISSUES RELATED TO THE EVALUATION OF FACTORS THAT INCREASE THE RISK FOR ADVERSE CHILDHOOD EXPERIENCES

ANAMIKA JAIN[1], TIM CARR[2], MAGDALENA IORGA[3*]

ABSTRACT. Adverse childhood experiences are the results of traumatic events that children are passing till their eighteen years old. Many factors are influencing the development of adverse childhood experiences (ACE) and risk factors were also identified by many researchers. Family-related problems, environment, socio-economic status, abuse, etc. are all determinants of ACE. Many studies showed that there is a strong link between ACE and psychological and physical health problems in adult life, meaning that ACE should be treated as public health problem. But some ethical problems arise from identifying ACE during childhood. Accordingly, to the theory of Loftus, negative memories could be implanted. The evaluation of ACE should be done with a lot of responsibility, considering all ethical issues in order to assure a proper psychological recovery and to avoid adulthood health problems.

Keywords: *adverse childhood experiences, physical health, psychological health, chronic disease, parents, victimisation, ethics*

REZUMAT. Probleme etice privind evaluarea factorilor care cresc riscul experienţelor adverse din copilărie. Experienţele adverse din copilărie (EAC) sunt rezultatul unor evenimente traumatice prin care copiii trec până la vârsta de optsprezece ani. Mulţi factori influenţează dezvoltarea acestora şi de asemenea, factori de risc au fost identificaţi de foarte mulţi cercetători. Factori legaţi de familie, mediu, statut socio-economic, existenţa unui abuz etc, toţi sunt factori determinaţi ai evenimentelor adverse din copilărie. Multe studii au

[1] Medical Student, Faculty of Medicine, University of Medicine and Pharmacy, "Grigore T. Popa", Iasi, Romania
[2] Medical Student, Faculty of Medicine, University of Medicine and Pharmacy, "Grigore T. Popa", Iasi, Romania
[3] Associate Professor, PhD, clinical psychologist, Faculty of Medicine, Department of Behavioral Sciences, University of Medicine and Pharmacy "Grigore T. Popa", Iasi, Romania
* Corresponding author: Magdalena Iorga, PhD, Universitatii 16, 700160, University of Medicine and Pharmacy "Grigore T. Popa", Iasi, Romania, +40722800936

arătat faptul că există o strânsă legătură între EAC și problemele de sănătate psihică și fizică în perioada adultă. Dar câteva probleme de natură etică se nasc din încercarea de a identifica EAC. Conform teoriei lui Loftus, amintirile negative pot fi plantate în memoria subiectului. Evaluarea EAC trebuie să fie făcută cu multă responsabilitate, ținând cont de toate aspectele etice cu scopul de a asigura o bună recuperare psihologică și pentru a Evita problemele de sănătate în viața adultă.

***Cuvinte cheie**: experienţe adverse în copilărie, sănătate fizică, sănătate psihică, boală cronică, părinţi, victimizare, etică*

Introduction

Adverse childhood experiences (ACEs) are potentially traumatic events that can have negative, lasting effects on health and well-being. (Feliti et al., 1998). Some studies focusing on the impact of negative experiences during childhood on adult life showed that children exposed to adverse psychosocial experiences were at elevated risk of depression, high inflammation levels, and clustering of metabolic risk markers. The study of Danese et al. (2009) found that children who had experienced socioeconomic disadvantage, maltreatment or social isolation had elevated age-related-disease risks in adulthood.

The *Adverse Childhood Experiences Study* was the pioneer study conducted in the field of ACE's. (Dube et al., 2003). Felitti et al. were seeking to help patients lose weight, and found that a significant number of his patients were dropping out. On further investigation, many of those who dropped out were in fact the ones who were losing weight. The explanation for this seeming paradox was found in the discovery that unhealthy (risk) behaviours, such as overeating food and smoking were coping strategies for the subconscious stress they were experiencing and the trauma from their childhood. (ACE Reporter, 2003). These findings have since opened a large field of research in which important links were discovered between chronic disease, mental health problems and preventable disease to adverse events experienced in early development of the individual. The factors highlighted by this ground-breaking study laid the foundation for future research, which continues even until today.

Many studies pointed out that there are different factors which contribute to the development of ACE and that there are also some risk factors that make some individuals to be more exposed and vulnerable to ACE: age of exposure,

the duration of exposure to the traumatic even, gender, family related factors like socio-economic status and level of education of parents, the physical and mental health of parents and caregivers, family type (single parent, adopted child), environment, exposure to psychological, emotional, physical, sexual abuse.

Factors related to the development of ACE

Risk behaviours

A risk factor is defined as something that increases the vulnerability of a person or increases the likelihood of developing a disease or mental health problem. (Grizenko & Fisher, 1992) Stressful events such as conflicts between family, peers, school, ending romantic relationships and abusing drugs are major contributing factors in mental illness as well as a lack of emotional nurturance and physical or sexual abuse during childhood.

An illicit drug is identified as a substance that has multiple detrimental health outcomes such as sexually transmitted diseases, cardiac problems, domestic violence, disability and crime.

Based on data taken by the National Surveys on Drug Use and Health (2009-2014) it was found that 1 in 8 children (8.7 million) lived in a household where a parent has a substance abuse disorder. (Lipari & Van Horn, 2017). Where a child was subject to a parent having SUD, these were more often in households of low SES, dysfunctional families and families with academic and social problems. These children reported higher levels of behavioural and mental disorders (Peleg-Oren & Teichman, 2006) and had a higher chance of developing SUD themselves. (Bederman et al., 2001) This may be because the child has had an early exposure to drugs and witnessed their parents using it as a coping mechanism, they may follow in their footsteps and become addicted.

In a study of 8613 adults attending a primary care clinic in California, it was found that each ACE increased the chances of early drug usage 2-4 times and compared to those who had no ACES, respondents reporting 5 or more ACES were 7-10 times more prone to illicit drug use. (Dube et al., 2003) A plausible reason for early initiation during adolescence may be due to the accessibility, in a national survey including children aged 12-17 years old, 55% claimed that marijuana was easy to find. (*Substance Abuse and Mental Health Services Administration, 2001*)

Children growing up in environments where at least one parent is an alcoholic have an increased risk of having a dysfunctional family life and are prone to experiencing ACEs (emotional, physical, sexual abuse and parental divorce). Studies have shown that children of alcoholic parents are likely to develop coping styles such as inappropriate emotional expression, manipulation and personality disorders.

Research has presented a marked increase in children witnessing domestic violence in alcoholic households. A survey conducted by 8629 HMO members revealed the probability of men having a battered mother when growing up was 13 times higher when both parents were abusing alcohol. (Dube et al., 2002) A possible reason for this is due to the pharmacological effects alcohol has on the brain, leading to an aggressive behaviour.

In another study of 139 undergraduate and graduate students studying psychology or sociology, it was found that those brought up in families without alcoholism or mental illness had significantly higher self-esteem than other groups as well as a lower amount of depression and anxiety. (Williams et al., 1992)

In a national epidemiological survey involving 43,000 participants, respondents having 2 or more ACEs were almost 1.4 times more likely to have an alcohol addiction compared to those that had 1 or no ACEs. (Pilowsky et al., 2009) From this, it can be deduced that children growing up with alcoholic parents are at a higher risk of experiencing ACEs, they may then end up having an alcoholic dependence and this will in turn affect their children; therefore, it will be a cyclic effect.

Suicide is a health problem affecting people worldwide, it is the second and third leading cause of death between ages 10-19 in Canada and US. Before puberty, suicide is rare, but the rate peaks at ages 19-23. (Shaffer et al., 2001) This may be because of the level of planning and mental maturity needed for a suicidal attempt. (Brent, 1993).

In adolescents completing suicide, it was found in Canada that more than 90% of adolescents suffered from a mental health disorder. (Shaffer et al., 2001) *The Youth Risk Behaviour Survey* (Grunbaum et al., 2001) reported that 19% of high school students considered attempting suicide and 17% of randomly selected undergraduate and graduate students had a history of self-harm. (Withlock et al., 2006). In a physiological autopsy of 120 successive suicides aged less than 20 years, factors found to be contributing to the suicide were problems at school, a family history of suicidal behaviour, poor parent-child communication, dysfunctional families and stressful life events. (Gould et al., 1996)

There are studies presenting strong evidence linking attempted suicides with ACES. In a study of 17,337 adult members attending primary health care, 1.1% of respondents, who had a minimum of one suicidal attempt, stated no ACES; however with those reporting 7 or greater, the suicidal attempt increased to 35.2%. (Chapman et al., 2007) A possible reason for this can be explained by a study of 49 women aged 18-45 who reported child abuse. The women who reported child abuse and were diagnosed with major depression showed a six times higher adrenocorticotrophic hormonal response to stressors compared to the control group. It is believed that high levels of adrenocorticotrophic hormone over activate the autonomic nervous system and affect the functionality of the hypothalamic-pituitary-adrenal axis and so increases the risk of depression. (Heim et al., 2000) These results suggest that child abuse may lead to modifications in the brain's function and result in lasting consequences. (Chapman et al., 2007).

Lower rates of alcohol consumption, substance abuse and an increase in antidepressant prescription have shown a decline in suicidal rate for the young population in US. (Brent et al., 1991; Olfson et al., 1998). Canterbury, Canada reported the greatest drop in suicidal rates linked to an increased prescription of SSRI (a type of antidepressant) in that area. (Joyce, 2001)

Environment

A caring and supportive environment is vital for aiding the development of a child. There are millions of abandoned children worldwide that are left with limited opportunities and little assistance. The Bucharest early intervention project found that children raised in Romanian institutions aged 12-31 months had a much higher rate of reactive attachment disorder in which they were unable to secure a healthy relationship with their caregivers. (Zeanah et al., 2005) These children also displayed higher rates of reduced physical growth, cognitive delays and bad behaviours. (Snyke et al., 2002; Snyke et al., 2007) Raised levels of inattentiveness and hyperactivity for adopted children in Romania and children living in care in the UK have been reported. (Tizard et Hoges, 1978; Rov et al., 2000)

A study of 65 children in London found that children who were previously in institutions and afterwards returned to their birth families or were adopted did not suffer the negative emotional outcomes that those staying in institutions suffered. (Tizard et Hoges, 1978) Therefore, it can be said that

the greater the time a child spends in institution, the more likely the child is to develop behavioural problems. (Tizard et Rees, 1975)

A research conducted on Eritrean war orphans suggested that the management of children in institutions plays a significant contribution on mental health and cognitive development. The results showed that orphanages where children are encouraged to become independent by communicating with the staff and learning how to make decisions for themselves were less likely to have behavioural problems and emotional distress compared to children in institutions where they must abide by a set of strict rules, schedules and where all decisions are made by staff members. (Wolff & Fesseha, 1998)

Another determinant in how the children are cared for is in the culture and religious beliefs of that family or country. In some countries the child of a deceased parent is not accepted by the extended family and treated harshly, whereas in other countries the child will be treated as if they were their own. (Whetten et al., 2009)

It is believed that adolescents from authoritative homes have better academic achievements in school. (Dornbusch et al., 1997) Strict parenting can also affect the behavioural development of the child with children having better work ethics, better class participation, spend more time on homework, have higher goals and optimistic feelings of school. (Lamborn et al., 1991)

Parenting styles were assessed in 1.198 15-18 yr old Brazilians. Adolescents coming from authoritative families incorporated 5 principles into their children: universalism, benevolence, compliance with social standards, tradition and security. The results showed similarities in the priority given to these principals between adolescents from indulgent and authoritative parents, but adolescents from neglectful families placed these values with a lower priority. Adolescents with permissive parenting had higher family self-esteem and performed equally in academics, social aspects and physical self-esteem compared to those with authoritative parents. Adolescents from neglected families performed lower in those categories. From this study, it can be concluded that where the child experiences affection, support, approval and attention, they are able to obtain on par results without the need for elevated discipline. (Martinez & Garcia, 2008)

Many children change schools each year for multiple reasons, in America, 20% of the population (6 million children) aged 5-13 move locations each year. Levine (1966) and Bloom (1978) proposed that changing schools may have an adaptive problem.

Data taken from the 9914 subjects aged 6-17 years in a national health survey found that 23% of children who relocated often had repeated a year in education compared to 12% that repeated who never or rarely moved. 18% that repositioned consistently had 4 or more behavioural problems compared

to 7% who never or rarely moved and these children having behavioural problems were 35% more likely to fail a grade, but growth development and learning disabilities were not found to be linked. (Wood et al., 1993)

In a survey of 250 students who completed education till the 9th grade, there were no significant differences in GPA and attendance with students between grades 1-8, however between the transition of 8th grade to high school there was a significant effect on the student's academic achievements. The student's GPAs reduced by greater than half a letter grade and there was a significant rise in absences between grades 8-9, students absent from school for more than 20 days rose from 23% to 45% on progression to high school. Black students presented no significant difference in their academic achievement, which suggests a racial involvement in this study, but overall it was found that white students coped better in the transition to high school. It can be concluded from this study that transition to high school may be particularly hard for students to adapt to possibly due to new anticipations from teachers, a greater likelihood of judgement among peers, and the stress of important decisions to be made during this time. (Felner et al., 1981)

It is known that gang members tend to commit violent crimes, are more likely to carry a gun and partake in both selling and abusing drugs. The inability to complete school and early sexual activity were factors found to increase the likelihood of gang involvement in females. (Bjerregaard & Smith, 1993).

In a research, 808 children were followed up from age 10 till 18. 15.3% of the sample admitted to being part of a gang between ages 13-18 with the greatest frequency being age 15 and male. The results indicated that adolescents living with one parent or no parents had up to a 3 times greater odd ratio of joining gangs compared to those living with both parents. Parental encouragement towards violence between ages 10-12 also foreshadowed later gang associations as well as a sibling's anti-social behaviour. Being classified as mentally disabled or having low academic performance had up to a 3 times greater odds ratio of later being involved in gangs. Early influence of drugs has shown to be a predictor of future gang involvement. 29.7% of children admitting the abundant availability of drugs when they were aged 10-12 became gang members compared to 10.6% who joined gangs after reporting the unavailability of marijuana aged 10-12. Adolescents in the top quartile area for marijuana availability were found to have a 3.6 times greater odds ratio of becoming part of a gang than other neighbourhoods. Therefore, the results present that parental behaviour, antisocial siblings, drug availability and learning difficulties in childhood increase the likelihood of the child being affiliated with gangs in the future. (Hill et al., 1999)

Parents with mental illness or physical disability

In 2008, it was estimated that 3 million children from the EU live in a household where this is a mentally ill parent (Pretis and Dimova, 2003)

These mental health problems can be short-term or long-term and are sometimes combined with alcohol and drug abuse. A parent having a mental illness may find it difficult to effectively carry out their role as a caregiver and this could impact the relationship with their child.

The attachment theory is built on the infant's first attachment (usually with their mother) that moulds their emotional and cognitive development (Bowlby, 1969) and later relationships that child forms. (Ainsworth & Marvin, 1995) A parent that is nurturing and fulfils the child's needs forms a feeling of security. (Chase-Lansdale et al., 1995) However, due to a parent's illness or addiction to drugs and alcohol, the child may feel neglected. This leads to an avoidant or insecure attachment. (Erwin, 2013)

Research has shown that children growing up with parents having mental illnesses have greater levels of psychosocial stress, learning difficulties, suicidal and antisocial behaviours and oppositional defiant disorder. (Klimes-Dougan et al., 1999; Leadbeater et al., 1996; Cantwell & Baker, 1984)

A research conducted in the UK involved 65 individuals working in the health, social care and voluntary sector who were asked to comment on their views about young carers. They believed the biggest difficulty faced by young carers is social isolation. Many children living with parents having a mental illness find it hard to assimilate with their peers due to their involvement in caring responsibilities, this may make it hard for their inexperienced peers to understand their struggles. The children also reported being too tired to join in social events or play with classmates and hence their ability to maintain friendships was affected. (Gray et al., 2008)

A study conducted by the Young Carers Research Group (YCRG) at Loughborough University, UK investigated 40 parents with a severe mental illness whose children were looking after them. 87% were mothers with depression or bipolar disorder and 90% of these mothers were cared for by their daughters (with an average age of 12). These children were adapted to having responsibilities associated to that of an adult such as domestic and nursing duties like toileting and bathing parents. (Aldridge & Becker, 1993; Deardem & Becker, 2004)

The children also emotionally supported parents, namely in episodes of self-harm and psychosis. Consequently, they can be described as having a role reversal where the child is taking on responsibilities of a parent. There was no evidence found of the parents physically abusing or neglecting the child despite self-harming themselves, this suggests children that have a parent with mental

illness are not negatively affected. It is possible the parent-child relationship may be strengthened as the child cares, is attentive and is understanding of the condition their parent suffers. (Aldridge, 2006; Aldridge & Becker, 1993)

Having a newly handicapped parent can be of particular distress to a child as they experience pitying comments from teachers, friends and peers; they are less likely to ask for help from fear of being ridiculed. (Romano, 1976) Furthermore, the education of the child may suffer with them taking time out from school e.g. if the parent is hospitalised after a suicidal attempt, which would also debilitate the focus of that child on studies. This has been proven with reports of children who have dropped out of school or avoided university to look after their parent.

Socioeconomic status (SES)

By joining the household income and the highest level of education received by parents, the socio-economic status is calculated.

Various studies conducted have related children growing up in a low SES to have a higher incidence of physical health problems, mental health problems, learning difficulties and poor career advancement compared to children that are richer. This could be due to a lack of educational resources offered in the household, less mentally stimulating activities that help to develop the brain and an increased exposure to toxins or allergens.

McEwan investigated the link between stress and health outcomes. His work concluded that during allostasis, the body must learn to adapt to its' environment and as a result compensates to reach this equilibrium. This could explain why a low SES in childhood has shown links to poorer health in adolescence and adulthood. (Friedman & McEwan, 2004)

Studies have shown that smoking mothers are more prevalent among families with low socio-economic statuses and this has been linked to low birth weight and a 40% higher neonatal mortality rate. (Comstock et al., 1971) Researchers at MacArthur Foundation Network of SES and health have said for the development of a particular organ system, there are "critical periods" and alterations during these periods are permanent. Therefore, a low birth rate could lead to complications such as an undeveloped pancreas and kidney leading to type 2 diabetes and hypertension. (Lee et al., 1988)

A study in New Zealand involving 1000 students, aged 26, who grew up in a low SES household discovered they were more likely to have cardiovascular health problems, periodontal disease and substance abuse regardless of their current SES. (Poulton et al., 2002)

Another study involved 4089 new-born infants in Stockholm, the children were followed up for 4 years. The results found that children from low SES had a higher incidence of asthma, rhinitis and eczema. (Almqvist et al., 2005)

When it comes to the relation of SES and education, underprivileged children are 2 times more likely to drop out from school and 1.5 times more prone to have a learning disability. (Duncan et al., 1994) In a sample of 80 countries, 12% of children in high-income households dropped out from school and 38% of children from low-income households dropped out from school. (Bruneforth, M., 2007)

Ludwig and Sawhill (2007) compared families in the lower 5th of the socio-economic population. Affluent families were more likely to have access to a laptop, have three times as many books and read more consistently. At a very early age, these contrasts had a large impact on test scores and were shown to have non-cognitive outcomes such as physical aggression, teenage pregnancy and involvement in crime.

The Child–Parent Center Program in Chicago enrolled over 1500 low-income children in an ongoing program from kindergarten to 3rd grade. A follow-up found that children in this program were more likely to attend college, have full time employment and less likely to be arrested and show signs of depression. (Reynolds et al., 2007) Therefore, these studies show that a low SES has an impact on a child's educational achievement, career progression, criminal convictions and mental health.

Marital status of parents

Marital status can be categorised into single, married, remarried, widowed, divorced and married but separated.

Divorce rates have increased significantly over the years and with this many families are raised in single-parent households.

Studies have shown that children brought up in households with divorced parents are more likely to have health problems. In Norway, a study found that children of divorced parents were 54% more likely to be overweight compared to that of married parents. (Biehl et al., 2014) This might be because of less time available to cook home-made foods and so the family resorts to processed foods of lower nutritional value. Another possibility is the child is eating to help manage their emotional stress. (Yannakoulia et al., 2008)

An unhappy marriage as well as parental depression has shown to affect a child's mental health. Children who have a depressed parent have greater

emotional and behavioural problems and children brought up in a household of marital dissatisfaction have greater distress levels. (Fishman & Meyers, 2000) Another study in Sweden showed results of a higher suicidal attempt rate in children in single-parent households. (Weitoft et al., 2003)

When it comes to the negative influence on children, divorce has different impacts considering the gender of the child. In the United States, a study assessing the effects of divorce and remarriage on the academic achievement of high school seniors found that females were more affected than males in divorce and remarriage of parents. (Ham, 2004)

The state level analysis of "*single households and children's educational achievement*" by (Amato et al., 2015) indicated that with the increased proportion of children from single parent households, the more poorly they scored in mathematics. Mathematics grades were found to be on average lower in the states in which there was a comparatively greater percentage of single-parent households. (these findings were confirmed by data). An explanation for this was hypothesised based on the theory developed by (Becker,1981) that parents invest both time and money into their children. And that in the case of a single parent household, one parent must meet the financial demands involved in raising the child, housekeeping and such, therefore in order to cover this they must spend more hours working in order to receive more wages to financially support the household. This would result in the parent being busier and not having time to offer to the child to meet his/her needs.

On the contrary, some studies show that children living in a single-parent household are more mature than those living with two parents. In a research program, 200 single parents were interviewed. The results determined that children who grew up in the absence of a parent were better at making decisions about the household and on family matters. A single parent working full time is more likely to share household responsibilities with their children for example at 8 years old they are hoovering and at 10 cooking, which may make it easier to look after themselves as they grow older. Parents working long hours may use harsher discipline and have less time to talk matters through with their child. (Walberg & Marjorikbanks, 1976) This lack of communication with their parents may make it hard to build future meaningful relationships.

It was reported that children from single-parent households are more likely to show authority towards their family. Adolescents have seen the vulnerabilities of their parents and are made aware and worried for problems such as a lack of income reaching the house. This led to feelings of uncertainty and a strong will to be self-sufficient. (Weiss, 1979)

Victimisation

Children are the most vulnerable for becoming victims of abuse, they are not able to adequately defend themselves physically or emotionally and a reciprocation may lead to further consequences for the child victim.

Emotional abuse is said to be a 'hidden form of child abuse' as it is less informed about, but the effects may be more harmful than physical abuse or neglect. Emotional abuse involves: rejection with the adult not understanding the child's worth or needs, terrorising or bulling where the adult verbally insults the child and instils fear, ignoring by showing no attention towards the child, isolation by cutting the child from social experiences or preventing friendships, corruption by teaching sexually exploitative conduct and showing the child that 'bad is good' and finally placing extreme pressure for the child to achieve beyond their abilities. (Garbarino et al., 1986) The brain systems are affected by early experiences, it is possible that ACEs change limbic reactivity and children growing up with ACEs are less able to regulate their emotions. This leads to disorders such as depression, bipolar disorder, borderline personality disorder, substance-abuse, eating disorders (Berking & Wupperman, 2012) and the children are at a higher risk of reactive aggression. (Lopez-Duran et al., 2009)

In sub-Saharan Africa, there are reports of poor physical and mental health with an increased risk of HIV infection, depression and suicidal thoughts. In a study with 3515 children aged 10-17 years, 35.5% stated a lifetime of emotional abuse, 56.3% a lifetime of physical abuse and 14.8% reported a lifetime of sexual harassment. Sexual abuse involved forcing children to watch pornography, non-consensual touching, kissing and genital touching which were most frequently mediated by peers and intimate partners. Younger children were more likely to face physical abuse and older children had a greater likelihood of reporting sexual or emotional abuse. The main sources of abuse were primary caregivers, teachers and relatives. (Meinck et al., 2016)

Having a secure attachment by caregivers is necessary for the development of emotional regulation. In a study of 76 maltreated children and 45 healthy controls aged 8-12, it was found that maltreated children had greater levels of emotional dysregulation, aggression and less social competence. (Shields et al., 2001) A possible consequence of emotional abuse was provided by a study of 230 adults completing the Dex/CRH test, the results showed a significant reduction in cortisol response in cases of reported child abuse. (Carpenter et al., 2009)

Research has shown that children that are sexually abused by family are at a higher risk of developing emotional and behavioural dysregulation. A study was conducted involving 21 sexually harassed girls aged 6-12 years, the results demonstrate that maltreated girls had a significantly lower emotional understanding

and lower emotional regulation than non-maltreated girls. Sexually abused girls reported stopping feelings of anger more so than non-abused girls, this could be because they expressed a greater fear of conflict if they showed their anger. (Shipman et al., 2000)

In a survey involving 487 men aged 19-84, the average age for first encountering the sexual abuse was 10.26 years. 61.5% reported the perpetrator being a clergy and 38.5% of participants reported the sexual abuse happening more than 20 times. The mean number of ACES was 1.87 with the most common reported ACE physical abuse at 45.4%. (Easton, 2012)

Therefore children can be victims of sexual, emotional and physical abuse which can induce later consequences in that child's overall wellbeing and health.

Ethical issues when evaluating ACE

As humans, we are able to intensify, maintain or reduce negative and positive emotions in a conscious or unconscious state, this may stimulate or inhibit the resulting behaviour. (Gross, 2002; Ochsner et al., 2002) We can change our reaction to emotions e.g. being distracted in an emotional situation can decrease the strength of the negative emotion or increase the strength depending on which part of the situation was focused on. In this way, the ultimate meaning of the thought can be changed in a situation. An example of where this is used for the benefit of patients is in cognitive behavioural therapy which is used to change the way we perceive situations and can help patients suffering from anxiety and depression. (Gross, 2002)

77 undergraduate participants were examined on how well they remembered past emotional childhood events such as getting lost, getting into a serious fight with another child, serious medical procedures and animal attacks. 88.3% remembered a true event and the results showed that 26% showed a full memory of a false event and 30% presented a partial memory of the false event. (Porter et al., 1999) These results indicate as Loftus' theory showed, that childhood memories can be implanted. According to Loftus' theory some studies are starting to show us how these false memories may arise. One reason is the increased pressure researchers place on the participants to remember a scenario and another may appear when someone is having difficulty remembering something, so they build an event from their imagination. False memories are created using both real memories and information received from others which may cause confusion. (Loftus & Palmer, 1974)

In a study of 129 women, 38% did not report the sexual abuse that had been documented in hospital records. And in some cases, they repeatedly denied any sexual maltreatment. In the case of one woman, the original account of the abuse recorded that the participant (aged 4), her cousin, (aged 9) her play mate (a little boy aged 4) were sexually abused by the uncle. The participant told her mother about the abuse and her mother informed the playmate's mother (a little boy) who stabbed the uncle. However, the participant answered that she had never met her uncle and he had died before she was born. She recalled that he molested a little boy and the mother of the little boy ended up killing the uncle. (Williams, 1994) Therefore, this shows that memories can be altered following tragic events.

Women aged 4-6 at the time of abuse were 62% more likely to have no recollection of the incident. This may be because of the emotional trauma suffered, being unable to comprehend the meaning or severity of the abuse as well as the limited cognitive development capacities altering the memories and resulting in the adults forgetting. It was found that women that had a close relationship with the offender were more likely to forget the abuse. (Everson & Boat, 1989)

Research shows that 4-8% of sexual abuse reported is imaginary. In a sample of 64 children, who were originally admitted to the emergency room under accusations of sexual harassment, 6% of these cases were deemed to be untrue. (Peters, 1977) In a study of 576 complaints of sexual abuse, 53% were confirmed, 17% were suspicious, 21% did not have enough evidence and 8 allegations made by 5 children were false. 4 of the girls who had false allegations had a history of sexual abuse and their symptoms suggested them having a post traumatic disorder. (Jones & McGraw, 1987)

Conclusion

Adverse childhood experiences cause a lot of negative effects on a child's life. Psychological or physical traumas are influencing an individual's life in adulthood. As studies proved, physical problems are strongly related to the presence of adverse experiences during childhood. So, identifying ACE could be seen more than an individual problem, but a public health-related concern. Apart from personal, family-related, social or educational issues related to ACE, ethical approaches should always be considered in order to help the subject to recover.

References:

Ainsworth, M.D. and Marvin, R.S., 1995. On the shaping of attachment theory and research: An interview with Mary DS Ainsworth (Fall 1994). *Monographs of the society for research in child development*, pp.3-21.

Aldridge, J. and Becker, S., 1993. Punishing children for caring: the hidden cost of young carers. *Children & society*, *7*(4), pp.376-387

Aldridge, J. and Becker, S., 1993. *Children who care: Inside the world of young carers*.

Aldridge, J., 2006. The experiences of children living with and caring for parents with mental illness. *Child Abuse Review: Journal of the British Association for the Study and Prevention of Child Abuse and Neglect*, *15*(2), pp.79-88.

Almqvist, C., Pershagen, G. and Wickman, M., 2005. Low socioeconomic status as a risk factor for asthma, rhinitis and sensitization at 4 years in a birth cohort. *Clinical & Experimental Allergy*, *35*(5), pp.612-618.

Amato, P.R., Patterson, S. and Beattie, B., 2015. Single-parent households and children's educational achievement: A state-level analysis. Social science research, 53, pp.191-202.

Anda, R.F., Whitfield, C.L., Felitti, V.J., Chapman, D., Edwards, V.J., Dube, S.R. and Williamson, D.F., 2002. Adverse childhood experiences, alcoholic parents, and later risk of alcoholism and depression. *Psychiatric services*, *53*(8), pp.1001-1009

Berking, M. and Wupperman, P., 2012. Emotion regulation and mental health: recent findings, current challenges, and future directions. *Current opinion in psychiatry*, *25*(2), pp.128-134

Biederman, J., Faraone, S.V., Monuteaux, M.C. and Feighner, J.A., 2000. Patterns of alcohol and drug use in adolescents can be predicted by parental substance use disorders. *Pediatrics*, *106*(4), pp.792-797.

Donkor, H.M., Grundt, J.H., Júlíusson, P.B., Eide, G.E., Hurum, J., Bjerknes, R. and Markestad, T., 2017. Social and somatic determinants of underweight, overweight and obesity at 5 years of age: a Norwegian regional cohort study. *BMJ open*, *7*(8), p.e014548.

Becker, G.S. and Becker, G.S., 2009. A Treatise on the Family. Harvard university press.

Bjerregaard, B. and Smith, C., 1993. Gender differences in gang participation, delinquency, and substance use. *Journal of Quantitative Criminology*, *9*(4), pp.329-355

Bowlby, J., 1969. *Attachment and Loss: Attachment; John Bowlby*. Basic books

Brent, D.A., Perper, J.A., Allman, C.J., Moritz, G.M., Wartella, M.E. and Zelenak, J.P., 1991. The presence and accessibility of firearms in the homes of adolescent suicides: a case-control study. *Jama*, *266*(21), pp.2989-2995.

Brent, D.A., 1993. Depression and suicide in children and adolescents. *Pediatrics in review*, *14*(10), pp.380-388

Bruneforth, M., 2007. Characteristics of children who drop out of school and comments on the drop-out population compared to the population of out-ofschool children. *Background paper for the EFA Global Monitoring Report*.

Cantwell, D.P. and Baker, L., 1984. Parental mental illness and psychiatric disorders in" at risk" children. *The Journal of clinical psychiatry*

Carpenter, L.L., Tyrka, A.R., Ross, N.S., Khoury, L., Anderson, G.M. and Price, L.H., 2009. Effect of childhood emotional abuse and age on cortisol responsivity in adulthood. *Biological psychiatry*, *66*(1), pp.69-75.

Chapman, D.P., Dube, S.R. and Anda, R.F., 2007. Adverse childhood events as risk factors for negative mental health outcomes. *Psychiatric Annals*, *37*(5).

Chase-Lansdale, P.L., Wakschlag, L.S. and Brooks-Gunn, J., 1995. A psychological perspective on the development of caring in children and youth: The role of the family. *Journal of Adolescence*, *18*(5), pp.515-556

Comstock, G.W., Shah, F.K., Meyer, M.B. and Abbey, H., 1971. Low birth weight and neonatal mortality rate related to maternal smoking and socioeconomic status. *American Journal of Obstetrics & Gynecology*, *111*(1), pp.53-59.

Dearden C, Becker S. 2004. Young Carers in the UK: The 2004 Report. Carers UK: London

Dornbusch, S.M., Ritter, P.L., Leiderman, P.H., Roberts, D.F. and Fraleigh, M.J., 1987. The relation of parenting style to adolescent school performance. *1987*, *58*, pp.1244-1257.

Dube, S.R., Anda, R.F., Felitti, V.J., Edwards, V.J. and Croft, J.B., 2002. Adverse childhood experiences and personal alcohol abuse as an adult. *Addictive behaviors*, *27*(5), pp.713-725.

Dube, S.R., Felitti, V.J., Dong, M., Chapman, D.P., Giles, W.H. and Anda, R.F., 2003. Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics*, *111*(3), pp.564-572.

Duncan, G.J., Brooks-Gunn, J. and Klebanov, P.K., 1994. Economic deprivation and early childhood development. *Child development*, *65*(2), pp.296-318

Easton, S.D., 2012. Understanding adverse childhood experiences (ACE) and their relationship to adult stress among male survivors of childhood sexual abuse. *Journal of prevention & intervention in the community*, *40*(4), pp.291-303

Erwin, P., 2013. *Friendship in childhood and adolescence*. Routledge.

Everson, M.D. and Boat, B.W., 1989. False allegations of sexual abuse by children and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, *28*(2), pp.230-235.

Felitti, V.J., Anda, R.F., Nordenberg, D., Williamson, D.F., Spitz, A.M., Edwards, V., Koss, M.P. and Marks, J.S., 2019. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American journal of preventive medicine*, *56*(6), pp.774-786.

Felner, R.D., Primavera, J. and Cauce, A.M., 1981. The impact of school transitions: A focus for preventive efforts. *American Journal of Community Psychology*, *9*(4), pp.449-459.

Fishman, E.A. and Meyers, S.A., 2000. Marital satisfaction and child adjustment: Direct and mediated pathways. *Contemporary Family Therapy*, *22*(4), pp.437-452.

Friedman MJ, McEwan B. Posttraumatic stress disorder, allostatic load, and medical illness. In: Schnurr PP, Green BL, eds. Trauma and Health: Physical Health Consequences of Exposure to Extreme Stress. Washington, DC: American Psychological Association; 2004.

Garbarino, J., Guttmann, E. and Seeley, J.W., 1986. *The psychologically battered child* (p. 8). San Francisco: Jossey-Bass.

Gould, M.S., Fisher, P., Parides, M., Flory, M. and Shaffer, D., 1996. Psychosocial risk factors of child and adolescent completed suicide. *Archives of general psychiatry*, *53*(12), pp.1155-1162.

Gray, B., Robinson, C. and Seddon, D., 2008. Invisible Children: Young Carers of Parents with Mental Health Problems-The Perspectives of Professionals. *Child and Adolescent Mental Health*, *13*(4), pp.169-172

Grizenko, N. and Fisher, C., 1992. Review of studies of risk and protective factors for psychopathology in children. *The Canadian Journal of Psychiatry*, *37*(10), pp.711-721

Gross, J.J., 2002. Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, *39*(3), pp.281-291

Grunbaum, J.A., Kann, L., Kinchen, S.A., Williams, B., Ross, J.G., Lowry, R. and Kolbe, L., 2002. Youth risk behavior surveillance—United States, 2001. *Journal of School Health*, *72*(8), pp.313-328.

Ham, B.D., 2004. The effects of divorce and remarriage on the academic achievement of high school seniors. *Journal of Divorce & Remarriage*, *42*(1-2), pp.159-178

Heim, C., Newport, D.J., Heit, S., Graham, Y.P., Wilcox, M., Bonsall, R., Miller, A.H. and Nemeroff, C.B., 2000. Pituitary-adrenal and autonomic responses to stress in women after sexual and physical abuse in childhood. *Jama*, *284*(5), pp.592-597

Hill, K.G., Howell, J.C., Hawkins, J.D. and Battin-Pearson, S.R., 1999. Childhood risk factors for adolescent gang membership: Results from the Seattle Social Development Project. *Journal of research in Crime and Delinquency*, *36*(3), pp.300-322.

Jones, D.P. and McGraw, J.M., 1987. Reliable and fictitious accounts of sexual abuse to children. *Journal of interpersonal Violence*, *2*(1), pp.27-45.

Joyce, P.R., 2001. Improvements in the recognition and treatment of depression and decreasing suicide rates. *New Zealand medical journal*, *114*(1145), p.535.

Klimes-Dougan, B., Free, K., Ronsaville, D., Stilwell, J., Welsh, C.J. and Radke-Yarrow, M., 1999. Suicidal ideation and attempts: a longitudinal investigation of children of depressed and well mothers. *Journal of the American Academy of Child & Adolescent Psychiatry*, *38*(6), pp.651-659

Lamborn, S.D., Mounts, N.S., Steinberg, L. and Dornbusch, S.M., 1991. Patterns of competence and adjustment among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child development*, *62*(5), pp.1049-1065.

Leadbeater, B.J., Bishop, S.J. and Raver, C.C., 1996. Quality of mother–toddler interactions, maternal depressive symptoms, and behavior problems in preschoolers of adolescent mothers. *Developmental Psychology*, *32*(2), p.280

Lee, K.S., Ferguson, R.M., Corpuz, M. and Gartner, L.M., 1988. Maternal age and incidence of low birth weight at term: a population study. *American journal of obstetrics and gynecology*, *158*(1), pp.84-89.

Lipari, R.N. and Van Horn, S.L., 2017. Children living with parents who have a substance use disorder. *The CBHSQ Report*.

Loftus, E.F. and Palmer, J.C., 1974. Reconstruction of automobile destruction: An example of the interaction between language and memory. *Journal of verbal learning and verbal behaviour. 13(5), pp.585-589.*

Lopez-Duran, N.L., Olson, S.L., Hajal, N.J., Felt, B.T. and Vazquez, D.M., 2009. Hypothalamic pituitary adrenal axis functioning in reactive and proactive aggression in children. *Journal of abnormal child psychology*, *37*(2), pp.169-182.

Ludwig, J. and Sawhill, I., 2007. Success by Ten: Intervening Early, Often, and Effectively in the Education of Young Children. Discussion Paper 2007-02. *Hamilton Project*.

Martinez, I. and Garcia, J.F., 2008. Internalization of values and self-esteem among Brazilian teenagers from authoritative, indulgent, authoritarian, and neglectful homes. *ADOLESCENCE-SAN DIEGO-*, *43*(169), p.13

Meinck, F., Cluver, L.D., Boyes, M.E. and Loening-Voysey, H., 2016. Physical, emotional and sexual adolescent abuse victimisation in South Africa: prevalence, incidence, perpetrators and locations. *J Epidemiol Community Health*, *70*(9), pp.910-916.

Ochsner, K.N., Bunge, S.A., Gross, J.J. and Gabrieli, J.D., 2002. Rethinking feelings: an FMRI study of the cognitive regulation of emotion. *Journal of cognitive neuroscience*, *14*(8), pp.1215-1229.

Olfson, M., Marcus, S.C., Pincus, H.A., Zito, J.M., Thompson, J.W. and Zarin, D.A., 1998. Antidepressant prescribing practices of outpatient psychiatrists. *Archives of general psychiatry*, *55*(4), pp.310-316.

Peleg-Oren, N. and Teichman, M., 2006. Young children of parents with substance use disorders (SUD): A review of the literature and implications for social work practice. *Journal of Social Work Practice in the Addictions*, *6*(1-2), pp.49-61.

Peters, J.J., 1976. Children who are victims of sexual assault and the psychology of offenders. *American Journal of Psychotherapy*, *30*(3), pp.398-421

Pilowsky, D.J., Keyes, K.M. and Hasin, D.S., 2009. Adverse childhood events and lifetime alcohol dependence. *American journal of public health*, *99*(2), pp.258-263.

Porter, S., Yuille, J.C. and Lehman, D.R., 1999. The nature of real, implanted, and fabricated memories for emotional childhood events: Implications for the recovered memory debate. *Law and human behavior*, *23*(5), pp.517-537.

Poulton, R., Caspi, A., Milne, B.J., Thomson, W.M., Taylor, A., Sears, M.R. and Moffitt, T.E., 2002. Association between children's experience of socioeconomic disadvantage and adult health: a life-course study. *The lancet*, *360*(9346), pp.1640-1645.

Pretis, M. and Dimova, A., 2016. *Early intervention with children of mentally ill parents*. E. Reinhardt.

Reporter, A.C.E., 2003. *The Effects of Adverse Childhood Experiences on Adult Health and Well Being.*

Reynolds, A.J., Temple, J.A., Ou, S.R., Robertson, D.L., Mersky, J.P., Topitzes, J.W. and Niles, M.D., 2007. Effects of a school-based, early childhood intervention on adult health and well-being: A 19-year follow-up of low-income families. *Archives of Pediatrics & Adolescent Medicine*, *161*(8), pp.730-739.

Romano, M.D., 1976. Preparing children for parental disability. *Social Work in Health Care*, *1*(3), pp.309-315

Roy, P., Rutter, M. and Pickles, A., 2000. Institutional care: risk from family background or pattern of rearing?. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, *41*(2), pp.139-149.

Shaffer, D. and Pfeffer, C.R., 2001. Practice parameter for the assessment and treatment of children and adolescents with suicidal behavior. *Journal of the American Academy of Child & Adolescent Psychiatry*, *40*(7), pp.24S-51S.

Shields, A., Ryan, R.M. and Cicchetti, D., 2001. Narrative representations of caregivers and emotion dysregulation as predictors of maltreated children's rejection by peers. *Developmental psychology*, *37*(3), p.321.

Shipman, K., Zeman, J., Penza, S. and Champion, K., 2000. Emotion management skills in sexually maltreated and nonmaltreated girls: A developmental psychopathology perspective. *Development and psychopathology*, *12*(1), pp.47-62.

Smyke, A.T., Dumitrescu, A. and Zeanah, C.H., 2002. Attachment disturbances in young children. I: The continuum of caretaking casualty. *Journal of the American Academy of Child & Adolescent Psychiatry*, *41*(8), pp.972-982.

Smyke, A.T., Koga, S.F., Johnson, D.E., Fox, N.A., Marshall, P.J., Nelson, C.A., Zeanah, C.H. and BEIP Core Group, 2007. The caregiving context in institution-reared and family-reared infants and toddlers in Romania. *Journal of Child Psychology and Psychiatry*, *48*(2), pp.210-218.

Tizard, B. and Hodges, J., 1978. The effect of early institutional rearing on the development of eight year old children. *Journal of child psychology and psychiatry*, *19*(2), pp.99-118.

Tizard, B. and Rees, J., 1975. The effect of early institutional rearing on the behaviour problems and affectional relationships of four-year-old children. *Child Psychology & Psychiatry & Allied Disciplines*.

Walberg, H.J. and Marjoribanks, K., 1976. Family environment and cognitive development: Twelve analytic models. *Review of Educational Research*, *46*(4), pp.527-551.

Weiss, R.S., 1979. Growing up a little faster: The experience of growing up in a single-parent household. *Journal of Social Issues*, *35*(4), pp.97-111

Weitoft, G.R., Hjern, A., Haglund, B. and Rosén, M., 2003. Mortality, severe morbidity, and injury in children living with single parents in Sweden: a population-based study. *The Lancet*, *361*(9354), pp.289-295

Whetten, K., Ostermann, J., Whetten, R.A., Pence, B.W., O'Donnell, K., Messer, L.C., Thielman, N.M. and Positive Outcomes for Orphans (POFO) Research Team, 2009. A comparison of the wellbeing of orphans and abandoned children ages 6–12 in institutional and community-based care settings in 5 less wealthy nations. *PLoS One*, *4*(12), p.e8169.

Whitlock, J., Eckenrode, J. and Silverman, D., 2006. Self-injurious behaviors in a college population. *Pediatrics*, *117*(6), pp.1939-1948.

Williams, L.M., 1994. Recall of childhood trauma: a prospective study of women's memories of child sexual abuse. *Journal of consulting and clinical psychology*, *62*(6), p.1167

Williams, O.B. and Corrigan, P.W., 1992. The differential effects of parental alcoholism and mental illness on their adult children. *Journal of clinical psychology*, *48*(3), pp.406-414.

Wolff, P.H. and Fesseha, G., 1998. The orphans of Eritrea: Are orphanages part of the problem or part of the solution?. *American Journal of Psychiatry*, *155*(10), pp.1319-1324.

Wood, D., Halfon, N., Scarlata, D., Newacheck, P. and Nessim, S., 1993. Impact of family relocation on children's growth, development, school function, and behavior. *JAMA*, *270*(11), pp.1334-1338.

Yannakoulia, M., Papanikolaou, K., Hatzopoulou, I., Efstathiou, E., Papoutsakis, C. and Dedoussis, G.V., 2008. Association between family divorce and children's BMI and meal patterns: the GENDAI Study. *Obesity*, *16*(6), pp.1382-1387.

Zeanah, C.H., Smyke, A.T., Koga, S.F., Carlson, E. and Bucharest Early Intervention Project Core Group, 2005. Attachment in institutionalized and community children in Romania. *Child development*, *76*(5), pp.1015-1028.