

ADVERSE CHILDHOOD EXPERIENCES (ACE) STUDY

Research on Adverse
Childhood Experiences in Serbia



ADVERSE CHILDHOOD EXPERIENCES (ACE) STUDY

Research on Adverse Childhood
Experiences in Serbia

Adverse Childhood Experiences (ACE) Study

Research on Adverse Childhood Experiences in Serbia

Publisher:

UNICEF in Serbia

For the publisher:

Regina De Dominicis, UNICEF Representative

Editors:

Milica Pejović Milovančević and Oliver Tošković

Authors in alphabetical order:

Milutin Kostić, Ljiljana Lazarević, Vanja Mandić Maravić, Marija Mitković Vončina, Jelena Radosavljev Kirčanski, Ana Stojković, Marina Videnović

Translation:

Jelena Gledić

Design:

Rastko Toholj

ISBN 978-86-80902-24-1

Belgrade, March 2019.

The opinions expressed in this report are those of the author(s) and do not reflect the opinions of UNICEF.

The publication can be freely cited. Requests to utilize larger portions of the text should be addressed to UNICEF in Serbia.

For readers who would like to cite this document we suggest the following form: UNICEF (2019).

Adverse Childhood Experiences Research in Serbia (ACE study). Belgrade: UNICEF, 2019.

Copyright © UNICEF Serbia

Acknowledgements

Numerous associates have contributed to the preparation of this report.

A Steering Committee contributed to the quality assurance of the research and quality control of the report comprising: Prof. Dr. Veronika Išpanović, Prof. Nevenka Žegarac, Dr. Aleksandar Bojović, Božidar Dakić, Dr. Mirjana Živković Šulović, Vesna Nedeljković and Dr. Vesna Knjeginjić. We are thankful to Yongjie Yon and other colleagues from World Health Organization who have reviewed the report.

We are grateful to the large group of students of psychology who surveyed the participants in a timely and competent manner. We also thank all participants for their openness to participate in the research and for the time they have contributed in completing the questionnaires.

Contents

Preface	5
1. EXECUTIVE SUMMARY	7
1.1. Purpose of the study	7
1.2. Methodology	8
1.3. Main conclusions	8
1.4. Recommendations	9
2. BACKGROUND	11
2.1. National context of ACEs	11
2.2. ACE definitions	14
2.3. Variables associated with ACEs	17
2.3.1. Sociodemographic factors and ACEs	18
2.3.2. Physical health and ACEs	18
2.3.3. Mental health and ACEs	19
2.3.4. Personality and ACEs	20
2.3.5. Attachment and ACEs	22
2.3.6. Benevolent childhood experiences and ACEs	22
2.3.7. Parenting disciplinary practices and ACEs	22
2.3.8. Education and ACEs	23
2.3.9. ACEs and well-being	24
2.4. Study objectives	24
3. METHODS	25
3.1. Instruments	26
3.1.1. ACE International Questionnaire	26
3.1.2. Health Appraisal Questionnaire	27
3.1.3. Family Health History Questionnaire	27
3.1.4. Trauma Symptom Checklist (TSC-40)	27
3.1.5. Benevolent Childhood Experience scale (BCE)	27
3.1.6. Experiences in Close Relationships-Revised (ECR-R)	27
3.1.7. Basic personality traits — HEXACO	28
3.1.8. Disintegration trait–DELTA scale	28
3.1.9. Non-suicidal self-injury (NSSI) questionnaire	28

3.2. Pilot study	28
3.3. Focus group with research assistants	29
3.4. Limitations	29
3.5. Review process	30
3.6. Ethics	30
3.7. Management	30
4. RESULTS	32
4.1. Sample description	32
4.2. Adverse Childhood Experiences	35
4.2.1. <i>The relationship between different types of ACEs</i>	39
4.2.2. <i>Sociodemographic correlates of ACEs</i>	42
4.2.3. <i>Physical health and ACEs</i>	45
4.2.4. <i>Risky behaviours and ACEs</i>	49
4.2.5. <i>Mental health and ACEs</i>	52
4.2.6. <i>ACEs and personality</i>	54
4.2.7. <i>Benevolent Childhood Experiences</i>	56
4.2.8. <i>Attitudes to corporal punishment</i>	59
4.2.9. <i>Attachment in romantic relationships</i>	61
4.3. ACEs and education	63
4.3.1. <i>ACEs and dropout</i>	63
4.3.2. <i>ACEs and education level</i>	65
5. RECOMMENDATIONS — HOW TO BREAK THE CIRCLE OF VIOLENCE	67
5.1. Universal (primary) prevention of ACE	67
5.2. Selective (secondary) prevention	68
5.3. Indicated (tertiary) prevention	69
5.4. Recommendations for future research on ACE	70
References	71
Appendix	82
List of Participants	108

Preface

The study explored Adverse Childhood Experiences (ACEs) as traumatic experiences in a person's life occurring before the age of 18, which the person remembers as an adult:

- Various forms of child maltreatment
- Other adverse circumstances within the household or wider environment of a child.

The study comprised 2,792 respondents who agreed to participate, and we are grateful for their time and willingness.

How many people experienced each ACE?

- Physical abuse 13.6% (repeatedly)
- Psychological abuse 26.3% (repeatedly)
- Abuse of mother by partner 12.1% (repeatedly)
- Abuse of father by partner 5.6% (repeatedly)
- Sexual abuse 2.8%
- Physical neglect 5.6% (repeatedly)
- Psychological neglect 10.5% (repeatedly)
- Alcoholism in family 16.7%
- Drug abuse in family 1.9%
- Depression in family 13.0%
- Suicide in family 4.6%
- Incarceration of family member 5.6%
- Parent separation 15.1%
- Bullying 11.0% (repeatedly)
- Involvement in physical fight 19.7% (repeatedly)
- Community violence 37.7% (repeatedly)
- Collective violence 3.3% (repeatedly)

For every 100 adults in Serbia, about 70 have experienced at least one form of ACE repeatedly during childhood, and about 20 have experienced four or more:

- 0 ACEs 28.8%
- 1 ACE 25.0%
- 2–3 ACEs 26.5%
- 4+ ACEs 19.7%

Who are the persons with higher number of ACEs?

- ▶ those from **urban areas**
- ▶ those who are **not in a partner relationship**
- ▶ **males**
- ▶ **younger** participants (age 18 to 29 years)
- ▶ those with **lower education**, with **dropout from school, school absenteeism**, who were victims or perpetrators of **school violence**
- ▶ those with **less Benevolent Childhood Experiences (BCEs)**
- ▶ persons with certain personality traits — particularly **higher Disintegration trait** (peculiar, odd, inclined to break rules, stubborn, feel unpopular, more prone to feel less lively and optimistic).

What psychosocial and health related issues are found in those with higher number of ACEs?

- ▶ **abortions**
- ▶ **substance abuse** — smoking, alcohol consumption, drug abuse
- ▶ **self-destructive behaviour** — suicide attempts, non-suicidal self-injury
- ▶ **mental health symptoms** — dissociation, sleep problems, sexual dysfunction, panic, uncontrolled anger
- ▶ **physical illnesses** — respiratory, gastrointestinal and cardiovascular problems, diabetes, neurological symptoms
- ▶ stronger support for **corporal punishment** as a disciplinary method (among those who are parents)
- ▶ more **insecure attachment** in romantic relationships, resulting in worse relationship quality.

1. EXECUTIVE SUMMARY

1.1. PURPOSE OF THE STUDY

According to the report by the World Health Organization (WHO) (WHO, 2014), one quarter of all adults claim that they were physically abused in childhood, and one in five women claim that they were sexually abused in childhood. The first WHO report on prevention of child maltreatment drew attention to the need of investing in the prevention of violence, as it poses a serious public-health concern with lifelong consequences. Most commentaries on good practices conclude that a multi-sector, interdisciplinary approach is the most effective way of working together to provide protection of children (e.g., Wales Audit Office, 2015; Gilbert, Widom, Browne et al., 2009).

An adverse childhood experience (ACE) describes a traumatic experience in a person's life occurring before the age of 18 that the person remembers as an adult. The following are examples of ACEs: physical abuse, emotional abuse, sexual abuse, alcoholism in the family, drug abuse in the family, depression or any other mental illness in the family, suicide in the family, incarceration of a family member, abuse of mother by her partner, abuse of father by his partner, parent separation, psychological neglect, physical neglect, bullying, involvement in physical fight, community violence, and collective violence.

The purpose of the research was to explore the prevalence of risk factors, ACEs and their consequences in terms of health and education outcomes on a nationally representative sample of adults 18–65 years old in Serbia. Given the importance of consequences of ACEs in terms of their negative impact on health and other outcomes, it was important to complement the existing findings by researching the prevalence of risk factors, ACEs and their consequences in terms of mental and somatic health and educational outcomes on a nationally representative adult sample in Serbia. It was also very important to investigate the associations of ACEs with functioning in close relationships and parenting cognitions, since this would give specific directions for child abuse prevention. Distinguishing the effects of ACEs from other significant life events was warranted.

Specific types of adverse experiences were assessed using multiple questions and the key research objectives were related to:

- ▶ the prevalence of ACEs during the first 18 years of life in the Serbian representative sample;
- ▶ exploration of the prevalence of exposure to different types of abuse and neglect (physical abuse and neglect, psychological (emotional) abuse and neglect, sexual abuse);
- ▶ determining the prevalence of exposure to different kinds of household dysfunction (alcohol and drugs, abuse in the family, parental separation or divorce, domestic violence, etc.);
- ▶ determining the prevalence of different health-risk behaviours (alcohol and drug abuse, suicidal behaviour, etc.);
- ▶ investigating the possible impact of ACEs on health-risk behaviours;
- ▶ identifying the interrelationship between different types of ACEs;
- ▶ establishing the cumulative influence of multiple categories of ACEs on health-harming behaviours;
- ▶ establishing the associations of ACEs with somatic and mental health problems, personality, attachment and parenting attitudes (controlling for the effect of other life events); and,
- ▶ identifying impact of ACE and association of ACE with educational outcomes and current socioeconomic status of respondents.

1.2. METHODOLOGY

The ACE survey was conducted as a cross-sectional research, conducted through a face-to-face methodology of data collection, through computer-assisted personal interviewing (CAPI). The study used a representative sample derived from multistage random sampling, with a stratified cluster sample in the first stage, and random sample in the second stage. The final sample consisted of 2,792 respondents, and the respondents from urban and rural areas were almost equally represented in the sample.

The core research instrument package was developed based on the methodology recommended by the United States Centers for Disease Control and Prevention (CDC) and WHO (a version adapted by the earlier ACE study in Serbia). It included questionnaires assessing ACEs, and personal and family health history. Certain types of adverse experiences were assessed using multiple questions and were scored in two ways, as “any” and “frequent” ACE, i.e., using a criterion of *less* (experience occurring once or twice) and *more severe* (experience occurring many times), respectively, whereas other types of ACEs were scored as binary variables. The total ACE scores (“any” and “frequent”) represent the number of different ACEs that occurred in a participant’s childhood and adolescence. The additional questionnaires were aimed to assess psychiatric symptoms, basic personality traits, romantic attachment, attitudes related to parenting (corporal punishment), benevolent childhood experiences (BCEs), education (prevalence of dropout, frequency of school problems, achieved educational and occupational level), and other sociodemographic variables, to give a more profound picture on impact and consequences of ACEs. All instruments were administered in self-report form, with gender-specific questions for core instruments.

A Steering Committee (SC) was established and chaired by the Institute of Psychology with members from the Institute of Mental Health, WHO, the Serbian Ministry of Health, and UNICEF. The SC served as the Reference Group for the research and enabled the review process to be carried out in a systematic, consultative manner. The ethical safeguards were implemented in line with the UNICEF Procedure for Ethical Standards in Research, Evaluation, Data Collection and Analysis and in accordance with the UNICEF Strategic Guidance Note on Institutionalizing Ethical Practice for UNICEF Research.

1.3. MAIN CONCLUSIONS

Four or more ACEs were present in about 40%, according to the less severe ACE criterion (any ACE), and in about 20% of participants according to the more severe ACE criterion (frequent ACE). Males were more likely to experience different ACEs: more likely to be victims of bullying, be involved in physical fights, witness community violence and witness collective violence. Women were more likely to experience living with a person with depression. Economic status was not related to the prevalence of ACEs, regardless of the scoring method. Respondents from urban areas were more exposed to various ACEs, such as physical abuse, psychological abuse, parental separation, bullying and community violence. Reporting more ACEs in childhood was related to being single at the time of the study (psychological abuse, psychological neglect, physical neglect and bullying).

A higher number of ACEs significantly correlated with a number of health-related behaviours and health problems (respiratory, gastrointestinal and cardiovascular problems; and neurological symptoms), showing that higher ACE diversity is related to a higher probability of having physical health problems. Contrary to expectations, having diabetes was only very weakly related to having more frequent ACEs. Experiencing more ACEs was further associated with a poorer perception of one’s own health.

Higher number of ACEs was also significantly associated with the higher intensity of various trauma-related mental health problems, such as dissociation, sleep disorders and sexual problems. Furthermore, those with more ACEs such as physical abuse, psychological abuse, abuse of mother by partner, bullying, involvement in physical fight and community violence, etc., tended to drink alcohol and use drugs more. Interestingly, alcohol consumption was not correlated to the history of alcoholism or substance abuse in the family. Participants with more ACEs were more likely to attempt suicide, as well as non-suicidal self-injury (NSSI) (higher any ACE score predicted more

NSSI before 18 years of age, whereas higher both any and frequent ACE scores predicted higher NSSI after 18). Out of all ACEs, only three appear as significant correlates of NSSI — sexual abuse, incarceration of family member, and abuse of father by partner.

A number of ACEs showed significant association with personality traits as well (the dimension of Disintegration). Persons who have highest ACE scores can be described as peculiar, odd, inclined to break rules for personal profit and motivated by material gain, and prone to flatter others to achieve what they want. They also hold grudges against those who have harmed them, are stubborn and quarrelsome. They tend to consider themselves as unpopular, do not prefer to be the centre of attention, and are more prone to feel less lively and optimistic.

Higher ACE scores were also associated with insecure romantic attachment (higher attachment anxiety and, to a lesser extent, attachment avoidance). Attachment dimensions partially mediated the association between higher ACE score (frequent ACE) and partner relationship quality, as well as between higher ACE score (frequent ACE) and trauma-related mental health problems.

Along with ACEs, specific positive childhood experiences (BCEs) were predictive of trauma-related psychiatric symptoms in terms of protective effects. The trauma-related symptoms were the least severe in those with low ACEs and high BCEs; more severe in those with low both ACEs and BCEs, even more severe in those with high ACEs and high BCEs, and most severe in those with high ACEs and low BCEs. The independent effects of BCEs did not fully compensate the negative effects of ACEs on trauma-related symptoms.

In this study, over half of the participants disagreed with spanking a child as a helpful parental disciplinary practice, whereas about 70% disagreed with following statement, “the beating stick came from heaven” in regard to child rearing. The number of ACEs (any ACE score) very weakly correlated with support for corporal punishment. However, those who were more frequently spanked in childhood were more prone to support corporal punishment. This effect was also weak, but greater than for ACE score.

When it comes to education, about 18% of respondents dropped out of school or university. The prevalence of dropout increased with ACEs. Almost one in five persons who had experienced four or more ACEs reported leaving education before finishing it. Both any and frequent ACE scores were higher for those with higher prevalence of school problems (absenteeism, exposure to school violence and presence of violent behaviour), with medium effect size. Children who were exposed to violence at home or at the community level were also exposed to the violence and/or manifested violent behaviour in the school setting. Higher frequent ACE scores were weakly associated with higher education. Contrary to the expectation, ACE scores were not associated with employment status.

1.4. RECOMMENDATIONS

Preventing ACEs can improve health across the whole life course, enhancing individuals’ well-being and productivity. The health, social, criminal justice and education systems are all likely to see better results for the Serbian population if ACEs are prevented. The research findings are aimed at decision-makers and practitioners responsible to design and deliver violence prevention and protection policies and programmes. Research findings provide evidence on the scale of the problem in Serbia as a basis for advocacy for further investment into violence prevention. Overall findings inform future programming and development of interventions aimed at violence prevention as well as the development of programmes of support to victims of violence. The results of the research will be relevant to professionals in contact with ACE issues as well as to the general public to raise awareness of the impact of early abuse and neglect. The findings will be of key importance to the social welfare system, as they can provide input for advancing risk assessment tools and procedures as well as for shaping response services that target families living in multiple deprivation, where children are at “the edge” of the care system and are at risk of being placed into care.

There should be cooperation and exchange of information between experts and institutions involved in prevention regarding the consequences of ACE. For example, any expert or professional who is in contact with a child exposed to ACE should inform the child’s medical general practitioner, in order to perform specific preventive ac-

tions as well as regular specific check-ups to prevent possible health consequences of ACE. While education about the negative consequences of substance abuse or mental health problems should be implemented in all schools or social and health-care institutions for children and youth, a special focus is needed on those children that were recognized to have higher ACE, or who were victims of abuse and neglect.

It is necessary to put more emphasis on positive childhood experiences in terms of assessment and intervention, since these have protective effects on development and resilience. It should be recommended to all professionals to assess children for positive experiences, since positive experiences are the ingredients of personal defence against maladaptation. Education of parents, and parents-to-be, as well as professionals who work with children and adolescents, on recognizing the presence of protective factors is essential. Education of adolescents on protective factors and providing help in strengthening those factors would be of great importance (i.e., raise their awareness about positive childhood experience, stimulate them to seek help when these experiences are lacking, etc.).

An explicit ban on corporal punishment of children and adolescents within the national family law legislation is warranted. Further education of professionals working with children and adolescents along with parents is essential, aimed at raising awareness, recognition and willingness to react in cases of corporal punishment. Becoming a parent may represent the breaking point in prevention of corporal punishment in the next generation.

The education system should be reinforced in order to more successfully compensate or diminish the effect of ACE. Intersectoral collaborations and organization of joint activities are needed in order to obtain the full effects of intervention programmes. When considering decrease of school dropout, a focus on maltreated children and their specific educational needs should be part of the interventions.

Strategies for preventing ACE should be directed towards all levels of prevention — universal (addressing general population), selective (addressing at-risk populations) before ACEs occur; as well as indicated prevention (preventing the continuation and the consequences of ACEs) after the occurrence of adverse experiences. Implicitly, national prevention steps should take into account the 2014 WHO report *Global Status Report on Violence Prevention*, suggesting the following ways to prevent violence:

- ▶ developing safe, stable and nurturing relationships between children and their parents and caregivers;
- ▶ developing life skills in children and adolescents;
- ▶ reducing the availability and harmful use of alcohol;
- ▶ reducing access to guns and knives;
- ▶ promoting gender equality to prevent violence against women;
- ▶ changing cultural and social norms that support violence;
- ▶ victim identification, care and support programmes.

To accomplish the aforementioned goals, different sectors or stakeholders should be involved. The 2016 WHO report *INSPIRE: Seven Strategies for Ending Violence Against Children* expands on the above to provide specific strategies for prevention involving a number of government sectors as follows: Implementation and enforcement of laws (Justice sector); Norms and values (Health, Education and Social Welfare sectors); Safe environments (Ministries of Interior and Planning); Parent and caregiver support (Health and Social Welfare sectors); Income and economic strengthening (Ministries of Finance and Labour); Response and support services (Health, Justice and Social Welfare sectors); Education and life skills (Education sector).

2. BACKGROUND

2.1. NATIONAL CONTEXT OF ACEs

Prevention and suppression of violence against children is a priority of national policies in Serbia. Under the Constitution of the Republic of Serbia, children have human rights pertinent to their age and mental maturity; children are protected from mental, physical, economic and any other form of exploitation and abuse (Article 64, paragraphs 1 & 3). In addition, families, mothers, single parents and children have special protections (Article 66). The right to be protected from any form of violence is a fundamental right of every child and is defined by the Convention on the Rights of the Child, as well as many other international and regional treaties ratified by Serbia that regulate the issues of human rights protection.

Ratifying the Convention on the Rights of the Child, which came into force on 2 November 1990, Serbia assumed the obligation to apply measures that prevent violence against children and to provide protection of children from all forms of violence in the family, institutions and broader social environment. Articles of the Convention on the Rights of the Child cover protection of children from:

- Physical and mental violence, exploitation and abuse (Article 19);
- All forms of sexual exploitation and abuse (Article 32);
- Abduction of, sale or trafficking in children (Article 35);
- All other forms of exploitation, that are detrimental to the child's welfare (Article 36);
- Inhumane and degrading treatment and punishment (Article 37).

The Convention also stipulates obligations of the state to provide measures of support for physical and psychological recovery of the child that is a victim of violence and his or her reintegration into society (Article 39).

According to the official census of households from 2011, there are 1,263,128 children in Serbia (Popis stanovništva, 2011), equivalent to 17.3% of the population. The prevention and suppression of violence against children and protection of children from violence are part of the core priorities of the Serbian national policies. The National Action Plan for Children defined for the period between 2004 and 2015 included a general framework of policies related to children. As part of this plan, in 2005, the Serbian Government adopted the General Protocol for the Protection of Children from Abuse and Neglect. The goal of this protocol was to secure a framework for setting up an effective, operational network for the protection of children from abuse, neglect, exploitation and violence. Together with the General Protocol, special sector protocols were also adopted defining specific roles and procedures in the protection of children from abuse and neglect for every relevant sector that is a part of the protection system — labour and social protection agencies, education, police, health care, and justice.

Serbia has ratified two additional protocols annexed to the Convention on the Rights of the Child: The Optional Protocol on the Sale of Children, Child Prostitution and Child Pornography, and the Optional Protocol on the Involvement of Children in Armed Conflicts from 2002.

Besides the Convention on the Rights of the Child, Serbia respects many other international documents and conventions:

- Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (1984);
- Convention against Transnational Organized Crime (2000);
- Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children (2000);
- Convention on the Protection of Children against Sexual Exploitation and Sexual Abuse (Lanzarote Convention) of the European Council (2007/2010);

- ▶ Convention on Preventing and Combating Violence against Women and Domestic Violence (Istanbul Convention);
- ▶ Convention on Cybercrime (Budapest Convention) of the European Council (2001);
- ▶ Convention of the International Labour Organization (ILO) Number 138 (1973);
- ▶ Convention of ILO Number 182 on Worst Forms of Child Labour (1999);
- ▶ European Convention on the Exercise of Children's Rights (1996, in force since 2000);
- ▶ EU Strategy for the Rights of the Child; EU Guidelines on the Promotion and Protection of the Rights of the Child (2007);
- ▶ EU Agenda for the Rights of the Child (2011).

Serbia was exposed to many severe stressors during the last 20 years, such as civil war in the surroundings, United Nations economic sanctions which lasted for 3.5 years and 11 weeks of NATO bombing in 1999. The consequences were a destroyed infrastructure, a large number of refugees and internally displaced people, social instability, economic difficulties and deterioration of the healthcare system (Lecic Tosevski & Draganic Gajic, 2005). One of the serious consequences is so-called brain drain, as 300,000 young people left the country. Serbia has a GDP per capita of around US\$ 6,500 (UNICEF, 2017) and there is a high unemployment rate of 12.9% (Statistical Office of the Republic of Serbia, 2018). In 2014 public expenditure on health care amounted to 10.4% of GDP (WHO, 2016).

In 2008, the Serbian Government adopted a National Strategy for Prevention and Protection of Children from Violence for the period 2009–2015, and in 2010 an action plan for its implementation was adopted. Together with the strategy and action plan, laws regarding violence against children were improved to promote their implementation. Although formal evaluation was not performed, after the expiry of the term of the National Strategy to assess its impact, many studies have shown that violence against children in Serbia is still widespread.

An extensive process of social, political and economic reforms is ongoing in Serbia. Over time, a thorough reform of the Serbian legal system has been conducted. Numerous substantive and procedural laws significantly improving the international standing of Serbia, have been adopted. Serbia became a candidate for EU membership in March 2012, and in January 2014 an intergovernmental conference was held between Serbia and the EU, marking the initiation of accession negotiations. This process requires further harmonization of the national legislation with standards and regulations of the EU, as well as their full implementation. This applies to the area of prevention and child protection from violence, in which numerous significant reforms have been undertaken and should be continued in the future.

In the Euro-integration process, in July 2016 Serbia opened Chapter 23. The implementation of the Action Plan for Chapter 23 is one of the priorities of the Government. This plan envisages drafting of the new Strategic Framework for Prevention and Protection of Children from Violence in 2017 and review of soft legislation.

Empirical evidence from the Research to Policy and Practice Process (R3P) national report (UNICEF, 2017) indicates that neglect and various forms of abuse and violence against children in Serbia are present in all segments of social life: family home, kindergarten, school, institutions (for children without parental care, for children with disabilities, correctional institutions), etc. Children are also exposed to less direct but complex forms of violence, for instance, various forms of discrimination, child marriage, child labour or other forms of exploitation, and through multiple social exclusion (Babović, 2015).

Serbia has well-developed programmes preventing violence in schools, which are now substantially integrated into national policies and practices. There is, however, a significant gap when it comes to addressing the violence that takes place within the family. Practical tools for risk assessments and family interventions are underdeveloped and/or seldom used; whole-family cross-sectoral approaches are not part of the practice; there is a general lack of awareness to what extent parental capacities and family relationships impact well-being, which in turn leads to inadequate funds in these areas.

The Balkan epidemiological study on abuse and neglect of children reported that nearly 70% of children (Hanak, Tenjović, Išpanović Radojković, Vlajković & Beara, 2012) in Serbia were exposed to some form of physical or emotional abuse. The study also reports that 38% of children were witnesses of violence between adults in their family. Between 8% and 10% of children were subjected to some form of sexual violence, and 3.7% had experienced

direct sexual violence in the previous year. The same survey showed that one third of children had been affected by two or three types of violent behaviours, while 5.4% of children had been subjected to all types of violence (physical, emotional, sexual and were witnesses of domestic violence). Data show that the corporal punishment of children in the family, which is used as a method of discipline, is the most prevalent form of violence against children. In other words, adults often do not recognize or do not accept that corporal punishment is, in fact, a form of violence — degrading a child, leading to physical injuries, and worsening child's overall health.

According to the data from the Multiple Indicator Cluster Surveys (MICS), a gradual decline in violent disciplining methods of children in Serbia has been registered, from 72.8% in 2005 (Republički zavod za statistiku i Istraživačka agencija, 2006) to 67% in 2010 (UNICEF, 2011). In MICS 2014 (UNICEF, 2015) a further decline to 43% was observed. Although severe corporal punishment is still widespread in all ethnic groups in Serbia (with highest percentages observed in the Roma population), recent evidence shows that its prevalence is also in decline. The violent methods of disciplining are declining in the Roma population as well (81.5% in 2005, 86% in 2010 and 66% in 2014), especially severe forms (20.7%, 6% and 8%, respectively) (Statistical Office of the Republic of Serbia and UNICEF, 2014). Severe forms of corporal punishment are more often used with girls, and the most worrying fact is that very young children, aged 1–4 years, are more often victims of corporal punishment than older children. Seven per cent of respondents to the household questionnaires believe that physical punishment is a necessary part of child-rearing, which implies an interesting contrast with the actual prevalence of physical discipline. The respondents' age is negatively associated with the likelihood of finding physical punishment a necessary method of disciplining children, with the percentage of respondents who believe in the necessity of physical punishment ranging from 13% for those under age 25 years to 3% for those age 60 and above.

Findings of the mapping in the R3P national report (UNICEF, 2017) indicate that interventions carried out over the past 10 years can be grouped into three basic types. The first type represents interventions aimed at the improvement of institutional and organizational mechanisms; other interventions focused on attitudes, values and competences; and the rest on the organization of direct services for the protection and support of children victims of violence and their families. The basic logic involved the development of a top-down system, from the creation of a legal framework and operational policies in the action plan, the adoption of general and specific protocols, and the capacity building of each sector to operate within their powers, to the mechanisms of cross-sectoral cooperation and the establishment of operational teams in local communities that are trained and coordinated professionals from different parts of the system. Activities focused on changes in values, attitudes and competences were a particularly frequent form of intervention during the past period in Serbia (but still not sufficient), and there were significantly fewer interventions aimed at providing direct protection and support to children exposed to violence or at risk of violence. One of the important findings of the R3P was the influence of structural violence that is not sufficiently addressed or taken into consideration and has a serious impact, particularly on ACE, as they do not include only violence against children.

By mapping interventions and consulting with a number of relevant actors during the research process for policies and practices in the national study, some weaknesses in the system for preventing and protecting children from violence have been identified. There is no functional, efficient central multisectoral body responsible for coordination, monitoring and evaluation of the effects of policies and measures for prevention and protection, as well as regular reporting on the achieved results, shortcomings and coordination of stakeholders. There is no developed methodology for the systematic monitoring of the implementation of existing protocols; there is no centralized administrative record for all relevant systems that would allow easy, reliable access to data for various stakeholders, whether to protect children from violence in practice or to analyse the situation. The processes of monitoring and evaluating interventions (laws, policies, measures, programmes, services) are rare and non-systematic, and they are not the condition and basis of (re)defining policies and measures in an adequate way, incorporated into the system of prevention and protection. Interventions are not always tailored to the specificities of individual environments, and the system is more focused on protecting the child when violence has already taken place, rather than preventing and combating violence against the child. Prevention programmes are rare, not continuous or systematic, and usually do not have a large coverage.

The first Serbian study on the prevalence of ACEs (Survey of adverse childhood experiences among Serbian university students (Paunovic et al., 2015)) was conducted on a representative sample of university students from all six public universities in Serbia. The aims were to investigate the prevalence of ACEs in the young population and to identify possible associations between different types of ACEs and health-risk behaviours. Results showed that students who suffered physical abuse were 1.5 times more likely to be smokers, two times more likely to use drugs, and 4.2 times more likely to attempt suicide. Additionally, respondents were most frequently exposed to psychological abuse (36.7%; out of which 17.3% more than a few times), physical abuse (27.8%; 10.9% more than a few times) and psychological neglect (15.7%; 7.7% more than a few times). Sexual abuse was reported by 4.3% and physical neglect by 8.9%. Males had a higher prevalence of exposure to physical abuse and neglect, psychological and sexual abuse, and females to psychological neglect. The results also showed that the chances of taking part in health-risk behaviours increase when people are exposed to a higher number of ACEs.

Previously, interventions for prevention and suppression of violence against children and for protection of children subjected to violence were directed by the strategic aims and objectives of the National Strategy for Prevention and Protection of Children from Violence for the period 2009–2015 and the accompanying Action Plan (2010–2012). The Council for Children’s Rights was delegated to coordinate, monitor and evaluate the effects of the implementation of the strategy, but this goal was only partially achieved. The Working Group of the Council for Children’s Rights conducted monitoring and published a report on the results of the application of the Action Plan for the period 2010–2012. However, the effects of the Action Plan were never assessed.

Preventing and protecting children from violence has been one of the key priorities in national policies for more than a decade. In 2017, a new policy cycle in prevention and protection of children from violence against children (VAC) was initiated and should result in the adoption of the new National Strategy for Protection of Children from Violence by the end of 2018.

2.2. ACE DEFINITIONS

Experiences during childhood can affect health throughout the life course. Children who experience stressful and poor quality childhoods are more likely to adopt health-harming behaviours during adolescence, which can themselves lead to mental illnesses and diseases such as cancer, heart disease and diabetes later in life. ACEs are not just a concern for health. Individuals who experience ACEs are more likely to perform poorly in school, more likely to be involved in crime, and ultimately less likely to be productive members of a society (Jaffee et al. 2018; Reavis, Looman, Franco & Rojas, 2013).

ACEs is the expression used to describe all types of abuse, neglect and other traumatic experiences that occur to individuals under the age of 18. The first study in this field was the revolutionary CDC–Kaiser Permanente ACE Study examining the relationships between these experiences during childhood and reduced health and well-being later in life: childhood experiences have a tremendous, lifelong impact on our health and the quality of our lives (Centers for Disease Control and Prevention, Kaiser Permanente, 2016). The ACE Study showed dramatic links between ACEs and risky behaviour, psychological issues, serious illness and the leading causes of death. The study showed that exposure to ACEs can alter the development of neurological, immunological and hormonal systems. Subsequently, individuals with greater exposure to ACEs are more likely to develop health-harming and anti-social behaviours, such as drinking, smoking and drug abuse. They are also more likely to be involved in violence and other anti-social behaviour and perform poorly in schools. Individuals with poor health and behavioural problems are more prone to develop conditions such as diabetes, cancer, cardiovascular disease and mental illness.

Global research (CDC–Kaiser ACE Study) showed that childhood experiences, both positive and negative, have a tremendous impact on lifelong health and opportunity and future violence victimization and perpetration. As such, early experiences are an important public health issue.

Child maltreatment is a globally present phenomenon, with long-term consequences to victims, family and society (Thornberry, Knight, & Lovegrove, 2012). Recent data revealed a yearly rate of 41,000 homicides of children

younger than 15 years of age (WHO, 2018). The worldwide rates of violence against children in 2017 show that 23% of children are physically abused, 36% are emotionally abused, 16% are physically neglected, and 12% are sexually abused (WHO, 2018). Consequences of child maltreatment begin in childhood, but may progress through adolescence and adulthood, and have consequences on various domains of functioning — physical, mental and social (Mitkovic Voncina, Pejovic-Milovancevic, Mandic-Maravic, & Lecic-Tosevski, 2017; WHO, 1999).

Given the negative impact that ACEs have on physical and mental health and other life outcomes, complementing the existing findings with the results of the study conducted on the sample representative of Serbia is of high importance.

The ACE conditions used in the ACE survey reflect only a selected list of experiences. The list of ACEs slightly varies in different studies (Felitti et al., 1998; Merrick et al., 2017; Shonkoff et al., 2012; Paunovic et al., 2015). The major ACEs are:

- physical abuse
- sexual abuse
- emotional abuse
- peer sexual abuse
- alcoholism in the family
- drug abuse in the family
- depression or any other mental illness in the family
- suicide in the family
- incarceration of a family member
- abuse of mother by partner
- abuse of father by partner
- parent separation or death
- psychological neglect
- physical neglect
- bullying
- involvement in a physical fight
- community violence
- collective violence.

It is estimated that 40 million children worldwide are subjected to abuse and/or neglect; the risk of homicide is twice as high in the age group 0 to 4 than in the age group 5 to 14. In adolescence, apart from traffic-related trauma, abuse represents the leading cause of morbidity and mortality. According to the WHO definition (WHO, 1999), child maltreatment refers to “all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child’s health, survival, development or dignity, in the context of a relationship of responsibility, trust or power” (p.13).

Physical abuse includes real or potential physical injury produced by behaviour or lack of protection by a caregiver, within the reasonable limits (WHO, 1999). Commonly, physical abuse comes in the form of “non-accidental injury” (NAI) (Jayakumar, Barry, & Ramachandran, 2010) of various tissues, whereas specific forms refer to ‘Shaken baby syndrome’ (Matschke, Herrmann, Sperhake, Körber, Bajanowski & Glatzel, 2009) syndrome of induced illness (‘Munchausen by proxy’) (Galvin, Newton & Vandeven, 2005; Pejović-Milovančević et al., 2012).

Emotional abuse refers to caregiver’s repeated behaviour or absence of behaviour that leads or may lead to disturbances in a child’s emotional and social development (WHO, 1999). This may come in various forms, such as rejection, degradation, terror, isolation, being instigated by others to behave badly, exploitation, deprivation of essential stimulation, emotional exchange and availability, as well as unreliable and inconsistent parenting (Pejović-Milovančević et al., 2012). Witnessing family violence is another form of emotional abuse that may have detrimental effects on child mental health and development (UNICEF, 2006).

Sexual abuse comprises any sexual activity (with or without touch, with or without penetration) between a child and adult, or between a child and another child/adolescent who is dominant by chronological age or develop-

mental stadium; if the child is younger than 14, even consensual sexual activity is considered as sexual abuse (WHO, 1999; Ministry of Health of the Republic of Serbia, 2009; Pejović-Milovančević et al., 2012).

Neglect refers to a persistent failure of the caregiver to fulfil a child's basic needs, leading to serious actual or potential damage to the child's health and development in any key area, and therefore may be manifested as physical, educational, emotional or medical (WHO, 1999; Pejović-Milovančević et al., 2012). When analysing and discussing neglect as a form of maltreatment, we have to take into account that sometimes it is difficult to distinguish between neglect and limitations of the family to provide the necessary conditions in the context of poverty (Krug, Mercy, Dahlberg, & Zwi, 2002).

Child maltreatment and inadequate caregiving, in general, are closely related to other specific ACEs in childhood and adolescence. Having a **family member with a mental disorder**, especially a parent, may have various negative repercussions on a child's life. Maternal **depression** is related to more hostile, negative or disengaged parenting, and to lower parenting warmth. Data show that even after the recovery from a depressive episode, the improvement of parenting quality may not reach levels comparable to parents that were never depressed (National Research Council and Institute of Medicine, 2009). An insufficient number of studies have been conducted on fathers to draw unambiguous conclusions, but available findings mostly correspond to those obtained on mothers. Furthermore, parental depression is associated with various outcomes in children: poorer physical health and well-being, stress-related conditions and different early mental health vulnerabilities such as "difficult" temperament, insecure attachment, emotion dysregulation, aggression, poorer interpersonal functioning, poorer cognitive performance and academic achievements, as well as cognitive vulnerabilities to depression.

Similar to depression, research data show that parents with **anxiety disorders** also may have higher child abuse potential (Kalebić-Jakupčević & Ajduković, 2011). Parental **alcoholism and substance abuse** are another risk factor for child maltreatment (Elwyn & Smith, 2013) and for a variety of adverse outcomes in children (Solis et al., 2012). These outcomes mostly refer to lower academic functioning (i.e., failure to pursue secondary education, weaker performance in reading, spelling and maths, etc.), problematic emotional functioning (anxiety, depression, conduct problems, social incompetence), as well as substance abuse (Solis et al., 2012). Parental **suicide** as another adverse experience in a child's life, leads to a greater risk of psychiatric hospitalization and suicide in children, compared to youth with living parents (Kuramoto et al., 2010).

ACEs related to **household challenges** (exposure to violently treated parent (usually a mother), parental divorce or separation, parental incarceration, a household member with substance abuse problems, and a household member with mental illness) are associated with future violence and victimization, health risk behaviours, chronic health conditions, mental illness, decreased life potential, and premature death (Gilbert et al., 2015; Metzler, Merrick, Klevens, Ports & Ford, 2017).

Having an **incarcerated household member (family member in a jail)** during childhood is associated with higher risk of poor health-related quality of life during adulthood, suggesting that the collateral damages of incarceration for children are long-term (Cunningham, Merrilees, Taylor & Mondri, 2017).

Exposure to **parental separation/divorce** is associated with increased risks of disruption of positive developmental outcomes across a number of domains and is associated with adverse adult outcomes, particularly in the realm of intimate relationships (Friesen, John Horwood, Fergusson & Woodward, 2017). Compared with individuals from families with stable parental relationships, young people exposed to parental separation/divorce are more likely to hold more negative attitudes toward marriage (Riggio & Weiser, 2008) and cohabit rather than marry (Valle & Tillman, 2014). When they do marry, young adults exposed to parental separation/divorce are more likely to find a partner who is also from an unstable family (Wolfinger, 2003), and their relationships can be characterized by lower commitment (Amato & DeBoer, 2001), poorer relationship quality, particularly for women, and an increased likelihood of repeating the pattern of separation and divorce witnessed in childhood (Mustonen, Huurre, Kiviruusu, Haukkala & Aro, 2011). As the number of an individual's ACEs or exposure to childhood adversity increases, the risk of experiencing poorer life outcomes as an adult also increases. Researchers suggest that children dealing with a **parental death** are vulnerable to long-term emotional problems such as symptoms of depression, they are more anxious and withdrawn, with more school problems and generally poorer academic performance than non-bereaved children (Hoeg et al., 2018).

The negative effects are even more severe when children are exposed to **domestic violence**. Domestic violence is a pattern of assaultive and coercive behaviours used in the context of dating or intimate relationships. Studies showed that being exposed to domestic violence is the single best predictor of transmitting violence across generations. Children exposed to domestic violence are more likely to suffer child maltreatment than non-exposed children; the risk of physical and sexual abuse of children increases dramatically from 30% to 60% in those who witnessed domestic violence. Mothers beaten by their partners are twice as likely to abuse their children, and fathers who frequently beat their wives are more likely to beat their children as well (Van Horn & Lieberman, 2010). Witnessing family violence has long been unaddressed, although a growing body of research indicates that these children are affected in various domains, including their physical or biological functioning, behaviour, emotions, cognitive development and social adjustment.

According to a UNICEF (2009) report, about 535 million children under the age of 18 are growing up in regions where acts of political violence and armed conflict are occurring. Studies showed that witnessing or experiencing **community violence or discrimination** is associated with concurrent negative health effects and increased participation in risk behaviours (Cronholm et al., 2015). Researchers found that community violence, such as witnessing an assault, experiencing a household theft, having someone close murdered, witnessing a murder, experiencing a riot, or being in a war zone (Cronholm et al., 2015; Cummings, 2016) has a negative impact on children's mental health. Another study also found high rates of adversity to physical/mental health including peer victimization, property victimization, exposure to community violence if someone close had a severe illness or accident, or someone close died through illness or accident (Finkelhor, Shattuck, Turne & Hamby, 2013).

Studies suggested that exposure to political violence and armed conflict increases the risk of nonspecific behavioural and emotional symptoms, hyperactivity and peer problems among preschool children (Thabet, Karim & Vostanis, 2006). Studies conducted on older children exposed to political violence and armed conflict reported heightened aggression (Al-Krenawi & Graham, 2012), increased risk-taking behaviours (Pat-Horenczyk et al., 2007), alcohol consumption and problems in internalizing, attachment, somatic health, and sleep (e.g., Sagi-Schwartz, Seginer & Aldeen, 2008; Qouta, Punamäki & El Sarraj, 2008).

Exposure to violence and victimization has been linked to mental health problems and trauma symptomatology (Finkelhor, Ormrod & Turner, 2007; Moylan et al., 2010), as well as delinquency and violence (Margolin, Vickerman, Oliver & Gordis, 2010; Mrug et al., 2010). The majority of studies found that exposure to various forms of violence, including parental violence (Holt et al., 2008; Wolf et al., 2003), school violence (Eisenbraun, 2007), and community or neighbourhood violence (Lynch, 2003) is associated with negative outcomes among children and adolescents.

Recent evidence also indicates that **multiple victimizations** are common in youth, and that youth exposed to violence in one context or setting (e.g., school, neighbourhood, family) are more likely to experience exposure in other settings as well (Finkelhor et al., 2007; Mrug et al., 2008). Further, there is evidence that the cumulative effects of exposure to violence and victimization may be more detrimental to youth compared to experiencing a single type of violence (Moylan et al., 2010; Mrug & Windle, 2010). Namely, these findings demonstrated that the cumulative effects of exposure to violence in schools, homes and neighbourhoods lead to increased anxiety, depression, aggressive fantasies, delinquency and aggression.

2.3. VARIABLES ASSOCIATED WITH ACEs

It has been shown that ACEs, particularly child abuse and neglect, leave consequences on mental functioning (psychiatric disorders, personality problems) and general health throughout the lifespan (Mitkovic-Voncina et al., 2017); the consequences also refer to the problems of experiences in close relationships, as well as problems in parenting cognitions, leading to the repetition of child abuse in the next generation. More than half of adults (51%) who were abused as children experienced domestic abuse in later life (Office for National Statistics, 2017a). According to the Crime Survey for England and Wales (CSEW) for the year ending March 2016 (Office for National Statistics, 2017b), around one in five adults aged 16 to 59 (an estimated 6.2 million people) had experienced

some form of abuse as a child. More than one in three (36%) of those who experienced abuse by a family member as a child was abused by a partner as an adult. The data also show that adults who witnessed domestic abuse as a child in their home were more likely to experience abuse by a partner as an adult (34% compared with 11% who did not witness domestic abuse). Almost a third of adults (31%) who were abused as children reported being sexually assaulted as an adult, whereas only 7% of those who did not experience abuse as a child reported abuse in adulthood. Family violence has potentially profound effects across the life cycle of an individual — from infancy, through childhood and adolescence, and even through to adulthood — and long-term implications on self-esteem, relationships, physical and mental health, and daily functioning. In a recent report commissioned by ASCA, an individual who has been abused or otherwise traumatized in childhood is at significantly higher risk of impaired social, emotional and cognitive well-being as an adult (Kezelman, Hossack, Stavropoulos & Burley, 2015). When it comes to child abuse affecting the parenting of the victim in adulthood and abusing their own children, a number of studies confirm that risk (Thornberry et al., 2012). Approximately one third of child abuse victims may continue the cycle of abuse in the next generation, one third breaks the cycle, whereas the remaining third is sensitive to social stress (Oliver, 1993). In this way, early traumatization may self-perpetuate through “space and time”, affecting not only the victim, but other people and other generations from the victim’s social network as well.

2.3.1. Sociodemographic factors and ACEs

Determining the specific sociodemographic factors associated with ACE is important for several reasons. Firstly, they are important as risk factors for ACE, and secondly, as argued by Enlow, Blood & Egeland (2013), adverse sociodemographic conditions may have additive effects, increasing the risk for poor outcomes beyond that associated with trauma exposure (Briggs Gowan, Carter & Ford, 2012). Sociodemographic status may also act as a moderator, with trauma exposure having more damaging effects in children living with lower socioeconomic status (Enlow et al., 2013).

Several studies explored the complex relationship of ACE and sociodemographic factors. In Sugaya et al. (2012), child physical abuse (CPA) was significantly more likely to occur among females than males, respondents born in the United States of America than those living in the United States of America but born elsewhere, and among Native American, Black and Hispanic individuals relative to non-Hispanic White persons. Respondents with a history of CPA were also more likely to be widowed, separated or divorced than married, to have attained lower rather than higher educational achievement, and to have public rather than private insurance. However, there are many other factors influencing whether a bad experience will leave consequences. Higher risk of exposure to CPA was found among girls, among adolescents living in a one-parent household, and among adolescents with a chronic disability (Mansbach-Kleinfeld, Ifrah, Apter & Farbstein, 2015). However, there were no significant differences regarding the occurrence of CPA among urban or rural populations (Sugaya et al., 2012).

The data on relations of age and risk for abuse is not unanimous — some results show that parental age is not significant (Milner, Robertson & Rogers, 1990; Milner & Chilamkurti, 1991), while others show that younger parents have a greater risk for abuse of their children (Haskett, Johnson & Miller, 1994; Krug et al., 2002). Most of the results show that abuse happens more often in a poor “ecological context,” meaning lower socioeconomic status, single-parent families, lower education of parents (Krug et al., 2002).

2.3.2. Physical health and ACEs

Early adversity, especially child maltreatment, has shown association with various unfavourable outcomes in terms of physical health throughout the lifespan. Maltreatment in childhood has been related to endocrinological diseases such as obesity (Danese & Tan, 2014) and type 2 diabetes (Thomas, Hypponen & Power, 2008). Furthermore, early childhood adversity has been linked with cardiovascular disease in later life, specifically hypertension (Alastalo et al., 2009) and ischemic heart disease (Dong et al., 2004). As well, a study exploring the effect of ACE on developing cancers throughout the lifespan of a victim has shown a positive association, especially for sexual abuse (Brown, Thacker & Cohen, 2013).

There are several hypotheses explaining the relationship between ACE and long-term physical illness. The first hypothesis refers to health-risk behaviours as mediators between early adversity and chronic illness, since ACE has been linked to behaviours such as smoking (Jun et al., 2008) and alcohol use (Ramiro, Madrid & Brown, 2010). As an example, a study by Brown et al. (2010) showed that the association of ACE and lung cancer can be partially explained through smoking.

Another hypothesis proposes biological mechanisms referring to disruption of physiological stability systems, through neuro-endocrino-immunological mechanisms (Danese & McEwen, 2012; Nusslock & Miller, 2016) and persistent low grade inflammation that has been linked with several age-related diseases (Hostinar, Nusslock & Miller, 2017). Additional possible biological mechanisms are related to the effects of early adversity on biological aging and interacting with genetic vulnerability (see in Mitkovic Voncina et al., 2017).

2.3.3. Mental health and ACEs

Ground-breaking studies like the CDC–Kaiser Permanente ACE Study indicated that ACEs are common and associated with health risk behaviours, mental illness, decreased life potential, and premature death (Felitti et al., 1998). It was found to be dose-related — if an individual's number of ACE increases, their risk of experiencing poorer adult outcomes also increases (Merrick et al., 2017).

Exposure to ACEs is a well-determined risk factor for adult mental health functioning (Merrick et al., 2017). In addition, the exposure to early ACEs is linked to impaired physiological responses, including impaired stress response (Shonkoff et al., 2012), which can, in turn, contribute to impaired mental health and well-being. ACEs are related to several psychiatric disorders, like depressed affect and depression (Chapman et al., 2004; Edwards, Holden, Felitti & Anda, 2003; Merrick et al., 2017), and suicide and suicidal behaviour (Dube et al., 2001; Bruwer et al., 2014).

Exposure to childhood sexual abuse is associated with increased rates of major depression, anxiety disorder, suicidal ideation, suicide attempt, alcohol dependence and illicit drug dependence (Fergusson, McLeod & Horwood, 2013). Another study indicated links between emotional abuse in childhood and increased odds of major depression. Experiencing both emotional neglect and emotional abuse was associated with increased likelihood of major depression, dysthymia, mania, any mood disorder, panic disorder, social phobia, generalized anxiety disorder, post-traumatic stress disorder, and any Axis I disorder (Tailieu, Brownridge, Sareen & Afifi, 2016). Additionally, a study conducted on a heterogeneous sample of psychiatric disorders showed that physical neglect and emotional neglect are mostly correlated to dissociation symptoms, in ages 3–6 and 12–14 (Schalinski et al., 2015).

In addition to various adverse outcomes of ACEs in terms of mental disorders, research repeatedly shows that ACEs are linked to risky, health-harming behaviours, such as substance misuse, dysfunctional dieting, violent behaviours and adolescent pregnancy. A recent study from England has shown a best-fit logistic regression model for ACE and health-harming behaviour. Although causality could not be established in this study, modelling estimated that nationally 11.9% of binge drinking, 13.6% of poor diet, 22.7% of smoking, 52.0% of violence perpetration, 58.7% of heroin/crack cocaine use, and 37.6% of unintended teenage pregnancy prevalence could be attributed to ACEs (Bellis, Hughes, Leckenby, Perkins, & Lowey, 2014). Another study indicated the link between ACEs and alcohol dependence; specifically, experiencing two or more ACEs, compared with none, significantly increased the risk for alcohol dependence, even after controlling for sociodemographic variables and disorder-specific potential confounders (Pilowsky, Keyes & Hasin, 2009).

Another type of risky behaviour associated with ACEs is non-suicidal self-injury (NSSI). It is defined as behaviour that is self-directed and deliberate, resulting in injury or potential injury to oneself, without suicidal intent (O'Connor & Nock, 2014), although it consistently correlates with suicidality (e.g., Kiekens et al., 2018). In recent years, the number of studies investigating NSSI has been constantly growing, especially since NSSI was included in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (American Psychiatric Association, 2013). Common forms of NSSI include cutting, burning, scratching, banging, hitting, biting, etc. Meta-analysis showed that women are significantly more likely to report a history of NSSI than men, and are more prone to cutting

compared to men (Bresin & Schoenleber, 2015). Studies show that NSSI serves different functions, like brief relief, self-punishment, attracting attention in order to seek help, making others feel responsible for their problems, and as an act of conformity allowing individuals to connect with peers who also self-injure themselves (Wilkinson & Goodyer, 2011). In spite of the short-term relief that NSSI enables, it leads to long-term negative consequences. Although NSSI can often co-occur with some mental illnesses, most frequently with depression and anxiety, it is also increasingly evident in individuals with no other mental illness (Nock, 2014). Research showed NSSI prevalence of 17.1% to 38.6% across European countries (Brunner et al., 2014), 15% in China (You et al., 2011; Tang et al., 2011), and 8.1% in Australia (Taylor et al., 2011). Data from the meta-analysis show NSSI prevalence in six geographical regions (Asia, Australia/New Zealand, Canada, Europe, United Kingdom, United States of America) of 17.2% among adolescents, 13.4% among young adults, and 5.5% among adults (Swannell, Martin, Page, Hasking & St John, 2014). However, data on NSSI prevalence in Serbia is missing.

Numerous studies warn us about the link between ACEs and NSSI (Baiden et al., 2017; Kaess, 2013). Meta-analysis showed that overall childhood maltreatment is associated with NSSI, especially in the case of childhood emotional neglect or emotional abuse (Liu, Scopelliti, Pittman & Zamora, 2018). Each type of childhood abuse, occurring at any time within the first 16 years of life is significantly associated with NSSI (Wan et al., 2015). Poor family functioning at age 14 mediates the association between childhood family adversity before age 5 and subsequent onset of NSSI between 14 and 17 years (Cassels et al., 2018). Highly lethal self-harm was associated with childhood physical peer victimization, sexual abuse, emotional abuse, and emotional neglect (Han et al., 2018). Research showed that individuals who reported 4 and more ACEs were significantly more likely to be in the repeat self-harm group compared to those who experienced 0–3 ACEs (Cleare et al., 2018).

Child abuse has been shown to dramatically negatively influence the level of maturity and responsibility in sexual relations. Victims of childhood abuse are more than twice as likely to have 50 or more intercourse partners (Felitti et al., 1998). Survivors of sexual abuse are at elevated risk of problematic sexual behaviour, having up to an eight-fold increase in HIV-risk behaviour (Bensley, Van Eenwyk & Simmons, 2000). Problematic sexual behaviour leads to a two-fold increase of adolescent pregnancies for sexual abuse survivors (Noll, Shenk & Putman, 2009), although physical abuse is a strong predictor here too (Madigan, Wade, Tarabulsz, Jenkins & Shoulddidge, 2014). It was found that early sexual activity mediates the relationship between child abuse and neglect and prostitution later in life (Wilson & Widom, 2010). The authors of this study discussed that these findings underscore the important role of early sexual initiation in involvement in prostitution among abused and neglected children, and support the need for interventions to reduce sexual risk-taking and promote healthy sexual behaviour among maltreated children as they grow up. Findings from these studies suggest that child abuse is related to irresponsible sexual behaviour, which affects the health and economic status of the individual and creates an economic burden on society as a whole.

2.3.4. Personality and ACEs

Contemporary findings show that personality can be described using several personality characteristics. One of the very common models used to describe personality is HEXACO (Ashton & Lee, 2005), encompassing six basic personality characteristics or traits:

1. **Honesty-Humility:** people who score high on the Honesty-Humility scale avoid manipulating others for personal gain, feel little temptation to break rules, feel no special entitlement to elevated social status, and are not interested in wealth and luxury;
2. **Emotionality or Neuroticism vs. Emotional Stability:** people who score high on Emotionality have a tendency to experience negative emotions, a tendency to experience anxiety in response to life's stresses, and feel a need for emotional support from others;
3. **Extraversion vs. Introversion:** people who score high on Extraversion have a tendency to experience positive emotions, be enthusiastic and energetic, feel positive about themselves, feel confident when addressing a group of people, and enjoy social gatherings and interaction;

4. Agreeableness vs. Anger: people who score high on Agreeableness have a tendency to forgive for the wrongs that they suffered, are lenient in judging others, are willing to cooperate and reach a compromise with others, and can easily control their temper;
5. Conscientiousness vs. Impulsiveness: people who score high on Conscientiousness are good in organizing their time, work in a disciplined way toward their goals, strive for accuracy and perfection in their tasks, and are thoughtful when making decisions;
6. Openness to Experiences vs. Rigidity: people who score high on Openness have a tendency to be absorbed in beauty, art and nature, and are inquisitive about various domains of knowledge, prone to use imagination, and interested in unusual ideas or people.

Different from Big Five, the HEXACO model includes an Honesty-Humility trait, which is considered highly important for the development and manifestation of various maladaptive behaviours (Ashton & Lee, 2008).

Studies show that personality traits and maltreatment, being abused or neglected in childhood, are independently related to the different negative health outcomes later in life (Karmakar, Elhai, Amialchuk & Tiejien, 2017). However, studies investigating relations between adult adaptive personality and different forms of ACEs are scarce (see Hengartner et al., 2016). Findings indicate that among normal personality traits, Neuroticism is most consistently related to health and psychosocial functioning (Hengartner et al., 2015; Karmakar et al., 2017; Krueger, Caspi, Moffitt, Silva & McGee, 1996; Lahey, 2009). A study by Hengartner et al. (2016), conducted on a large general population-based community sample, found that emotional abuse is related to increased Neuroticism and Openness, and low Agreeableness. High Neuroticism, low Extraversion and Agreeableness are related to emotional neglect. High Neuroticism was associated with physical abuse, neglect and sexual abuse. In addition, this study found that among different forms of ACEs, emotional abuse and neglect are most substantially related to the Big Five personality traits (Hengartner et al., 2016).

There is a consensus among scholars that personality traits, specifically Neuroticism, mediate the relationship between ACEs and different (mental) health outcomes, like substance abuse, depression, psychological distress (for an overview see Karmakar et al., 2017). However, to the best of our knowledge, there are no studies investigating the relationship between ACEs and basic personality traits, defined by the HEXACO model. Specifically, findings indicate that persons scoring low on Honesty traits manifest delinquent behaviour, are more prone to substance abuse, sexual harassment proclivities, unrestricted socio-sexuality, etc. (for an overview see Ashton & Lee, 2008). Therefore, it would be important to include the Honesty-Humility trait in a wide-scope study investigating ACEs and their relation with various other characteristics and outcomes.

Recently, psychosis proneness was reconceptualized as a basic personality trait and named Disintegration (Knezevic, Savic, Kutlesic & Opacic, 2017). A hierarchical structure of the trait was revealed in this study and shown to consist of the nine lower-level traits — General Executive Impairment, Perceptual Distortions, Enhanced Awareness, Depression, Paranoia, Mania, Flattened Affect, Somatic Dysregulations, and Magical Thinking — highly converging to the higher-order Disintegration factor. In a series of factor analyses, they were found to form a factor separate from the Five Factor model (FFM) (Costa & McCrae, 1992). The separateness of Disintegration from Big Five traits was replicated across informants (self-, mother's and father's report), samples (undergraduate students and general population), and units of analyses (facets and items). The separateness of psychotic-like phenomena from the Big Five (but also from the other personality models) is supported by the recent meta-analytical findings (Knezevic et al., 2016; Lazarevic et al., 2016). Disintegration was found to have a normal distribution in the general population. Having in mind previous findings indicating a positive relation between ACEs and higher risk for development of psychotic-like symptoms (for an overview see Pos et al., 2016), comprehensive assessment of personality that would encompass Disintegration, as a trait representing a vulnerability for the development of psychotic-like phenomena, is of high importance.

2.3.5. Attachment and ACEs

Attachment refers to the innate psychobiological system stimulating humans to search for the proximity of significant others (i.e., parental figures), in need of security. It is an “internal working model” of the self, and of self-in-relation to others (Bowlby, 1969), rooted in the first relationship between a baby and a caregiver. It is shaped throughout the relationship with significant figures and is closely linked to the reciprocal behaviour of the caregiver and parental sensitivity (Bowlby, 1969; Ainsworth, Blehar, Waters & Wall, 1978). If early social exchange with the caregivers is compromised, the child may fail to develop secure bonds with significant others throughout life, resulting in the insecure attachment that has been evidenced in victims of child maltreatment (Özcan, Bozacioglu, Enginkaza, Bilgin & Tomruk, 2016). Insecure attachment, on the other hand, has been acknowledged as a risk factor for a variety of maladaptive adult outcomes, such as depression (Dagan, Facompre & Bernard, 2018), traumatic symptoms (Barazzone, Santos, McGowan & Donaghay-Spire, 2018) and even problems of physical health (Davis et al., 2014; Balint et al., 2016). Moreover, the attachment has been repeatedly found to moderate and mediate the relationship between traumatic experiences and post-traumatic stress (Barazzone et al., 2018), and more specifically between childhood adversity on one side, and psychological distress and problems of well-being on the other side (Corcoran & McNulty, 2018). Attachment has been operationalized through two dimensions: attachment anxiety (negative self-perceptions of self, positive perceptions of others, indicates hyperactivating interpersonal strategy) and avoidance (positive perceptions of self, negative perceptions of others, indicates deactivating interpersonal strategy), as well as their combination (negative perception of self and others), with higher values on dimensions implying more insecure attachment (Wood & Riggs, 2009). Since attachment patterns may show continuity across time and across social contexts (Behrens, Hart & Parker, 2012), early attachment insecurity may persist into adulthood affecting adult relationships, such as partner relationships, through insecure romantic attachment styles. This may be associated with serious partner dysfunctions such as relationship dissatisfaction and even relationship violence (Lassri, Luyten, Cohen & Shahar, 2016; Godbout et al., 2017), contributing to further problems of global functioning.

2.3.6. Benevolent childhood experiences and ACEs

Contemporary literature attributed more attention to the positive childhood experiences that have benevolent influences on child development, and that can even counteract the pernicious effects of adverse experiences (Narayan, Rivera, Bernstein, Harris & Lieberman, 2018). Benevolent childhood experiences refer to the positive early social bonds such as good relationship and secure attachment with a caregiver, as well as a positive sense of self, both of which provide the basis for future healthy relationships (Cicchetti & Toth, 2009; Narayan et al., 2018). Further, it involves having a predictable home routine, such as regular meals or bedtime (Narayan et al., 2018). Within the ecological-transactional perspective, developmental benefits do not only depend on internal and familial factors, but also on relationships with friends, peers at school, teachers, neighbours, mentors and figures in the community (Annan, Blattman & Horton, 2006; Narayan et al., 2018). Therefore, so-called Benevolent Childhood Experiences (BCEs) are described as promotive factors that directly reduce the risk for psychopathology and stress, among both those with low and with high levels of childhood adversity. Consequently, BCEs should be considered as an unavoidable companion to any research of ACE effects on adult functioning.

2.3.7. Parenting disciplinary practices and ACEs

Although harsh parenting discipline such as physical discipline has been recognized as a risk factor for various adverse outcomes in childhood and adulthood, with a very thin and unclear line between this way of disciplining a child and maltreating a child, this disciplinary strategy is still present worldwide, and even in countries that legally ban such practices (Witt et al., 2017). It has been suggested that spanking is transmitted across generations (Witt et al., 2017; Wang, Hing & Xing, 2018), which creates a possible risk of intergenerational transmission of child maltreatment (Mitkovic Voncina et al., 2017). Even before someone becomes a parent, attitudes toward parenting practices are being created (Mitkovic Voncina et al., 2017). These may serve as a primer of this intergenerational transmission, since it has been shown that attitudes toward corporal punishment mediate the link between

experiencing and perpetuating this form of discipline (Wang et al., 2018) and that maternal negative parental attributions were found to mediate the relationship between parental stress and harsh/abusive discipline towards child (Beckerman, van Berkel, Mesman & Alink, 2017). The reason spanking would be internalized as positive after maltreatment may be related to not being adapted to own early adversity, in terms of either attributing the responsibility for the maltreatment to the self (“it’s my fault”), or attempting to diminish the significance by denying that maltreatment happened (“it was not really maltreatment, it taught me a lesson”) (Murphy et al., 2014). Therefore, assessing attitudes toward corporal punishment in the context of own childhood adversity is warranted, even before someone becomes a parent.

2.3.8. Education and ACEs

There is a growing awareness of the impact of childhood adversity and maltreatment on educational (Goodman, Miller & West-Olatunji, 2012; Porche, Fortuna, Lin & Alegria, 2011) and occupational outcomes (Giovannelli, Reynolds, Mondri & Ou, 2016). It has been noticed, a few decades ago, that academic problems co-occur with the manifestations of emotional distress and maltreatment (Roeser, Eccles & Srobel, 1998; Porche, Costello & Rosen-Reynoso, 2016). The prevalence of academic difficulties among maltreated children is perceived as an urgent problem because academic success contributes very strongly to resilience (Schelble, Franks & Miller, 2010).

Numerous hypotheses were tested in order to explain the relationship. It has been assumed that stressful experiences during childhood may contribute to structural changes in the brain (Deblinger, Mannarino, Cohen & Steer, 2006; Teicher et al., 2003; Weber & Reynolds, 2004) or to the modification of neurotransmitter activity (Bremner, Davis, Southwick, Krystal & Charney, 1994), which may contribute to learning problems. Roeser and associates (1998) stated that persistent negative emotions possibly resulting from adverse experiences produce memory and attention bias. The presence of these emotions enhances memories of the past academic difficulties or failures. At the same time, a child’s attention is organized around the potential source of future failure. This type of memory and attention bias could cause academic difficulties and increased dissatisfaction with school performance.

The ACE effects on learning can be seen early on in education. In the study of Jimenez and associates (Jimenez, Wade, Lin, Morrow & Reichman, 2016) children experiencing ACEs before the age of 5 were facing below-average, teacher-reported academic and literacy skills and behaviour problems in kindergarten. The epidemiological study of ACEs among US children from the years 2011–2012 revealed that children adolescents (6–17 years old), with two or more adverse childhood experiences, were 2.67 times more likely to repeat a grade in school compared to children without any of the experiences (Bethell, Newacheck, Hawes & Halfon, 2014). Furthermore, children without ACEs had 2.59 greater odds of being engaged in school, compared to their peers with two or more such experiences. Maltreated children fall behind their peers in school, as they score significantly lower on standardized maths and reading tests. They are also more likely to be identified as needing special education and to be held back at least one grade (Ryan et al., 2018). Association between ACE and academic achievements has been shown in college students as well. Students who entered college with post-traumatic stress disorder had difficulties with sleep and concentration, which impacted their ability to persist with academic assignments even when tasks are difficult (Boyras, Granda, Baker, Tidwell & Waits, 2015).

Research results among the adults also support the relationship between ACEs and educational and occupational outcomes. This is expected, since learning difficulties and low academic achievement during childhood compromise adulthood success in educational, occupational and socioeconomic domains (Evans & Kim, 2010; Sansone, Leung, & Wiederman, 2012; Zielinski, 2009). It has been shown that multiple ACEs result in lower educational achievement, leading to financial insecurity that then increases the risk of adult life problems such as homelessness, marital conflict, injuries and unemployment (Nurius et al., 2015). Adults who were maltreated as children are two times more likely to have low educational qualifications or not be in education, employment or training (Jaffee et al., 2018). Abused and neglected young people have a greater probability of failing to complete high school or not be engaged in either study or employment at age 21 (Mills et al., 2018). In other words, only 58% of the maltreated adolescents complete their education, which is about 15% less than the national average of education competition in the United States of America (Cage, 2018).

School-level factors may serve as protective against the negative effects of the ACE. Positive school experiences, good relationship with teachers and peers and school engagement could enhance resilience to childhood maltreatment (Gilligan, 2000; Williams & Nelson-Gardell, 2012). Helping maltreated children to regulate their emotions during their school hours may have long-term benefits associated with academic performance (Schelble, Franks & Miller, 2010). Engagement in extracurricular activities, satisfaction with school and not being bullied were most important in facilitating resilience in educational attainment, self-esteem and well-being, and school-based interventions are recommended to promote positive adaptation following parental maltreatment (Khambati, Mahedy, Heron & Emond, 2018). Extracurricular activities in schools also provide opportunities to set goals, practice independence and connect with other peers (Peck, Roeser, Zarrett & Eccles, 2008), which encourages academic resilience.

2.3.9. ACEs and well-being

As mentioned earlier, a growing body of research confirmed that ACEs were significantly associated with various mental and physical illnesses. However, health cannot be defined only through the absence of disease or infirmity, but must be operationalized through a state of complete physical, mental and social well-being (Jahoda, 1958). Mental well-being involves several domains such as: feeling optimistic about the future, feeling useful, feeling relaxed, dealing with problems well, thinking clearly, feeling close to other people, being able to make up one's own mind about things (Hughes, Lowel, Quigg & Bellis, 2016).

A nationally representative household survey of English adults, using the ACE framework, found a relationship between childhood adversity and markers of mental well-being and life satisfaction (Hughes et al., 2016; Nurius, Green, Logan-Greene & Borja, 2015). Similarly, a representative population-based health survey by Nurius and associates (2015) demonstrated the relationship between ACEs and perceived well-being, with higher ACE scores being associated with poorer adult outcomes, including low socioeconomic status and diminished resilience resources, each of which influenced perceived well-being. Well-being is associated with self-perceived health, longevity, healthy behaviours, mental and physical illness, social connectedness, productivity, and factors in the physical and social environment. Well-being integrates mental health (mind) and physical health (body) resulting in more holistic approaches to disease prevention and health promotion (Diener et al., 2009; Dunn, 1973).

2.4. STUDY OBJECTIVES

The purpose of the research is to explore the prevalence of ACEs and their psychological, medical and education outcomes on a nationally representative sample of adults 18–65 years old in Serbia.

The main goals of the study are to:

- ▶ investigate the prevalence of ACEs during the first 18 years of life, their interrelations and sociodemographic correlates;
- ▶ investigate the associations of ACEs and ACE scores with problems of physical health;
- ▶ investigate the associations of ACEs and ACE scores with trauma-related mental health problems, substance abuse, suicide, non-suicidal self-injury (NSSI);
- ▶ investigate the associations of ACEs and ACE scores with personality traits;
- ▶ investigate the associations of ACEs and ACE scores with romantic attachment;
- ▶ investigate the prevalence and protective effects of benevolent childhood experiences on trauma-related mental health problems;
- ▶ investigate the associations of ACEs and ACE scores with attitudes towards corporal punishment as a parental disciplinary practice;
- ▶ investigate the associations of ACEs and ACE scores with educational and occupational variables.

3. METHODS

The ACE survey was conducted as a cross-sectional research, conducted through a face-to-face methodology of data collection, through computer-assisted personal interviewing (CAPI). Trained research-assistants (30) were hired to collect data. An online platform was used for questionnaire administration, which was administered by the trained research assistants (RA). After the introduction, respondents were filling the questionnaire using a tablet, and those who were not familiar with tablet use were given a paper form of the questionnaire. If respondents had difficulties reading, RAs helped the participants in filling the questionnaire through a “face-to-face” interview. For these participants, answers were entered into the database by the RAs. Adults who could not comprehend questions due to mental/intellectual disability were excluded from the survey.

The questionnaire was administered to the sample representative for the population of Serbian adults, aged 18–65. This kind of sample ensures reliable analysis on the level of categories of the region, type of settlement (urban/other) and various sociodemographic characteristics of participants. Initially, the plan was to collect data on 3,000 adult participants, aged 18 to 65. The sample size was determined based on several parameters, including effect size, number of groups for sample disaggregation, and assumed response rate. Since a number of potentially comparable groups is relatively large, and effect sizes reported in the literature are considered small, the required sample size was around 2,000–2,500 participants. Taking into account reported response rates in Serbia, of 39.7% to 66.7%, in some recent studies for face-to-face interviewing (Božnić et al., 2017; Kilibarda, Czech, Sieroslowski, Gudelj Rakić & Martens, 2014), the estimation was that a starting point of 3,000 participants would be enough to reach the required minimum of 2,000 respondents. The final sample consisted of 2,792 participants.

The sampling plan included multistage random sampling, with a stratified cluster sample in the first stage, and random sample in the second stage. In the first stage, the stratification variables used were region and type of settlement (urban-rural). First, we divided Serbia into regions (Vojvodina, Belgrade, East and South Serbia, West Serbia and Sumadija). Since cluster random sample requires sampling of certain groups/clusters, we used municipalities in Serbia as clusters to be sampled. Further on, for each region, municipalities were randomly sampled, proportional to the size of the region and settlement type (urban-rural). For the random choice of participants, in each sampled municipality, we used a random-walk technique. The RA started interviewing from some central point in each municipality, turned right on each street, entered every third house/building on that street, and then entered every second apartment. If there was more than one eligible person in the household unit the person whose birthday was closest to the day of testing was selected as the respondent.

Statistical analyses included descriptive methods (frequencies, percentages, means, standard deviations), methods testing differences between groups (ANOVA, t-tests) and associations of categorical or quantitative variables (Chi-square, Pearson’s and Spearman’s correlations), as well as multivariate testing (linear and logistic regressions, Canonical Correlation Analysis, moderation and mediation analysis based on ordinary least square regression within path analysis method, using bootstrapping confidence intervals (macro PROCESS (Hayes, 2013)). All analyses were conducted in SPSS software, version 20.

If a certain result is statistically significant it means that it can be considered as an effect which truly exists in a population, while if something is not statistically significant, it means that those results are accidentally obtained on an examined sample, and the effect cannot be considered as something truly existent in a population. Statistically significant results are marked with stars (*), and the following markings were used to indicate the usual levels of statistical significance:

- one star (*) indicates statistical significance at 0.05 level; this provides 95% certainty of true effect;
- two stars (**) indicate statistical significance at 0.01 level; this provides 99% certainty of true effect.

Bonferroni correction of statistical significance level (level of statistical significance is reached by dividing 0.05 with the number of comparisons) was performed in cases in which multiple differences or correlations were tested, in order to avoid accidental effects.

3.1. INSTRUMENTS

The core research instrument package was developed based on the methodology recommended by the United States Centers for Disease Control and Prevention and WHO. It included questionnaires assessing ACEs, and personal and family health history. All instruments were administered in self-report form, and questions were tailored to be gender-specific.

3.1.1. ACE International Questionnaire

To assess adverse childhood experiences, we used two versions of ACE questionnaires: the ACE-International Questionnaire (ACE-IQ) (available at: www.who.int/violence_injury_prevention/violence/activities/adverse_childhood_experiences/questionnaire.pdf), and the previously modified version of the ACE-IQ for the purposes of ACE study on the student population in Serbia (Paunovic et al., 2015). For the analysis in this report, we used data from the latter, which represents a modification of ACE-IQ. All of the questions used in this study to determine childhood experiences were introduced with the phrase “While you were growing up during your first 18 years of life ...” (Felitti et al., 1998). The questionnaire provided an assessment of 18 ACEs. However, due to technical problems caused by the application used for online questionnaire administration, questions related to peer sexual violence and parental death were omitted. Finally, 17 different types of ACE were assessed: physical abuse, psychological abuse, sexual abuse, alcoholism in family, drug abuse in family, depression or any other mental illness in family, suicide in family, incarceration of family member, abuse of mother by partner, abuse of father by partner, parent separation, psychological neglect, physical neglect, bullying, involvement in physical fight, community violence and collective violence.

The ACE score is a measure of cumulative exposure to adverse childhood conditions. Exposure to any single ACE condition is counted as one point. Points are then tallied for a final ACE score. If a person experienced none of the conditions in childhood, the ACE score is zero. It is important to note that the ACE score does not capture the frequency or severity of any given ACE in a person’s life, focusing instead on the number of ACE conditions experienced.

Each ACE was represented by a binary variable according to the scoring keys provided. Questions on various types of child maltreatment (except sexual abuse), community violence and collective violence, as well as involvement in physical fight had the four-point Likert response scale (*never, once or twice, a few times, and many times*), whereas the remaining ACE questions were answered in a dichotomous way (*yes/no*). Specific types of adverse experiences represented by the Likert response scale, were assessed using multiple questions and were scored in two ways, as **any** and **frequent** ACE, i.e., using a *less severe* and a *more severe* criterion, respectively.

Using a *less severe* criterion, we considered that a participant had a specific ACE if he or she reported experiencing events from this domain at least “*once or twice*”. Variables representing each ACE were then labelled as “**any ACE**” (implying that any, even occasional presence of adverse event was taken into account).

Using a *more severe* criterion, we considered that a participant had a specific ACE only if he or she reported experiencing events from this domain “*many times*”. Variables representing each ACE were then labelled as “**frequent ACE**” (implying that only frequent, i.e. severe adverse event was taken into account).

These different methods of scoring were used only for those ACEs that were assessed through questions with ordinal responses (*never, once or twice, a few times, many times*), whereas those ACEs represented by questions with binary responses (*yes or no*) were scored positive if answered *yes*, in both scoring methods. In other words, all ACEs had *any score*, but only those which were represented through scaled responses had *frequent scores*, too. In some analyses, in order to have a full range of different ACEs with frequent scores, we added binary scores for those

which did not have frequent ones. For instance, when we calculated ACE frequent total score, besides frequent, we included binary scores for ACEs which had only those, in order to have all ACE types included.

Each ACE that was marked as present was scored as one point. Total ACE scores, the “any ACE score” and the “frequent ACE score” were then calculated as a sum of points, according to the two aforementioned ways of scoring, representing the diversity of less severe (any) or more severe (frequent) ACEs.

3.1.2. Health Appraisal Questionnaire

Questions about health-related behaviours and health problems were taken from health surveys directed by the Centers for Disease Control and Prevention: The Behavioural Risk Factor Surveys (Siegel et al., 1992) and the Third National Health and Nutrition Examination Survey (Andersen et al., 1998). This questionnaire was slightly altered with questions about depression being taken from the Diagnostic Interview Schedule of the National Institute of Mental Health (NIMH) (Robins et al., 1981).

3.1.3. Family Health History Questionnaire

This questionnaire was primarily designed to facilitate and accelerate the data collection about the current physical and mental state of patients (Pecoraro, Inui, Chen, Plorde & Heller, 1979). It consists of lists of physical and mental illnesses, unhealthy habits, etc. For each item, respondents answer if they have ever experienced the condition or problem listed. Some of the items target the health problems of their family members. The average Cohen’s kappa coefficient is 0.794. Additionally, the questionnaire aimed to assess psychiatric symptoms, basic personality traits, attachment, and parenting cognitions.

3.1.4. Trauma Symptom Checklist (TSC-40)

The TSC-40 is a research measure that evaluates symptomatology associated with childhood or adult traumatic experiences in adults (Elliott & Briere, 1992). This is a revision of the earlier TSC-33 version (Briere & Runtz, 1989). The TSC-40 assesses trauma symptoms such as anxiety, depression, dissociation, sexual problems and sleep disturbance. It contains 40 items with a joint 4-point Likert-type scale ranging from 1 (never) to 4 (often). In addition to the total TSC-40 score, the questionnaire allows for calculation of six subscores: Anxiety ($\alpha=0.66$), Depression ($\alpha=0.70$), Dissociation ($\alpha=0.64$), Sexual Abuse Trauma Index ($\alpha=0.62$), Sexual Problems ($\alpha=0.73$) and Sleep Disturbance ($\alpha=0.77$). Total TSC-40 score demonstrates highly reliability (Cronbach’s $\alpha=0.90$).

3.1.5. Benevolent Childhood Experience scale (BCE)

Contains a 10-item checklist of positive experiences between ages 0–18. Items are assessing perceived relational and internal safety and security (e.g., at least one safe caregiver, beliefs that gave comfort), positive and predictable quality of life (e.g., enjoyment of school, regular meals and bedtime), and interpersonal support (e.g., a teacher who cared, a supportive non-caregiver adult) (Narayan et al., 2017).

3.1.6. Experiences in Close Relationships-Revised (ECR-R)

Assesses adult romantic partner attachment, through 36 items with 7-point Likert-type rating scale ranging from 1 (disagree strongly) to 7 (agree strongly) (Fraley, Waller & Brennan, 2000). Two attachment dimensions, Anxiety (level of insecurity related to the partner’s availability or responsiveness) and Avoidance (level of discomfort in being close to or depending on the partner), are assessed via 18 items. Cronbach’s alpha for Anxiety scale is 0.90 and for Avoidance scale is 0.89.

3.1.7. Basic personality traits — HEXACO

For measurement of the six basic personality traits the HEXACO-60 was used (Ashton & Lee, 2005). Each of the six traits (Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience) is assessed via 10 items with joint 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Internal consistency ranges from 0.77 to 0.80 in the college sample and from 0.73 to 0.80 in the community sample (Ashton & Lee, 2009).

3.1.8. Disintegration trait–DELTA scale

In addition to HEXACO, we assessed Disintegration trait, using a DELTA scale consisting of 20 items with joint 5-point Likert-type scale (Knežević et al., 2017). Cronbach Alphas of the DELTA subscales were found to be high, ranging from 0.76 (for Flattened Affect) to 0.89 (Perceptual Distortions and Depression), while Cronbach Alpha for total scale was 0.90.

3.1.9. Non-suicidal self-injury (NSSI) questionnaire

NSSI was designed for this study. It was based on several questionnaires such as Deliberate Self-Harm Inventory (DSHI) (Gratz, 2001; Lundh, Karim & Quilisch, 2007), Inventory of Statements About Self-Injury (ISAS) (Klonsky & Glenn, 2009), Ottawa Self-Injury Inventory (OSI) (Martin et al., 2013) and Self-Harm Behaviour Questionnaire (SHBQ) (Gutierrez et al., 2001). The questionnaire starts with the general question “Have you deliberately inflicted physical injury to yourself without the desire to kill yourself?” after which the most common forms of these behaviours are listed. The questionnaire ends with a question “Have you deliberately inflicted some of these injuries to yourself, which led to medical interventions or hospital treatment?” The NSSI contains 12 items with joint binary (yes or no) and numeric (how many times) responses. Respondents had to provide answers for each question with respect to two time periods: before and after the age of 18. NSSI behaviours are most common in adolescence (Brown & Plener, 2017). The second time period, after the age of 18, designated the coming of age in Serbia, when adolescents are legally allowed to engage in some activities (e.g. driving), and some forms of these behaviours are risky, such as smoking, drinking. Although they get involved with these risky behaviours even before the age of 18, once they are 18 years old, risky activities become more accessible to them.

Items dedicated to **general information, sociodemographic characteristics** and **education** not covered by other questionnaires, as well as questions on **parenting attitudes such as supporting corporal punishment** were created for the purpose of this study and added to the mentioned instruments.

These questionnaires were translated and back-translated by experts fluent in both English and Serbian. Translation equivalence was analysed and items were adjusted to fit local requirements.

3.2. PILOT STUDY

Questionnaires were pre-tested on a pilot sample of 64 volunteers. The link with the survey was distributed online to students and their friends and relatives. The average age of participants in the pilot study was 30.13 (SD=11.95), 81.25% females. The average time necessary to complete the survey was 58.24 minutes, while the minimum was 23 minutes. Only two out of 64 participants needed around 3 hours to complete all questionnaires (183 and 189 minutes) but they were outliers since the third longest time was around 2 hours. The majority of the participants did not find any serious obstacles to filling the forms: on average they rated the complexity of the questionnaire 1.94 (on a scale ranging from 1 to 5), and arduousness 2.4 on average (on a scale from 1 to 5). Based on the data collected in the pilot study and the obtained results, instruments were revised and finalized upon receiving feedback to the research protocol.

3.3. FOCUS GROUP WITH RESEARCH ASSISTANTS

The focus group with research assistants (RA) was organized to gather information about their positive and negative experiences during three months of field work. The majority of the RAs (26 out of 30) attended the focus groups. Focus groups were organized with two aims: 1) to collect qualitative data on the survey procedure itself (e.g., estimate of the rejection rate and potential solutions for this issue, the responses that might influence the validity of the data, unpleasant situations that the RAs faced, and personal experiences of the RAs and the evaluation of the training); and 2) as a debrief procedure for the RAs. The RAs estimated that the rejection rate was higher in urban areas (ranging from 83% to 96%) than in rural areas (ranging from 50% to 86%), but both rates were very high, which was not expected. RAs reported that an in-kind incentive would have improved the response rate. Another important issue that emerged was the resistance to use a tablet, mostly by older respondents from rural areas. Therefore, data in rural areas were more often collected using paper and pencil, especially from older respondents in these areas. In most cases, the respondents commented on the length of the survey (they evaluated it as too long), and the similarity of some questions in both the ECR-R and HEXACO questionnaires. In addition, the RAs expressed certain concerns regarding the response bias (socially desirable responding and impression management) and response set (random filling in, yes- and no-persons, etc.).

The second part of the focus group was aimed to serve as a debrief procedure for the RAs. They reported that respondents were experiencing unpleasantness when responding to the questions with troubling content (rape, abuse, death). Another issue that emerged was an inadequate treatment of the RAs by the potential respondents (insults, ignorance, etc.). The RAs evaluated the training programme as very helpful in preparing them for the field work, but they also suggested that it might be beneficial for the RAs if support groups with professionals were organized during the field work (e.g., once per month).

3.4. LIMITATIONS

Along with specific strengths, this study also had certain methodological limitations. The first limitation refers to the cross-sectional study design, which does not allow for conclusions on causal relationships. In other words, assessing histories of ACEs and outcome related variables at the same moment of time cannot provide information about what is the cause and what is the consequence. Therefore, examined effects will only be considered as correlations, excluding causal interpretations.

Furthermore, using the retrospective self-report as a method of data collection results in danger of recall bias, meaning that the current memories of past experiences may not be as correct and objective. It is particularly limiting for early experiences of ACE that could have happened in the early years of life and which participants cannot recall — but which could have left huge consequences. In addition, due to the presence of research assistants, there was a greater possibility of socially desirable responding and impression management. Also, the self-report method increased the chance of bias in terms of the response set (random filling in, yes- and no-persons, etc.).

Although the ACE questionnaire has largely been used internationally, this study used a partly modified version, to provide comparisons with the previous ACE study done in Serbia. However, this modification implies limited reliability of any direct comparisons with ACE studies from other countries, done with different versions of the ACE questionnaire. But since it is quite comprehensive, it leaves a possibility to calculate scores in different manners, and to make comparisons with other studies possible. Furthermore, although the ACE questionnaire provides data about memories of a palette of adverse experiences, it cannot provide quantitative information on the true intensity of each adverse experience (such as child maltreatment experiences) or the total score of adversity intensity.

Finally, this study may be limited by selection bias, in terms of having a greater chance to participate in the study if spending more time at home (unemployed, retired persons). Also, we recognized that our sample has bias toward more educated and employed people, due to response bias toward participants with higher education and employment rate.

3.5. REVIEW PROCESS

A Steering Committee (SC) was established and chaired by the Institute of Psychology with members from the Institute of Mental Health, World Health Organization (WHO), Serbian Ministry of Health and UNICEF. The SC played the role of the Reference Group for the research and organized the review process in a systematic, consultative manner. The SC provided ongoing technical and practical guide to the research as required. The members of the SC reviewed and provided comments on the concept note (ToR), inception report (research protocol), draft report(s) and the final report prior to its approval, suggested steps for improvement or other actions, and recommend relevant clearance/approvals. The research protocol (inception report) was reviewed by the independent agency contracted by UNICEF, while the draft research report will be reviewed by both the contracted agency and UNICEF Regional Office technical advisers.

3.6. ETHICS

The ethical safeguards were implemented in line with the **UNICEF Procedure for Ethical Standards in Research, Evaluation, Data Collection and Analysis** and in accordance with the UNICEF Strategic Guidance Note on Institutionalizing Ethical Practice for UNICEF Research.

Confidentiality and privacy were guaranteed for all participants, and they received all necessary information about the potential risks and benefits from participating in this research before being given questionnaires, so that they could individually make a decision about participation in this research. Participants signed consent forms prior to the interview, and a copy of the form was handed over to them. The second signed copy was stored at the Institute of Psychology in a locked cabinet to which only members of the research team have access. Signed consent forms will be stored for one year after the fieldwork is completed and after that destroyed using a shredder.

Respondents participated in the study anonymously. Collected data is stored in the application's cloud. Only research team members will have access to the data. The application uses Firebase Google cloud storage, which is a real-time database, using GDPR security standards. The questionnaires that were collected in a paper form (due to participants lacking knowledge on the use of tablets) are stored at the Institute of Psychology in a locked cabinet to which only team members have access.

None of the respondents were minors. The questionnaire was gender-sensitive. Data were completely anonymous. All participants signed informed consent and all procedures adhered to the principles of the Declaration of Helsinki. Participants could withdraw their consent at any time and could ask for their data to be deleted.

The protocol and the survey were approved by the Institutional Review Board of the Institute of Mental Health, Belgrade, Serbia.

3.7. MANAGEMENT

The research was implemented by the Institute of Psychology, Faculty of Philosophy, University of Belgrade, in the period from November 2017 until November 2018. The Institute for Mental Health, Belgrade, Serbia, was the main partner of the Institute of Psychology and provided its contribution through development of research instruments and methodology, inputs and participating in the training of interviewers, data analysis, report writing and journal publishing. The expert group consists of professionals from both parties. The expert group participated in development of the methodology and research instruments, in the training for interviewers and drafting of the final report. The principal researcher/expert group coordinator led the development of research instruments, provided inputs and participated in the training of interviewers, led data analysis and report writing and overall management of the research, and coordination of all research teams and phases. The survey coordinator worked on overall management of the research and coordination of all research teams and phases,

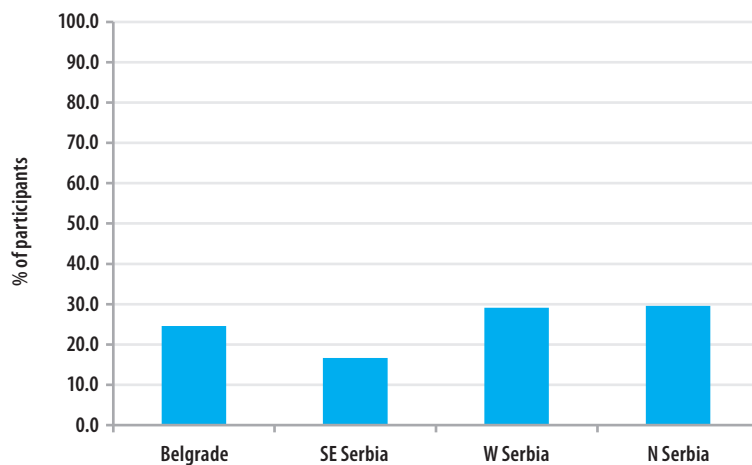
participated in development of the methodology and training of interviewers. The sampling and data processing expert worked on selection of the sample, development of the CAPI application, and management of data processing. The fieldwork coordinator organized and managed the training and fieldwork, logistic support to interviewers, and organization of fieldwork monitoring.

4. RESULTS

4.1. SAMPLE DESCRIPTION

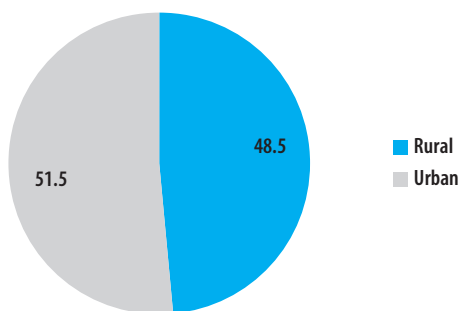
The study was conducted on a sample representative for the population of Serbia. In total, the final sample consisted of 2,792 respondents. Among study participants, 25% (N=667) were from the metro area of the capital (Belgrade and suburban municipalities), 17% from south-east Serbia (N=453), 28.3% from western (N=755), and 29.8% from northern Serbia (Vojvodina region) (N=796) (see Figure 1). For remaining participants data about region were missing.

Figure 1. The regional distribution of the sample in percentages



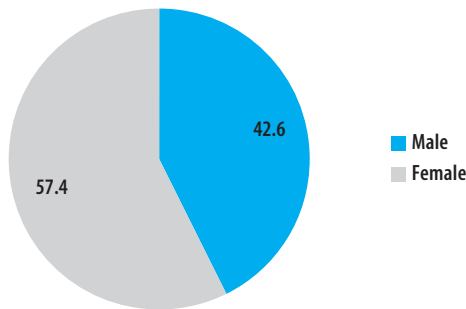
The respondents from urban and rural areas were almost equally represented in the sample (urban N=1,378 (51.5%), rural N=1,293 (48.5%)), Figure 2. According to the 2011 census, rural areas are a bit less represented (40.56%) than in our sample.

Figure 2. The urban-rural distribution of the sample in percentages



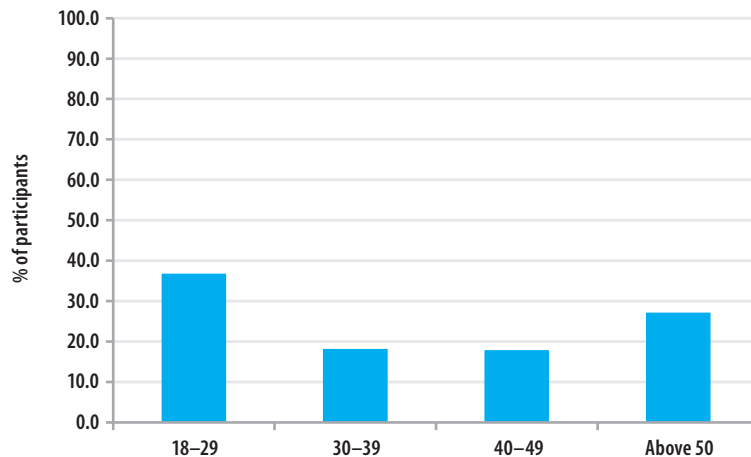
Females were slightly more represented in the sample (57.4%, N=1,573) compared to males (42.6%, N=1,169), Figure 3. This deviates slightly from population values according to the 2011 census, 48.69% males and 51.31% females, which is probably due to response bias.

Figure 3. The gender ratio in the sample in percentages



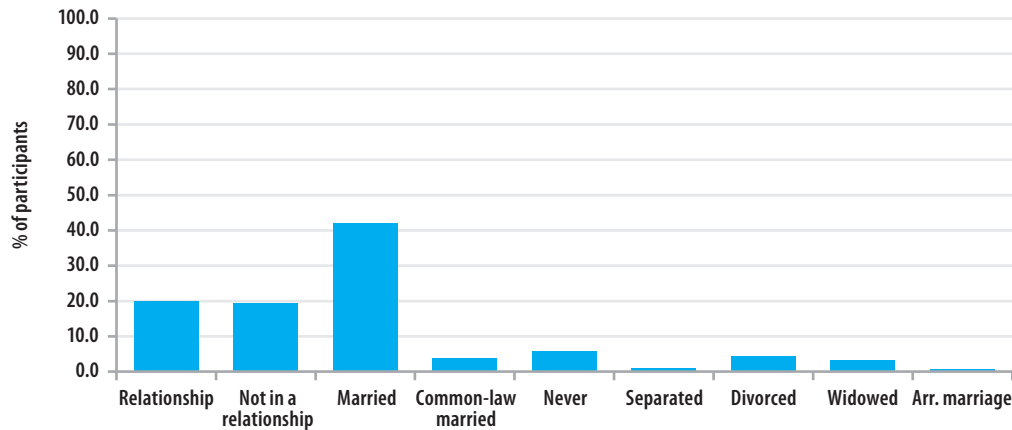
Regarding age, we divided our sample into four groups (Figure 4). We can see that the youngest group (age 18–29) is most frequent (36.8%), followed by the oldest group, above age 50 (27.1%). The two middle age groups are a bit less represented, 18.2% for age group 30–39 and 17.9% for age group 40–49. This distribution deviates slightly from the population, according to the 2011 census (23.68%, 21.63%, 20.83% and 33.86% respectively for the four mentioned age groups). This difference is probably due to response bias.

Figure 4. Distribution of age groups in our sample (percentages)



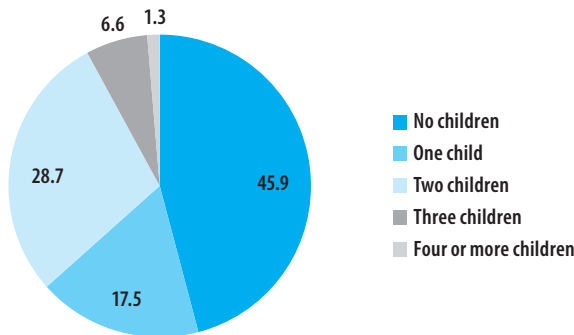
When it comes to romantic relationship status, 42% of respondents reported being married, 20.1% in a relationship but not married, and 3.9% in common-law marriage, whereas 3.4% were widowed, 4.5% divorced, and 0.9% separated. Participants currently not in a relationship constituted 19.4%, while 5.9% were never involved in a romantic relationship. Twenty-three persons (0.8%) did not choose their spouse, i.e., their marriages were pre-arranged. Results are displayed in Figure 5. According to 2011 census data, in similar age groups one should expect 55.13% married, 9.95% widowed, 4.98% divorced, 4.15% in common-law marriage, and 25.79% single individuals, which resembles the distribution in our sample.

Figure 5. Sample distribution in percentages by marital/relationship status

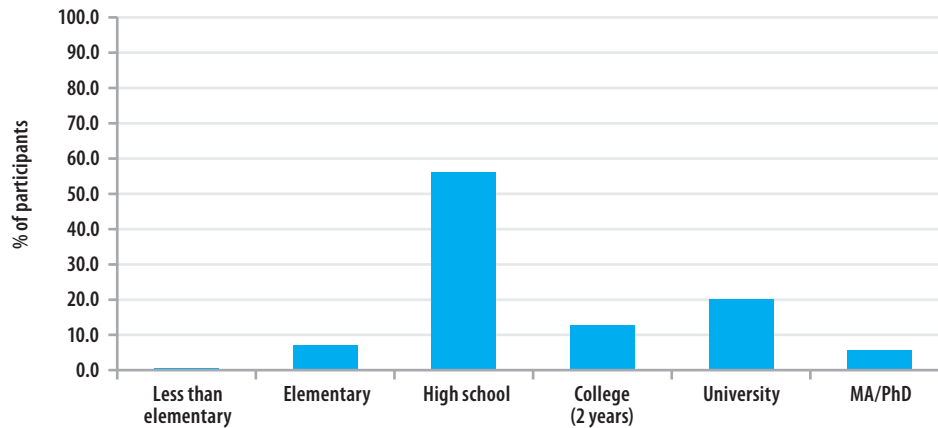


Almost half of the respondents (45.9%) do not have children. One third of the sample (28.7%) have two children, 17.5% one child, and 6.6% three children. Only 1.3% of people in our sample have more than three children. Results are displayed in Figure 6.

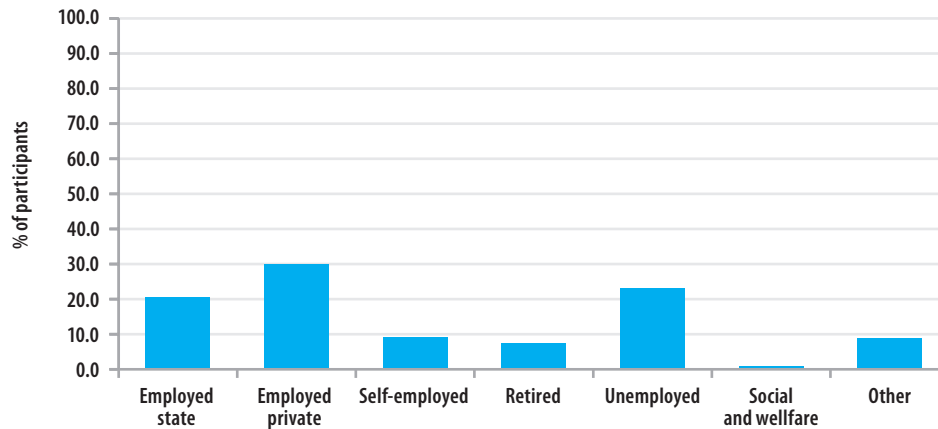
Figure 6. The distribution of the number of children per respondent, in percentages



Only 5 persons (0.2%) did not finish elementary school, while 180 (6.6%) dropped out after elementary school. The majority of respondents completed high school (55.9%), 12.4% completed college — two-year programme, 19.8% completed university — four-year programme and only 5.1% have a masters degree or PhD. Results are displayed in Figure 7, and they deviate from education level distribution in the population according to the 2011 census (13.73% less than elementary, 20.84% elementary, 49.13% high school, 5.68% college and 10.63% university and above). Deviations are mainly due to selected age groups (18–65 in our sample) but also due to response bias toward participants with higher education. This might have implications on the results in terms of education outcomes and employment.

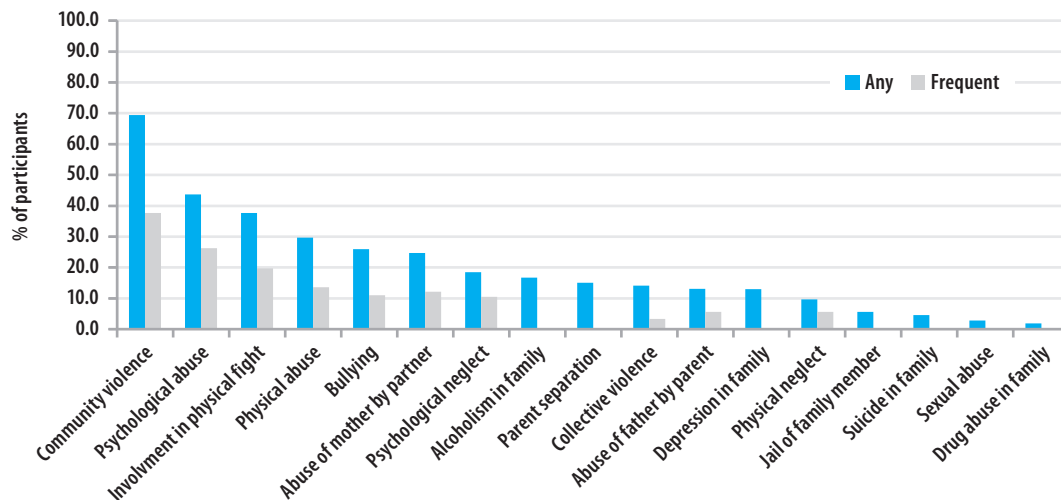
Figure 7. The education level distribution (percentages)

According to employment status, 59.59% of the sample was employed (in state and private companies or self-employed), 7.51% was retired, 23.2% described themselves as unemployed, while 0.82% uses social and welfare services. According to the 2011 census, 42.57% of the population in same age group as our sample is employed, which is less than we found.

Figure 8. The employment status distribution (percentages)

4.2. ADVERSE CHILDHOOD EXPERIENCES

First, full distribution of two types of measures, any and frequent ACE, are presented (Figure 9 and Table 1). Some ACE types do not have frequent scores since they were measured only through binary questions (0-not present or 1-present). In these data it is possible to notice frequency of appearance for each individual ACE type in the sample in its full range. No statistically significant differences regarding ACE scores were found between different ways of filling the questionnaire (using a tablet or paper form).

Figure 9. The prevalence, in percentages, of ACEs obtained using two scoring methods**Table 1.** The prevalence of individual ACE types in percentages, obtained using two scoring methods (for some ACE types frequent scores do not exist)

Type of adverse event	Any %	Frequent %
Physical abuse	29.7	13.6
Psychological abuse	43.7	26.3
Sexual abuse	2.8	-
Alcoholism in family	16.7	-
Drug abuse in the family	1.9	-
Depression in family	13.0	-
Suicide in family	4.6	-
Incarceration of family member	5.6	-
Abuse of mother by partner	24.7	12.1
Abuse of father by partner	13.1	5.6
Parent separation	15.1	-
Psychological neglect	18.5	10.5
Physical neglect	9.7	5.6
Bullying	26.0	11.0
Involvement in a physical fight	37.7	19.7
Community violence	69.4	37.7
Collective violence	14.1	3.3

Further, the number of ACEs were categorized, according to usual cut-off scores, into four categories:

- 1) no ACE (frequency is 0),
- 2) one ACE,
- 3) two or three ACEs,
- 4) four or more ACEs.

This kind of categorization was done for the purpose of easier comparison of results with previous studies on ACE. When data were analysed taking into account even rare events (“any” ACE), 13.7% (N=366) of the participants reported no single ACE. One ACE was experienced by 16.3% (N=434), two or three by 29.0% (N=771), whereas the rest of respondents had four or more ACEs (41.0%; N=1,091).

Figure 10. Percentages of ACE categories when moderate criterion is observed

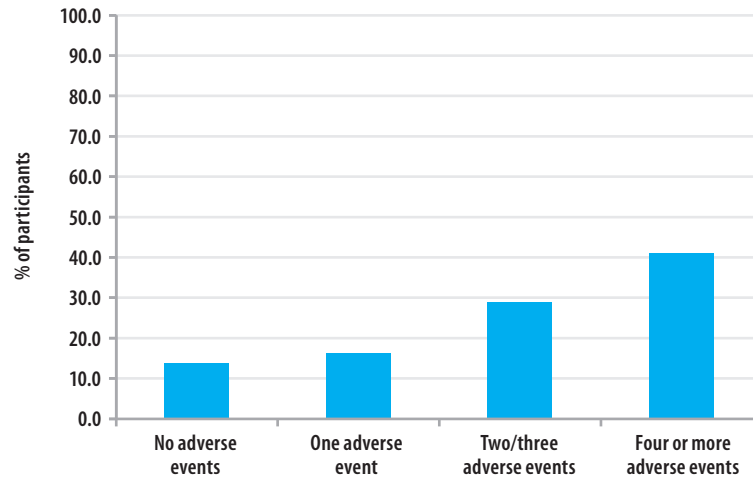
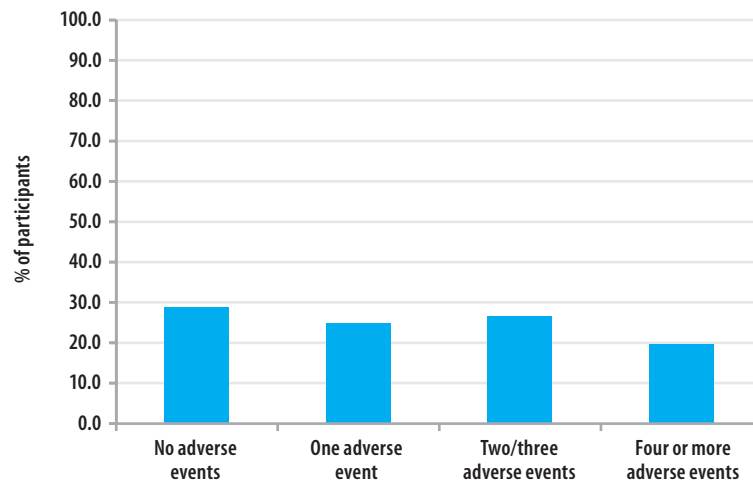


Figure 11. Percentages of ACE categories when frequent ACEs are considered



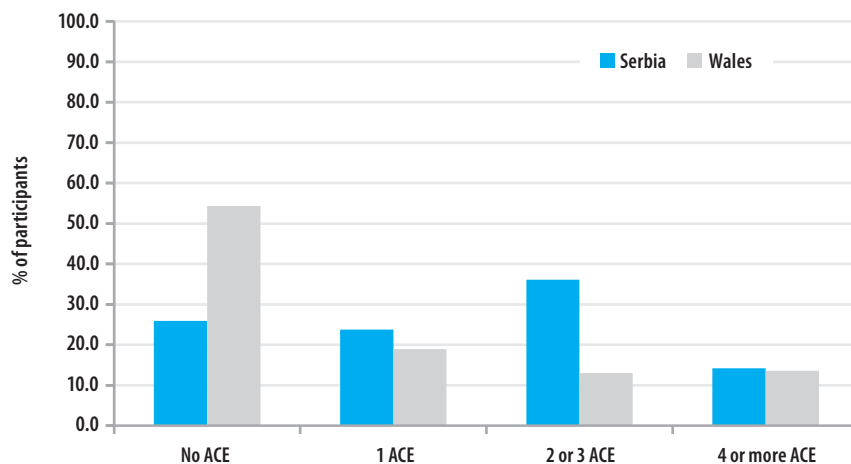
When only repeated events (“frequent” ACEs) are taken into account, one third of the sample did not experience a single adverse event (28.8%, N=767), the number of those with one frequent ACE is 25.0% (N=665), while those with two or three are similar (26.5%, N=706). One-fifth of the sample experienced four or more frequent ACEs (19.7%, N=524).

Comparison of our results with the survey of ACE among Serbian university students in 2013/2014 (WHO, 2015) was possible since we used same questionnaires and measures. In that previous study, around 50% of respondents did not experience a single ACE, while in our sample it was 13.7% for rare events (any score) and 28.8% for repeated events (frequent score). Discrepancy in results between the two studies might be related to differences in age

and education of participants. Namely, while the previous study was conducted among university students, the present study included the entire adult age range, where only 25% had a university education. Since more ACEs were associated with lower education and more drop-out from school in the present study (details available in the Results section on ACEs and education), higher ACEs frequency may actually derive from less educated portions of the sample. Also, possible higher prevalence of ACEs in our study might occur due to the fact that community violence had the highest prevalence. This can further be explained in the context of collective experience of wars, civil unrest, demonstrations, insecurity, etc., which all happened in Serbia in the previous three decades, and it possibly did not involve the present student population as much as it did other groups of participants. Therefore, we calculated distribution of ACE categories, based on frequent scores, without community violence and the data are much closer to the previous study (37.3% did not experience a single adverse event, 24.3% reported having one ACE, 23.1% having two or three, while 15.2% reported having four or more ACEs).

In order to compare our results to the Welsh ACE Study (Wales Audit Office, 2015), we recalculated ACE scores in the same manner as the authors in that study did. For scores calculated in that way, in the Wales study 54.9% of respondents did not experience a single ACE, while in our study it was 25.9%. Categories of people who experienced one ACE (18.98% in the Wales study compared to 23.8% in ours) and four and more ACEs (13.61% in Wales study compared to 14.2% in ours) were similar, while the category of those who experienced two or three events was more frequent in Serbia (Figure 12).

Figure 12. Comparison of ACE categories between Wales and Serbia (percentages) (scores are calculated as in the Wales study)

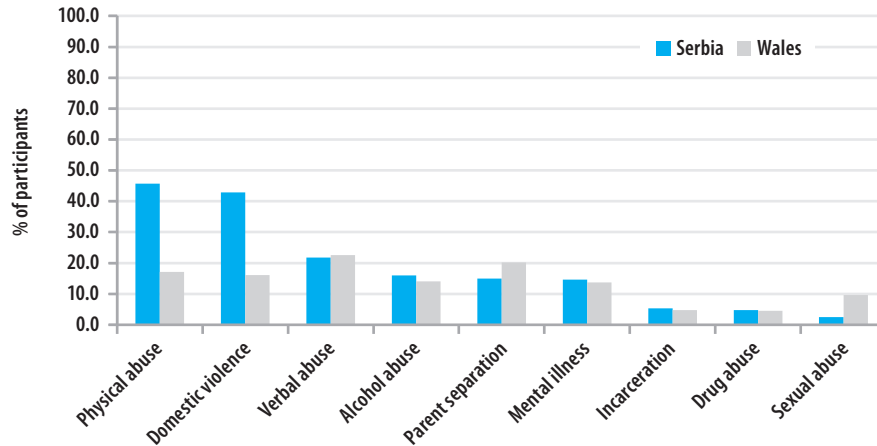


If we compare individual ACEs between the two studies, we can see that physical abuse (17.06% in the Wales study compared to 45.7% in ours) and domestic violence (16.07% in the Wales study compared to 42.9% in ours) are reported with much higher rates in Serbia than in Wales (Figure 13). On the other hand, parent separation (20.12% in the Wales study compared to 14.9% in ours) and sexual abuse (9.67% in the Wales study compared to 2.5% in ours) appeared a bit more frequently in the Wales sample. Other ACE types had similar reported rates in both studies.

The years of crisis in Serbia, which were accompanied with numerous acute and chronic stressors, have adversely affected the mental health of the population. The prolonged stress to which citizens of Serbia were exposed, caused significant psychological and social consequences, particularly among vulnerable individuals. The incidence of stress related disorders, psychosomatic illnesses, substance abuse and suicide is high, as well as delinquency and violence among young people (Lecic Tosevski et al., 2007) and could be connected with community violence. The findings of the international multicentric study carried out seven years after major trauma have shown that the prevalence of chronic post-traumatic stress disorder (PTSD) is still very high in the country (current

18.8%, life-time 32.3%) as well as of major depressive episode (current 26.2%, recurrent 14.4%) (Pribe et al., 2010). The persistent and chronic stress, war, poverty, constant financial and existential uncertainty have both general and individual implications. It is a chronic, collective traumatization and might be in connection with community violence.

Figure 13. Comparison of different ACE types between Wales and Serbia (percentages) (scores are calculated as in the Wales study)



4.2.1. The relationship between different types of ACEs

ACEs covered by this research are the following: physical abuse, emotional abuse, sexual abuse, alcoholism in the family, drug abuse in the family, depression or any other mental illness in the family, suicide in the family, incarceration of a family member, abuse of mother by her partner, abuse of father by his partner, parent separation, psychological neglect, physical neglect, bullying, involvement in physical fight, community violence and collective violence. Screening for a variety of ACEs enabled testing mutual relationship. It was analysed if different ACEs tend to group together based on some latent similarity. To test this, the factor analysis was used, principal components method, with varimax rotation of principal axes. As a criterion for factor extraction, Cattell's scatter diagram was used.

Results showed that the explored ACEs group into three different factors, or groups, regardless of the scoring method used. All ACEs that arrange together into one of the three groups have relatively high intercorrelations (among themselves), and relatively low, or no correlations with ACEs from the other two groups. In other words, ACEs from one group are related to each other, and the existence of one kind is related to a higher risk of other kinds from that same group.

In the first phase, ACEs were analysed when as a scoring method "any" was used.

1. The first factor or group consists of ACEs mostly related to physical abuse and violence, such as involvement in a physical fight, bullying, community violence, physical abuse, and collective violence. The only type of ACE diverging from the other forms in this group is psychological abuse. However, it correlates highly with other forms of ACEs. Having in mind the dominant content of this group (factor), we interpreted it as **violence** (Table 2). This finding shows that the appearance of one type of violence is related to the appearance of other types of violence.
2. The second factor includes ACEs such as depression in the family, suicide in the family, psychological neglect, sexual abuse and parental separation. Since most of these ACE types refer to some kind of neglect or retrieval, this group was interpreted as **neglect** related ACEs (Table 2). Based on the findings, one type of neglect-related behaviour is also accompanied with other types. For some of the ACEs in this group, it is hard to understand

why they belong here — for example, sexual abuse — but this finding does not mean that sexual abuse is a type of neglect, it just shows that it correlates with neglect types of ACE more than with other types of ACE. It could be concluded that sexual abuse appears often along with various types of neglect, such as depression in the family, suicide in the family, psychological neglect, and parental separation.

3. The third factor is related to adverse experiences such as alcoholism in the family, abuse of mother by her partner, abuse of father by his partner, incarceration of a family member, drug abuse in the family and physical neglect. Since most of these ACE types refer to abusive social interactions, we interpreted this group of ACEs as **abuse** (Table 2). As for the previous factors, we can conclude that one type of abuse is associated with other ACEs from this group. As for the previous group, it might be hard to understand why physical neglect fits into this group — and it does not mean that physical neglect is a type of abuse — it just shows that it correlates with abuse types of ACE more than with other types of ACE. Physical neglect appears often with various types of abuse (alcoholism in the family, abuse of mother by her partner, abuse of father by his partner, incarceration of a family member, drug abuse in the family).

Table 2. Factor loadings of ACEs — scoring method “any ACE”

Any Violence	Involvement in a physical fight	0.639
	Psychological abuse	0.602
	Bullying	0.586
	Community violence	0.575
	Physical abuse	0.559
	Collective violence	0.381
Any Neglect	Depression in family	0.705
	Suicide in family	0.615
	Psychological neglect	0.495
	Sexual abuse	0.435
	Parent separation	0.340
Any Abuse	Alcoholism in family	0.668
	Abuse of mother by partner	0.635
	Incarceration of family member	0.497
	Abuse of father by partner	0.462
	Drug abuse in the family	0.293
	Physical neglect	0.270

Note: Numbers represent correlations of each ACE with the group as a whole

The same analytic strategy to the score applied using the other scoring method was obtained, i.e., “frequent” ACEs. For those ACE types which do not include frequency, we used “any” scores in order to have a full range of ACEs. Again, three groups of adverse experiences could be distinguished very similar to the ones obtained in the previous analysis:

1. The first group consists of ACEs mainly related to physical abuse and violence, such as involvement in a physical fight, community violence, collective violence, bullying, incarceration of a family member. Although there were some discrepancies in comparison to the previous analysis when “any ACE” scoring method was applied (for example, instead of psychological abuse being in the first factor in the previous analysis, incarceration of family member grouped in the first factor in this analysis), all these experiences are still related

to violence and bullying. Similar to the previous analysis, this group (factor) was named as **violence** (Table 3). This finding indicates that the appearance of one type of violence is related to the appearance of other types of violence.

2. The second factor again included ACEs such as depression in the family, suicide in the family, sexual abuse and parental separation. All these ACEs refer to some kind of neglect or retrieval, and therefore this group was interpreted as **neglect** related ACEs (Table 3). As already mentioned, this finding suggests that one type of neglect-related behaviour is related to the other neglect-related ACEs. Same as in the results obtained for any ACE scores, sexual abuse correlates with neglect types of ACE more than with other types of ACE. Since this is a relatively consistent finding in both types of scores, it could be concluded that sexual abuse appears often with various types of neglect.
3. The third factor (group) is related to adverse experiences such as abuse of mother by her partner, abuse of father by his partner, physical abuse, psychological abuse, psychological neglect, physical neglect and alcoholism in the family. In spite of the small differences between the content of this factor and the third factor obtained in the previous analysis, when “any ACE” scoring method was applied (specifically, here physical abuse, psychological abuse, psychological neglect were grouped in the third factor, whereas incarceration of family member and drug abuse are missing from it), all extracted ACEs are related to abusive social interactions, and this group was interpreted as **abuse** (Table 3). Same as in the previous factors, it could be concluded that one type of abuse is related to the other abusive ACEs. In this group, psychological and physical neglect correlate with abuse types of ACE more than with other types of ACE. Since this is also a relatively consistent finding in both types of scores, it could be summarized that psychological and physical neglect often appear with various types of abuse.

Interestingly, when “frequent ACE” scoring method was used, drug abuse did not appear in any of the extracted factors (groups). This is probably due to a relatively low prevalence of frequent drug abuse in the population, and therefore it does not correlate with other types of adverse experiences.

Table 3. Factor loadings of ACEs — scoring method “frequent ACE”

Frequent Violence	Involvement in a physical fight	0.734
	Community violence	0.670
	Collective violence	0.489
	Bullying	0.412
	Incarceration of family member	0.279
Frequent Neglect	Depression in family	0.698
	Suicide in family	0.679
	Parent separation	0.523
	Sexual abuse	0.320
Frequent Abuse	Abuse of mother by partner	0.667
	Physical abuse	0.634
	Abuse of father by partner	0.616
	Psychological abuse	0.610
	Psychological neglect	0.519
	Physical neglect	0.502
	Alcoholism in family	0.452

Note: Numbers represent correlations of each ACE with the group as a whole

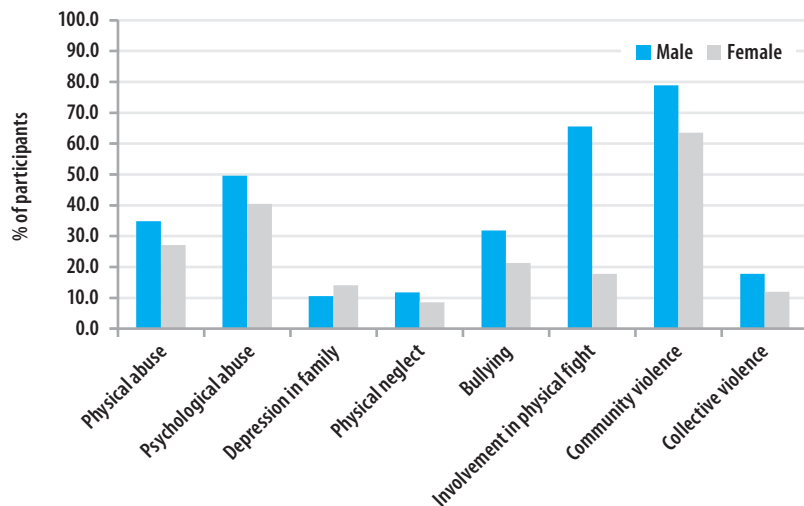
To conclude, various types of ACEs are related to each other, in such way that they arrange into three groups, which we named and interpreted as: violence related, neglect related and abuse related ACEs. Regardless of the scoring method used, ACEs organize into these groups. Based on both scoring approaches and the above-mentioned results, it could be concluded that experiences such as involvement in a physical fight, community violence, collective violence, bullying, incarceration of a family member and psychological abuse would often appear together, and if any of them is found, we might expect other types to emerge. Additionally, experiences such as depression in the family, suicide in the family, psychological neglect, sexual abuse and parent separation, also tend to appear together. In line with this, the appearance of one of these ACEs could indicate that other types are present too. Finally, experiences such as abuse of the mother by her partner, abuse of the father by his partner, physical abuse, psychological abuse, psychological neglect, physical neglect, alcoholism in the family, incarceration of a family member and drug abuse, are kinds of experiences which tend to appear together. Again, it indicates that if some of the ACEs from this group are present, it is likely that others will be present too.

4.2.2. Sociodemographic correlates of ACEs

Gender differences. Data from this survey show that boys are more likely to experience different ACEs. If we analyse specific ACEs, obtained using both scoring methods, boys are more likely to:

- ▶ be victims of bullying: any ACE ($\varphi_c^1=0.121^{**}$) and frequent ACE ($\varphi_c=0.085^{**}$),
- ▶ be involved in physical fights: any ACE ($\varphi_c=0.485^{**}$) and frequent ACE ($\varphi_c=0.409^{**}$),
- ▶ witness community violence: any ACE ($\varphi_c=0.173^{**}$) and frequent ACE ($\varphi_c=0.165^{**}$),
- ▶ witness collective violence: any ACE ($\varphi_c=0.083^{**}$) and frequent ACE ($\varphi_c=0.074^{**}$).

Figure 14. Significant gender differences in ACEs: less severe criterion (any ACE)

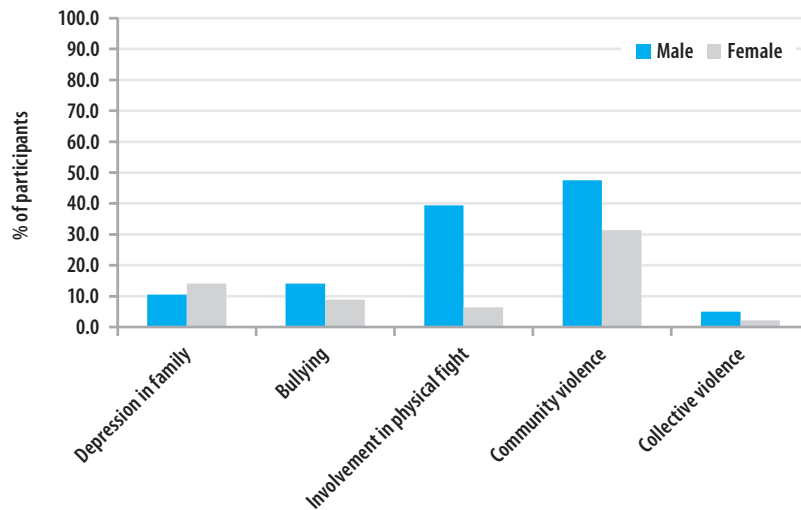


Besides that, when any ACE score is taken into account (including rare events), boys were more likely to:

- ▶ be victims of physical abuse ($\varphi_c=0.080^{**}$),
- ▶ be victims of psychological abuse ($\varphi_c=0.090^{**}$),
- ▶ be subjected to physical neglect ($\varphi_c=0.061^{**}$).

Girls were more likely to have the experience of living with a person with depression ($\varphi_c=0.064^{**}$).

1 Symbol refers to Cramer's V coefficient throughout the text.

Figure 15. Significant gender differences ACEs: severe criterion (frequent ACE)

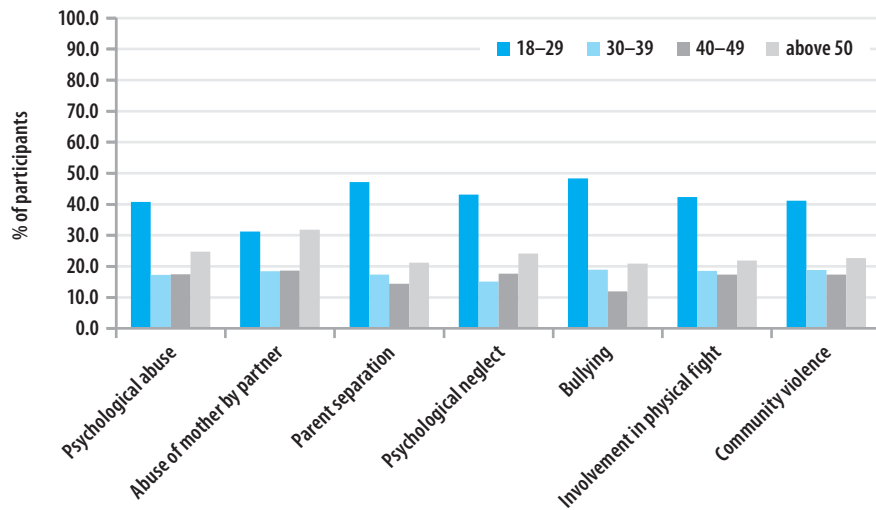
When results from this survey are compared to the Serbian student ACE study (WHO, 2015), certain differences are noticeable. In this survey, the relation between gender and alcohol abuse was not found, while in the Serbian student ACE study it was obtained. In the study conducted on the Serbian university students sample there were no gender differences when observed ACE was living with a person with mental condition, while in this study women more often reported living with a person with depression during their childhood. Although one possible explanation of the difference could be related to different age and education of participants, further investigation is needed to explore the remaining reasons for these discrepancies between the results obtained in the two surveys.

In the survey of ACEs among Serbian university students, males more frequently reported experiencing physical abuse and severe corporal punishment, compared to females (WHO, 2015). Physical neglect and psychological abuse were more prevalent in men in both studies. When prevalence of child physical abuse was explored in the United States of America, higher pervasiveness was found in females (Sugaya et al., 2012).

Age differences. We did find statistically significant differences between participants of different age groups on several types of ACE. The youngest participants, from age 18 to 29, reported more often than other age groups the following ACEs: psychological abuse ($\varphi_c=0.082^{**}$ for any and $\varphi_c=0.058^*$ for frequent ACE score), abuse of mother by partner ($\varphi_c=0.069^{**}$ for any and $\varphi_c=0.111^{**}$ for frequent ACE score), parent separation ($\varphi_c=0.094^{**}$), psychological neglect ($\varphi_c=0.069^{**}$ for any ACE score), bullying ($\varphi_c=0.159^{**}$ for any and $\varphi_c=0.115^{**}$ for frequent ACE score), involvement in a physical fight ($\varphi_c=0.114^{**}$ for any ACE score) and community violence ($\varphi_c=0.189^{**}$ for any and $\varphi_c=0.116^{**}$ for frequent ACE score). The only ACE type in which, beside the youngest group, the oldest group also reported higher rates was for abuse of mother by partner.

We might argue that higher rates in the youngest group are at least partially due to better recall, since ACEs are closest to them in time. On the other hand, it might be that the above mentioned ACEs really are more pronounced in younger groups, or it might be that participants from this group are more sensitive to notice and report about them. The higher reported rate of abuse of mother by her partner by the oldest group might be due to changes happening in society. Namely, it might be that family violence was more frequent in the past and therefore the oldest participants might have experienced it more frequently during their childhood.

Figure 16. Significant age group differences on ACEs (any ACE scores)

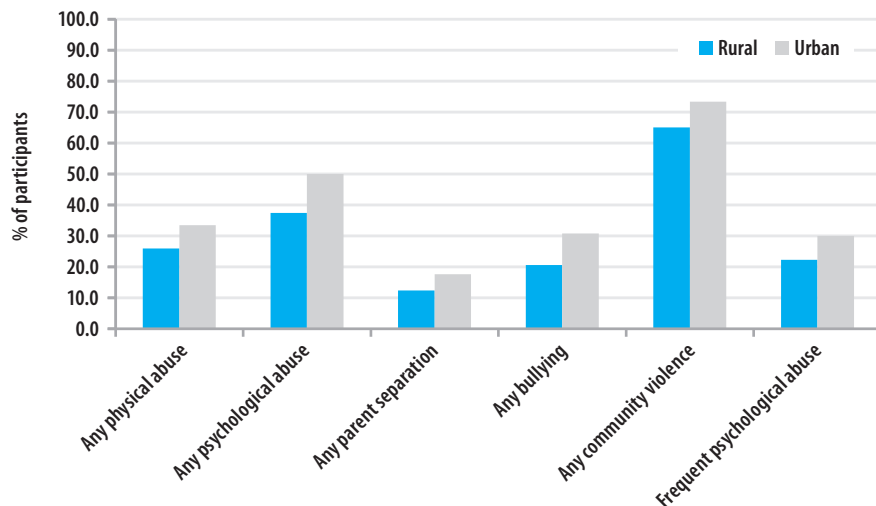


Material status of participants. The material status was expressed as the self-reported average income per household, or as a personal income level at the time of the questionnaire administration. This measure was not related to the prevalence of the ACEs, regardless of the scoring method; but it did show some weak relation to some types of adverse experiences if they take into account rare events, that is, if they are calculated as any scores. For instance, people with higher personal incomes were less likely to be exposed to psychological abuse ($r_{pbis}=-0.078^{**}$), while those with higher family incomes were less likely to be psychologically neglected ($r_{pbis}=-0.071^{**}$). On the other hand, these relations are very small and therefore regularity which they represent is hardly noticeable.

Urban–rural areas. Results indicate that respondents from urban areas are more exposed to ACEs, regardless of the scoring method: any ACE score ($r=0.115^{**}$), and frequent ACE score ($r=0.051^{**}$). When we analyse the predominance of different ACEs in urban and rural areas, the results show that respondents from urban areas were more exposed to the following:

- ▶ physical abuse: only any ACE score ($\varphi_c=0.082^{**}$),
- ▶ psychological abuse: any ACE score ($\varphi_c=0.127^{**}$), and frequent ACE score ($\varphi_c=0.088^{**}$),
- ▶ parental separation ($\varphi_c=0.072^{**}$),
- ▶ bullying: any ACE score ($\varphi_c=0.116^{**}$),
- ▶ community violence: any ACE score ($\varphi_c=0.089^{**}$).

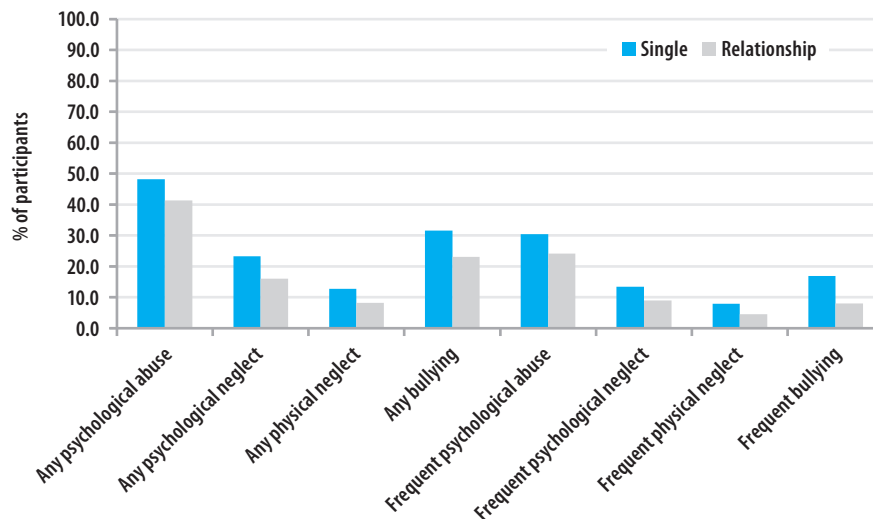
Figure 17. Significant urban–rural differences in ACEs: any and frequent ACE scores



Relationship status. Persons who currently are not in a relationship more frequently report ACEs than those who currently are involved in some kind of relationship, specifically, any ACE score ($r=0.089^{**}$) and frequent ACE score ($r=0.1^{**}$). Additionally, findings indicate that respondents who report being single were more likely to experience:

- ▶ psychological abuse: any ACE score ($\varphi_c=0.066^{**}$), and frequent ACE score ($\varphi_c=0.068^{**}$),
- ▶ psychological neglect: any ACE score ($\varphi_c=0.088^{**}$), and frequent ACE score ($\varphi_c=0.069^{**}$),
- ▶ physical neglect: any ACE score ($\varphi_c=0.072^{**}$), and frequent ACE score ($\varphi_c=0.069^{**}$),
- ▶ bullying: any ACE score ($\varphi_c=0.092^{**}$), and frequent ACE score ($\varphi_c=0.135^{**}$).

Figure 18: Significant differences in any and frequent ACEs based on relationship status



Summing up the above-mentioned relations with various sociodemographic characteristics, it could be concluded that ACEs, mainly those related to violence or to physical and psychological abuse, appear more often among young, male participants, from urban areas and among those who are single. Single people had higher prevalence of ACE when they were children than people who are in relationships today.

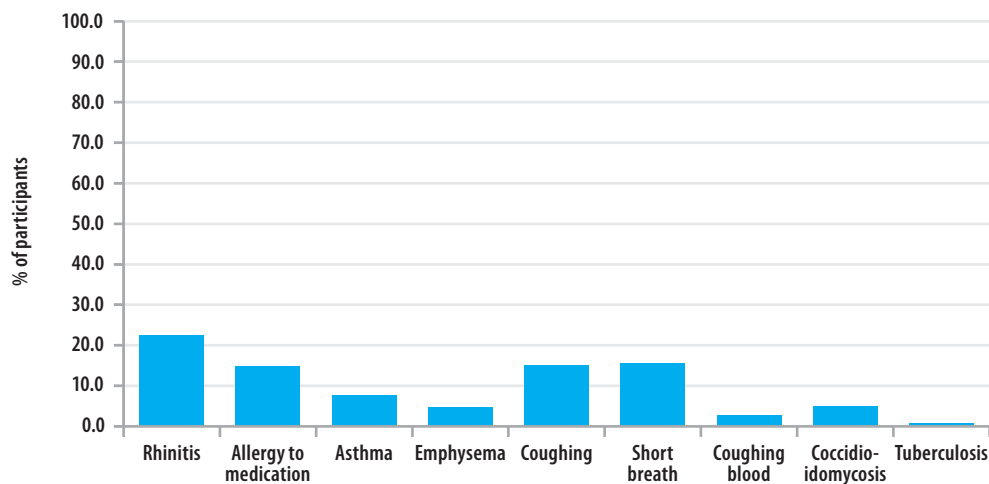
4.2.3. Physical health and ACEs

Physical health was assessed using questions about health-related behaviours and health problems. Sexual relations for the vast majority (75%) started between 16 and 20 years, with 18 the most frequent age. There are no differences between males and females. In the sample, there were a few respondents whose responses on when they became sexually active can be considered as outliers: age 12 (4 or 0.1%) or age 38 (3 or 0.1%). In the sample, 2.8% ($N=73$) had had a sexually transmitted disease (STD). Around one fifth of the women (21.3%) had had an abortion, and these women experienced significantly more ACEs (both any and frequent ACE scores) during childhood than women who did not have an abortion. This result is in line with previous research (Bleil et al., 2011).

Regarding health problems related to the respiratory system, 22.5% ($N=590$) respondents reported having issues with rhinitis. In addition, 14.8% had an allergy to medication, 7.8% ($N=206$) had asthma, 4.7% ($N=122$) had chronic bronchitis or emphysema, 15.1% ($N=396$) reported frequent coughing, while 15.7% ($N=412$) reported shortness of breath. In this sample, 2.8% ($N=72$) persons experienced coughing blood, 0.5% ($N=12$) had been treated for tuberculosis or coccidioidomycosis, while 0.9% ($N=24$) had tested positive for tuberculosis. Number of respiratory problems (sum of all above mentioned) correlates positively with number of ACEs during childhood, both any ACE

score ($r=0.191^{**}$) and frequent ACE score ($r=0.207^{**}$). Besides that, almost all respiratory problems, except being treated for tuberculosis or coccidioidomycosis, and being positive for tuberculosis, correlate significantly with both any ACE score and frequent ACE score (correlations range between $r_{pbis}=0.05^{**}$ and $r_{pbis}=0.17^{**}$ for both, any and frequent ACE scores). These findings suggest that experiencing more ACEs during childhood is associated with higher probability of having respiratory problems. We can predict that a larger number of ACEs will increase odds of having some of above mentioned respiratory problems (except being treated for tuberculosis or coccidioidomycosis) from 1.07 to 1.2 times. This kind of increase is relatively small, but still significant. These findings corroborate previous results (Wing, Gjelsvik, Nocera & McQuaid, 2015).

Figure 19. Prevalence of respiratory problems



When gastrointestinal problems were assessed, one fifth of the sample reported stomach pain 19.4% (N=507), 24.5% (N=642) reported having digestion problems, 12.8% (N=336) constipation, and 5.5% (N=144) diarrhoea. Gastrointestinal ulcer was reported by 5.3% (N=139), 1.4% (N=36) experienced vomiting blood, and 3.7% (N=96) reported black stools. Regarding other gastrointestinal problems, 7.5% (N=195) had cholelithiasis/issues with gallbladder, 5.2% (N=137) had hepatitis or other hepatic issues, while 8.1% (N=203) had a significant change in stool type and regularity. The number of gastrointestinal problems (sum of all mentioned above) correlates positively with the number of ACEs, both any ACE score ($r=0.181^{**}$) and frequent ACE score ($r=0.182^{**}$). Almost all gastrointestinal problems, except cholelithiasis and hepatitis, correlate significantly with both scores (correlations between $r_{pbis}=0.05^{**}$ and $r_{pbis}=0.126^{**}$ for any and frequent ACE scores). These findings indicate that experiencing more ACEs is related to higher probability of having gastrointestinal problems. Results show that a larger number of ACEs will increase odds of having some of the above mentioned gastrointestinal problems (those which significantly correlate with ACE scores) from 1.06 to 1.25 times. This kind of increase is relatively small, but still significant. In previous studies, it was found that irritable bowel syndrome is linked to ACEs (Park et al., 2016).

When presence of cardiovascular symptoms was explored, 21.2% (N=556) reported having chest pain when exposed to physical exertion, 31.5% (N=827) reported feeling their heart racing or “skipping a beat”, while 8.5% (N=223) reported having other cardiovascular issues. Almost a third of the sample, 28% (N=733), reported hypertension, while 1.7% (N=45) had suffered a heart attack. When frequency of chronic medication intake was analysed, 17.6% (N=459) were taking medication to treat hypertension, 7.5% (N=195) reported taking antilipemic therapy, 2.9% (N=75) using nitroglycerine and 0.8% (N=21) underwent a coronary artery surgery. The number of cardiovascular problems (sum of all mentioned above) correlates positively with the number of ACEs, both any ACE score ($r=0.136^{**}$) and frequent ACE score ($r=0.163^{**}$). Almost all cardiovascular problems, except having varicose veins and a heart attack, correlate significantly with both, any and frequent ACE score (correlations range

between $r_{pbis}=0.04^{**}$ and $r_{pbis}=0.158^{**}$ for both, any and frequent ACE scores). These findings show that higher ACE is related to a higher probability of having cardiovascular problems. Larger number of ACEs will increase odds of having some of above mentioned cardiovascular problems (those which significantly correlate with ACE scores) from 1.05 to 1.15 times. This kind of increase is relatively small, but still significant.

Figure 20. Prevalence of gastrointestinal problems

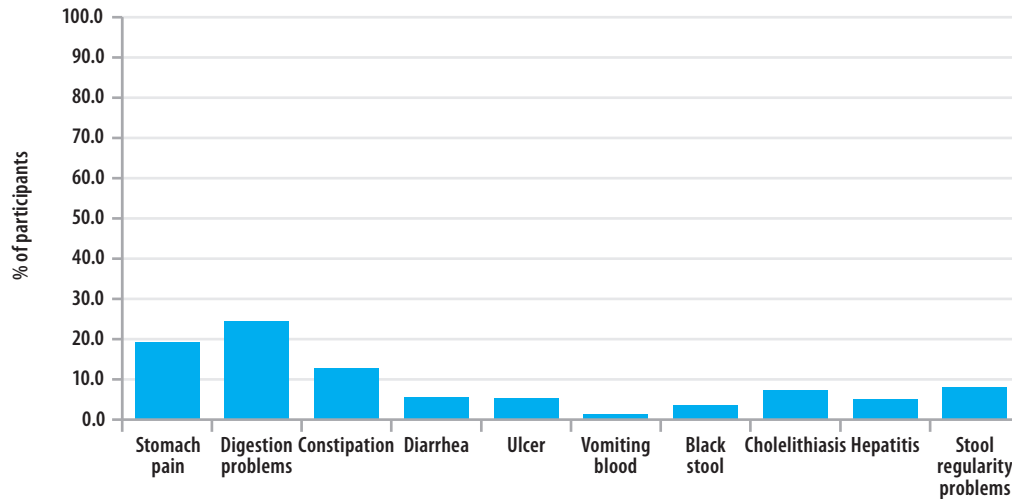
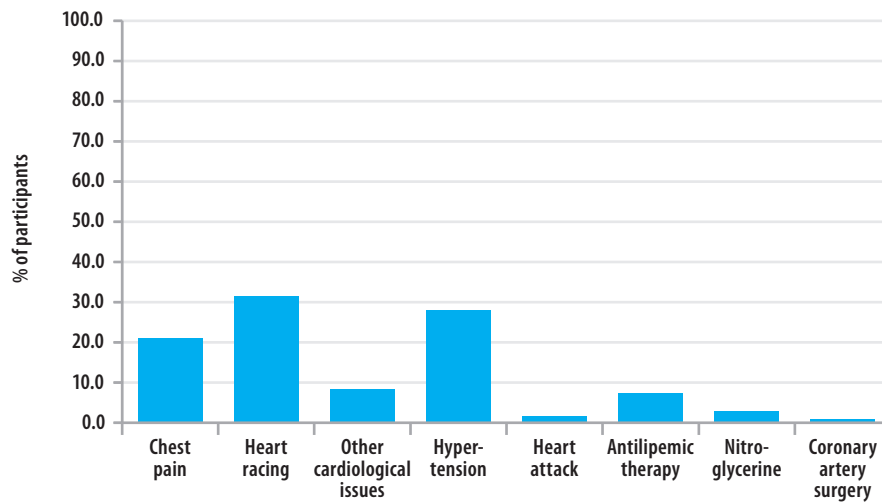


Figure 21. Prevalence of cardiovascular problems



Diabetes was reported by 2.6% (N=68) and 2.3% (N=59) received therapy for it. Diabetes did not correlate to any ACE score, but it showed weak positive correlation to frequent ACE score ($r=0.046^*$). This indicates that, at least in the sample, having diabetes is only very weakly related to having more frequent adverse experiences in childhood. Several studies found that type II diabetes and all kinds of cardiovascular diseases (myocardial infarction, stroke, ischemic heart disease, coronary heart disease) are more prevalent in persons who experience childhood maltreatment (Basu, McLaughlin, Misara & Koenen, 2017; Gilbert et al., 2015). In a study by Wade and associates (2016), ACEs were associated with cardiovascular disease, but not diabetes.

Frequent headaches were present in 22.6% of the sample (N=591), 9.3% (N=243) experienced dizziness, 36.3% (N=955) reported frequent back pain, and 20.7% (N=541) frequent joint pain or swelling. All these symptoms are related to both, any and frequent ACE scores:

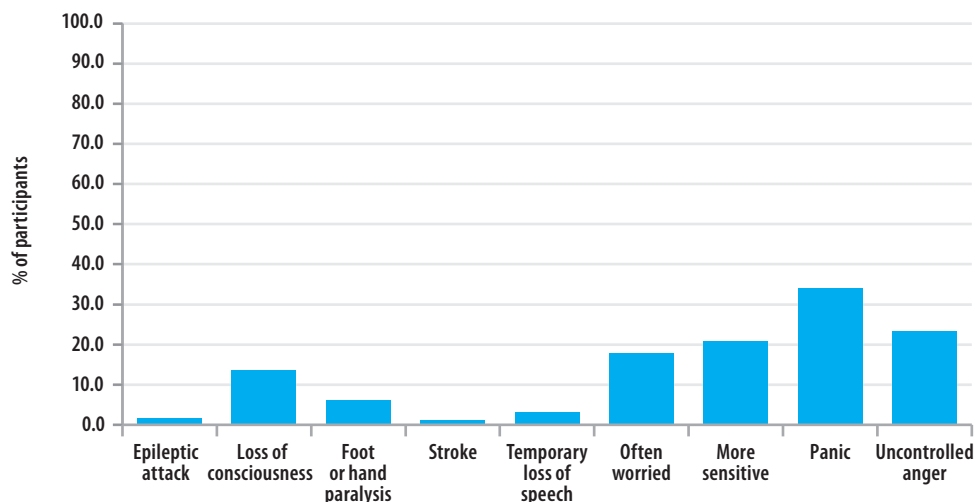
- ▶ headaches correlate to any ACE ($r=0.08^{**}$) and frequent ACE score ($r=0.092^{**}$),
- ▶ dizziness correlates to any ACE ($r=0.063^{**}$) and frequent ACE score ($r=0.075^{**}$),
- ▶ back pain correlates to any ACE ($r=0.116^{**}$) and frequent ACE score ($r=0.115^{**}$),
- ▶ joint pain correlates to any ACE ($r=0.043^*$) and frequent ACE score ($r=0.069^{**}$).

One study also showed that all measured ACEs (abuse — emotional, physical, sexual, witnessing domestic violence, growing up with mentally ill, substance abuse, household members with criminal history, and parental separation or divorce) were highly correlated to frequent headaches in adulthood (Anda, Tietjen, Schulman, Felitti & Croft, 2010).

Thyroid dysfunction was reported by 7.9% (N=207) of respondents in the sample. Thyroid gland disorders did not correlate with ACEs in the study, regardless of the scoring criterion. Contrary to the findings from this survey, a recent study indicated low T3 levels in adolescents who experienced physical abuse during childhood (Machado et al., 2015).

When neurological and psychological symptoms were analysed, 1.5% (N=39) reported having epileptic attacks, 13.5% (N=354) experienced loss of consciousness, 6.2% (N=161) experienced foot or hand paralysis, 1.1% (N=30) had had a stroke, and 3% (N=78) experienced a temporary loss of speech. Regarding some psychological symptoms, 17.8% (N=466) reported often being worried about getting ill, while 20.9% (N=546) reported that they were worried they were more susceptible than others. One third of the respondents felt panic in certain circumstances (34.1%, N=891), and 23.4% (N=611) experienced anger which they could not control. Having neurological symptoms (sum of all mentioned above) correlates positively with the number of ACEs, both any ACE score ($r=0.303^{**}$) and frequent ACE score ($r=0.293^{**}$). Almost all individual neurological problems, except epileptic attacks and stroke, correlated significantly with both, any and frequent ACE scores during childhood (correlations range between $r_{pbis}=0.09^{**}$ and $r_{pbis}=0.306^{**}$). These findings suggest that experiencing more ACEs is related to higher probability of having neurological problems. Highest correlations with ACE are psychological symptoms, such as uncontrolled anger ($r_{pbis}=0.306^{**}$) or panic ($r_{pbis}=0.214^{**}$). Larger number of ACEs will increase the odds of having some of the above-mentioned neurological symptoms (those which significantly correlate with ACE scores) from 1.11 to 1.23 times. Similar to that, a larger number of ACEs will increase the odds of having some of above-mentioned psychological symptoms (those which significantly correlate with ACE scores) from 1.12 to 1.32 times. For both types, neurological and psychological symptoms, this kind of increase is relatively small, but still significant.

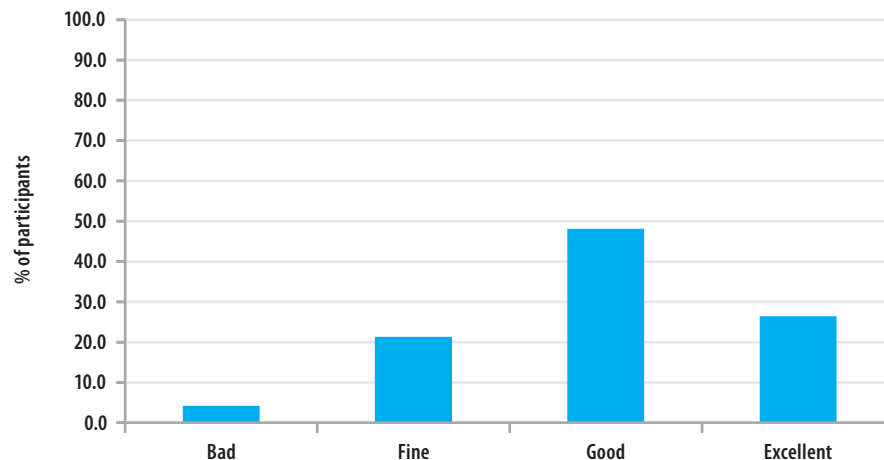
Figure 22. Prevalence of neurological and neurology-related symptoms



Regarding health-related behaviours specific for women, breast secretion was reported by 4.6% (N=68) women in the sample, 15.5% (N=229) experienced metrorrhagia, and postmenopausal bleeding in 4.6% (N=43) women in the sample. Breast lump or a node was present in 8.5% (N=124) of female persons in the sample, while 65.1% (N=967) reported performing self-examination for breast nodes on a regular basis.

A quarter of the sample did not visit the doctor's office in the previous year (24.7%, N=651), 21.5% (N=566) went to a doctor once, 16.0% (N=422) twice, 11.4% (N=300) three times, 4.7% (N=123) four times, while 21.6% visited a doctor more than five times in the past year. Moreover, 17.8% (N=466) reported often being worried about their health, and when asked to assess their overall physical health 4.2% (N=110) described it as bad, 21.3% (N=554) as fine, 48.1% (N=1,250) as good, and 26.4% (N=685) as excellent.

Figure 23. Subjective experience of own health status



The self-report assessment of physical health correlated negatively with both any ACE ($r=-0.137^{**}$), and frequent ACE score ($r=-0.145^{**}$). This suggests that experiencing more ACEs will be associated with a poorer perception of one's own health.

An important part of indicated prevention is reducing the consequences of abuse and neglect. Namely, after identification of abuse and neglect among children, it is also important to recognize the specific needs of children who experience ACEs. According to the results of this study, experiencing ACE in childhood leads to respiratory, gastrointestinal, cardiovascular and neurological problems in adulthood. The action that should be taken regarding this aspect of ACE consequences is, the cooperation and exchange of information between experts and institutions involved in the overall process. The experts who recognize the ACE in a child should notify the general physician responsible for the child, in order to perform specific preventive actions, as well as regular specific check-ups, oriented towards these groups of disorders.

4.2.4. Risky behaviours and ACEs

Previous findings suggest that ACEs are related to physical health directly, but also indirectly, through different addictive behaviours like alcohol, tobacco and substance abuse. More than a third of the sample are smokers (39.1%), and smoking correlates with total number of ACEs, for both any ACE ($r_{pbis}=0.11^{**}$), and frequent ACE score ($r_{pbis}=0.105^{**}$).

Today, smokers as children were more likely to have been exposed to physical abuse, psychological abuse, alcoholism in the family, incarceration of a family member, involvement in a physical fight, community violence and collective violence. It is likely that they were more exposed to ACE and they became smokers. This relation does

not imply causation, it just shows a slight tendency to find more of the mentioned ACEs among smokers. Previous studies showed positive correlation between experiencing ACEs and smoking. Specifically Wade and Bellis (2016) found this in individuals who experienced three or more ACEs, while another study indicated that a significant correlation exists between experiencing four or more ACEs and smoking (Bellis, Hughes, Leckenby, Perkins & Lowey, 2014), both in comparison to no ACE.

Figure 24. Prevalence of smoking

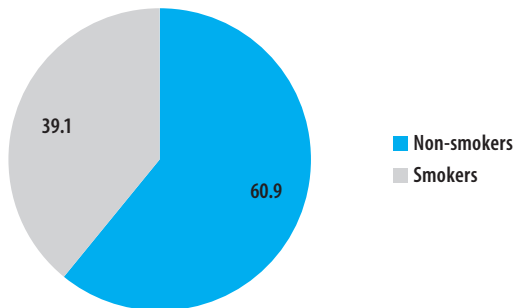
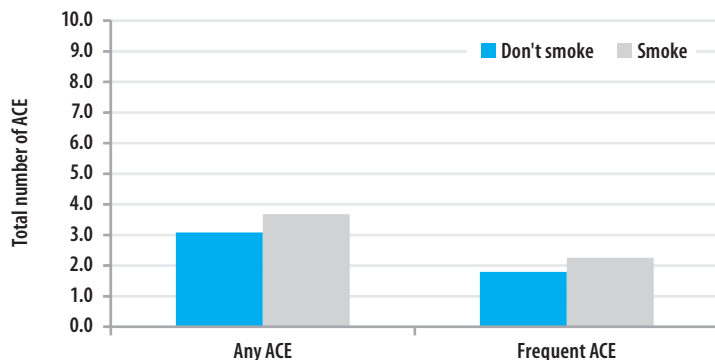


Figure 25. Difference between smokers and non-smokers in total number of any or frequent ACEs



The majority of the respondents in the sample reported trying alcohol (70.4%), and 6.6% of them (N=126) considered themselves alcoholic at least at some point in their life. Alcohol consumption is correlated with total number of ACEs, both any ACE ($r_{pbis}=0.155^{**}$), and frequent ACE score ($r_{pbis}=0.093^{**}$). People who had ACEs are more likely to drink alcohol in adulthood. Specifically, individuals who experienced physical abuse, psychological abuse, who witnessed their mother being abused by her partner, who were bullied or involved in a physical fight and community violence, tend to drink more alcohol in adulthood.

Around one fifth of the sample had tried drugs (19.6%), but only 9.2% of that number (N=48) reported they had an addiction at least once in their life. Drug abuse is correlated with total number of ACEs, both any ACE ($r_{pbis}=0.281^{**}$), and frequent ACE score ($r_{pbis}=0.214^{**}$). This finding suggests that individuals experiencing ACEs tend to abuse illegal drugs in adulthood. The findings showed that almost all types of ACE are related to drug abuse. In other words, those who report that they have tried drugs were more likely to have experienced physical abuse, psychological abuse, sexual abuse, drug abuse, depression or any other mental illness in the family, abuse of mother by her partner, abuse of father by his partner, parent separation, psychological neglect, physical neglect, bullying, involvement in a physical fight, community violence and collective violence.

Figure 26. Difference between those who drink and those who do not drink in total number of any or frequent ACEs

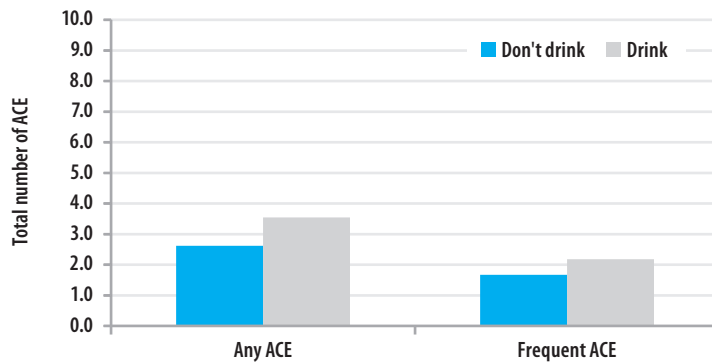
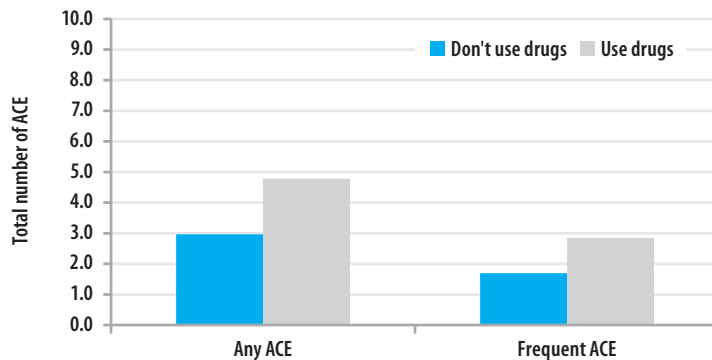


Figure 27. Difference between those who use and do not use drugs in total number of any or frequent ACEs



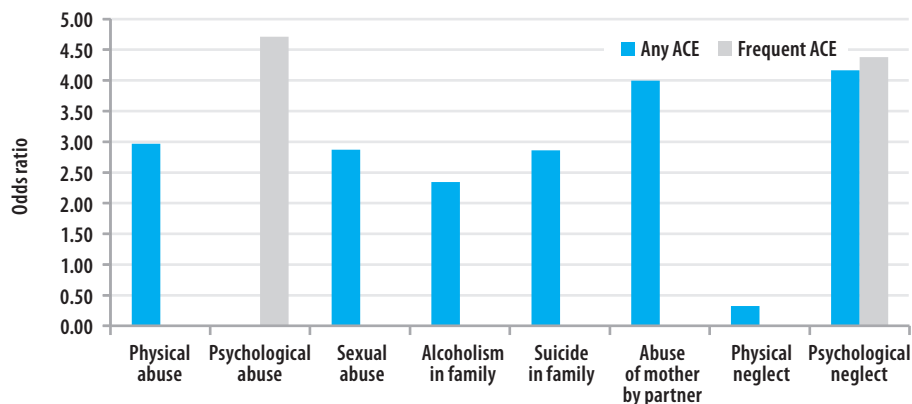
Substance abuse and alcohol consumption are linked to most ACE types, when analysing them separately. What is probably most surprising is finding that alcohol consumption is not correlated to a history of alcoholism in the family, neither to substance abuse. Also, not only questions regarding consumption, but all other questions about use, abuse of and dependence on drugs or alcohol were highly correlated to the number of ACE, both any and frequent. This is in line with a study from 2016, which found that the history of substance abuse was significantly correlated with two or more ACEs (Wade et al., 2016), as well as recent studies that have shown a link between ACE and alcohol dependence: experiencing two or more (Pilowsky et al., 2009) and four or more (Bellis et al., 2014) ACEs, compared with none, significantly increased the risk for alcohol dependence.

ACEs can lead to smoking, alcoholism and drug abuse, and this has multiple consequences — from damaged physical health and higher morbidity and mortality; to worsening of psychological functioning; social, work and family problems; and higher crime. In the other sense, for some children, substance abuse ought to indicate that professionals should look for other issues and potential ACEs the child might be experiencing, so as to provide timely support. Due to all of this, education about substance abuse and negative consequences should be implemented in all schools, but with special programmes and more intensive courses for children who were recognized to have higher ACE, or were victims of abuse and neglect. This may be one of the most important steps, since substance abuse leads to a cascade of negative events that damages all aspects of life for the persons affected and those around them.

4.2.5. Mental health and ACEs

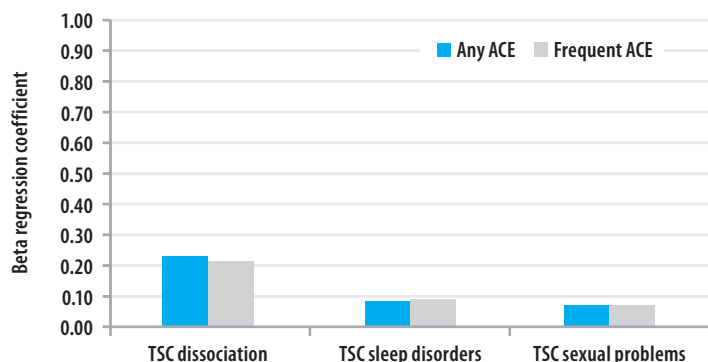
In the sample, 52 persons (2%) had attempted suicide. Almost a quarter of the sample (22.6%) had sought professional help from a psychiatrist, psychologist or psychotherapist in their lifetime. Analysis showed that having any ACEs significantly predicted suicide attempts later in life, when ACEs are scored with both any ACE score (Nagelkerke $r^2=0.26^{**}$), and frequent ACE score (Nagelkerke $r^2=0.17^{**}$). Results indicate that those who had experienced physical abuse would be 2.97 times more likely to attempt suicide, while those who had repeatedly experienced psychological abuse would be 4.71 times more likely to attempt suicide. Sexual abuse increases the odds of committing suicide 2.87 times, alcoholism in the family 2.35 times, suicide in the family 2.86 times, abuse of mother by partner 3.99 times, and psychological neglect 4.16 times (any score) or 4.38 times (frequent score). On the other hand, those who experienced physical neglect would be 0.33 times less likely to attempt suicide (Figure 28). Overall, the findings are in line with the previous studies indicating that having ACEs is related to suicide attempts later in life (Dube et al., 2001).

Figure 28. Odds ratios for committing suicide based on experienced ACEs



The Trauma Symptom Checklist (TSC) assesses trauma-related mental health symptoms in the following domains: dissociation, anxiety, depression, sexual abuse trauma index (SATI), sleep disturbance, and sexual problems. The intensity of mental health symptoms was analysed in relation to ACEs. Results show that both, any and frequent ACE scores predict around 8% of the variance in mental health symptoms ($r^2=0.083^{**}$). ACEs appear as significant predictors of three mental-health symptom groups: dissociation ($\beta=0.231^{**}$ for any ACE, and $\beta=0.217^{**}$ for frequent ACE score), sleep disorders ($\beta=0.091^{**}$ for any ACE, and $\beta=0.095^{**}$ for frequent ACE score), and sexual problems ($\beta=0.068^*$ for both, any and frequent ACE scores). In other words, experiencing more ACEs is related to higher intensity of mental-health symptoms such as dissociation, sleep problems and sexual dysfunction.

Figure 29. Relation between ACEs (any and frequent ACE scores) and mental-health symptoms expressed via regression (beta) coefficients



The results are partly in accordance with previous studies. Results on relation between ACEs and dissociation confirmed previously found associations (Maaranen, 2004). However, associations of ACE with depression and anxiety, found in other studies (Chapman et al., 2004; Edwards et al., 2003), were not confirmed by the present study. These symptoms weakly correlated with ACEs in the present study as well, but the effect disappeared after controlling for other symptoms, which show higher correlations with ACEs, such as dissociation, sleep disorders and sexual problems, that could have acted as moderators or mediators of ACE effects on depression and anxiety.

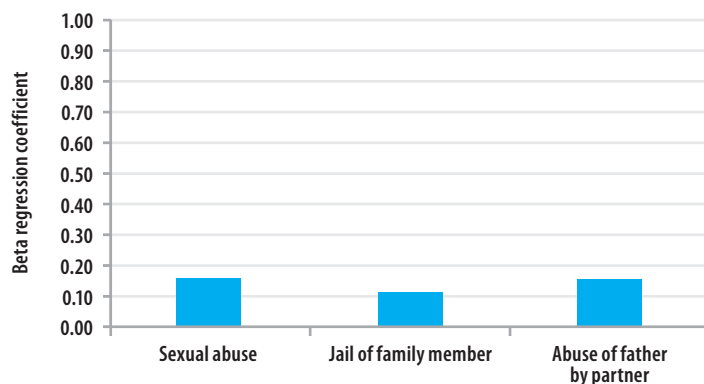
Relations between individual types of ACEs and mental-health symptoms suggest that TSC Depression correlates with all ACEs except with parental separation and involvement in a fight. A recent meta-analysis found that parental separation is associated with increased risk for offspring depression, but the relationship was moderated by several variables like offspring gender, age at assessment and at depression onset, genotype, pre-adolescent temperament, intellectual abilities, emotional problems in childhood, and maternal sensitivity (DiManno, MacDonald & Knight, 2015). Another study found that exposure to childhood sexual abuse is weakly correlated with increased rates of major depression and anxiety disorder, while TSC SATI was related to all ACEs (Fergusson et al., 2013).

In this survey, TSC Sleep Disorders correlated weakly with all ACEs except with fight involvement. This is in line with previous meta-analytic findings demonstrating weak correlation of ACEs and sleep disorders: specifically, correlation was found between family conflict at ages 7–15 and insomnia at 18 years of age and between childhood sexual abuse and sleep disturbances (Kajeepeeta, Gelaze, Jackson & Williams, 2015). Findings of this study indicate weak relations between all ACEs and TSC Sexual Problems; the only exception was the lack of correlation between collective violence and TSC Sexual Problems.

The non-suicidal self-injury questionnaire (NSSI) was used to examine propensity to behaviours such as self-cutting, skin burning, breaking own bones, or similar. Of all respondents, 4.3% reported NSSI, out of which 3.6% were related to behaviours before age 18, and 1.8% after age 18. Frequency of these forms of behaviour, before age 18, ranges from 1 to 50 times, and after age 18, from 1 to 30 times. There is a low positive correlation between frequency of NSSIs before and after the age of 18 ($r=0.23^*$). Contrary to expectations, results showed that NSSIs are more common in male respondents ($\Phi=0.75^{**}$). Finally, weak positive correlation was registered between suicide attempts and NSSI ($\Phi=0.25^{**}$).

When it comes to the prediction of NSSIs that occurred after the age of 18, either any or frequent ACE scores were significant predictors. Additionally, frequent ACE scores did not significantly predict NSSI occurring before the age of 18. However, any ACE scores were predictive of NSSI that occurred before the age of 18 ($r^2=0.092^*$). This finding suggests that 9.2% of the variability in such behaviours can be related to ACEs. When we analyse individual types of ACEs, only three are significant predictors of NSSI: sexual abuse ($\beta=0.158^{**}$), incarceration of a family member ($\beta=0.113^*$) and abuse of father by his partner ($\beta=0.154^*$). Since all correlations are positive, it indicates that higher childhood adversity is related to a higher frequency of NSSIs.

Figure 30. Relations between any ACE scores and NSSI expressed via regression (beta) coefficients



It is important to mention that this is the first survey exploring the prevalence of NSSIs in Serbia. The percentage of respondents in a sample who reported NSSI at least once during their lifetime is higher than that percentage in Germany (Plener et al., 2016). However, when we compare the findings from Serbia with those obtained on the European sample (Swannell et al., 2014), the prevalence in Serbia is lower. Since this is a form of behaviour typical for adolescence (Brown & Plener, 2017), as expected, NSSI is more prevalent before the age of 18. Contrary to expectations, in our sample, NSSI was more common in male respondents. Authors investigating gender differences in NSSI warn of drawing conclusions due to the small number of males included in non-clinical studies (Victor et al., 2018). In addition, the number of people reporting NSSI is very small (which was also the case in this study), warranting very cautious conclusions. Furthermore, the results of a meta-study showed that after adjusting for methodological factors, prevalence remained higher among females than males, but that the difference was no longer significant (Swannell et al., 2014).

The obtained positive correlation between NSSI and suicide attempts is in line with previous findings (e.g. Brausch & Muehlenkamp, 2018; Hasking, Boyes, Finlay-Jones, McEvoy & Rees, 2018; Kiekens et al., 2018). Finally, in accordance with previous results, our data show that ACEs are related to NSSI (Liu et al., 2018; Cleare et al., 2018), which indicates that NSSI are among the potential consequences that ACEs leave on an individual.

There are several findings regarding links between mental health and ACEs and all are important for public health and understanding consequences of ACEs. ACEs may lead to suicide attempts later in life, higher intensity of mental-health symptoms such as dissociation, sleep problems and sexual dysfunction, as well as NSSI that occurred after the age of 18 (and to an extent even before age 18).

Due to all of this, the State and the public have a duty to prevent, when possible, or reduce the consequences of abuse and neglect. When a child is recognized as having an accumulation of ACEs or is a victim of abuse or neglect, designated institutions should protect them, either directly (when possible, such as in cases of abuse and neglect) or through specific preventative actions. One way of doing this might be by teaching functional coping strategies for overcoming stress. This might help children overcome the impacts of ACEs nearer that time, but also later in life.

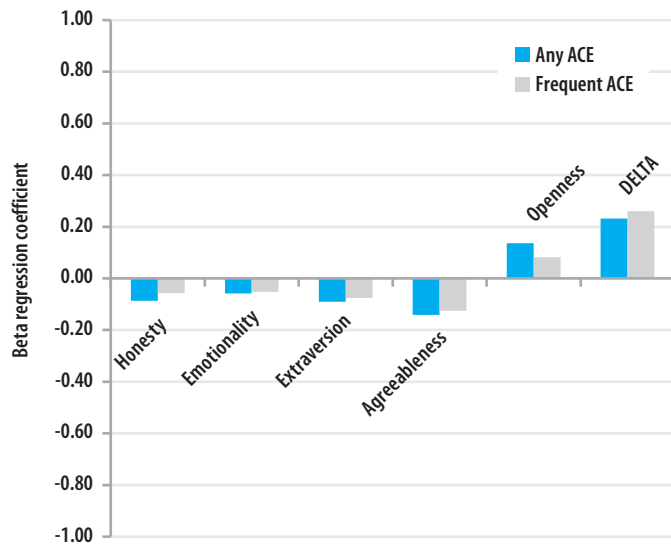
Also, there is a need to teach parents or professionals (childcare workers, teachers, general practitioners) — who might be the first to recognize heightened stress, accumulation of ACE, or any other type of suffering — on what signs of abuse, neglect or psychological suffering to look for, and to provide coping strategy classes for affected individuals. More continuous support should be made available to children identified with ACE along with more systematic follow up.

Contrary to expectations, in our sample, NSSI is more common in male respondents. Also, mental health problems are often seen as a weakness, which is something that boys especially are subjected to because of the traditional roles expected in society, and boys may more readily hide their suffering. Due to this, it is important to put as much emphasis on mental health and raising coping strategies in boys as in girls. One of the activities should be more availability of mental health services for support and counselling, particularly for adolescents.

4.2.6. ACEs and personality

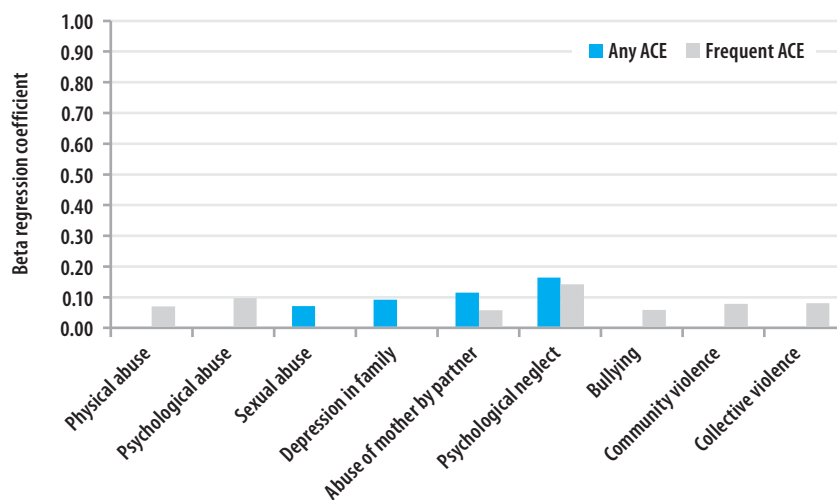
In this survey, relations between basic personality structure and ACEs were assessed. One of the ways to analyse these data is to try to predict ACE scores based on personality traits. The HEXACO questionnaire assesses six basic personality traits, i.e., Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness. Besides that, the DELTA questionnaire was used to measure Disintegration trait, which is shown to be a significant predictor of various behavioural outcomes, independently from other personality traits measured in the HEXACO model. Since scores obtained on personality inventories can be age dependent, it was decided to perform the analyses while controlling for age of respondents. These analyses revealed that personality traits predict both, any and frequent ACE scores ($r^2=0.137^{**}$, $r^2=0.124^{**}$, respectively). In addition, when controlling for age of the respondents, the strongest personality correlate of ACEs is Disintegration, and this correlation is positive: the higher the Disintegration score, the higher the number of ACEs. In addition, ACEs were negatively related with majority personality traits, i.e. Agreeableness, Extraversion, Emotionality, Honesty-Humility, and positively with Openness to experience. The only personality trait that did not correlate with ACEs is Conscientiousness.

Figure 31. Relations between any and frequent ACE scores and basic personality traits expressed via regression (beta) coefficients



When the relationship between specific types of ACEs and basic personality traits was analysed, results again demonstrated that Disintegration is the most consistent correlate. The highest correlations were obtained between Disintegration and psychological neglect ($\beta=0.157^{**}$ for any ACE, and $\beta=0.135^{**}$ for frequent ACE score), abuse of mother by partner ($\beta=0.109^{**}$ for any ACE, and $\beta=0.052^*$ for frequent ACE score) and depression in the family ($\beta=0.087^{**}$). Somewhat smaller relations with Disintegration were shown for physical abuse ($\beta=0.064^{**}$ for frequent ACE score), psychological abuse ($\beta=0.091^{**}$ for frequent ACE score), sexual abuse ($\beta=0.065^{**}$), community violence ($\beta=0.072^{**}$ for frequent ACE score) and collective violence ($\beta=0.075^{**}$ for frequent ACE score).

Figure 32. Relations between ACE scores (any and frequent) and Disintegration trait expressed via regression (beta) coefficients



It was investigated whether ACEs moderate the relationship between the personality traits and health outcomes. Findings indicate that ACEs significantly add to the prediction of overall physical health over and above all seven personality traits (additional 6% of the variance of physical health is explained by ACEs). When it comes to the

prediction of mental health, ACEs are adding little to what is already predicted by the personality traits (3% of the variance), although this additional prediction is significant.

Findings showed that among basic personality traits, Disintegration has strongest links with ACEs. Persons who have highest ACE scores can be described as peculiar, odd, inclined to break rules for personal profit and motivated by material gain, and prone to flatter others to achieve what they want. They also hold grudges against those who have harmed them, are stubborn and quarrelsome. They tend to consider themselves as unpopular, do not prefer to be the centre of attention, and are more prone to feel less lively and optimistic. When we analysed the relationship between specific types of ACEs and basic personality traits, Disintegration was the most consistent correlate. Physical and emotional abuse, depression/suicidal tendencies, violent behaviour of family members, and emotional neglect had the highest correlations with Disintegration.

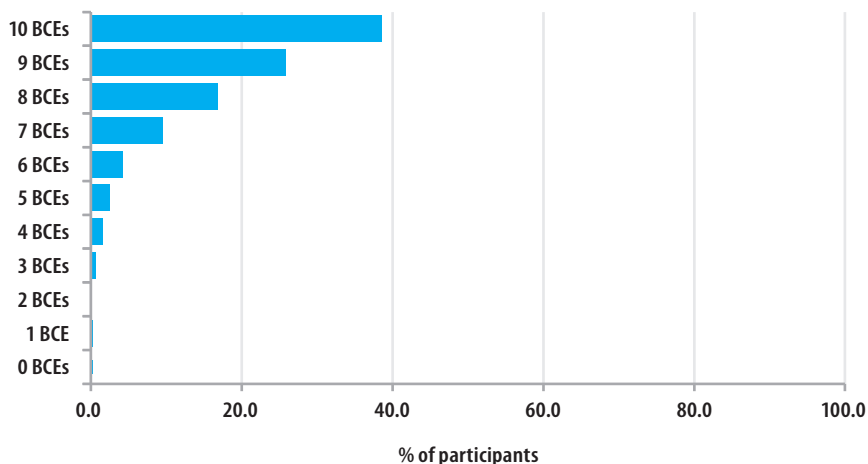
Although these effects are not strong, they indicate that behaviour of people experiencing these ACEs can be described as more peculiar, odd or bizarre. Finally, we were interested whether, in prediction of overall physical health, ACEs are contributing in addition to personality dispositions. Results showed that ACEs are contributing to the prediction of overall physical health over and above personality traits. In prediction of the mental health, ACEs were significant but the influence was less strong. In other words, mental health is far more determined by the personality structure than by ACEs.

Based on the current design of the survey, it is not possible to determine the direction of influence between ACEs and personality traits. However, there are several hypotheses that deserve further testing. It might be that certain individuals suffered ACEs in childhood and that those negative experiences influenced the development of personality in adulthood. Another possibility would be that those individuals who were exposed to the ACEs more than others were peculiar and odd, and due to those characteristics were more prone to experience ACEs. Finally, it is possible that individuals high on the Disintegration scale tend to “colour” their experiences and memories negatively due to distorted test of reality. Therefore, it is possible that they ascribe negative attributes to the experiences they were exposed to as children. Since Disintegration influences both cognitive and affective processing, it is highly possible that individuals high on the Disintegration scale tend to perceive and describe their past events as negative, or different from what happened in reality.

4.2.7. Benevolent Childhood Experiences

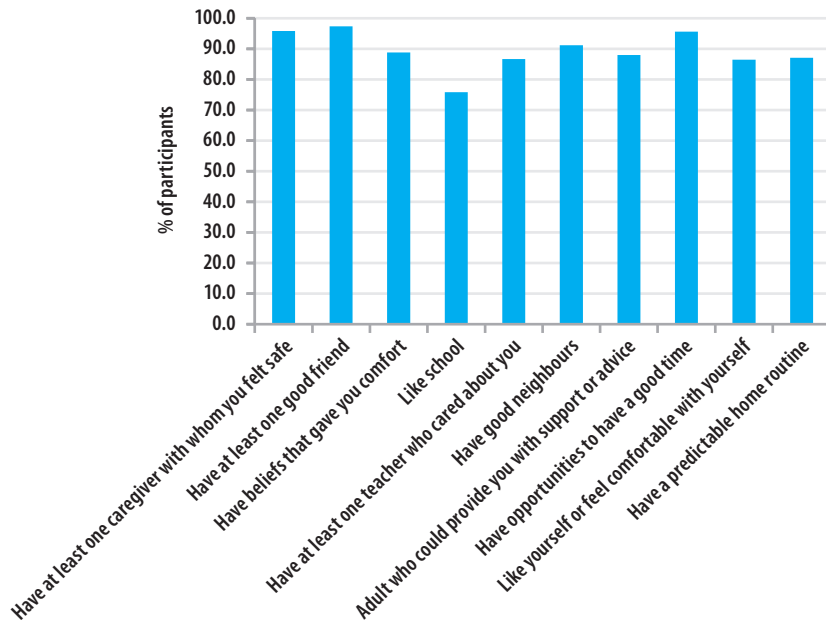
Out of 10 benevolent childhood experiences (BCEs) investigated in the study, the participants on average had 9 of them (mean=8.66, median=9). The maximum number of BCEs was reported by 38.6% (N=1,015), whereas those with 5 or less BCEs constituted only 5% of the sample (N=132) (Figure 33). Females report more BCEs ($r_{pbis}=-0.130^{**}$). Additionally, more educated ($Rho=0.165^{**}$), individuals with higher monthly income ($Rho=0.131^{**}$), those who are parents ($Rho=0.086^{**}$), and the ones currently in a partner relationship ($Rho=0.094^{**}$) reported more BCEs. All correlations were weak.

Figure 33. Number of BCEs among participants



The three most frequent BCEs are: *having at least one good friend*, *having at least one caregiver with whom one felt safe*, and *having opportunities to have a good time*. The least present BCEs are: *liking school*, *having at least one teacher who cared about them*, and *liking oneself or feeling comfortable with oneself* (Figure 34).

Figure 34. Frequency of BCEs among participants



Association between BCEs and ACEs and traumatic symptoms

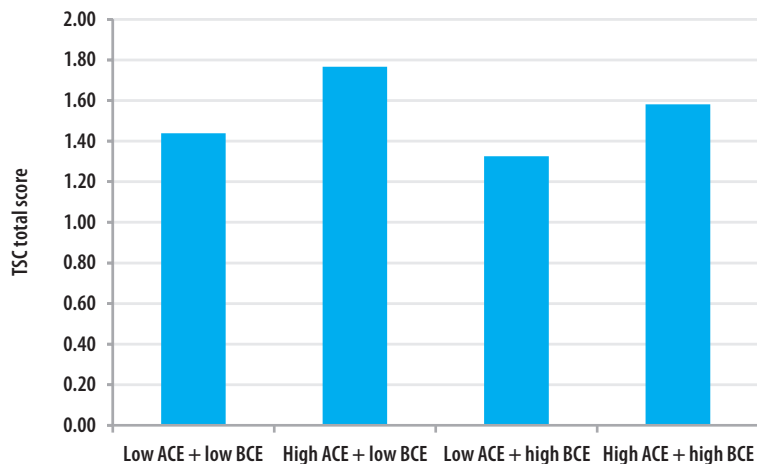
As expected, participants with lower number of BCEs had higher number of ACEs ($Rho=-0.223^{**}$ for any ACE, and $Rho=-0.208^{**}$ for frequent ACE score), and more traumatic symptoms ($Rho=-0.180^{**}$). When controlling for gender and age, presence of the following BCEs significantly predicted lower severity of traumatic symptoms: *liking oneself or feeling comfortable with oneself* ($Beta=-0.126^{**}$), *having good neighbours* ($Beta=-0.115^{**}$), *having a predictable home routine* ($Beta=-0.086^{**}$), and *having opportunities to have a good time* ($Beta=-0.060^{*}$). In other words, these BCEs acted as protective factors.

Participants were then divided in four groups according to the frequent ACE score ("high ACE" assumed if four or more, according to the adverse outcome cut-off in the literature (Hughes et al., 2017)), and the BCEs score ("high BCE" assumed if nine or more — median was used as a cut-off). The first group involved participants with *low ACEs and high BCEs*, the second with *both low ACEs and low BCEs*, the third with *both high ACEs and high BCEs*, and the fourth with *high ACEs and low BCEs*. These groups were compared for total score obtained on the traumatic symptom checklist (TSC). All groups' scores differed significantly ($F=66.395^{**}$, post-hoc group differences were significant at 0.01 level). The least severe symptoms were present in the group with low ACEs and high BCEs; more severe in those with both low ACEs and low BCEs; followed by the group with both high ACEs and high BCEs; while the most severe symptoms were present in the group of individuals with high ACEs and low BCEs (Figure 35). The multivariate analysis revealed that the BCEs score independently explained 1.3%** and the frequent ACEs score 7.2%** of the trauma-related symptom variance, implying the smaller independent effect of BCEs than of ACEs number.

Most of the participants in the study had a high number of positive experiences in childhood; precisely, 39% had all ten BCEs. Available evidence obtained on a sample of women from the United States of America, who presumably had low income, indicated that 28% experienced BCEs (Narayan et al., 2018). In the current sample, more

BCEs were reported by females, individuals with higher education and income, and those who are parents and in a relationship. Previous findings did not show significant associations between age and education on one side, and BCEs on the other (Narayan et al., 2018).

Figure 35. Traumatic symptoms in four groups of participants clustered according to ACEs/BCEs number



The most frequent positive childhood experiences in this study were related to good attachment to a caregiver, peers, and opportunities to have a good time, whereas good relationship with teacher and positive attitude toward school, as well as experiences serving to build self-liking capacities were the least present. As expected, the number of positive experiences was inversely associated with the number of adverse experiences in childhood and traumatic symptoms, similar to the study by Narayan et al. (2018). Low self-esteem, unpredictable home routine, bad neighbourhood relationships and not having the opportunity to have a good time predicted higher traumatic symptoms.

The finding that the highest trauma-related symptom severity is present in those with high adversity and low positive experience, while the lowest trauma-related symptom severity is present in those with low adversity and highly present positive experiences, as two extremes, supports the view of ACEs as a risk and BCEs as a protective factor when it comes to mental health. This is in line with the previous literature (Chung, Mathew, Elo, Coyne & Culhane, 2008; Hillis et al., 2010; Narayan et al., 2018). Similar to the study by Narayan and colleagues (2018), in this study, among those with high adversity in childhood, participants with highly present positive experience had fewer trauma-related symptoms than those with low positive experience, implying that positive experiences may to some extent buffer the effects of adversity. However, we also found that the presence of adversity in spite of high positive experiences was associated with more severe trauma-related symptoms compared to the situation where there is a lack of positive experience and the absence of adversity. This implies that the buffering effects of positive experience might not fully compensate the effects of adversity. As in the study by Narayan et al. (2018), positive experiences showed independent protective effects when it comes to trauma-related psychiatric symptoms, and in the present study this effect was slightly smaller than the independent effects of adversity. This result emphasizes the toxicity of adversity, and suggests that to fully buffer these toxic effects, more positive childhood experiences and positive experiences in adulthood (such as Safe Stable Nurturing Relationships (Schofield et al., 2013)) are needed. To the best of our knowledge, this is the first study on childhood adversity and positive experiences on a large representative sample, further exploration of the nature of the relationship between these two types of experiences and their role in trauma-related symptomatology is needed.

Since positive childhood experiences have protective effects on development and resilience, it is necessary to put more emphasis on this domain in terms of assessment and intervention. Every child should be assessed for positive experiences, with or without the visible presence of the adversity, since positive experiences are the ingredients of personal defence against maladaptation. When it comes to protective effects against trauma-related mental health problems, special attention should be given to exploring and strengthening self-confidence, good relationships with neighbours, having a predictable home routine and opportunities to have pleasurable times while growing up.

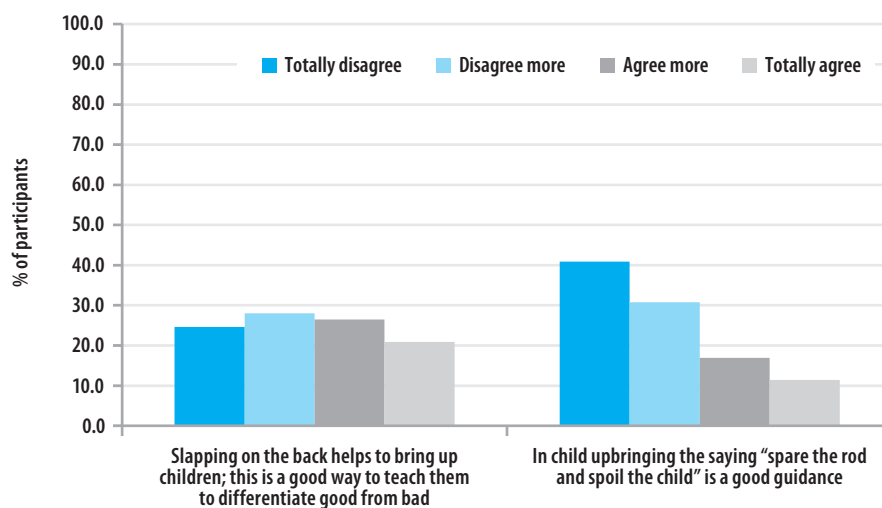
Education of the parents, expecting parents, as well as of professionals who work with children and adolescents, on recognizing the presence of protective factors and providing help in strengthening those factors would be of great importance. Even education of adolescents on this matter would be helpful, since it could raise their awareness and stimulate them to seek help when protective experiences are lacking. Parents should be provided with knowledge on how to establish adequate parent–child relationships, explore their child’s self-image, pleasure activities, and how to provide the predictable nourishing setting for their child. Community efforts on providing harmonious neighbourhood functioning, such as education and follow-up, are also warranted.

However, since the protective positive childhood experiences defined so far may not fully buffer the negative effects of early adversity, it is important to always keep in mind that preventing the ACEs is of utmost importance, and that additional buffering factors during development or in adulthood should be identified and acted upon. Assessment of protective factors should be highly individualized as a personal set of strengths for each child and adolescent (by parents, teachers, doctors, etc.), as well as for each adult identified as a victim of early adversity or as a person suffering from mental health problems.

4.2.8. Attitudes to corporal punishment

Participants, regardless of whether they were parents themselves, responded to two questions related to attitudes toward corporal punishment (Figure 36). Overall, respondents were more unsupportive than supportive of corporal punishment. Over half of the participants (52.6%) disagreed, completely or predominantly, with the statement “Spanking helps disciplining a child, it is a good way to teach the child right from wrong”. The majority of participants (71.7%) disagreed with the statement “When rearing children, it is good to follow the saying — The beating stick came from heaven”. About 55.6% of those who answered disagreed with both statements.

Figure 36. Distribution of attitudes toward corporal punishment among participants



Participants who were more likely to support corporal punishment in total (sum of the two questions above) were males ($r_{pbis}=0.124^{**}$), and individuals with lower education ($Rho=-0.054^{**}$).

Associations with ACEs

The total ACE score for any experience weakly correlated with support for corporal punishment ($Rho=0.056^{**}$). Additionally, we explored the association between being spanked in childhood and adolescence (as a discipline method used by own parents) and current attitudes toward corporal punishment. Participants who were more often spanked were more supportive of using corporal punishment as a disciplining method, and this association was stronger than the association with the ACE score ($Rho=0.201^{**}$).

Being a parent appeared as a moderator between the ACE score and the attitude toward corporal punishment, in a way that if a person is a parent and experienced more ACEs, they were more supportive of corporal punishment. Higher number of ACEs weakly but significantly predicted higher support for corporal punishment only in those who were parents (any ACE score $B=0.04^*$; frequent ACE score $B=0.05^*$), whereas this relationship was not significant in non-parents.

Importantly, over half of the participants in the study were unsupportive of corporal punishment. Although some Serbian studies provide data on the experience of corporal punishment in childhood (e.g. WHO and UNICEF studies in Serbian population (Paunovic et al., 2015; Serbian Multiple Indicator Cluster Survey, 2014)), to the best of our knowledge, this is the first study exploring the *attitudes towards corporal punishment*, in a representative sample of adults in Serbia. In spite of differences in the measuring method, the numbers are comparable with the findings of the representative German study where 56% of the participants opposed corporal punishment (Witt et al., 2017). Similar to the findings in the representative German study (Witt et al., 2017), participants in this study who were more supportive of corporal punishment in disciplining a child were males, and people with lower education. A Canadian online study among community non-parents showed that higher age was the only demographic predictor (Gagné, Tourigny, Joly & Pouliot-Lapointe, 2007).

The participants with higher number of ACEs (any ACE score) and moreover, those who were more spanked in childhood, were more prone to support using corporal punishment in child rearing, suggesting the risk of potential intergenerational patterns of spanking and maltreatment. This risk was higher in participants who were parents. A number of studies speak in favour of the existence of intergenerational transmission of maladaptive parenting patterns and child maltreatment (Lange, Callinan & Smith, 2018; Thornberry et al., 2012), roughly confirming a traditional rule of thumb that only a third of victims perpetuate the intergenerational cycle, another third breaks it, and the remaining third stays sensitive to social stress (Oliver, 1993). The mechanisms of this intergenerational transmission are still unknown, although various bio-psycho-social factors influencing it were hypothesized (Mitkovic Voncina et al., 2017).

However, there is a controversy on the specificity of the relationship between different childhood adversities and support of corporal punishment. The spanking frequency in childhood showed stronger association with supporting corporal punishment than the number of ACEs. The German study on a representative sample also found that those who supported corporal punishment reported experiencing this exact kind of discipline themselves by their parents (Witt et al., 2017), whereas a study in China showed associations between experiencing and perpetuating corporal punishment, with positive attitudes toward this type of discipline serving as a possible mechanism (Wang et al., 2018). Gagné and collaborators (2007) indicated that those who were threatened and humiliated by parents and suffered severe physical violence agreed less with spanking as a disciplinary method; however, those who were spanked in childhood approved more of spanking. In another study, adolescents who were spanked by their mothers supported corporal punishment more, regardless of the frequency, timing or chronicity of the corporal punishment they had received; however, no association was found among adolescents with suspected physical abuse in early or middle childhood (Deater-Deckard, Lansford, Dodge, Pettit, & Bates, 2003). Therefore, the data indicate possible differences in how various types of childhood adversity affect endorsing corporal punishment as a disciplinary method.

In order to prevent corporal punishment and its adverse effects including intergenerational transmission, continuous and multilayer preventive activities are needed. First of all, setting an explicit ban on corporal punishment of children and adolescents within the national family law legislation is warranted, according to international standards. Screening and reporting could be improved with further education of professionals working with children

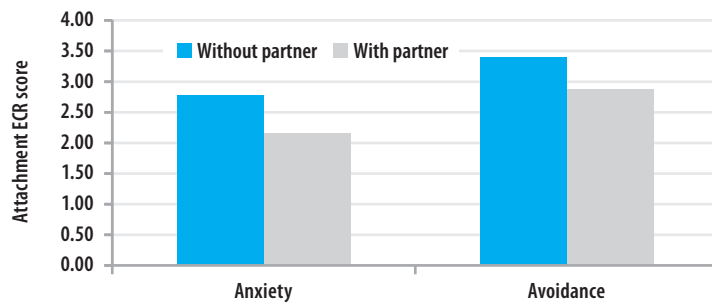
and adolescents, as well as with parents, aimed at raising awareness, recognition and willingness to react in cases of corporal punishment. The procedure protocols on child protection should be continuously and systematically evaluated in terms of content, how much they are followed, and what are the obstacles.

When it comes to universal, selective and indicated prevention, education of the population may still play a central role. Education activities should be directed not only to parents and expecting parents, but also to future parents, in terms of adolescents and young people whose attitudes toward corporal punishment are being formed under the influence of experiencing corporal punishment by their own parents. Since being a parent increases the chances of ACEs predicting support for corporal punishment in adulthood, becoming a parent may represent the breaking point in prevention of corporal punishment in the next generation. In other words, education on distinguishing appropriate from non-appropriate parenting and disciplining methods should begin as early as possible, long before someone becomes a parent. Screening parents for their own experiences of ACEs and corporal punishment would also be of importance in terms of prevention, as well as screening attitudes towards parenting in parents with high childhood adversity.

4.2.9. Attachment in romantic relationships

A description of romantic attachment dimensions in groups of participants with or without current romantic relationship is presented in Figure 37. Participants without a partner had more insecure attachment, represented by significantly higher levels of both attachment anxiety and avoidance ($r_{pbis}=-0.257^{**}$ and $r_{pbis}=-0.215^{**}$, respectively).

Figure 37. Attachment dimensions in participants with and without current partner relationships



Those with higher anxiety were younger ($Rho=-0.096^{**}$), with lower family income ($Rho=-0.092^{**}$), and without children ($r_{pbis}=-0.154^{**}$), whereas those with higher avoidance had lower education ($Rho=-0.095^{**}$).

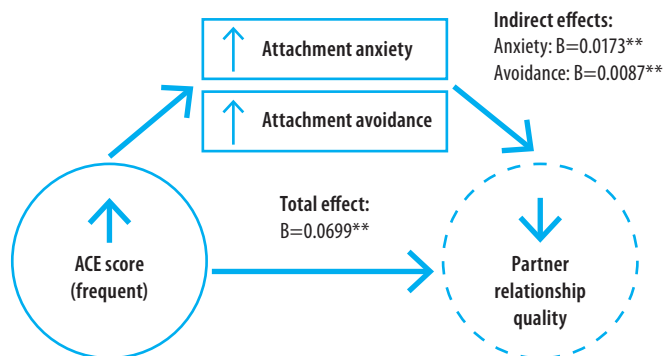
Attachment dimensions were also significantly related to perceived relationship quality (operationalized as excellent, good, occasional verbal conflicts, frequent verbal conflicts, and verbal conflicts with physical violence). Among participants who were in partner relationships, those who reported worse relationship quality had more insecure attachment in terms of higher levels of both attachment dimensions ($Rho=-0.254^{**}$ for anxiety and $Rho=-0.282^{**}$ for avoidance).

Association with ACEs

Total ACE scores were associated with both attachment anxiety ($Rho=0.239^{**}$ for any ACE scores, and $Rho=0.207$ for frequent ACE scores) and to a lesser extent avoidance ($Rho=0.099^{**}$ for any ACE scores, and $Rho=0.101^{**}$ for frequent ACE scores).

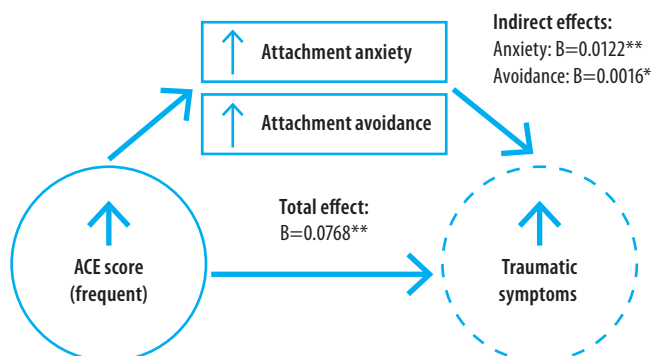
Attachment anxiety and avoidance partially mediated the association between frequent ACEs total score and perceived partner relationship quality in participants who currently had romantic partners. This effect was independent of gender and age. This finding suggests that the effect of multiple adverse experiences in childhood on worse current romantic relationship quality may be, in part, explained by the mechanism of insecure attachment, i.e., the higher attachment scores (Figure 38).

Figure 38. Mediating effects of attachment between frequent ACE score and relationship quality



Attachment anxiety and avoidance also partially mediated the association between frequent ACE score and trauma-related symptoms in the sample. This effect was also independent of gender and age. It suggests that the effects of multiple adverse experiences in childhood on more severe psychiatric trauma-related symptoms may be, in part, explained by the mechanism of insecure attachment, i.e. the higher attachment scores (Figure 39). In both mediations, effects were weak but significant, and more prominent for anxiety than avoidance.

Figure 39. Mediating effects of attachment between frequent ACE score and trauma-related symptoms



Insecure romantic attachment was related to younger age, lower education, lower family income, not being a parent, not being in a relationship or having worse relationship quality. More adversity in childhood was related to more insecure romantic attachment (with stronger links for attachment anxiety than avoidance), and this is probably partly responsible for lower quality in partner relationships and having more trauma-related symptoms. Results, overall, support the findings in the literature. Among Irish students, insecure attachment (anxiety) partly explained the relationship between childhood ad-

versity and psychological distress and self-perceived well-being, although this was shown for general, and not for a romantic attachment (Corcoran & McNulty, 2018). Child maltreatment was associated with betrayal trauma in adulthood through attachment anxiety among US college students (Hocking, Simons & Surette, 2016). Even brief early separation from attachment figures during childhood trauma was linked to long-lasting effects on attachment security, further leading to adult post-traumatic psychopathology (Bryant et al., 2017). When it comes to affecting relationships, our findings were somewhat similar to the results of the study among French-Canadian adolescents and emerging adults (Godbout et al., 2017). Namely, the exposure to family violence in childhood increased current relationship violence through romantic attachment anxiety. In the same study, attachment avoidance was predictive of relationship satisfaction, and the followed-up change in romantic attachment associated with changes in relationship satisfaction and violence. Another study among Israeli undergraduate students indicated the effect of emotional abuse in childhood on romantic relationship functioning, and attachment avoidance along with self-criticism was partly responsible for this effect (Lassri et al., 2016). Overall, childhood adversity may have significant effects on adult attachment styles, with repercussions on mental health and relationship functioning. However, the effects sizes in our study were small, emphasizing the need to explore to a higher extent these relationships and possible mediators.

Insecure attachment has long been a part of psychological and psychiatric clinical assessment and intervention. However, insecure attachment patterns in general population may easily go undetected and affect social adaptation, especially in terms of partner relationships. Since insecure romantic attachment may partially be responsible for the effects of early adversity on both low relationship quality and more intensive trauma-related mental health problems, it is of utmost importance to follow several screening directions:

- identify attachment patterns in early adversity victims (of all ages);
- identify history of early adversity among those presenting insecure attachment;
- identify both early adversity history and romantic attachment patterns in those with problematic partner relationships, and those with mental health problems (especially trauma-related problems).

To buffer the negative effects of early trauma in those with insecure attachment internal model, it is necessary to intervene in terms of attachment modification. More targeted education of professionals, as well as providing more sources for psychotherapeutic activities within the public health-care services would make such interventions more accessible for victims of all age, and provide more chance of the healing change. Education of general population about the meaning and importance of attachment, on the pervasiveness of its effects, and on the power of psychotherapeutic change, would be of significance in terms of better self-awareness, more proneness to help-seeking, better therapeutic compliance, and less stigma.

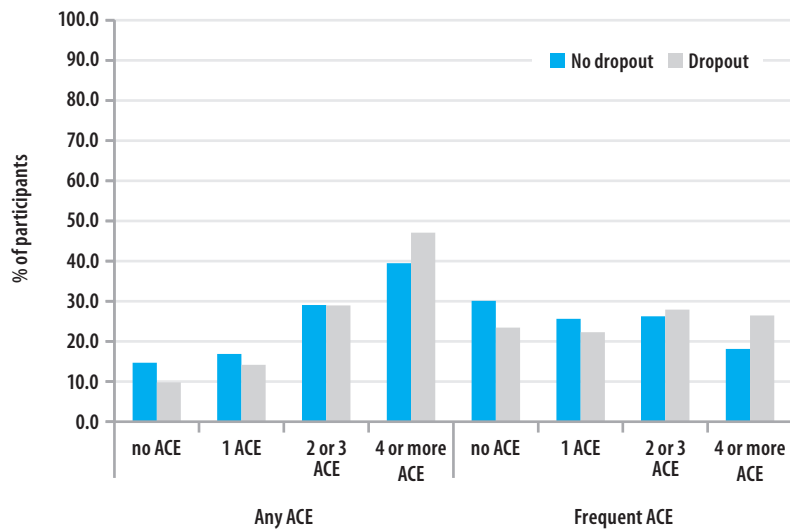
4.3. ACEs AND EDUCATION

In this domain, the relationship between ACEs and education was explored specifically regarding the prevalence of dropout, the frequency of school problems, achieved educational and occupational level.

4.3.1. ACEs and dropout

In total, 18.3% of respondents dropped out of school or university. The prevalence of dropout increased with ACEs for the both, any experience ($r_{pbis}=0.086^{**}$) and frequent experience ($r_{pbis}=0.092^{**}$) criteria. Less than 15% of the participants who did not report any ACEs were school leavers. On the other hand, almost one in five persons who had experienced four or more ACEs reported leaving education before finishing it (21% any experience criteria and 25% frequent experience criteria). School problems score was calculated as a mean frequency of absenteeism, violence toward teachers and pupils, engaging in school fights, destroying school property, and exposure to teacher and peer violence. These results are in accordance with previous studies, which showed increase in the probability of failing to complete high school among maltreated and neglected young people (Cage, 2018; Mills et al., 2018).

Figure 40. ACEs and their association with dropout

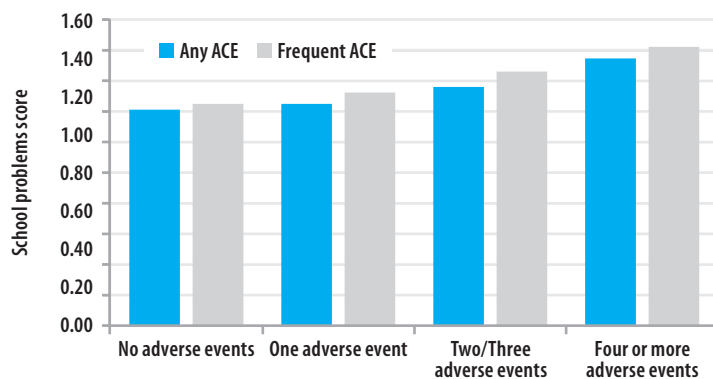


There was a statistically significant medium correlation between ACEs and prevalence of school problems, defined as absenteeism, exposure to school violence and presence of violent behaviour, for both any ACE ($r=0.46^{**}$) and frequent ACE score ($r=0.41^{**}$).

A medium correlation with psychological abuse was observed on analysing the relationship between specific types of ACEs and prevalence of school problems, as well as with different types of violence, such as bullying, fights, community violence and collective violence ($r^2=0.34^{**}$).

These results suggest that participants who were exposed to violence at home or at the community level (that are part of ACEs score) were more prone to experience violence and/or manifest violent behaviour in the school setting (aspects of school problem score).

Figure 41. ACEs and school problems score



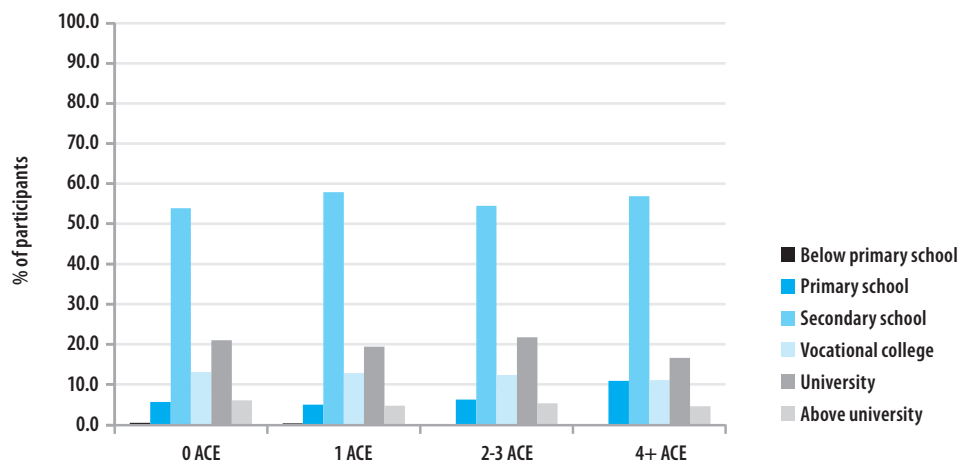
4.3.2. ACEs and education level

Most of the participants finished secondary school (56%) and 25% have a university degree. There were no statistically significant differences in ACEs scores regarding the level of education considering the criterion of any experience. Regarding the criterion of frequent experience, participants with higher education have lower ACEs score ($\eta^2=0.01^{**}$). However, this relation is very weak, around 1% of the variance in experiencing frequent ACE to a lower extent can be related to higher education.

Only one statistically significant association was found between ACE and the nine reasons for dropping out, and that one is only significant for the criterion of any experience: participants with a higher ACEs score more often left school because of health reasons. Correlations between ACE and school success at the primary and secondary school levels are either missing or are very low.

Findings suggest only a statistically significant relationship between ACE and employment in urban region, and that is only for the any experience criterion.

Figure 42. Education level and frequent ACEs



Overall, 26% of individuals participating in the ACE survey were unemployed. Contrary to the expectation, there were no statistically significant differences in ACEs scores between unemployed and employed participants. This finding is not in line with previous studies, which showed negative relations between ACEs and occupational outcomes (Mills, Kisely, Alati, Strathearn & Najman, 2018; Jaffee et al., 2018), and requires further analysis dedicated to the identification of significant moderators.

People with ACE are more inclined to drop out of school and obtain a lower level of education. These results indicate that the education system should be reinforced in order to more successfully compensate or diminish the effect of ACE. Collaboration with other systems (such as health and child protection), as well as organized joint activities, are needed in order to obtain the full effects of intervention programmes.

Reducing the number of young people leaving school early is one of the five key targets in the European Commission's Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth (European Commission, 2010). It is also a strategic orientation of educational reforms in Serbia. The results of this study point out that a focus on maltreated children and their specific educational needs should be part of the interventions oriented toward prevention of dropout.

The first step should be a profound understanding of the specific problems and challenges maltreated children confront in during their education. Reinforcing school staff competences regarding identification and support of children who are facing adverse experiences will reduce negative educational outcomes.

Children who experience violence in the family or at the community level should be a focus of the school strategies for reducing school violence. Two scenarios should be avoided: that these children become victims of peer violence in school; and that they become violent towards their peers. Future intervention studies should explore the possibility of helping maltreated children to regulate their emotions, which will reduce the risk for the manifestation of violent behaviour and will enhance their peer acceptance. A good relationship with classmates and close friend relationships are recognized as an important protective factor for academic resilience. Having that in mind, improving school climate quality and a strong sense of belonging will promote maltreated children's social and academic engagement. Teachers, school counsellors, after-school programme supervisors, and coaches could become very important role models for children who permanently or temporarily lack some of the essential social bonds.

5. RECOMMENDATIONS – HOW TO BREAK THE CIRCLE OF VIOLENCE

The United Nations Secretary General's world report on violence against children (Pinhiero, 2006, p. 93), states that governments should ensure "comprehensive systems to prevent violence and protect children in ways that respect the child and their family, their dignity and privacy and the developmental needs of girls and boys". The report recommends that coordinated responses to prevent violence to children can be strengthened by: a) Providing good prenatal and postnatal care and home visitation for optimizing early childhood development; b) Implementing culturally appropriate and gender sensitive parenting programmes that support families to provide a violence-free home; c) Protecting vulnerable children in the family and addressing disability and gender issues such as spouse/intimate partner violence (IPV), which is highly associated with all types of child maltreatment (50–60% of cases).

Our study has shown the broad effect ACEs may have on various problems throughout life in all facets of functioning — mental, physical and social. Preventive strategies are crucial for promotion of health of individuals, as well as the functioning of societies in general. Different aspects of prevention are represented by three types of preventive domains — universal (primary), selective (secondary) and indicated (tertiary).

5.1. UNIVERSAL (PRIMARY) PREVENTION OF ACE

The techniques of universal (primary) prevention are the most cost-effective way of preventing violence against children. It is necessary to consider them as alternatives to reactive interventions. Many interventions (e.g., health home-visits by nurses) might prove useful in preventing and identifying child abuse and neglect, as well as domestic violence. The mechanisms of universal prevention are as follows:

- advisory work regarding family planning, prenatal and postnatal health care for mother and child;
- parenting schools for future parents, in which parents would be introduced to the needs of the baby and the skills encouraging development from the earliest age;
- parenting schools for parents, guardians and foster parents of preschool children, in which they would become familiar with the characteristics of children's development and the needs of children and how to provide nurturing care;
- counselling and education of parents and children about abuse and neglect, about the harmfulness of corporal punishment of children, disciplining children by methods of positive discipline, etc.

Counselling can be provided through home visits by visiting nurses, as well as through regular check-up visits at the primary health care level and it does not require establishment of new modalities of service provision. In *Making the Connection*, a study conducted in seven countries of Eastern Europe and Central Asia, evidence showed that violence against children is reported as affecting children as young as one year old (United Nations Population Fund/UNICEF, 2018). The leading recommendation of the study was to promote early childhood development (ECD) interventions that aim to involve both mothers and fathers in creating nurturing, violence-free households, and support reporting of incidents. Early prenatal intervention has been shown to be effective in developing positive and safe home environments. Prevention interventions can also involve fathers as well as mothers in creating nurturing, violence-free households, which can have long-lasting effects.

To summarize, first steps in preventing ACEs should be related to activities in at least four domains. The first domain relates to children themselves, teaching them about their own rights. The second domain refers to family, educating family members about children's rights, but also empowering them through knowledge on nonviolent child-rearing, positive discipline strategies along with child development, importance of nurturing care, development of attachment, and engagement of both parents. The third domain is related to schools, hospitals and other institutions where professionals have contact and interactions with children. Professionals should be educated to provide children with stress-coping strategies, issues regarding substance abuse, assertive communication, etc. Finally, the fourth domain is the role of the media, that should be oriented towards raising awareness of children, families and professionals on children's rights, parenting skills, the possible impacts of ACEs, etc.

For example, education about substance abuse and its negative consequences may be one of the most important steps, along with putting emphasis on mental health and raising coping strategies. Education on appropriate parenting and disciplining methods should begin as early as possible, long before someone becomes a parent. Parents should be provided with knowledge on how to establish positive childhood experiences, because those have protective effects on development and resilience. Providing harmonious neighbourhood functioning is also warranted. There is a need to teach professionals — who might be the first to recognize heightened stress, accumulation of ACE, or any other type of suffering (parents, childcare workers, teachers, general practitioners) — on which signs of abuse, neglect or psychological suffering to look for, and to provide coping strategy classes for affected individuals.

5.2. SELECTIVE (SECONDARY) PREVENTION

Selective prevention involves detection of children and families with an increased risk of ACEs, as well as activities aimed at preventing ACEs from occurring. As an example, best results in working with identified high-risk groups are achieved during home visits, through discussion and counselling with small children. Home visits contribute to the improvement of: the well-being of parents (depression of the mother, substance abuse), parenting skills and behaviour (feeding, a more stimulating and safer home environment) and general outcomes for the child (outcomes related to health, nutrition and development). It is important for home visitors to be trained to identify risks in a holistic manner (socioeconomic, violence, safety and security of children, parental well-being, engagement of fathers, focus on overall child development, parental capacities to support nurturing care, etc.) and have capacity to conduct more visits to families in need through a progressive component. Home visitors should collaborate and engage with professionals across different sectors. Home visiting programmes in the region, delivered by patronage nurses, also have a strong primary prevention potential.

In addition, all professionals in contact with children should also be sensitized to recognize risk factors and signs that could indicate that a child is or could be exposed to ACE, and to intervene early or to prevent it. All points of contact with children by health care professionals should be also used to assess mental health and possible exposure to ACE. Education and social protection professionals should know what are the signs that indicate exposure to ACE in order to react timely, and should have a set of screening questions at hand.

Special attention should be given to exploring and strengthening self-confidence, good relationships with neighbours, having a predictable home routine, and opportunities to have pleasurable times while growing up. This might help children overcome impacts of ACEs at the time, but also later in life.

Primary and secondary prevention are more effective when they are provided as *universal services* offered to everyone, along with *enhanced services* and interventions *targeting* families that are found to be *'in need'* and/or exposed to high risk of abuse before violence against a child takes place. These preventive strategies should also be focused on strengthening protective factors such as: supportive family environment; fostering parenting skills; stable family relations; employment of parents; adequate housing and access to healthcare and social services; and communities providing support to parents and which take responsibility for preventing domestic violence.

Screening parents for their own experiences of ACEs would also be of importance in terms of prevention, as well as screening attitudes towards parenting in parents with high childhood adversity.

5.3. INDICATED (TERTIARY) PREVENTION

Indicated prevention includes work with abused and neglected children and their families when abuse has already taken place, in order to prevent repeated abuse and neglect, and reduce the consequences of abuse and neglect. This also refers to consequences of other ACEs that occurred. In this case, cooperation and exchange of information between experts and institutions involved in the overall process is necessary. The goal is to preserve the family and prevent displacement of abused and neglected children into institutions or alternative forms of out-of-family care.

The first step should comprise thorough assessment of mental and physical health of both child and the family, biologic indicators of stress or trauma, elements of resilience, protective factors such as positive childhood experiences (BCEs — adequate attachment to at least one caregiver, to friends, teachers, predictable home routine, etc.), and positive functioning and well-being (Bethell et al., 2017). The following steps refer to interventions that buffer the negative effects of ACEs in terms of psychosocial support, psychiatric and medical treatments, social and educational inclusion. One of the important domains of indicated prevention are activities focused on preventing the intergenerational transmission of early adversity (Mitkovic Voncina et al., 2017).

Teaching functional coping strategies for overcoming stress when a child is recognized as having an accumulation of ACEs or is a victim of abuse or neglect in designated institutions (schools, health and social care institutions) should be recommended.

More targeted education of professionals, as well as providing more sources for psychotherapeutic activities within the public health-care services would be helpful for victims of all ages in terms of better self-awareness, more proneness to help-seeking, better therapeutic compliance, and less stigma. Reinforcing school staff competences regarding identification and support of children who are facing ACE will reduce negative educational outcomes, and the very first step is better understanding of the specific problems and challenges that maltreated children confront. Children who experience violence should be in the focus of strategies for reducing school violence. Improving school climate quality and a strong sense of belonging to the school will promote maltreated children's social and academic engagement.

In conclusion, as a result of research, mapping and consultation with key stakeholders in the system for the prevention and protection of children against violence (researchers, experts, activists, civil service providers, civil servants and policymakers), a list of key priorities for current policy has been defined, focusing on interventions in the system of prevention and protection of children against violence:

- Better coordination of interventions with relevant policies.
- Improve the protection system at local level.
- Continuous work on raising awareness and changing social norms, values and attitudes through the continuation of zero tolerance campaigns against violence; encouraging non-violent communication; banning violent discipline of children; and promoting gender equality and non-discrimination.
- Improving competencies empowered by institutions that deal with children.
- Support families in the development of parental competencies.
- Development of prevention services, direct support and protection of children from vulnerable groups. These include: children with disabilities, children in conflict with the law, children exposed to child labour, children in early and forced marriage, children from Roma settlements, children who are migrants and refugees, and especially unaccompanied children.
- Ensuring and strengthening the financing of the prevention and protection system against violence against children, and related programmes.
- Creating specialized treatment homes for child and adolescent victims of maltreatment, where specific assessment and therapy interventions are applied.

5.4. RECOMMENDATIONS FOR FUTURE RESEARCH ON ACE

In spite of consistent findings of higher risk of adverse outcomes after ACEs have occurred, there is evidence that many children and adults still do not experience such outcomes, which was also reflected by small effect sizes in this study. This may mean that there are complex underlying mechanisms which determine whether the victims will or will not be affected by maladaptation. These mechanisms could be related to various biological and psychosocial processes and factors, building a personal “wall of resilience”. Many of these factors are still unclear, and need further exploration.

References

1. Abajobir, A. A., Kisely, S., Williams, G., Strathearn, L., Suresh, S., & Najman, J. M. (2017). The association between substantiated childhood maltreatment, asthma and lung function: A prospective investigation. *Journal of Psychosomatic Research, 101*, 58–65.
2. ACE-IQ, WHO; Available at: http://www.who.int/violence_injury_prevention/violence/activities/adverse_childhood_experiences/questionnaire.pdf
3. Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.
4. Alastalo, H., Räikkönen, K., Pesonen, A. K., Osmond, C., Barker, D. J., Kajantie, E., Heinonen, K. & Eriksson, J. G. (2009). Cardiovascular health of Finnish war evacuees 60 years later. *Annals of Medicine, 41*(1), 66–72. doi:10.1080/07853890802301983
5. Al-Krenawi, A., & Graham, J. R. (2012). The impact of political violence on psychosocial functioning of individuals and families: The case of Palestinian adolescents. *Child and Adolescent Mental Health, 17*(1), 14–22.
6. Amato, P. R., & DeBoer, D. D. (2001). The transmission of marital instability across generations: Relationship skills or commitment to marriage?. *Journal of Marriage and Family, 63*(4), 1038–1051.
7. American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders: DSM–5* [5th ed]. Washington (D.C.): American Psychiatric Association.
8. Anda, R., Tietjen, G., Schulman, E., Felitti, V., & Croft, J. (2010). Adverse childhood experiences and frequent headaches in adults. *Headache: The Journal of Head and Face Pain, 50*(9), 1473–1481.
9. Andersen RE, Crespo CJ, Bartlett SJ, Cheskin LJ, Pratt M. (1998). Relationship of physical activity and television watching with body weight and level of fatness among children: results from the Third National Health and Nutrition Examination Survey. *JAMA. 279*(12):938–42.
10. Annan, J., Blattman, C., & Horton, R. (2006). The state of youth and youth protection in Northern Uganda. Uganda: UNICEF, 23.
11. Ashton, M. C., & Lee, K. (2005). Honesty-humility, the Big Five, and the five-factor model. *Journal of Personality, 73*(5), 1321–1354.
12. Ashton, M. C., & Lee, K. (2008). The HEXACO model of personality structure and the importance of the H factor. *Social and Personality Psychology Compass, 2*(5), 1952–1962.
13. Ashton, M. C., & Lee, K. (2009). The HEXACO–60: A short measure of the major dimensions of personality. *Journal of Personality Assessment, 91*(4), 340–345.
14. Babović, M. (2015). Teorijski i istraživački pristupi u proučavanju strukturnog, kulturnog i direktnog nasilja [Theoretical and Research Approaches in the Study of Structural, Cultural and Direct Violence]. *Sociologija, 57*(2), 331–352.
15. Baiden, P., Stewart, S. L., & Fallon, B. (2017). The role of adverse childhood experiences as determinants of non-suicidal self-injury among children and adolescents referred to community and inpatient mental health settings. *Child Abuse & Neglect, 69*, 163–176.
16. Balint, E. M., Gander, M., Pokorny, D., Funk, A., Waller, C., & Buchheim, A. (2016). High prevalence of insecure attachment in patients with primary hypertension. *Frontiers in Psychology, 7*, 1087.
17. Barazzone, N., Santos, I., McGowan, J., & Donaghay-Spire, E. (2018). The links between adult attachment and post-traumatic stress: A systematic review. *Psychology and Psychotherapy: Theory, Research and Practice, 92*(1), 131–147.
18. Barker, B., Kerr, T., Dong, H., Wood, E., & Debeck, K. (2017). High school incompleteness and childhood maltreatment among street-involved young people in Vancouver, Canada. *Health & Social Care in the Community, 25*(2), 378–384.
19. Basu, A., McLaughlin, K. A., Misra, S., & Koenen, K. C. (2017). Childhood maltreatment and health impact: The examples of cardiovascular disease and type 2 diabetes mellitus in adults. *Clinical Psychology: Science and Practice, 24*(2), 125–139.
20. Beckerman, M., van Berckel, S. R., Mesman, J., & Alink, L. R. (2017). The role of negative parental attributions in the associations between daily stressors, maltreatment history, and harsh and abusive discipline. *Child Abuse & Neglect, 64*, 109–116.
21. Behrens, K. Y., Hart, S. L., & Parker, A. C. (2012). Maternal sensitivity: Evidence of stability across time, contexts, and measurement instruments. *Infant and Child Development, 21*(4), 348–355.
22. Bellis, M. A., Hughes, K., Leckenby, N., Perkins, C., & Lowey, H. (2014). National household survey of adverse childhood experiences and their relationship with resilience to health-harming behaviors in England. *BMC Medicine, 12*(1), 72.

23. Bellis, M. A., Lowey, H., Leckenby, N., Hughes, K., & Harrison, D. (2013). Adverse childhood experiences: retrospective study to determine their impact on adult health behaviours and health outcomes in a UK population. *Journal of Public Health, 36*(1), 81–91.
24. Bensley, L. S., Van Eenwyk, J., & Simmons, K. W. (2000). Self-reported childhood sexual and physical abuse and adult HIV-risk behaviors and heavy drinking. *American Journal of Preventive Medicine, 18*(2), 151–158.
25. Bethell CD, Carle A, Hudziak J, et al. (2017). Methods to Assess Adverse Childhood Experiences of Children and Families: Toward Approaches to Promote Child Well-being in Policy and Practice. *Acad Pediatr., 17*(7S):S51–S69.
26. Bethell, C. D., Newacheck, P., Hawes, E., & Halfon, N. (2014). Adverse childhood experiences: assessing the impact on health and school engagement and the mitigating role of resilience. *Health Affairs, 33*(12), 2106–2115.
27. Bland, V. J., & Lambie, I. (2018). Does childhood neglect contribute to violent behavior in adulthood? A review of possible links. *Clinical Psychology Review, 60*, 126–135.
28. Bleil, M. E., Adler, N. E., Pasch, L. A., Sternfeld, B., Reijo-Pera, R. A., & Cedars, M. I. (2011). Adverse childhood experiences and repeat induced abortion. *American Journal of Obstetrics and Gynecology, 204*(2), 122–e1–6.
29. Bowlby, J. (1969). *Attachment and Loss, Volume I Attachment*. Penguin Books.
30. Boyraz, G., Granda, R., Baker, C. N., Tidwell, L. L., & Waits, J. B. (2016). Posttraumatic stress, effort regulation, and academic outcomes among college students: A longitudinal study. *Journal of Counseling Psychology, 63*(4), 475–468.
31. Boznic, V., Katayama, R., Munoz, R., Takamatsu, S., & Yoshida, N. (2017). *Prospects of estimating poverty with phone surveys: experimental results from Serbia*. Washington, DC: The World Bank.
32. Brausch, A. M., & Muehlenkamp, J. J. (2018). Perceived effectiveness of NSSI in achieving functions on severity and suicide risk. *Psychiatry Research, 265*, 144–150.
33. Bremner, J. D., Davis, M., Southwick, S. M., Krystal, J. H. & Charney, D. S. (1994). Neurobiology of posttraumatic stress disorder. In R. S. Pynoos, R. S. (edit.) (1994). *Posttraumatic stress disorder: A clinical review*. (pp. 43–64). Baltimore: The Sidran Press.
34. Bresin, K., & Schoenleber, M. (2015). Gender differences in the prevalence of nonsuicidal self-injury: A meta-analysis. *Clinical Psychology Review, 38*, 55–64.
35. Briere, J., & Runtz, M. (1989). The Trauma Symptom Checklist (TSC-33) early data on a new scale. *Journal of Interpersonal Violence, 4*(2), 151–163.
36. Briggs-Gowan, M. J., Carter, A. S., & Ford, J. D. (2011). Parsing the effects violence exposure in early childhood: Modeling developmental pathways. *Journal of Pediatric Psychology, 37*(1), 11–22.
37. Brown, D. W., Anda, R. F., Felitti, V. J., Edwards, V. J., Malarcher, A. M., Croft, J. B., & Giles, W. H. (2010). Adverse childhood experiences are associated with the risk of lung cancer: a prospective cohort study. *BMC Public Health, 10*(1), 20. doi: 10.1186/1471-2458-10-20.
38. Brown, M. J., Thacker, L. R., & Cohen, S. A. (2013). Association between adverse childhood experiences and diagnosis of cancer. *PLoS One, 8*(6), e65524. doi: 10.1371/journal.pone.0065524.
39. Brown, R. C., & Plener, P. L. (2017). Non-suicidal self-injury in adolescence. *Current Psychiatry Reports, 19*(3), 20.
40. Brunner, R., Kaess, M., Parzer, P., Fischer, G., Carli, V., Hoven, C. W., ... & Balazs, J. (2014). Life-time prevalence and psychosocial correlates of adolescent direct self-injurious behavior: a comparative study of findings in 11 European countries. *Journal of Child Psychology and Psychiatry, 55*(4), 337–348.
41. Bruwer, B., Govender, R., Bishop, M., Williams, D. R., Stein, D. J., & Seedat, S. (2014). Association between childhood adversities and long-term suicidality among South Africans from the results of the South African Stress and Health study: a cross-sectional study. *BMJ Open, 4*(6), e004644.
42. Bryant, R. A., Creamer, M., O'Donnell, M., Forbes, D., Felmingham, K. L., Silove, D. & Nickerson, A. (2017). Separation from parents during childhood trauma predicts adult attachment security and post-traumatic stress disorder. *Psychological Medicine, 47*(11), 2028–2035.
43. Burke, N. J., Hellman, J. L., Scott, B. G., Weems, C. F., & Carrion, V. G. (2011). The impact of adverse childhood experiences on an urban pediatric population. *Child Abuse & Neglect, 35*(6), 408–413.
44. Cage, J. (2018). Educational attainment for youth who were maltreated in adolescence: investigating the influence of maltreatment type and foster care placement. *Child Abuse & Neglect, 79*, 234–244.
45. Cassels, M., van Harmelen, A. L., Neufeld, S., Goodyer, I., Jones, P. B., & Wilkinson, P. (2018). Poor family functioning mediates the link between childhood adversity and adolescent nonsuicidal self-injury. *Journal of Child Psychology and Psychiatry*. doi: 10.1111/j.1469-7610.2018.02406.x
46. Centers for Disease Control and Prevention & Kaiser Permanente ACE Study, <https://www.cdc.gov/violenceprevention/acestudy/about.html>
47. Centers for Disease Control and Prevention, & Kaiser Permanente. (2016). The ACE study survey data [unpublished data]. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention.

48. Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders, 82*(2), 217–225.
49. Christiansen, J., Christiansen, J. L., & Howard, M. (1997). Using protective factors to enhance resilience and school success for at-risk students. *Intervention in School and Clinic, 33*(2), 86–89.
50. Chung, E. K., Mathew, L., Elo, I. T., Coyne, J. C., & Culhane, J. F. (2008). Depressive symptoms in disadvantaged women receiving prenatal care: the influence of adverse and positive childhood experiences. *Ambulatory Pediatrics, 8*(2), 109–116.
51. Cicchetti, D., & Toth, S. L. (2009). The past achievements and future promises of developmental psychopathology: The coming of age of a discipline. *Journal of Child Psychology and Psychiatry, 50*(1–2), 16–25.
52. Cleare, S., Wetherall, K., Clark, A., Ryan, C., Kirtley, O., Smith, M., & O'Connor, R. (2018). Adverse childhood experiences and hospital-treated self-harm. *International Journal of Environmental Research and Public Health, 15*(6), 1235. doi:10.3390/ijerph15061235.
53. Corcoran, M., & McNulty, M. (2018). Examining the role of attachment in the relationship between childhood adversity, psychological distress and subjective well-being. *Child Abuse & Neglect, 76*, 297–309.
54. Cronholm, P. F., Forke, C. M., Wade, R., Bair-Merritt, M. H., Davis, M., Harkins-Schwarz, M., ... & Fein, J. A. (2015). Adverse childhood experiences: expanding the concept of adversity. *American Journal of Preventive Medicine, 49*(3), 354–361.
55. Cummings, E. M., Merrilees, C. E., Taylor, L. K., & Mondri, C. F. (2017). Developmental and social–ecological perspectives on children, political violence, and armed conflict. *Development and Psychopathology, 29*(1), 1–10.
56. Dagan, O., Facompré, C. R., & Bernard, K. (2018). Adult attachment representations and depressive symptoms: A meta-analysis. *Journal of Affective Disorders, 236*, 274–290.
57. Danese, A., & McEwen, B. S. (2012). Adverse childhood experiences, allostasis, allostatic load, and age-related disease. *Physiology & Behavior, 106*(1), 29–39. doi:10.1016/j.physbeh.2011.08.019.
58. Danese, A., & Tan, M. (2014). Childhood maltreatment and obesity: systematic review and meta-analysis. *Molecular Psychiatry, 19*(5), 544. doi:10.1038/mp.2013.54.
59. Danese, A., Pariante, C. M., Caspi, A., Taylor, A., & Poulton, R. (2007). Childhood maltreatment predicts adult inflammation in a life-course study. *Proceedings of the National Academy of Sciences, 104*(4), 1319–1324.
60. Dargis, M., & Koenigs, M. (2018). Two subtypes of psychopathic criminals differ in negative affect and history of childhood abuse. *Psychological Trauma: Theory, Research, Practice, and Policy, 10*(4), 444–451.
61. Davis, C. R., Usher, N., Dearing, E., Barkai, A. R., Crowell-Doom, C., Neupert, S. D., & Crowell, J. A. (2014). Attachment and the metabolic syndrome in midlife: the role of interview-based discourse patterns. *Psychosomatic Medicine, 76*(8), 611–621.
62. de Aquino Ferreira, L. F., Pereira, F. H. Q., Benevides, A. M. L. N., & Melo, M. C. A. (2018). Borderline personality disorder and sexual abuse: A systematic review. *Psychiatry Research, 262*, 70–77.
63. Deater-Deckard, K., Lansford, J. E., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2003). The development of attitudes about physical punishment: An 8-year longitudinal study. *Journal of Family Psychology, 17*(3), 351–360.
64. Deblinger, E., Mannarino, A. P., Cohen, J. A., & Steer, R. A. (2006). A follow-up study of a multisite, randomized, controlled trial for children with sexual abuse-related PTSD symptoms. *Journal of the American Academy of Child & Adolescent Psychiatry, 45*(12), 1474–1484.
65. Di Manno, L., Macdonald, J. A., & Knight, T. (2015). Family dissolution and offspring depression and depressive symptoms: A systematic review of moderation effects. *Journal of Affective Disorders, 188*, 68–79.
66. Diener, E., Scollon, C. N., & Lucas, R. E. (2009). The evolving concept of subjective well-being: The multifaceted nature of happiness. In *Assessing well-being* (pp. 67–100). Dordrecht: Springer.
67. Dong, M., Giles, W. H., Felitti, V. J., Dube, S. R., Williams, J. E., Chapman, D. P., & Anda, R. F. (2004). Insights into causal pathways for ischemic heart disease: adverse childhood experiences study. *Circulation, 110*(13), 1761–1766.
68. Dube, S. R., Anda, R. F., Felitti, V. J., Chapman, D. P., Williamson, D. F., & Giles, W. H. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: findings from the Adverse Childhood Experiences Study. *JAMA, 286*(24), 3089–3096.
69. Dunn H. (1973). *High level wellness*. Arlington: R.W. Beatty
70. Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: results from the adverse childhood experiences study. *American Journal of Psychiatry, 160*(8), 1453–1460.
71. Eisenbraun, K. D. (2007). Violence in schools: Prevalence, prediction, and prevention. *Aggression and Violent Behavior, 12*(4), 459–469.
72. Elliott, D. M., & Briere, J. (1992). Sexual abuse trauma among professional women: Validating the Trauma Symptom Checklist-40 (TSC-40). *Child Abuse & Neglect, 16*(3), 391–398.

73. Elwyn, L., & Smith, C. (2013). Child maltreatment and adult substance abuse: The role of memory. *Journal of Social Work Practice in the Addictions, 13*(3), 269–294.
74. England, M. J. E., & Sim, L. J. (2009). *Depression in parents, parenting, and children: Opportunities to improve identification, treatment, and prevention*. Washington (DC): National Academies Press.
75. Enlow, M. B., Blood, E., & Egeland, B. (2013). Sociodemographic risk, developmental competence, and PTSD symptoms in young children exposed to interpersonal trauma in early life. *Journal of Traumatic Stress, 26*(6), 686–694.
76. European Commission. (2010). *Europe 2020: A Strategy for Smart, Sustainable and Inclusive Growth*. [Communication]. Brussels: European Commission.
77. Evans, G. W., & Kim, P. (2010). Multiple risk exposure as a potential explanatory mechanism for the socioeconomic status–health gradient. *Annals of the New York Academy of Sciences, 1186*(1), 174–189.
78. Falgares, G., Marchetti, D., Manna, G., Musso, P., Oasi, O., Kopala-Sibley, D. C., ... & Verrocchio, M. C. (2018). Childhood maltreatment, pathological personality dimensions, and suicide risk in young adults. *Frontiers in Psychology, 9*, 806.
79. Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., & Marks, J. S. (1998). 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, 14*(4), 245–258.
80. Fergusson, D. M., McLeod, G. F., & Horwood, L. J. (2013). Childhood sexual abuse and adult developmental outcomes: Findings from a 30-year longitudinal study in New Zealand. *Child Abuse & Neglect, 37*(9), 664–674.
81. Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007). Polyvictimization and trauma in a national longitudinal cohort. *Development and Psychopathology, 19*(1), 149–166.
82. Finkelhor, D., Shattuck, A., Turner, H., & Hamby, S. (2013). Improving the adverse childhood experiences study scale. *JAMA Pediatrics, 167*(1), 70–75.
83. Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology, 78*(2), 350–365.
84. Friesen, M. D., John Horwood, L., Fergusson, D. M., & Woodward, L. J. (2017). Exposure to parental separation in childhood and later parenting quality as an adult: evidence from a 30-year longitudinal study. *Journal of Child Psychology and Psychiatry, 58*(1), 30–37.
85. Gagné, M. H., Tourigny, M., Joly, J., & Pouliot-Lapointe, J. (2007). Predictors of adult attitudes toward corporal punishment of children. *Journal of Interpersonal Violence, 22*(10), 1285–1304.
86. Galvin, H. K., Newton, A. W., & Vandeven, A. M. (2005). Update on Munchausen syndrome by proxy. *Current Opinion in Pediatrics, 17*(2), 252–257.
87. Gilbert, L. K., Breiding, M. J., Merrick, M. T., Thompson, W. W., Ford, D. C., Dhingra, S. S., & Parks, S. E. (2015). Childhood adversity and adult chronic disease: an update from ten states and the District of Columbia, 2010. *American Journal of Preventive Medicine, 48*(3), 345–349.
88. Gilbert, R., Widom, C. S., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *The Lancet, 373*(9657), 68–81.
89. Gilligan, R. (2000). Adversity, resilience and young people: The protective value of positive school and spare time experiences. *Children & Society, 14*(1), 37–47.
90. Giovanelli, A., Reynolds, A. J., Mondri, C. F., & Ou, S. R. (2016). Adverse childhood experiences and adult well-being in a low-income, urban cohort. *Pediatrics, peds-2015*.
91. Gjelsvik, A., Dumont, D. M., Nunn, A., & Rosen, D. L. (2014). Adverse childhood events: Incarceration of household members and health-related quality of life in adulthood. *Journal of Health Care for the Poor and Underserved, 25*(3), 1169.
92. Godbout, N., Daspe, M. È., Lussier, Y., Sabourin, S., Dutton, D., & Hébert, M. (2017). Early exposure to violence, relationship violence, and relationship satisfaction in adolescents and emerging adults: The role of romantic attachment. *Psychological Trauma: Theory, Research, Practice, and Policy, 9*(2), 127–137.
93. Goodman, R. D., Miller, M. D., & West-Olatunji, C. A. (2012). Traumatic stress, socioeconomic status, and academic achievement among primary school students. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*(3), 252.
94. Gratz, K. L. (2001). Measurement of deliberate self-harm: Preliminary data on the Deliberate Self-Harm Inventory. *Journal of Psychopathology and Behavioral Assessment, 23*(4), 253–263.
95. Gutierrez, P. M., Osman, A., Barrios, F. X., & Kopper, B. A. (2001). Development and initial validation of the Self-Harm Behavior Questionnaire. *Journal of Personality Assessment, 77*(3), 475–490.
96. Han, A., Wang, G., Xu, G., & Su, P. (2018). A self-harm series and its relationship with childhood adversity among adolescents in mainland China: a cross-sectional study. *BMC Psychiatry, 18*(1), 28.
97. Hanak N., Tenjović L., Išpanović Radojković, V., Vljaković A. & Beara M. (2012). *Balkanska epidemiološka studija o zlostavljanju i zanemarivanju dece u Srbiji*. Beograd: Fakultet za specijalnu edukaciju i rehabilitaciju; 2012.

98. Harkness, K. L., Bruce, A. E., & Lumley, M. N. (2006). The role of childhood abuse and neglect in the sensitization to stressful life events in adolescent depression. *Journal of Abnormal Psychology, 115*(4), 730.
99. Haskett, M. E., Johnson, C. A., & Miller, J. W. (1994). Individual differences in risk of child abuse by adolescent mothers: Assessment in the perinatal period. *Journal of Child Psychology and Psychiatry, 35*(3), 461–476.
100. Hasking, P., Boyes, M. E., Finlay-Jones, A., McEvoy, P. M., & Rees, C. S. (2018). Common pathways to NSSI and suicide ideation: The roles of rumination and self-compassion. *Archives of Suicide Research, 20* Sep 2018: 1–14. doi: 10.1080/13811118.2018.1468836.
101. Haydon, A. A., Hussey, J. M., & Halpern, C. T. (2011). Childhood abuse and neglect and the risk of STDs in early adulthood. *Perspectives on Sexual and Reproductive Health, 43*(1), 16–22.
102. Hayes A.F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. US: Guilford Publications.
103. Hengartner, M. P., Ajdacic-Gross, V., Wyss, C., Angst, J., & Rössler, W. (2016). Relationship between personality and psychopathology in a longitudinal community study: a test of the predisposition model. *Psychological Medicine, 46*(8), 1693–1705.
104. Hillis, S. D., Anda, R. F., Dube, S. R., Felitti, V. J., Marchbanks, P. A., Macaluso, M., & Marks, J. S. (2010). The protective effect of family strengths in childhood against adolescent pregnancy and its long-term psychosocial consequences. *The Permanente Journal, 14*(3), 18–27.
105. Hillis, S. D., Anda, R. F., Felitti, V. J., & Marchbanks, P. A. (2001). Adverse childhood experiences and sexual risk behaviors in women: a retrospective cohort study. *Family Planning Perspectives, 33*(5), 206–211.
106. Hocking, E. C., Simons, R. M., & Surette, R. J. (2016). Attachment style as a mediator between childhood maltreatment and the experience of betrayal trauma as an adult. *Child Abuse & Neglect, 52*, 94–101.
107. Høeg, B. L., Johansen, C., Christensen, J., Frederiksen, K., Dalton, S. O., Dyregrov, A., & Bidstrup, P. E. (2018). Early parental loss and intimate relationships in adulthood: A nationwide study. *Developmental Psychology, 54*(5), 963–974.
108. Holmes, T. H., & Rahe, R. H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research, 11*(2), 213–218.
109. Holt, S., Buckley, H., & Whelan, S. (2008). The impact of exposure to domestic violence on children and young people: A review of the literature. *Child Abuse & Neglect, 32*(8), 797–810.
110. Hostinar, C. E., Nusslock, R., & Miller, G. E. (2018). Future directions in the study of early-life stress and physical and emotional health: implications of the neuroimmune network hypothesis. *Journal of Clinical Child & Adolescent Psychology, 47*(1), 142–156. doi:10.1080/15374416.2016.1266647.
111. <http://www.stat.gov.rs/en-US/aktuelni-pokazatelji>
112. Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., Jones, L., & Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet Public Health, 2*(8), e356–e366.
113. Hughes, K., Lowey, H., Quigg, Z., & Bellis, M. A. (2016). Relationships between adverse childhood experiences and adult mental well-being: results from an English national household survey. *BMC Public Health, 16*(1), 222.
114. Jaffee, S. R., Ambler, A., Merrick, M., Goldman-Mellor, S., Odgers, C. L., Fisher, H. L. & Arseneault, L. (2018). Childhood maltreatment predicts poor economic and educational outcomes in the transition to adulthood. *American Journal of Public Health, 108*(9), 1142–1147.
115. Jahoda, M. (1958). *Joint commission on mental health and illness monograph series: Current concepts of positive mental health., Vol. 1*. 136 pp.
116. Jayakumar, P., Barry, M., & Ramachandran, M. (2010). Orthopaedic aspects of paediatric non-accidental injury. *Journal of Bone and Joint Surgery. British Volume, 92*(2), 189–195.
117. Jimenez, M. E., Wade, R., Lin, Y., Morrow, L. M., & Reichman, N. E. (2016). Adverse experiences in early childhood and kindergarten outcomes. *Pediatrics, peds-2015*.
118. Jun, H. J., Rich-Edwards, J. W., Boynton-Jarrett, R., Austin, S. B., Frazier, A. L., & Wright, R. J. (2008). Child abuse and smoking among young women: the importance of severity, accumulation, and timing. *Journal of Adolescent Health, 43*(1), 55–63.
119. Kaess, M., Parzer, P., Mattern, M., Plener, P. L., Bifulco, A., Resch, F., & Brunner, R. (2013). Adverse childhood experiences and their impact on frequency, severity, and the individual function of nonsuicidal self-injury in youth. *Psychiatry Research, 206*(2–3), 265–272.
120. Kajeepeta, S., Gelaye, B., Jackson, C. L., & Williams, M. A. (2015). Adverse childhood experiences are associated with adult sleep disorders: a systematic review. *Sleep Medicine, 16*(3), 320–330.
121. Kalebić Jakupčević, K., & Ajduković, M. (2011). Risk factors of child physical abuse by parents with mixed anxiety-depressive disorder or posttraumatic stress disorder. *Croatian Medical Journal, 52*(1), 25–34.

122. Karmakar, M., Elhai, J. D., Amialchuk, A. A., & Tietjen, G. E. (2018). Do personality traits mediate the relationship between childhood abuse and migraine? An exploration of the relationships in young adults using the add health dataset. *Headache: The Journal of Head and Face Pain*, 58(2), 243–259.
123. Kendler, K. S., Kuhn, J. W., & Prescott, C. A. (2004). Childhood sexual abuse, stressful life events and risk for major depression in women. *Psychological Medicine*, 34(8), 1475–1482.
124. Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior*, 43(2), 207–222.
125. Kezelman, C., Hossack, N., Stavropoulos, P., & Burley, P. (2015). The cost of unresolved childhood trauma and abuse in adults in Australia. Retrieved from: Adults Surviving Child Abuse and Pegasus Economics, Sydney.
126. Khambati, N., Mahedy, L., Heron, J., & Emond, A. (2018). Educational and emotional health outcomes in adolescence following maltreatment in early childhood: a population-based study of protective factors. *Child Abuse & Neglect*, 81, 343–353.
127. Kiekens, G., Hasking, P., Boyes, M., Claes, L., Mortier, P., Auerbach, R. P., ... & Myin-Germeys, I. (2018). The associations between non-suicidal self-injury and first onset suicidal thoughts and behaviors. *Journal of Affective Disorders*, 239, 171–179.
128. Kilibarda, B., Mravcik, V., Sieroslowski, J., Gudelj Rakic, J., & Martens, M. S. (2015). National survey on life styles of citizens in Serbia 2014 — substance use and gambling. Institute of Public Health of Serbia.
129. Kim, M., Woodhouse, S. S., & Dai, C. (2018). Learning to provide children with a secure base and a safe haven: The Circle of Security-Parenting (COS-P) group intervention. *Journal of Clinical Psychology*, 74(8), 1319–1332.
130. Klonsky, E. D., & Glenn, C. R. (2009). Assessing the functions of non-suicidal self-injury: Psychometric properties of the Inventory of Statements About Self-injury (ISAS). *Journal of Psychopathology and Behavioral Assessment*, 31(3), 215–219.
131. Knežević, G., Lazarević, L. B., Bosnjak, M., Purić, D., Petrović, B., Teovanović, P., ... & Bodroža, B. (2016). Towards a personality model encompassing a Disintegration factor separate from the Big Five traits: A meta-analysis of the empirical evidence. *Personality and Individual Differences*, 95, 214–222.
132. Knezevic, G., Savic, D., Kutlesic, V., & Opacic, G. (2017). Disintegration: A reconceptualization of psychosis proneness as a personality trait separate from the Big Five. *Journal of Research in Personality*, 70, 187–201.
133. Kret, M. E., & De Gelder, B. (2012). A review on sex differences in processing emotional signals. *Neuropsychologia*, 50(7), 1211–1221.
134. Krueger, R. F., Caspi, A., Moffitt, T. E., Silva, P. A., & McGee, R. (1996). Personality traits are differentially linked to mental disorders: a multitrait-multidiagnosis study of an adolescent birth cohort. *Journal of Abnormal Psychology*, 105(3), 299–312.
135. Krug, E. G., Mercy, J. A., Dahlberg, L. L., & Zwi, A. B. (2002). The world report on violence and health. *The Lancet*, 360(9339), 1083–1088.
136. Kuramoto, S. J., Stuart, E. A., Runeson, B., Lichtenstein, P., Långström, N., & Wilcox, H. C. (2010). Maternal versus paternal suicide and offspring risk of hospitalization for psychiatric disorders and suicide attempt. *Pediatrics*, 126(5), e1026–e1032.
137. Lahey, B. B. (2009). Public health significance of neuroticism. *American Psychologist*, 64(4), 241–256.
138. Lange, B. C., Callinan, L. S., & Smith, M. V. (2018). Adverse childhood experiences and their relation to parenting stress and parenting practices. *Community Mental Health Journal*, doi: 10.1007/s10597-018-0331-z.
139. Lassri, D., Luyten, P., Cohen, G., & Shahar, G. (2016). The effect of childhood emotional maltreatment on romantic relationships in young adulthood: A double mediation model involving self-criticism and attachment. *Psychological Trauma: Theory, Research, Practice, and Policy*, 8(4), 504–511.
140. Lazarević, L. B., Bošnjak, M., Knežević, G., Petrović, B., Purić, D., Teovanović, P., ... & Bodroža, B. (2016). Disintegration as an Additional Trait in the Psychobiological Model of Personality. *Zeitschrift für Psychologie*. 224, 204–215.
141. Lecic-Tosevski, D., Pejovic-Milovancevic, M., & Popovic-Deusic, S. (2007). Reform of mental health care in Serbia: ten steps plus one. *World Psychiatry*, 6(2), 115.
142. Lecic-Tosevski, D., Pejovic-Milovancevic, M., Tenjovic, L., Draganic-Gajic, S., & Christodoulou, G. N. (2005). Personality characteristics of psychiatric trainees. *Psychotherapy and Psychosomatics*, 74(2), 129–130.
143. Li, L., Chassan, R. A., Bruer, E. H., Gower, B. A., & Shelton, R. C. (2015). Childhood maltreatment increases the risk for visceral obesity. *Obesity*, 23(8), 1625–1632.
144. Liu, R. T., Scopelliti, K. M., Pittman, S. K., & Zamora, A. S. (2018). Childhood maltreatment and non-suicidal self-injury: a systematic review and meta-analysis. *The Lancet Psychiatry*, 5(1), 51–64.
145. Lundh, L. G., Karim, J., & Quilisch, E. V. A. (2007). Deliberate self-harm in 15-year-old adolescents: A pilot study with a modified version of the Deliberate Self-Harm Inventory. *Scandinavian Journal of Psychology*, 48(1), 33–41.
146. Lynch, M. (2003). Consequences of children's exposure to community violence. *Clinical Child and Family Psychology Review*, 6(4), 265–274.

147. Maaranen, P., Tanskanen, A., Haatainen, K., Koivumaa-Honkanen, H., Hintikka, J., & Viinamäki, H. (2004). Somatoform dissociation and adverse childhood experiences in the general population. *Journal of Nervous and Mental Disease, 192*(5), 337–342.
148. Machado, T. D., Salum, G. A., Bosa, V. L., Goldani, M. Z., Meaney, M. J., Agranonik, M., & Silveira, P. P. (2015). Early life trauma is associated with decreased peripheral levels of thyroid-hormone T3 in adolescents. *International Journal of Developmental Neuroscience, 47*, 304–308.
149. Madigan, S., Wade, M., Tarabulsy, G., Jenkins, J. M., & Shouldice, M. (2014). Association between abuse history and adolescent pregnancy: a meta-analysis. *Journal of Adolescent Health, 55*(2), 151–159.
150. Malinosky-Rummell, R., & Hansen, D. J. (1993). Long-term consequences of childhood physical abuse. *Psychological Bulletin, 114*(1), 68–79.
151. Mansbach-Kleinfeld, I., Ifrah, A., Apter, A., & Farbstein, I. (2015). Child sexual abuse as reported by Israeli adolescents: Social and health related correlates. *Child Abuse & Neglect, 40*, 68–80.
152. Margolin, G., Vickerman, K. A., Oliver, P. H., & Gordis, E. B. (2010). Violence exposure in multiple interpersonal domains: Cumulative and differential effects. *Journal of Adolescent Health, 47*(2), 198–205.
153. Martin, J., Cloutier, P. F., Levesque, C., Bureau, J. F., Lafontaine, M. F., & Nixon, M. K. (2013). Psychometric properties of the functions and addictive features scales of the Ottawa Self-Injury Inventory: A preliminary investigation using a university sample. *Psychological Assessment, 25*(3), 1013.
154. Martin, L., Viljoen, M., Kidd, M., & Seedat, S. (2014). Are childhood trauma exposures predictive of anxiety sensitivity in school attending youth? *Journal of Affective Disorders, 168*, 5–12.
155. Matschke, J., Herrmann, B., Sperhake, J., Körber, F., Bajanowski, T., & Glatzel, M. (2009). Shaken baby syndrome: a common variant of non-accidental head injury in infants. *Deutsches Ärzteblatt International, 106*(13), 211.
156. Medici, M., Direk, N., Visser, W. E., Korevaar, T. I., Hofman, A., Visser, T. J., ... & Peeters, R. P. (2014). Thyroid function within the normal range and the risk of depression: a population-based cohort study. *Journal of Clinical Endocrinology & Metabolism, 99*(4), 1213–1219.
157. Merrick, M. T., Ports, K. A., Ford, D. C., Afifi, T. O., Gershoff, E. T., & Grogan-Kaylor, A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child Abuse & Neglect, 69*, 10–19.
158. Metzler, M., Merrick, M. T., Klevens, J., Ports, K. A., & Ford, D. C. (2017). Adverse childhood experiences and life opportunities: shifting the narrative. *Children and Youth Services Review, 72*, 141–149.
159. Mills, R., Kisely, S., Alati, R., Strathearn, L., & Najman, J. M. (2018). Cognitive and educational outcomes of maltreated and non-maltreated youth: A birth cohort study. *Australian & New Zealand Journal of Psychiatry, 0004867418768432*.
160. Milner, J. S., & Chilamkurti, C. (1991). Physical child abuse perpetrator characteristics: A review of the literature. *Journal of Interpersonal Violence, 6*(3), 345–366.
161. Milner, J. S., Robertson, K. R., & Rogers, D. L. (1990). Childhood history of abuse and adult child abuse potential. *Journal of Family Violence, 5*(1), 15–34.
162. Milovančević, M. P., Tenjović, L., Ispanović, V., Mitković, M., Kirčanski, J. R., Minčić, T., & Toševski, D. L. (2014). Psychopathology and resilience in relation to abuse in childhood among youth first referred to the psychiatrist. *Vojnosanitetski Pregled-Military-Medical and Pharmaceutical Review, 71*(6), 565–570.
163. Ministry of Health of the Republic of Serbia. (2009). *Posebni protokol sistema zdravstvene zaštite za zaštitu dece od zlostavljanja i zanemarivanja* (2009). Beograd: Ministarstvo zdravlja Republike Srbije.
164. Mitkovic-Voncina, M., Pejovic Milovancevic, M., Mandic Maravic, V., & Lecic Tosevski, D. (2017). Timeline of Intergenerational Child Maltreatment: the Mind–Brain–Body Interplay. *Current Psychiatry Reports, 19*(8), 50.
165. Mitkovic-Voncina, M., Lecic-Tosevski, D., Pejovic-Milovancevic, M., & Popovic-Deusic, S. (2014). Linking child maltreatment history with child abuse potential: relative roles of maltreatment types. *Archives of Biological Sciences, 66*(4), 1681–1687.
166. Moffitt, T. E., Harrington, H., Caspi, A., Kim-Cohen, J., Goldberg, D., Gregory, A. M., & Poulton, R. (2007). Depression and generalized anxiety disorder: cumulative and sequential comorbidity in a birth cohort followed prospectively to age 32 years. *Archives of General Psychiatry, 64*(6), 651–660.
167. Moylan, C. A., Herrenkohl, T. I., Sousa, C., Tajima, E. A., Herrenkohl, R. C., & Russo, M. J. (2010). The effects of child abuse and exposure to domestic violence on adolescent internalizing and externalizing behavior problems. *Journal of Family Violence, 25*(1), 53–63.
168. Mrug, S., & Windle, M. (2010). Prospective effects of violence exposure across multiple contexts on early adolescents' internalizing and externalizing problems. *Journal of Child Psychology and Psychiatry, 51*(8), 953–961.
169. Murphy, A., Steele, M., Dube, S. R., Bate, J., Bonuck, K., Meissner, P., ... & Steele, H. (2014). Adverse childhood experiences (ACEs) questionnaire and adult attachment interview (AAI): Implications for parent child relationships. *Child Abuse & Neglect, 38*(2), 224–233.

170. Mustonen, U., Huurre, T., Kiviruusu, O., Haukkala, A., & Aro, H. (2011). Long-term impact of parental divorce on intimate relationship quality in adulthood and the mediating role of psychosocial resources. *Journal of Family Psychology, 25*(4), 615.
171. Nacak, Y., Morawa, E., Tuffner, D., & Erim, Y. (2017). Insecure attachment style and cumulative traumatic life events in patients with somatoform pain disorder: A cross-sectional study. *Journal of Psychosomatic Research, 103*, 77–82.
172. Narayan, A. J., Rivera, L. M., Bernstein, R. E., Harris, W. W., & Lieberman, A. F. (2018). Positive childhood experiences predict less psychopathology and stress in pregnant women with childhood adversity: A pilot study of the Benevolent Childhood Experiences (BCEs) scale. *Child Abuse & Neglect, 78*, 19–30.
173. National Research Council and Institute of Medicine. (2009). *Depression in Parents, Parenting, and Children: Opportunities to Improve Identification, Treatment, and Prevention*. Committee on Depression, Parenting Practices, and the Healthy Development of Children. Board on Children, Youth, and Families. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.
174. Nilsson, D., Gustafsson, P. E., & Svedin, C. G. (2010). Self-reported potentially traumatic life events and symptoms of post-traumatic stress and dissociation. *Nordic Journal of Psychiatry, 64*(1), 19–26.
175. Nock, M. K. (Ed.). (2014). *The Oxford handbook of suicide and self-injury*. Oxford University Press.
176. Noll, J. G., Shenk, C. E., & Putnam, K. T. (2008). Childhood sexual abuse and adolescent pregnancy: A meta-analytic update. *Journal of Pediatric Psychology, 34*(4), 366–378.
177. Nurius, P. S., Green, S., Logan-Greene, P., & Borja, S. (2015). Life course pathways of adverse childhood experiences toward adult psychological well-being: A stress process analysis. *Child Abuse & Neglect, 45*, 143–153.
178. Nusslock, R., & Miller, G. E. (2016). Early-life adversity and physical and emotional health across the lifespan: a neuroimmune network hypothesis. *Biological Psychiatry, 80*(1), 23–32. doi: 10.1016/j.biopsych.2015.05.017.
179. O'Connor, R. C., & Nock, M. K. (2014). The psychology of suicidal behaviour. *The Lancet Psychiatry, 1*(1), 73–85.
180. Office for National Statistics, United Kingdom. (2017). Impact of child abuse on later life: Crime Survey for England and Wales, year ending March 2016. www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/adhocs/007527impactofchildabuseonlaterlifecrimesurveyforenglandandwalesyearendingmarch2016
181. Office for National Statistics, United Kingdom. (2017). People who were abused as children are more likely to be abused as an adult. www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/peoplewhowereabusedaschildrenaremorelikelytobeabusedasanadult/2017-09-27-footnote_2
182. Oliver, J. E. (1993). Intergenerational transmission of child abuse: rates, research, and clinical implications. *American Journal of Psychiatry, 150*(9), 1315.
183. Özcan, N. K., Boyacıoğlu, N. E., Enginkaya, S., Bilgin, H., & Tomruk, N. B. (2016). The relationship between attachment styles and childhood trauma: a transgenerational perspective—a controlled study of patients with psychiatric disorders. *Journal of Clinical Nursing, 25*(15–16), 2357–2366.
184. Ozcetin, A., Belli, H., Ertem, U., Bahcebasi, T., Ataoglu, A., & Canan, F. (2009). Childhood trauma and dissociation in women with pseudoseizure-type conversion disorder. *Nordic Journal of Psychiatry, 63*(6), 462–468.
185. Park, S. H., Vidlock, E. J., Shih, W., Presson, A. P., Mayer, E. A., & Chang, L. (2016). Adverse childhood experiences are associated with irritable bowel syndrome and gastrointestinal symptom severity. *Neurogastroenterology & Motility, 28*(8), 1252–1260.
186. Pat-Horenczyk, R., Peled, O., Daie, A., Abramovitz, R., Brom, D., & Chemtob, C. M. (2007). Adolescent exposure to recurrent terrorism in Israel: Posttraumatic distress and functional impairment. *American Journal of Orthopsychiatry, 77*(1), 76–85.
187. Paunovic, M., Markovic, M., Vojvodic, K., Neskovic, A., Sethi, D., & Grbic, M. (2015). Survey of adverse childhood experiences among Serbian university students. Report from the 2013/2014 survey. Copenhagen: WHO Regional Office for Europe.
188. Peck, S. C., Roeser, R. W., Zarrett, N., & Eccles, J. S. (2008). Exploring the roles of extracurricular activity quantity and quality in the educational resilience of vulnerable adolescents: Variable- and pattern-centered approaches. *Journal of Social Issues, 64*(1), 135–156.
189. Pecoraro, R. E., Inui, T. S., Chen, M. S., Plorde, D. K., & Heller, J. L. (1979). Validity and reliability of a self-administered health history questionnaire. *Public Health Reports, 94*(3), 231.
190. Pejović-Milovančević M., Minčić T., Kalanj D. (ur.). (2012). *Priručnik za primenu Posebnog protokola sistema zdravstvene zaštite za zaštitu dece od zlostavljanja i zanemarivanja*. Beograd: Institut za mentalno zdravlje; 2012.
191. Pieterse, D. (2015). Childhood maltreatment and educational outcomes: evidence from South Africa. *Health Econ., 24*(7), 876–94.
192. Pilowsky, D. J., Keyes, K. M., & Hasin, D. S. (2009). Adverse childhood events and lifetime alcohol dependence. *American Journal of Public Health, 99*(2), 258–263.
193. Pinheiro, P. S. (2006). *World report on violence against children*. Geneva: United Nations.

194. Plener, P. L., Allroggen, M., Kapusta, N. D., Brähler, E., Fegert, J. M., & Groschwitz, R. C. (2016). The prevalence of non-suicidal self-injury (NSSI) in a representative sample of the German population. *BMC Psychiatry, 16*(1), 353.
195. Popis stanovništva, domaćinstava i stanova 2011. u Republici Srbiji (2011). Retrieved 5 September 2018. Retrieved from <http://www.popis2011.stat.rs>
196. Porche, M. V., Costello, D. M., & Rosen-Reynoso, M. (2016). Adverse family experiences, child mental health, and educational outcomes for a national sample of students. *School Mental Health, 8*(1), 44–60.
197. Porche, M. V., Fortuna, L. R., Lin, J., & Alegria, M. (2011). Childhood trauma and psychiatric disorders as correlates of school dropout in a national sample of young adults. *Child Development, 82*(3), 982–998.
198. Pos, K., Boyette, L. L., Meijer, C. J., Koeter, M., Krabbendam, L., de Haan, L., & for GROUP. (2016). The effect of childhood trauma and Five-Factor Model personality traits on exposure to adult life events in patients with psychotic disorders. *Cognitive Neuropsychiatry, 21*(6), 462–474.
199. Priebe, S., Bogic, M., Ajdukovic, D., Franciskovic, T., Galeazzi, G. M., Kucukalic, A., ... & Schützwohl, M. (2010). Mental disorders following war in the Balkans: a study in 5 countries. *Archives of General Psychiatry, 67*(5), 518–528.
200. Wales Audit Office. Available at <https://www.audit.wales/system/files/publications/public-health-wales-audit-report-2015-english.pdf>
201. Qouta, S., Punamäki, R.-L., & El Sarraj, E. (2008). Child development and family mental health in war and military violence: The Palestinian experience. *International Journal of Behavioral Development, 32*, 310–321. doi: 10.1177/0165025408090973.
202. Statistical Office of the Republic of Serbia. Available at <http://www.stat.gov.rs/en-US/aktuelni-pokazatelj>
203. Ramiro, L. S., Madrid, B. J., & Brown, D. W. (2010). Adverse childhood experiences (ACE) and health-risk behaviors among adults in a developing country setting. *Child Abuse & Neglect, 34*(11), 842–855. doi: 10.1016/j.chiabu.2010.02.012.
204. Reavis, J. A., Looman, J., Franco, K. A., & Rojas, B. (2013). Adverse childhood experiences and adult criminality: how long must we live before we possess our own lives? *The Permanente Journal, 17*(2), 44–48.
205. Reiser, S. J., McMillan, K. A., Wright, K. D., & Asmundson, G. J. (2014). Adverse childhood experiences and health anxiety in adulthood. *Child Abuse & Neglect, 38*(3), 407–413.
206. Republički zavod za statistiku i Istraživačka agencija Strategic marketing. (2006) Istivanje višestukih pokazatelja stanja i položaja dece i žena u Republici Srbiji– MICS3, 2005, Finalni izveštaj. Beograd.
207. Republički zavod za statistiku, Republika Srbija, Available at <http://www.stat.gov.rs/>
208. Riggio, H. R., & Weiser, D. A. (2008). Attitudes toward marriage: Embeddedness and outcomes in personal relationships. *Personal Relationships, 15*(1), 123–140
209. Robins LN, Helzer JE, Croughan J, Ratcliff KS. (1981) National Institute of Mental Health Diagnostic Interview Schedule. Its history, characteristics, and validity. *Arch Gen Psychiatry, 38*(4), 381–9.
210. Roeser, R. W., Eccles, J. S., & Strobel, K. R. (1998). Linking the study of schooling and mental health: Selected issues and empirical illustrations at. *Educational Psychologist, 33*(4), 153–176.
211. Romano, E., Babchishin, L., Marquis, R., & Fréchette, S. (2015). Childhood maltreatment and educational outcomes. *Trauma, Violence, & Abuse, 16*(4), 418–437.
212. Ryan, J. P., Jacob, B. A., Gross, M., Perron, B. E., Moore, A., & Ferguson, S. (2018). Early exposure to child maltreatment and academic outcomes. *Child Maltreatment, 23*(4), 365–375.
213. Sagi-Schwartz, A., Seginer, R., & Abdeen, Z. (2008). Chronic exposure to catastrophic war experience and political violence: Links to the well-being of children and families. *International Journal of Behavioral Development, 32*, 257–259. doi: 10.1177/0165025408092219.
214. Sansone, R. A., Leung, J. S., & Wiederman, M. W. (2012). Five forms of childhood trauma: Relationships with employment in adulthood. *Child Abuse and Neglect-the International Journal, 36*(9), 676.
215. Schalinski, I., Teicher, M. H., Nischk, D., Hinderer, E., Müller, O., & Rockstroh, B. (2016). Type and timing of adverse childhood experiences differentially affect severity of PTSD, dissociative and depressive symptoms in adult inpatients. *BMC Psychiatry, 16*(1), 295.
216. Schofield, T. J., Lee, R. D., & Merrick, M. T. (2013). Safe, stable, nurturing relationships as a moderator of intergenerational continuity of child maltreatment: A meta-analysis. *Journal of Adolescent Health, 53*(4), S32–S38.
217. Schumm, J. A., Stines, L. R., Hobfoll, S. E., & Jackson, A. P. (2005). The double-barreled burden of child abuse and current stressful circumstances on adult women: The kindling effect of early traumatic experience. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies, 18*(5), 467–476.
218. Shin, S. H., Hassamal, S., & Groves, L. P. (2015). Examining the role of psychological distress in linking childhood maltreatment and alcohol use in young adulthood. *American Journal on Addictions, 24*(7), 628–636.
219. Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L. & Committee on Early Childhood, Adoption, and Dependent Care. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), e232–e246.

220. Siegel D, Benowitz N, Ernster VL, Grady DG, Hauck WW. (1992). Smokeless tobacco, cardiovascular risk factors, and nicotine and cotinine levels in professional baseball players. *Am J Public Health*, 82(3), 417–21.
221. Sinai, C., Hirvikoski, T., Nordström, A. L., Nordström, P., Nilsson, Å., Wilczek, A. & Jokinen, J. (2014). Hypothalamic pituitary thyroid axis and exposure to interpersonal violence in childhood among women with borderline personality disorder. *European Journal of Psychotraumatology*, 5(1), 23911.
222. Solis, J., Shadur, J., Burns, A., & Hussong, A. (2012). Understanding the diverse needs of children whose parents abuse substances. *Current Drug Abuse Reviews*, 5(2), 135–147.
223. Statistical Office of the Republic of Serbia and UNICEF (2014). *Serbian multiple indicator cluster survey and Serbian Roma settlements multiple indicator cluster survey, 2014. Final reports*. Belgrade, Serbia: Statistical Office of the Republic of Serbia and UNICEF.
224. Sugaya, L., Hasin, D. S., Olfson, M., Lin, K. H., Grant, B. F., & Blanco, C. (2012). Child physical abuse and adult mental health: a national study. *Journal of Traumatic Stress*, 25(4), 384–392.
225. Swannell, S. V., Martin, G. E., Page, A., Hasking, P., & St John, N. J. (2014). Prevalence of nonsuicidal self-injury in nonclinical samples: Systematic review, meta-analysis and meta-regression. *Suicide and Life-Threatening Behavior*, 44(3), 273–303.
226. Taha, F., Galea, S., Hien, D., & Goodwin, R. D. (2014). Childhood maltreatment and the persistence of smoking: a longitudinal study among adults in the US. *Child Abuse & Neglect*, 38(12), 1995–2006.
227. Taillieu, T. L., Brownridge, D. A., Sareen, J., & Afifi, T. O. (2016). Childhood emotional maltreatment and mental disorders: Results from a nationally representative adult sample from the United States. *Child Abuse & Neglect*, 59, 1–12.
228. Tang, J., Yu, Y., Wu, Y., Du, Y., Ma, Y., Zhu, H., ... & Liu, Z. (2011). Association between non-suicidal self-injuries and suicide attempts in Chinese adolescents and college students: a cross-section study. *PloS One*, 6(4), e17977.
229. Taylor, A. W., Martin, G., Dal Grande, E., Swannell, S., Fullerton, S., Hazell, P., & Harrison, J. E. (2011). Methodological issues associated with collecting sensitive information over the telephone-experience from an Australian non-suicidal self-injury (NSSI) prevalence study. *BMC Medical Research Methodology*, 11(1), 20.
230. Teicher, M. H., Andersen, S. L., Polcari, A., Anderson, C. M., Navalta, C. P., & Kim, D. M. (2003). The neurobiological consequences of early stress and childhood maltreatment. *Neuroscience & Biobehavioral Reviews*, 27(1), 33–44.
231. Thabet, A. A. M., Karim, K., & Vostanis, P. (2006). Trauma exposure in pre-school children in a war zone. *British Journal of Psychiatry*, 188(2), 154–158.
232. Thomas, C., Hyppönen, E., & Power, C. (2008). Obesity and type 2 diabetes risk in midadult life: the role of childhood adversity. *Pediatrics*, 121(5), e1240–e1249. doi:10.1542/peds.2007-2403.
233. Thornberry, T. P., Knight, K. E., & Lovegrove, P. J. (2012). Does maltreatment beget maltreatment? A systematic review of the intergenerational literature. *Trauma, Violence, & Abuse*, 13(3), 135–152.
234. Tiet, Q. Q., Bird, H. R., Hoven, C. W., Moore, R., Wu, P., Wicks, J., ... & Cohen, P. (2001). Relationship between specific adverse life events and psychiatric disorders. *Journal of Abnormal Child Psychology*, 29(2), 153–164.
235. Tietjen, G. E., Buse, D. C., & Collins, S. A. (2016). Childhood maltreatment in the migraine patient. *Current Treatment Options in Neurology*, 18(7), 31.
236. United Nations Children's Fund, and Office of the Special Representative of the Secretary-General for Children and Armed Conflict. (2009). *Machel study 10-year strategic review: Children and conflict in a changing world*. New York: UNICEF.
237. United Nations Children's Fund. (1989). Convention on the Rights of the Child.
238. United Nations Children's Fund. (2006). Behind Closed Doors: The impact of domestic violence on children. www.unicef.org/media/files/BehindClosedDoors.pdf, accessed on 8 Aug 2018.
239. United Nations Children's Fund. (2011). Serbia multiple indicator cluster survey 2010 — monitoring the situation of children and women. Belgrade: UNICEF, 2011.
240. United Nations Children's Fund. (2015). Serbia multiple indicator cluster survey 2014 — monitoring the situation of children and women. Belgrade: UNICEF, 2015.
241. United Nations Children's Fund. (2017). *Nasilje prema deci u Srbiji. Determinante, faktori rizika i intervencije*. [Violence Against Children in Serbia: Determinants, factors and interventions]. Retrieved from www.unicef.org/serbia/publikacije/determinante-i-faktori-nasilja-nad-decom-u-srbiji
242. United Nations Population Fund, and United Nations Children's Fund. (2018). Making the Connection: Intimate partner violence and violence against children in Eastern Europe and Central Asia. UNFPA/UNICEF. Retrieved from: www.unicef.org/eca/sites/unicef.org.eca/files/2018-05/MAKING%20THE%20CONNECTION__IPV_VAC%202018.pdf
243. Valle, G., & Tillman, K. H. (2014). Childhood family structure and romantic relationships during the transition to adulthood. *Journal of Family Issues*, 35(1), 97–124.
244. Van Horn, P., & Lieberman, A. F. (2010). Psychological impact on and treatment of children who witness domestic violence. In *Child Abuse and Neglect* (pp. 501–515).

245. Van Voorhees, E., & Scarpa, A. (2004). The effects of child maltreatment on the hypothalamic-pituitary-adrenal axis. *Trauma, Violence, & Abuse, 5*(4), 333–352.
246. Victor, S. E., Muehlenkamp, J. J., Hayes, N. A., Lengel, G. J., Styer, D. M., & Washburn, J. J. (2018). Characterizing gender differences in nonsuicidal self-injury: Evidence from a large clinical sample of adolescents and adults. *Comprehensive Psychiatry, 82*, 53–60.
247. Wade Jr, R., Cronholm, P. F., Fein, J. A., Forke, C. M., Davis, M. B., Harkins-Schwarz, M., & Bair-Merritt, M. H. (2016). Household and community-level adverse childhood experiences and adult health outcomes in a diverse urban population. *Child Abuse & Neglect, 52*, 135–145.
248. Wan, Y., Chen, J., Sun, Y., & Tao, F. (2015). Impact of childhood abuse on the risk of non-suicidal self-injury in mainland Chinese adolescents. *PLoS One, 10*(6), e0131239.
249. Wang, F., Wang, M., & Xing, X. (2018). Attitudes mediate the intergenerational transmission of corporal punishment in China. *Child Abuse & Neglect, 76*, 34–43.
250. Waxman, R., Fenton, M. C., Skodol, A. E., Grant, B. F., & Hasin, D. (2014). Childhood maltreatment and personality disorders in the USA: Specificity of effects and the impact of gender. *Personality and Mental Health, 8*(1), 30–41.
251. Weber, D. A., & Reynolds, C. R. (2004). Clinical perspectives on neurobiological effects of psychological trauma. *Neuropsychology Review, 14*(2), 115–129.
252. Welles Audit Office. Available at <https://www.audit.wales/system/files/publications/public-health-wales-audit-report-2015-english.pdf>
253. Wilkinson, P., & Goodyer, I. (2011). Non-suicidal self-injury. *European Child & Adolescent Psychiatry, 20*(2), 103–108.
254. Williams, J., & Nelson-Gardell, D. (2012). Predicting resilience in sexually abused adolescents. *Child Abuse & Neglect, 36*(1), 53–63.
255. Wilson, H. W., & Widom, C. S. (2010). The role of youth problem behaviors in the path from child abuse and neglect to prostitution: A prospective examination. *Journal of Research on Adolescence, 20*(1), 210–236.
256. Wing, R., Gjelsvik, A., Nocera, M., & McQuaid, E. L. (2015). Association between adverse childhood experiences in the home and pediatric asthma. *Annals of Allergy, Asthma & Immunology, 114*(5), 379–384.
257. Witt, A., Fegert, J. M., Rodens, K. P., Brähler, E., Lührs Da Silva, C., & Plener, P. L. (2017). The cycle of violence: examining attitudes toward and experiences of corporal punishment in a representative German sample. *Journal of Interpersonal Violence, 0886260517731784*.
258. Wolfe, D. A., Crooks, C. V., Lee, V., McIntyre-Smith, A., & Jaffe, P. G. (2003). The effects of children's exposure to domestic violence: A meta-analysis and critique. *Clinical Child and Family Psychology Review, 6*(3), 171–187.
259. Wolff, K. T., Cuevas, C., Intravia, J., Baglivio, M. T., & Epps, N. (2018). The effects of neighborhood context on exposure to adverse childhood experiences (ACE) among adolescents involved in the juvenile justice system: latent classes and contextual effects. *Journal of Youth and Adolescence, 47*(11), 2279–2300, doi: 10.1007/s10964-018-0887-5.
260. Wolfinger, N. H. (2003). Family structure homogamy: The effects of parental divorce on partner selection and marital stability. *Social Science Research, 32*(1), 80–97.
261. Wood, E., & Riggs, S. (2009). Adult attachment, cognitive distortions, and views of self, others, and the future among child molesters. *Sexual Abuse, 21*(3), 375–390.
262. World Health Organization. (1999). Report of the Consultation on Child Abuse Prevention, Geneva, 29–31 March 1999, World Health Organization, Social Change and Mental Health, Violence and Injury Prevention pp. 13–17.
263. World Health Organization. (2015). Survey of adverse childhood experiences among Serbian university students. Copenhagen: WHO Regional Office for Europe.
264. World Health Organization. Child maltreatment (child abuse). Available at http://www.who.int/violence_injury_prevention/violence/child/en/, accessed on 8 August 2018.
265. Wright, E. M., Fagan, A. A., & Pinchevsky, G. M. (2013). The effects of exposure to violence and victimization across life domains on adolescent substance use. *Child Abuse & Neglect, 37*(11), 899–909.
266. You, J., Leung, F., Fu, K., & Lai, C. M. (2011). The prevalence of nonsuicidal self-injury and different subgroups of self-injurers in Chinese adolescents. *Archives of Suicide Research, 15*(1), 75–86.
267. Zielinski, D. S. (2009). Child maltreatment and adult socioeconomic well-being. *Child Abuse & Neglect, 33*(10), 666–678.

Appendix

QUESTIONNAIRE

IN FRONT OF YOU THERE ARE QUESTIONS THAT RELATE TO DIFFERENT ASPECTS OF YOUR LIFE. PLEASE ANSWER ALL QUESTIONS.

PART A — ACEHAQ

1. Date of birth.

Month _____ Year _____

2. Sex

Male Female

3. How many children do you have? _____

IF YOU DO NOT HAVE CHILDREN, TYPE ZERO AND GO TO QUESTION 4.

3.a. How old were you when you got your first child? _____

3.b. What is the age of each child? If you have more than one child, separate numbers with commas:

3.c. Do you have a child that has developmental problems or a child that has a major illness or disorder?

YES NO

3.d. Do you have a child that was born outside of marriage or without a stable partnership?

YES NO

4. Do you have brothers or sisters?

YES NO

IF YOU DO NOT HAVE BROTHERS OR SISTERS, GO TO QUESTION 5.

4.a. Number of brothers _____ **and sisters** _____ .

4.b. What is your birth order? _____

5. How would you describe the relationship with your partner?

- a) excellent
- b) good
- c) occasional verbal conflicts
- d) frequent verbal conflicts
- e) verbal and physical conflicts
- f) I do not have a partner

6. How would you describe your current financial situation?

Write in thousands of dinars:

6.a. What is the total monthly household income _____**6.b. What is your personal monthly income** _____**7. How long have you been working?** _____**8. Current marital status:**

- a) in a relationship
- b) married
- c) in an extramarital community
- d) I have never been married
- e) separated
- f) divorced
- g) widow/widower

*IF YOU ANSWERED "d", GO TO QUESTION 9.***8.a. When did you first get married?**

Month _____ Year _____

8.b. How long are you currently married to your spouse? _____ years and _____ months**8.c. Did you choose your partner for your first marriage, by your own?** YES NO**8.d. If you did not, did you approve their choice?** YES NO**8.e. How many times have you been married?** _____**9. What is the highest educational level that you completed?**

- a) unfinished elementary school
- b) elementary school
- c) secondary school
- d) two-year college
- e) university
- f) specialization, master studies, master of science/arts degree or doctoral degree

9.a. Do you currently attend school or college? YES NO**9.b. If you do, what is the current educational level that you attend?**

- b) elementary school
- c) secondary school
- d) two-year college
- e) university
- f) specialization, master studies, master of science/arts degree or doctoral degree

9.c. Did you interrupt your schooling or studies before you reached the pertinent educational level?

YES NO

9.d. If you did, why did you interrupt your schooling or studies before you completed it?**Check ALL reasons that apply to you.**

- a) There were no opportunities to continue schooling in the town in which I lived or close by
- b) My grades were poor
- c) I did not want to continue schooling/studying any more

- d) I started working
- e) My parents did not want me to study
- f) I became a parent
- g) I got married
- h) For economic reasons (I could not pay for the schooling, move to another town...)
- i) For health reasons
- j) Other reasons

9.e. In the first 4 grades of elementary school your final achievement was usually:

- a) fail
- b) pass
- c) good
- d) very good
- e) excellent

9.f. In the higher grades of elementary school (grades 5–8) your final achievement was usually:

- a) fail
- b) pass
- c) good
- d) very good
- e) excellent

9.g. In elementary school, did you have to take remedial exams? YES NO

9.h. If you did, how many times? _____

9.i. In the high school, your final achievement was usually:

- a) fail
- b) pass
- c) good
- d) very good
- e) excellent

9.j. In secondary school, did you have to take remedial exams? YES NO

9.k. If you did, how many times? _____

9.l. What was your grade average during the university studies? _____

9.m. What educational level is required for the job you do?

- a) None
- b) Completed elementary school
- c) Completed secondary school
- d) Two year college graduate
- e) University graduate
- f) Master, specialist or doctoral degree

9.n. In elementary school was your conduct grade reduced?

- a) never
- b) once
- c) twice
- d) more than twice

9.o. In secondary school was your conduct grade reduced?

- a) never
- b) once
- c) twice
- d) more than twice

9.p. During your schooling how frequently did you:**- skip classes unjustifiably**

- a) never
- b) rarely
- c) commonly
- d) very frequently

- insult your teachers, threaten them or physically attack them

- a) never
- b) rarely
- c) commonly
- d) very frequently

- insult, ridicule, hit or kick other classmates

- a) never
- b) rarely
- c) commonly
- d) very frequently

- take part in fights

- a) never
- b) rarely
- c) commonly
- d) very frequently

- damage school property

- a) never
- b) rarely
- c) commonly
- d) very frequently

9.r. How frequently during your schooling did it happen that**- a teacher insulted you, threatened you or hit you?**

- a) never
- b) rarely
- c) commonly
- d) very frequently

- other students insulted you, ridiculed you, hit or kicked you?

- a) never
- b) rarely
- c) commonly
- d) very frequently

10. Which of the categories below describe your employment status best?

- a) Employed (public sector)
- b) Employed (private sector)
- c) Self-employed
- d) Retired
- e) Unemployed (able to work)
- f) Unemployed (unable to work)
- e) Beneficiary of social allowance
- g) Other, specify _____
- h) Unknown

11. How long have you been living at the current address?

- a) Less than 6 months
- b) Less than a year
- c) Less than 2 years
- d) 2 years or longer

12. During most of your childhood did your family own an apartment or house that you lived in?

YES NO

13. During your childhood how many times did your family move, including changes of place in the same town? _____

14. Before starting secondary school, you lived in:

- a) urban environment
- b) rural environment

15. How old was your mother when you were born? _____

15.a. What is the educational level of your mother?

- a) No schooling
- b) Unfinished elementary school
- c) Elementary school
- d) Secondary school
- e) College/university graduate
- f) Specialization, master studies, master of science/arts degree or doctoral degree

16. How old was your father when you were born? _____

16.a. What is the educational level of your father?

- a) No schooling
- b) Unfinished elementary school
- c) Elementary school
- d) Secondary school
- e) College/university graduate
- f) Specialization, master studies, master of science/arts degree or doctoral degree

17. During the first 18 years of your life, what was the financial standing of your family?

- a) Very poor
- b) Poor
- c) Average
- d) Good
- e) Very good

18. In the previous 30 days, how many days you missed a regular activity because you were under stress or felt depressed? _____

18.a. Activity to which your answer relates: a) work b) university

19. In the previous 30 days, how many days you missed a regular activity because of your poor physical health? _____

19.a. Activity to which your answer relates: a) work b) university

20. Have you smoked at least 100 cigarettes in your lifetime? YES NO

20.a. In the course of the first 18 years of your life, did you father smoke?

- a) Yes, and he still smokes
- b) Yes, but he quit when I was ____ years old (specify the number of years)
- c) No

20.b. In the course of the first 18 years of your life, did you mother smoke?

- a) Yes, and she still smokes
- b) Yes, but she quit when I was ____ years old (specify the number of years)
- c) No

20.c. How old were you when you took to smoking? _____

20.d. Are you a smoker now? YES NO

20.e. If you are, how many cigarettes a day do you smoke on the average?

Number of cigarettes _____

20.f. Did you use to smoke (but do not smoke now)? YES NO

IF YOU DID NOT, GO TO QUESTION 21.

20.g. How many cigarettes, approximately, you used to smoke a day?

Number of cigarettes _____

20.h. How old were you when you quit smoking? _____

21. In the previous 30 days, how many days per week did you exercise recreationally or to keep fit?

- a) 0 days
- b) 1 day
- c) 2 days
- d) 3 days
- e) 4 days
- f) 5 days
- g) 6 days
- h) 7 days

21.a. In the previous 30 days, when you exercised recreationally or to keep fit, how long did the practice last (in minutes)?

- a) 0 min
- b) 1–19 min
- c) 20–29 min
- d) 30–39 min
- e) 40–49 min
- f) 50–59 min
- g) 60 or more minutes

22. What was your maximum body weight ever? _____kg

22.a. How old were you then? _____

22.b. How tall were you then? _____cm

22.c. What is your current weight? _____kg

22.d. How tall are you? _____cm

23. Have you ever drunk alcohol (a couple of sips do not count)? YES NO

IF YOU HAVE NOT, GO TO QUESTION 24.

23.a. How old were you when you had your first alcoholic drink (a couple of sips do not count)? _____

23.b. In the previous month, did you drink at least one beer, wine, cocktail, liqueur, or any other alcoholic drink?

YES NO

23.c. In the previous month, how many days per week did you have an alcoholic drink, on average?

- a) 0 days
- b) 1 day
- c) 2 days
- d) 3 days
- e) 4 days
- f) 5 days
- g) 6 days
- h) 7 days

23.d. In the previous month, on days when you drank alcohol, how many drinks did you have per day?

- a) I did not drink any alcohol in the last 30 days
- b) 1 drink
- c) 2 drinks
- d) 3 drinks
- e) 4 or more drinks

23.e. Taking into account all kinds of alcoholic beverages, how many times in the last month did you drink 5 or more drinks on a single occasion? _____

23.f. In the previous month, how many times did you drive in situations when you probably had had too much alcohol? _____

23.g. Have you ever had any problems relating to the use of alcohol (with the police, health, people around you, or the like)?

YES NO

23.h. Did you ever think you yourself as of an alcoholic or a person drinking too much? YES NO

24. In the previous month, how many times did you ride in a car or any other vehicle driven by a person having drunk alcohol before? _____

24.a. In the first 18 years of your life did you live with anyone who drank alcohol excessively or was an alcoholic?

YES NO

24.b. Check these persons (check all pertinent boxes):

- a) Father
- b) Mother
- c) Brother(s)
- d) Sister(s)
- e) Other relative(s)
- f) Others, unrelated

24.c. Have you ever been married (lived in common law marriage) with a person who drank excessively or was an alcoholic?

YES NO

25. Have you ever done any drugs (including cannabis/pot)? YES NO

IF YOU HAVE NOT, GO TO QUESTION 26.

25.a. How old were you when you first did drugs? _____

25.b. How many times did you do drugs in your lifetime?

- a) never
- b) 1–2 times
- c) 3–10 times
- d) 11–25 times
- e) 26–99 times
- f) 100 and more times

25.c. Have you ever had any problems because of the drug use (with the police, health, people around you)?

YES NO

25.d. Have you ever considered yourself a drug addict? YES NO

25.e. Have you ever injected yourself with drugs (intravenously)? YES NO

25.f. Have you ever attended a rehab treatment? YES NO

25.g. If you have, how many times? _____

25.h. In the first 18 years of your life did you live with anyone who did drugs?

YES NO

26. Have you ever used psychiatric medicament (sedative — calming medicament, sleeping medicament, etc.) without being prescribed by a psychiatrist or much more than prescribed dose?

YES NO

26.a. In the first 18 years of your life did you live with anyone who abused medicaments or anyone who was medicaments addict?

YES NO

27. In the first 18 years of your life

- Were your parents ever separated or divorced? YES NO
- Have you ever lived with your stepfather? YES NO
- Have you ever lived with your stepmother? YES NO
- Have you ever lived in a foster family? YES NO
- Have you ever run away from home for more than one day? YES NO
- Have any of your brothers or sisters ever run away from home for more than one day? YES NO

28. Has anyone in your household

- suffered from depression or other mental illness? YES NO
- tried to commit a suicide? YES NO
- actually killed him/herself? YES NO
- ever been in jail? YES NO
- ever committed a serious crime? YES NO

29. Have you ever tried to kill yourself?

YES NO

IF YOU HAVE NOT, GO TO QUESTION 30.

29.a. How old were you when you tried to kill yourself for the first time? _____

29.b. How many times have you tried to kill yourself? _____

29.c. How old were you last time you tried to kill yourself? _____

29.d. Did any of your suicide attempts result in injury, poisoning, or overdose that had to be managed by healthcare professionals?

YES NO

30. Have you ever been treated by a psychologist, psychiatrist or psychotherapist, for any reason whatsoever?

YES NO

31. Have you ever been asked by a doctor, nurse or other healthcare professionals about problems at home, and potential unwanted sexual experiences?

YES NO

32. How many friends or relatives do you have who will help you, if needed, with your emotional problems and feelings?

- a) Nobody
- b) 1 person
- c) 2 persons
- d) 3 or more persons

*THE FOLLOWING QUESTIONS RELATE ONLY TO VOLUNTARY SEXUAL EXPERIENCES.
FOLLOWING QUESTIONS SHOULD BE ANSWERED ONLY BY MALE PARTICIPANTS.*

33.1. Have you ever had an intercourse (sex)? YES NO

IF YOU HAVE NOT, GO TO QUESTION 34.

- 33.1.a. How old were you when you had your first sexual intercourse?** _____
- 33.1.b. How many sexual partners have you had in your lifetime?** _____
- 33.1.c. How many sexual partners have you had in the last year?** _____
- 33.1.d. Have you ever made a girl/woman pregnant?** YES NO
- 33.1.e. How old were you then?** _____
- 33.1.f. How old was the youngest girl/women whom you made pregnant?** _____
- 33.1.g. How old were you then?** _____

FOLLOWING QUESTIONS SHOULD BE ANSWERED ONLY BY FEMALE PARTICIPANTS.

- 33.2. Have you ever had an intercourse (sex)?** YES NO
- IF YOU ARE HAVE NOT, GO TO QUESTION 34.*
- 33.2.a. How old were you when you had your first sexual intercourse?** _____
- 33.2.b. How many sexual partners have you had in your lifetime?** _____
- 33.2.c. How many sexual partners have you had in the last year?** _____
- 33.2.d. Are you pregnant now?** YES NO
- 33.2.e. How many times have you been pregnant?** _____
- 33.2.f. How many of your pregnancies have resulted in childbirth?** _____
- 33.2.g. How old were you when you got pregnant for the first time?** _____
- 33.2.h. When you got pregnant for the first time how old was the person who made you pregnant?** _____
- 33.2.i. Have you ever had intended abortion?** YES NO
- 33.2.j. If you have, how many times?** _____

During adolescence, people in puberty make some kind of thoughtlessness or make an incident for which they later regret. The following questions will relate to these situations. Please answer the following questions honestly, because there will not be any consequences, and your answers will be of great benefit to us in this research.

34. Has it ever happened that you:

- bullied someone psychologically (insult, humiliate)? YES NO
- beat up someone? YES NO

34.a. Who was a victim of your actions?

- a) Brother(s)/Sister(s)
- b) Parents(s)
- c) Other family member(s)
- d) Peer(s)/school members
- e) Partner(s)
- f) Unknown person(s)

PART B — BCE

35. When you were growing up, during your first 18 years of life

- did you have at least one caregiver with whom you felt safe? YES NO
- did you have at least one good friend? YES NO
- did you have beliefs that gave you comfort? YES NO

- did you like school? YES NO
- did you have at least one teacher who cared about you?
- did you have good neighbors? YES NO
- was there an adult (not a parent/caregiver) who could provide you with support or advice? YES NO
- did you have opportunities to have a good time? YES NO
- did you like yourself or feel comfortable with yourself? YES NO
- did you have a predictable home routine, like regular meals and a regular bedtime? YES NO

PART C — FHH

36. Do you have

- frequent stuffy or watery nose, sneezing? YES NO
- an allergy to any medications? YES NO
- asthma or notice yourself wheezing? YES NO
- chronic bronchitis or emphysema? YES NO
- a frequent cough for any reason? YES NO
- shortness of breath? YES NO
- pains or heavy pressure in your chest with exertion? YES NO
- episodes of fast heart beats or skipped beats? YES NO
- other heart problems? YES NO
- nocturnal leg cramps? YES NO
- leg pains from rapid or uphill walking, stairs? YES NO
- varicose veins? YES NO
- any skin problems? YES NO
- abdominal (stomach) pains? YES NO
- frequent indigestion or heartburn? YES NO
- constipation? YES NO
- frequent diarrhoea, loose bowels? YES NO

37. Have you ever

- coughed up blood (coughed not vomited)? YES NO
- been treated for TB or coccidioidomycosis (Valley Fever)? YES NO
- had a positive TB test? YES NO
- had lung cancer? YES NO
- had seizures, convulsions, fits? YES NO
- fainted or lost consciousness for no obvious reason? YES NO
- temporarily lost control of a hand or foot (paralysis)? YES NO
- had a stroke or "small stroke"? YES NO
- been temporarily unable to speak? YES NO
- broken any bones? YES NO
- frequently worried about being ill? YES NO
- been troubled as a result of being more sensitive than most people? YES NO
- had special circumstances in which you find yourself panicked? YES NO
- had reason to fear your anger getting out of control? YES NO

38. Have you ever had, or ever been told you have

- high blood pressure? YES NO
- to take blood pressure medicine? YES NO
- a heart attack (coronary)? YES NO

- to take medicine to lower your cholesterol? YES NO
- to use nitroglycerin? YES NO

39. Have you ever had, or been told you have

- an ulcer? YES NO
- vomited blood? YES NO
- black tar-like bowel movements? YES NO
- gallstones, gallbladder problems? YES NO
- yellow jaundice, hepatitis, or any liver trouble? YES NO
- definite change in your weight in recent months? YES NO

40. Are you troubled by

- frequent headaches? YES NO
- attacks of dizziness? YES NO
- frequent back pain? YES NO
- pain or swelling in your joints? YES NO

41. Has there been a definite change in the pattern or regularity of your bowel movements in the last year?

YES NO

42. Are you a vegetarian? YES NO

43. Have you had, or do you have

- any problems with your urinary tract (kidney, bladder)? YES NO
- loss of control of your urine? YES NO
- pain or burning when you urinate? YES NO
- blood in your urine? YES NO
- trouble starting the flow of urine? YES NO
- to get up repeatedly at night to urinate? YES NO
- radiation therapy? YES NO
- trouble refusing requests or saying "No"? YES NO
- hallucinations (seen, smelled, or heard things that were not really there? YES NO
- trouble falling asleep or staying asleep? YES NO
- tiredness, even after a good night's sleep? YES NO
- crying spells? YES NO
- depression or "feel down in the dumps"? YES NO
- much trouble with nervousness? YES NO
- any venereal disease? YES NO
- diabetes? YES NO
- to take medicine for diabetes? YES NO
- thyroid disease? YES NO
- cancer? YES NO

44. Are you

- currently sexually active with a partner? YES NO
- satisfied with your sex life? YES NO
- concerned you are at risk for AIDS? YES NO

45. In the past year, about how many visits to a doctor have you made? _____

46. Are you now having serious or disturbing problems with your

- marriage? YES NO
- family? YES NO
- job? YES NO
- drug usage? YES NO
- financial matters? YES NO

47. Have you ever had coronary artery surgery? YES NO

47.a. If you have, how old were you? _____

48. Did you have a blood transfusion between 1978 and 1985? YES NO

49. Are you vaccinated? YES NO

50. Have members of your family died before the age of 65? YES NO

51. Are there diseases which a number of family members have had? YES NO

52. Are there any unusual illnesses in your family you didn't list previously?

YES NO

53. Has a parent, brother, or sister developed coronary (heart) disease before age 60?

YES NO

54. Do you have an identical twin? YES NO

55. Do you regularly use seat belts in a car? YES NO

56. Fill in the circle that you think best describes your current state of health:

- a) excellent
- b) good
- c) fair
- d) poor

57. Fill in the circle that best describes your stress level:

- a) high
- b) medium
- c) low

FOLLOWING QUESTIONS ARE ONLY FOR FEMALE PARTICIPANTS.

58. Have you ever had

- a noticeable lump in your breast? YES NO
- vaginal bleeding between periods? YES NO
- after menopause, any vaginal bleeding whatsoever? YES NO
- discharge from your nipples? YES NO

59. Do you do breast self-exams regularly? YES NO

60. How old were you when you had your first period? _____

61. When did you get your last mammogram? _____

PART D — SCL

62. The next questionnaire contains certain symptoms of physical or mental problems. In the section next to the list of symptoms, please type in the “X” symbol in the blank field to indicate how often have you experienced each of the following symptoms in the last month?

Symptoms	Never		Often	
	0	1	2	3
Headaches				
Insomnia				
Weight loss (without dieting)				
Stomach problems				
Sexual problems				
Feeling isolated from others				
“Flashbacks” (sudden, vivid, distracting memories)				
Restless sleep				
Low sex drive				
Anxiety attacks				
Sexual overactivity				
Loneliness				
Nightmares				
“Spacing out” (going away in your mind)				
Sadness				
Dizziness				
Not feeling satisfied with your sex life				
Trouble controlling your temper				
Waking up early in the morning				
Uncontrollable crying				
Fear of men				
Not feeling rested in the morning				
Having sex that you didn’t enjoy				
Trouble getting along with others				
Memory problems				
Desire to physically hurt yourself				
Fear of women				
Waking up in the middle of the night				

Bad thoughts or feelings during sex

Passing out

Feeling that things are “unreal”

Unnecessary or over-frequent washing

Feelings of inferiority

Feeling tense all the time

Being confused about your sexual feelings

Desire to physically hurt others

Feelings of guilt

Feeling that you are not always in your body

Having trouble breathing

Sexual feelings when you shouldn’t have them

PART E — NSSI

63. This is a questionnaire we use to assess attempts of intentional self-injury behaviors, without a suicidal intention. Please try to remember whether these behaviors were present and if so how many times during your life and tell us honestly about it. Type in the “X” symbol in the blank fields. Although it may sometimes be difficult to remember the earlier years of life, please try to answer as precisely as possible to these questions. We assure you that the data will be used only for research purposes.

Have you deliberately...	BEFORE the age of 18			AFTER the age of 18	
	NO	YES	How many times?	YES	How many times?
...inflicted physical injury to yourself without the desire to kill yourself?					
1. punched yourself (causing a bruise)					
2. bitten yourself (causing broken skin)					
3. burned yourself (e.g. extinguished cigarettes on the skin)					
4. cut yourself (arms, legs, wrists or other body parts)					
5. scratched yourself (causing scars or bleeding)					
6. banged your head on a solid object (causing a bruise or severe injury)					
7. prevented your wounds from healing (for example, removing scab from your wound)					
8. poured toxic liquid on your skin					
9. broken your bones					
10. inflicted other forms of self-injury (if so name them):					
...inflicted some of these injuries on yourself, which led to medical interventions or hospitalization?					

PART F — LSI

64. The table below has a list of positive and negative life events. Please mark the empty box by typing “X” mark indicating which of these life events you experienced and when.

Life event	In the last year	Ever
Death of partner		
Death of child		
Death of brother or sister		
Divorce		
Marital separation from mate		
Detention in jail or other institution		
Death of a close family member		
Major personal injury or disease		
Marriage		
Being fired from work		
Marital reconciliation with mate		
Retirement from work		
Major change in the health or behavior of a family member		
Pregnancy		
Sexual difficulties		
Gaining a new family member (birth, adoption, older adult moving in, etc.)		
Major business readjustment		
Major change in financial state (i.e. either a lot worse or a lot better off than usual)		
Death of a close friend		
Changing to a different line of work		
Major change in the number of arguments w/spouse (i.e. either a lot more or a lot less than usual regarding child rearing, personal habits, etc.)		
Taking a mortgage (for home, business, etc...)		
Foreclosure on a mortgage or loan		
Major change in responsibilities at work (i.e. promotion, demotion, etc.)		
Son or daughter leaving home (marriage, attending college, joined mil.)		
In-laws troubles		
Outstanding personal achievement		
Spouse beginning ore ceasing work outside of home		
Beginning or ceasing formal schooling		
Major change in living conditions (new home, remodeling, deterioration of neighborhood or home etc.)		
Revision of personal habits (dress manners, associations, quitting smoking)		
Troubles with the boss		

Major change in working hours or conditions
Changes in residence
Changing to a new school
Major change in usual type and/or amount of recreation
Major change in church activity (i.e. a lot more or less than usual)
Major change in social activities (clubs, movies, visiting, etc.)
Taking on a loan (car, TV, freezer, etc.)
Major change in sleeping habits (a lot more or a lot less than usual)
Major change in the number of family get-togethers
Major change in eating habits (a lot more or less food intake, or very different meal hours or surroundings)
Vacation
Major holidays
Minor violations of the law (traffic tickets, jaywalking, disturbing the peace, etc.)

PART G — ECR

65. The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by circling a number to indicate how much you agree or disagree with the statement.

I'm afraid that I will lose my partner's love	1	2	3	4	5	6	7
I often worry that my partner will not want to stay with me	1	2	3	4	5	6	7
I often worry that my partner doesn't really love me	1	2	3	4	5	6	7
I worry that romantic partners won't care about me as much as I care about them	1	2	3	4	5	6	7
I often wish that my partner's feelings for me were as strong as my feelings for him or her	1	2	3	4	5	6	7
I worry a lot about my relationships	1	2	3	4	5	6	7
When my partner is out of sight, I worry that he or she might become interested in someone else	1	2	3	4	5	6	7
When I show my feelings for romantic partners, I'm afraid they will not feel the same about me	1	2	3	4	5	6	7
I rarely worry about my partner leaving me	1	2	3	4	5	6	7
My romantic partner makes me doubt myself	1	2	3	4	5	6	7
I do not often worry about being abandoned	1	2	3	4	5	6	7
I find that my partner(s) don't want to get as close as I would like	1	2	3	4	5	6	7
Sometimes romantic partners change their feelings about me for no apparent reason	1	2	3	4	5	6	7
My desire to be very close sometimes scares people away	1	2	3	4	5	6	7
I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am	1	2	3	4	5	6	7

It makes me mad that I don't get the affection and support I need from my partner	1	2	3	4	5	6	7
I worry that I won't measure up to other people	1	2	3	4	5	6	7
My partner only seems to notice me when I'm angry	1	2	3	4	5	6	7
I prefer not to show a partner how I feel deep down	1	2	3	4	5	6	7
I feel comfortable sharing my private thoughts and feelings	1	2	3	4	5	6	7
I find it difficult to allow myself to depend on romantic partners	1	2	3	4	5	6	7
I am very comfortable being close to romantic partners	1	2	3	4	5	6	7
I don't feel comfortable opening up to romantic partners	1	2	3	4	5	6	7
I prefer not to be too close to romantic partners	1	2	3	4	5	6	7
I get uncomfortable when a romantic partner wants to be very close	1	2	3	4	5	6	7
I find it relatively easy to get close to my partner	1	2	3	4	5	6	7
It's not difficult for me to get close to my partner	1	2	3	4	5	6	7
I usually discuss my problems and concerns with my partner	1	2	3	4	5	6	7
It helps to turn to my romantic partner in times of need	1	2	3	4	5	6	7
I tell my partner just about everything	1	2	3	4	5	6	7
I talk things over with my partner	1	2	3	4	5	6	7
I am nervous when partners get too close to me	1	2	3	4	5	6	7
I feel comfortable depending on romantic partners	1	2	3	4	5	6	7
I find it easy to depend on romantic partners.	1	2	3	4	5	6	7
It's easy for me to be affectionate with my partner	1	2	3	4	5	6	7
My partner really understands me and my needs	1	2	3	4	5	6	7

PART H — ACEIQ

These next questions are about certain things YOU may have experienced.

66. When you were growing up, during the first 18 years of your life, did a parent, guardian or other household member...

	Many times	A few times	Once or twice	Never
...yell or scream at you?	1	2	3	4
...threaten to, or actually, abandon you or throw you out of the house?	1	2	3	4
...swear at you, insult you, or put you down?	1	2	3	4
...act in a way that made you afraid that you might be physically hurt?	1	2	3	4
...spank, slap, kick, punch or beat you up?	1	2	3	4
...hit or cut you with an object, such as a stick (or cane), bottle, club, knife, whip etc?	1	2	3	4
...actually push, grab, shove, slap or throw something at you?	1	2	3	4
...hit you so hard that you had marks or were injured?	1	2	3	4

67. Some parent tend to “slap” their child as a form of discipline (“slap” means hit fast and with force on the head, cheek, “slam”, spank).

When you were growing up, during the first 18 years of your life...

...how frequently were you slapped?	Many times	A few times	Once or twice	Never
...how hard were you slapped?	Not hard	A bit harder	Quite hard	Very hard
...how old were you when you remember being slapped like that for the last time?	Age: _____			
...how often did your parents/guardians slap you as a act of discipline?	Many times	A few times	Once or twice	Never

68. When you were growing up, during the first 18 years of your life...

	Many times	A few times	Once or twice	Never
...how often did your parents/guardians not give you enough food even when they could easily have done so?	1	2	3	4
...were your parents/guardians too drunk or intoxicated by drugs to take care of you?	1	2	3	4
...how often did your parents/guardians not send you to school even when it was available?	1	2	3	4
...how often you didn't have enough to eat	1	2	3	4
...how often you had to wear dirty clothes	1	2	3	4

	Many times	A few times	Once or twice	Never
...understand your problems and worries?	1	2	3	4
...really know what you were doing with your free time when you were not at school or work?	1	2	3	4
...you thought your parents wished you had never been born.	1	2	3	4
...you felt that someone in your family hated you.	1	2	3	4

These next questions are about certain things you may actually have heard or seen IN YOUR HOME. These are things that may have been done to another household member but not necessarily to you.

69. When you were growing up, during the first 18 years of your life...

	Many times	A few times	Once or twice	Never
...did you see or hear a parent or household member in your home being yelled at, screamed at, sworn at, insulted or humiliated?	1	2	3	4
...did you see or hear a parent or household member in your home being slapped, kicked, punched or beaten up?	1	2	3	4
...did you see or hear a parent or household member in your home being hit or cut with an object, such as a stick (or cane), bottle, club, knife, whip etc.?	1	2	3	4

70. Sometimes physical blows occur between parents. While you were growing up in your first 18 years of life, how often did your father (or stepfather) or mother's boyfriend do any of these things to your mother (or stepmother)?

	Many times	A few times	Once or twice	Never
...how often did your father grab your mother, roughly grab her hand, hit her?	1	2	3	4
...how often did your father hit your mother with his leg, bit her, hit her with a fist or some heavy object?	1	2	3	4
...how often has your father been bumping your mother for at least a few minutes?	1	2	3	4
...how often has your father threatened to your mother with a knife or a pistol, or used a knife or a pistol to injure her?	1	2	3	4

71. While you were growing up in your first 18 years of life, how often did your mother (or stepmother) or father's girlfriend do any of these things to your father (or stepfather)?

	Many times	A few times	Once or twice	Never
...how often did your mother grab your father, roughly grab his hand, hit him?	1	2	3	4
...how often did your mother hit your father with her leg, bit him, hit him with a fist or some heavy object?	1	2	3	4
...how often has your mother been bumping your father for at least a few minutes?	1	2	3	4
...how often has your mother threatened to your father with a knife or a pistol, or used a knife or a pistol to injure him?	1	2	3	4

These next questions are about BEING BULLIED when you were growing up. Bullying is when a young person or group of young people say or do bad and unpleasant things to another young person. It is also bullying when a young person is teased a lot in an unpleasant way or when a young person is left out of things on purpose. It is not bullying when two young people of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.

72. When you were growing up, during the first 18 years of your life how often were you bullied?

- a) Many times
- b) A few times
- c) Once or twice
- d) Never

72.a. How did they bully you?

- a) Hit me, kicked, pushed among themselves, locked me up in a room
- b) Ridiculed me for my ethnicity/ ethnic features
- c) Ridiculed me for my religion
- d) Ridiculed me with sexual jokes, comments, gestures
- e) Bullied me with explicit sexual harassment or violence, threats to hurt me if I do not agree to sex
- f) Completely ignored me and left me out of all activities
- g) Ridiculed me for my looks
- h) Electronically (text messages, e-mail, social networks)
- i) Bullied me in other ways (specify): _____

This next question is about PHYSICAL FIGHTS. A physical fight occurs when two young people of about the same strength or power choose to fight each other.

72.b. When you were growing up, during the first 18 years of your life, how often were you in a physical fight?

- a) Many times
- b) A few times
- c) Once or twice
- d) Never

These next questions are about how often, when you were a child, YOU may have seen or heard certain things in your NEIGHBORHOOD OR COMMUNITY (not in your home or on TV, movies, or the radio).

73. When you were growing up, during the first 18 years of your life...

	Many times	A few times	Once or twice	Never
...did you see or hear someone being beaten up in real life?	1	2	3	4
...did you see or hear someone being stabbed or shot in real life?	1	2	3	4
...did you see or hear someone being threatened with a knife or gun in real life?	1	2	3	4

These questions are about whether YOU did or did not experience any of the following events when you were a child. The events are all to do with collective violence, including wars, terrorism, political or ethnic conflicts, genocide, repression, disappearances, torture and organized violent crime such as banditry and gang warfare.

74. When you were growing up, during the first 18 years of your life...

	Many times	A few times	Once or twice	Never
...were you forced to go and live in another place due to any of these events?	1	2	3	4
...did you experience the deliberate destruction of your home due to any of these events?	1	2	3	4
...were you beaten up by soldiers, police, militia, or gangs?	1	2	3	4
...was a family member or friend killed or beaten up by soldiers, police, militia, or gangs?	1	2	3	4

75. To what degree do you agree with the statements below?

	Completely	A lot	A little	Not at all
Slapping on the back helps to bring up children; this is a good way to teach them to differentiate good from bad	1	2	3	4
In child upbringing the saying "spare the rod and spoil the child" is a good guidance	1	2	3	4
Children should always obey their parents	1	2	3	4
Children should always make their parents satisfied	1	2	3	4

76. During the first 18 years of life, did some peer or peer group threatened to harm you if you do not consent to a sexual contact?

YES NO

76.a. Enter sex of that peer or peer group:

- a) male
- b) female
- c) some of them were male, and some of them were female

Some people, while growing up in their first 18 years of life, had a sexual experience with an ADULT OR SOMEONE AT LEAST FIVE YEARS OLDER THEN THEMSELVES. These experiences may have involved a relative, family friend or stranger.

77. During the first 18 years of life, did an adult or older relative, family friend, or stranger ever:

A. touch or fondle your body in sexual way? YES NO

IF DID, PLEASE ANSWER FOLLOWING QUESTIONS.

- a) **The first time this happened, how old were you?** _____
- b) **The first time, did this happen against your wishes?** YES NO
- c) **The last time this happened how old were you?** _____ years

d) About how many times did this happen to you? _____ years

e) How many different people did this to you? _____ people

f) What was the sex of the person(s) who did it?

- male
- female
- both

g) How old was/were person/s who did it? _____ years

B. did you touch their body in a sexual way? YES NO

IF DID, PLEASE ANSWER FOLLOWING QUESTIONS.

a) The first time this happened, how old were you? _____

b) The first time, did this happen against your wishes? YES NO

c) The last time this happened how old were you? _____ years

d) About how many times did this happen to you? _____ years

e) How many different people did this to you? _____ people

f) What was the sex of the person(s) who did it?

- male
- female
- both

g) How old was/were person/s who did it? _____ years

C. attempt to have any type of sexual intercourse (oral, anal, or vaginal) with you? YES NO

IF DID, PLEASE ANSWER FOLLOWING QUESTIONS.

a) The first time this happened, how old were you? _____

b) The first time, did this happen against your wishes? YES NO

c) The last time this happened how old were you? _____ years

d) About how many times did this happen to you? _____ years

e) How many different people did this to you? _____ people

f) What was the sex of the person(s) who did it?

- male
- female
- both

g) How old was/were person/s who did it? _____ years

D. actually have any type of sexual intercourse (oral, anal, or vaginal) with you? YES NO

IF DID, PLEASE ANSWER FOLLOWING QUESTIONS.

a) The first time this happened, how old were you? _____

b) The first time, did this happen against your wishes? YES NO

c) The last time this happened how old were you? _____ years

d) About how many times did this happen to you? _____ years

e) How many different people did this to you? _____ people

f) What was the sex of the person(s) who did it?

- male
- female
- both

g) How old was/were person/s who did it? _____ years.

PART I — HEXDELTA**78. On the following pages you will find a series of statements about you.**

Read each statement and decide how much you agree or disagree with that statement. Write your response in the space next to the statement using the following scale:

- 1 – strongly disagree
- 2 – disagree
- 3 – neutral (neither agree nor disagree)
- 4 – agree
- 5 – strongly agree

I would be quite bored by a visit to an art gallery.	1	2	3	4	5
I plan ahead and organize things, to avoid scrambling at the last minute	1	2	3	4	5
I rarely hold a grudge, even against people who have badly wronged me	1	2	3	4	5
I feel reasonably satisfied with myself overall	1	2	3	4	5
I would feel afraid if I had to travel in bad weather conditions	1	2	3	4	5
I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed	1	2	3	4	5
I'm interested in learning about the history and politics of other countries	1	2	3	4	5
I often push myself very hard when trying to achieve a goal	1	2	3	4	5
People sometimes tell me that I am too critical of others	1	2	3	4	5
I rarely express my opinions in group meetings	1	2	3	4	5
I sometimes can't help worrying about little things	1	2	3	4	5
If I knew that I could never get caught, I would be willing to steal a million dollars	1	2	3	4	5
I would enjoy creating a work of art, such as a novel, a song, or a painting	1	2	3	4	5
When working on something, I don't pay much attention to small details	1	2	3	4	5
People sometimes tell me that I'm too stubborn	1	2	3	4	5
I prefer jobs that involve active social interaction to those that involve working alone	1	2	3	4	5
When I suffer from a painful experience, I need someone to make me feel comfortable	1	2	3	4	5
Having a lot of money is not especially important to me	1	2	3	4	5
I think that paying attention to radical ideas is a waste of time	1	2	3	4	5
I make decisions based on the feeling of the moment rather than on careful thought	1	2	3	4	5
People think of me as someone who has a quick temper	1	2	3	4	5
On most days, I feel cheerful and optimistic	1	2	3	4	5
I feel like crying when I see other people crying	1	2	3	4	5
I think that I am entitled to more respect than the average person is	1	2	3	4	5

If I had the opportunity, I would like to attend a classical music concert	1	2	3	4	5
When working, I sometimes have difficulties due to being disorganized	1	2	3	4	5
My attitude toward people who have treated me badly is "forgive and forget"	1	2	3	4	5
I feel that I am an unpopular person	1	2	3	4	5
When it comes to physical danger, I am very fearful	1	2	3	4	5
If I want something from someone, I will laugh at that person's worst jokes	1	2	3	4	5
I've never really enjoyed looking through an encyclopedia	1	2	3	4	5
I do only the minimum amount of work needed to get by	1	2	3	4	5
I tend to be lenient in judging other people	1	2	3	4	5
In social situations, I'm usually the one who makes the first move	1	2	3	4	5
I worry a lot less than most people do	1	2	3	4	5
I would never accept a bribe, even if it were very large	1	2	3	4	5
People have often told me that I have a good imagination	1	2	3	4	5
I always try to be accurate in my work, even at the expense of time	1	2	3	4	5
I am usually quite flexible in my opinions when people disagree with me	1	2	3	4	5
The first thing that I always do in a new place is to make friends	1	2	3	4	5
I can handle difficult situations without needing emotional support from anyone else	1	2	3	4	5
I would get a lot of pleasure from owning expensive luxury goods	1	2	3	4	5
I like people who have unconventional views	1	2	3	4	5
I make a lot of mistakes because I don't think before I act	1	2	3	4	5
Most people tend to get angry more quickly than I do	1	2	3	4	5
Most people are more upbeat and dynamic than I generally am	1	2	3	4	5
I feel strong emotions when someone close to me is going away for a long time	1	2	3	4	5
I want people to know that I am an important person of high status	1	2	3	4	5
I don't think of myself as the artistic or creative type	1	2	3	4	5
People often call me a perfectionist	1	2	3	4	5
Even when people make a lot of mistakes, I rarely say anything negative	1	2	3	4	5
I sometimes feel that I am a worthless person	1	2	3	4	5
Even in an emergency I wouldn't feel like panicking	1	2	3	4	5
I wouldn't pretend to like someone just to get that person to do favors for me.	1	2	3	4	5
I find it boring to discuss philosophy	1	2	3	4	5
I prefer to do whatever comes to mind, rather than stick to a plan	1	2	3	4	5
When people tell me that I'm wrong, my first reaction is to argue with them	1	2	3	4	5
When I'm in a group of people, I'm often the one who speaks on behalf of the group	1	2	3	4	5
I remain unemotional even in situations where most people get very sentimental	1	2	3	4	5
I'd be tempted to use counterfeit money, if I were sure I could get away with it	1	2	3	4	5
On occasion, when I'm about to say something I end up saying something completely different	1	2	3	4	5

People speak ill of me	1	2	3	4	5
I feel the presence of evil forces around me, although I can't see them	1	2	3	4	5
Sometimes I have an impression that my feelings are frozen	1	2	3	4	5
I frequently repeat useless actions	1	2	3	4	5
Sometimes I feel as a split personality	1	2	3	4	5
I often wish I were dead and far away from everything	1	2	3	4	5
Sometimes my body, or a part of my body, becomes insensitive and numb	1	2	3	4	5
I feel that everything around me is unreal	1	2	3	4	5
Sometimes thoughts and pictures come to me all by themselves	1	2	3	4	5
I think that many life rules don't hold for me	1	2	3	4	5
I can't find a will to do anything	1	2	3	4	5
I feel I can influence the course of events only by thinking a lot about them	1	2	3	4	5
I feel being watched	1	2	3	4	5
Sometimes I feel like someone else inside of me makes decisions instead of me	1	2	3	4	5
Someone's voice can mesmerize me so much that I could go on listening to it forever	1	2	3	4	5
Sometimes I feel I will burst from the inside	1	2	3	4	5
Sometimes, while doing something, I experience a mental block, because my mind turns blank	1	2	3	4	5
It happens to me not to feel anything in a situation that should produce strong emotions	1	2	3	4	5
I often feel happy but also irritable at the same time	1	2	3	4	5

Thank you for your cooperation!

LIST OF PARTICIPANTS

During study field work following students of psychology administered questionnaires to participants:

Aleksa Radibratović, Aleksandar Jakovljević, Ana Vilotijević, Ana Blagojević, Ana Gligorijević, Anđela Lazović, Anđelija Pavlović, Bojana Većkalov, Danica Osmajić, Darija Hafrizović, Dejana Jovanović, Đorđe Cupać, Dražena Nikšić, Dušica Žeravić, Isidora Pejović, Ivana Jovanović, Jelena Jegdić, Katarina Bujandrić, Katarina Minčić, Kristina Mojović, Marija Kamatović, Marija Đorđević, Martin Pantović, Miljan Jović, Miloš Stojadinović, Mina Manić, Mirjana Dimitrijević, Nemanja Petrović, Sara Bogdanović, Svetlana Pavlović, Teodora Savić, Teodora Vuletić, Uroš Savić Kain, Vukašin Gligorić

ADVERSE CHILDHOOD EXPERIENCES (ACE) STUDY

**Research on Adverse
Childhood Experiences in Serbia**