Center for Youth Integration

Research on Adverse Childhood Experiences Among the Residents of Informal Settlements, Belgrade, 2024.

Centar za integraciju mladih
Center for Youth Integration

CWS

Center for Youth Integration

Research on Adverse Childhood Experiences Among the Residents of Informal Settlements, Belgrade, 2024.

Publisher:
Center for Youth Integration

Authors of the Study/Research team:

PhD Milica Pejović Milovančević, PhD Professor Oliver Tošković, PhD Jelena Vasić, Svetlana Pavlović

Interviewing was conducted by the team of the Center for Youth Integration:

Amina Šola · Ana Babić · Ana Mutavdžić · Biljana Petrović · Dijana Injac · Emilija Zarić · Gordana Balaban · Ivana Popović · Jelena Đorđević · Jelena Jović · Jelena Marinković · Jelena Mitić Pantić · Jovana Vukojev · Milan Otašević · Nemanja Mićić · Vladimir Tasić

Editor:

Dragana Vučković

ISBN-978-86-912679-5-7

Centar za integraciju mladih
Center for Youth Integration

CWS

CWS

CWS' vision is a world where everyone has food, voice and a safe place to call home. We've been working to make this a reality for more than 75 years, and we know it's possible. We've welcomed thousands of refugees and other new neighbors into our communities, helped countless families put food on the table and lifted the voices of people who have been left out. We know that we can always do more together than we can alone. The CWS family stretches around the world and across the lines that divide us.

In Serbia, for nearly two decades, CWS has been steadfast in its dedication to empowering Roma communities by providing access to vital services and nurturing a sense of belonging. At the core of our child protection strategy is the commitment to strengthen the capacities of those entrusted with safeguarding children. We support access to age-appropriate services like shelters, healthcare and education, forging strategic partnerships with local and international organizations to tackle the unique challenges Roma communities face. Since 2010, our partnership with the Center for Youth Integration (CYI) has been instrumental in addressing the needs of children in street situation, particularly within Belgrade's Roma communities. Through an integrated support encompassing shelters, education and resources, we strive to ensure Roma children receive equitable opportunities.

Beyond supporting service provision, CWS recognizes the power of data and strategically supports research initiatives to empower local actors with evidence-based tools for effective advocacy and program design. Acknowledging the unique challenges faced by Roma communities, CWS and CYI, in collaboration with the authors - research team, conducted the study presented here. We trust that this study will make a significant contribution to our understanding of Roma communities in Serbia, paving the way for deeper and more meaningful change. We want to express our sincere gratitude to everyone involved: the key informants - the courageous individuals who shared their experiences and some of their most painful memories; our fantastic research team for their grace and expertise; and our partners and colleagues at CYI who've been at the forefront, putting in the hours to coordinate and organize everyone, gather data and conduct interviews. To each and every individual who played a part, we offer our sincerest thanks for your invaluable role in this endeavor.

Research on Adverse Childhood Experiences among Residents of Informal Settlements
Belgrade, 2024.

About the Center for Youth Integration

The Center for Youth Integration (CYI) is a civil society organization based in Belgrade, Serbia, founded in 2004.

CYI is an organization that initiates, implements and supports responsible social changes with the aim of increasing the level of social inclusion of children and youth from marginalized groups. It is oriented towards the protection of the rights of the child, through the implementation of programs that contribute to respecting the best interests of the child and fulfillment the principles of the Convention on the Rights of the Child.

CYI strives to protect and improve the position of children and youth in street situations and children and youth who are at risk of being in street situations, as well as refugee and migrant children. As an organization that learns, develops its resources and chooses the best approaches for the realization of its potential, CYI is clearly determined to use the most important capital at its disposal - intellectual capital and our knowledge.

The vision of the Center for Youth Integration is to be a reputable organization that contributes to the creation of an inclusive society.

Our mission is to ensure the fulfillment of human rights end equal opportunities for every individual child and young person in our society by advocating for appropriate public policies, conducting research, pointing out systemic challenges and providing direct programs and services.

This research was conducted by CYI during May and June 2023 with the support of Church World Service Europe, in informal settlements, city of Belgrade.

During the previous 20 years of its existence, CYI is present and implements activities in informal settlements on the territory of the city of Belgrade. According to research conducted by CYI in 2022, in 30 informal settlements in Belgrade, most households (76%) predominantly identify as Roma.

Contents:

"...we are free to believe that it happened by chance, if we don't believe that forgotten things control us and that they can find a way, only if the door is opened for them..."

Dark Mother Earth, Kristian Novak

Informal settlements

The right to housing is, above all, a prerequisite for human life in dignity, and is closely related to the basic human right to an adequate place for life, peace, dignity and security (Sidoti, 1996). In addition to affecting the quality of life, adequate housing is also the basis for achieve and fulfill other human rights, such as the right to family life and privacy, freedom of movement, association, the right to health and development, right to education, employment and access to health services (Sidoti, 1996). Adequate housing in the broadest sense implies (Sidoti, 1996; UN Special Rapporteur, 2018):

- legal security of tenure - the absence of a threat that a person may be left without a place of residence in any way (confiscation of property, migration, etc.);
- access to appropriate services, primarily health services;
- appropriate approach to fulfill the right to education and employment.

The right to housing is confirmed in several legal documents of the United Nations (UN), such as: the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, the Special Rapporteur mechanism and other relevant UN treaties (Sidoti, 1996). One of the Sustainable Development Goals of the United Nations is "To make cities and human settlements inclusive, safe, resilient and sustainable", and in the effort to achieve this goal, the issue of housing occupies a central position (UN Sustainable Development Goals, 2015). The Third United Nations Conference on Housing and Sustainable Urban Development was held in 2016 - the outcome is an agenda promising the promotion of housing policies "based on the principles of social inclusion, economic effectiveness and environmental protection" (UN, 2018).

The concept of housing adequacy can be interpreted in the context of different frameworks (social, economic, cultural, climatic, ecological), but there are also clear legal frameworks, which refer to security of tenure, availability of services, materials, facilities and infrastructure; accessibility, habitability, cultural adequacy.

The definition of informal settlements is that they are settlements in which the residents do not have security regarding the ownership of the land or the housing space in which they live, which can refer both to the illegal occupation of public land and to the unregulated lease or rental of living space (Tsenkova et al., 2009). It is believed that the formation of informal settlements is influenced by several interacting factors: urbanization, with the consequent overpopulation of urban areas, deficiencies in administration and regulations related to urban planning, wars and natural disasters with consequent population migrations, poverty, social exclusion, etc. (Tsenkova et al., 2009).

There are several types of informal settlements: squatter settlements on public or private land; illegal suburban plots on private or public land, often on the urban fringe; overcrowded, dilapidated housing without adequate facilities, in city centers or densely urbanized areas (Tsenkova et al., 2009).

The main characteristics of informal settlements are:

- substandard living conditions in central or suburban regions, with numerous dangers;
- lack of permanent living space
- insufficient private and public space
- inadequate access to basic infrastructure and services such as water and sanitation,
- the existence and expansion of such settlements has further implications for urban planning (UN HABITAT 2015; 2020).

Although the importance of the issue of adequate housing is internationally recognized, the number of people who have not resolved the issue of housing rights is constantly increasing (UN, 2018). It is estimated that around one billion people in the world, or a quarter of the world's urban population, live in informal settlements, while at the same time it is estimated that this number will continue to grow, especially in developing countries. For example, it is estimated that the number of residents of informal settlements in the Sub-Saharan region will triple by 2050 (UN-Habitat, 2015). "Informal settlements represent one of the most enduring faces of poverty and lack of access to adequate housing" (UN HABITAT, 2020).

Informal settlements - national context

The literature mentions the existence of 583 substandard Roma settlements in Serbia (Zivkovic and Djordjevic, 2015; A11 Initiative, 2018). Also, it is noted that there are informal settlements in over 70% of all municipalities in Serbia. Informal settlements can be integrated, on the periphery or outside of formal settlements, and in the Belgrade region almost 2/3 of informal settlements are integrated into formal settlements, 1/4 are located on the periphery, and about 1/5 are outside formal settlements (Zivkovic and Djordjevic, 2015).

In addition, it is estimated that in the territory of Belgrade, informal settlements occupy 22% of building land and make up 40% of the total inhabited area (Tsenkova et al., 2009). The most vulnerable population living in informal settlements in Belgrade (35%) consists of young families with insufficient income for housing costs, followed by refugees (23%) and Roma (18%) (Tsenkova et al., 2009; UNECE, Vienna Conference 2004).

Starting in 1990, migration led to an increase in the number of people who settled and found refuge in Serbia, so that in 2005, according to the UNHCR, compared to other European countries, Serbia was the country hosting the largest number of refugees and internally displaced people (Tsenkova, et al, 2009).

The majority of the population in informal settlements in Serbia are people from Roma population, and some of the biggest difficulties for residents of informal settlements are: substandard living and working conditions, extreme poverty, social exclusion, discrimination, inability to have social and/or health insurance, limited access to fulfillment of human rights (Initiative

A11, 2019; Zivkovic and Djordjevic, 2015).

In the report of A11 Initiative on what life looks like in informal settlements in Serbia, the main characteristics are listed as:

- Inadequate access to drinking water;
- Inadequate access to sanitary and other infrastructure (sewerage or cesspit, public transport and roads, water supply and other utility companies);
- Poor quality of housing units;
- Overpopulation (high average population density per unit area or high number of people per household);
- Legal uncertainty regarding the houses on the plots (including pending property rights on the land and utilities in the settlement)
- Challenges with collecting reliable data and lack of housing strategies (A11 Initiative, 2019).

The Initiative for Economic and Social Rights (A11) conducted research on the situation in informal settlements in Serbia during October and November 2019. The data published in this report indicate that out of the total number of household members, children under the age of 15 make up 36%, and that the average household has four members. Half of the housing units was not built of solid materials, and almost half of the surveyed population did not have access to electricity, drinking water, toilets and bathrooms, as well as sewage, with the emphasis that 37% did not have access to any of the above. When it comes to health care, it was noted that the level of health care coverage of the Roma population in informal settlements is significantly lower comparing to the general population, and the population of internally displaced Roma (displaced from their previous places of residence on the territory of Serbia) was highlighted as particularly vulnerable. Also, it was documented a lower enrollment of children in compulsory primary education compared to the general population (A11 Initiative, 2019).

According to data from the 2019 MICS Survey, five out of six people in Roma settlements in Serbia, that is 83% of the population, lives in households with three or more indicators of material deprivation. It was pointed out that the poorest households in Roma settlements often face problems with basic sanitary conditions (UNICEF, 2020). In short, the general characteristics of informal settlements in Serbia are extreme poverty, social exclusion, discrimination and limited access to the fulfillment of human rights (Initiative A 11, 2019).

The interrelation of socio-economic status and mental health

Despite the fact that the scientific literature has speculated for a long time about a higher rate of mental health problems in socioeconomically disadvantaged populations, for long-time this type of research has been conducted mostly in high-income countries (Lund et al, 2010). Socio-economic factors and mental health are interrelated, but the difficulty for the research-

ers is the direction of their causality. Theoretical frameworks are represented by theories of social causation and social selection.

The theory of social causation postulates that poverty leads to social exclusion, stress, economic deprivation, difficult access to health care, malnutrition, violence and adverse life events, factors that together constitute potential mechanisms of mental disorders (Lund et al, 2010). The theory of social selection explains the impact of mental health on socio-economic status, in the sense that people with mental disorders often have reduced productivity and functionality, experience stigma, lose work and income, etc. (Lund et al, 2010).

The role of socio-economic factors in the outbreak and development of mental disorders is difficult to determine, primarily because mental disorders differ among themselves in terms of mechanisms of origin and manifestation. Social factors are considered to play a greater role in some disorders than in others. The interrelation of socioeconomic status (SES) with mental and general health was demonstrated in the elderly population in China, where the authors hypothesized that participation in social life plays a mediating role (Zhang et al., 2022). SES is also associated with mental health at work. Namely, Kim et al showed in South Korea, on a nationally representative sample, that lack of congruence between work and private life was associated with mental health outcomes, but especially in people with higher SES - higher education, and higher income. So, apart from the direct link between SES and mental health, it is possible that SES has an important modeling role of other external factors on health outcomes (Kim & Cho, 2020).

The book published by the World Health Organization (WHO) and authored by Patel et al, examined the interrelation of social determinants with specific health conditions, with a focus on low-income countries. (Patel et al., 2010).

The authors offered a framework for analyzing the socioeconomic context of health, in the sense of examining differential exposure to most risk factors, differential vulnerability and susceptibility to worse health outcomes; differences in health care outcomes (some health systems offer services not adapted to beneficiaries) and differences in consequences (loss of income and ability to work) (Patel et al., 2010).

Starting from the observed inequalities in the distribution of depression across socioeconomic strata within society, it is assumed that different mechanisms may be underlying, but that they are essentially centered around stress which is interrelated with low socioeconomic status (stigma, marginalization, poverty, services inaccessibility...). In man's psychological life, problems related to SES can be reflected as a feeling of hopelessness, helplessness, insecurity, low self-esteem, which in turn may increase risk for depression (Patel et al., 2010).

It is important to point out that, in literature, the different dimensions of SES can be recognized. Patel and colleagues point out that each of the individual factors of socio-economic vulnerability carries with it potential risks for mental health. For example, inadequate sanitation

Research on Adverse Childhood Experiences among Residents of Informal Settlements
Belgrade, 2024.

can increase health anxiety and stigma, but can also act through pathophysiological mechanisms, such as the effects of toxins. Also, hunger and food inaccessibility not only create feelings of anxiety and hopelessness, but also fatigue and health problems that increase the risk of depression (Patel et al., 2010).

It can be assumed that health outcomes in the population living in informal settlements are related to the factors of substandard living conditions, and the SES of these residents is singled out as a possible mediator.

In their 2023 study, Friedberg et al examined the prevalence of depression, anxiety, and post-traumatic stress disorder (PTSD) among school-going adolescents living in informal settlements in Kenya. Almost a fifth of adolescents had anxiety disorders, while to a lesser extent they reported symptoms indicating PTSD and depression (about 10% of respondents) (Friedberg et al., 2023). Adolescent girls who reported sexual violence before and during the study period, especially if they did not have access to health care, had significantly more mental health problems compared to the rest of the studied population (Friedberg et al, 2023). The authors also examined the outcomes of the applied intervention focused on empowerment, and it was shown that adolescent girls whose PTSD scores were reduced the most by the applied intervention were characterized by the high ability to access health care, low compliance with socially established gender norms, better housing conditions and lower academic achievement (Friedberg et al, 2023).

The authors conclude that adverse life experiences are strong risk factors for mental health problems, especially when they are combined with poverty and socioeconomic risk factors, which is described as a "vicious cycle in low- and middle-income countries" (Friedberg et al, 2023).

A study of 674 young men between the ages of 18 and 30 in informal settlements in South Africa found that factors such as food insecurity, the commission of a crime, adverse childhood event, exposure to traumatic events and alcohol abuse were associated with depression, while lower levels of education, food insecurity, exposure to traumatic events, and alcohol abuse were significantly associated with PTSD (Oyekunle et al., 2023).

Socio-economic status was also examined in the context of physical and somatic health, and the literature describes significant links between SES and cardiovascular diseases, diabetes, metabolic syndrome, arthritis, tuberculosis, chronic respiratory diseases, gastrointestinal diseases and adverse birth outcomes, as well as with accidental and violent fatal outcomes (Adler & Ostrove, 1999).

It is important to emphasize that not everyone who is exposed to risks is equally vulnerable, and that there are subpopulations that are more vulnerable than others due to biological or other factors. Gender is a biological fact that can be associated with a higher probability of exposure to violence, while being educated about mental health is an acquired characteristic

that significantly affects the recognition of potential problem and the determination to seek help, and therefore better outcomes. It is emphasized that "literacy" about mental health in socially vulnerable populations is important both on an individual and collective level (the person can recognize that he/she has a problem, or the community can be educated to recognize, support and guide, and the risk of stigma is reduced when help is sought) (Patel et al., 2010).

Finally, even when help is sought, it is essential that services are accessible, adequate, and culturally appropriate, with special attention to racial and ethnic minority groups, low-income populations, and residents of rural regions (Patel et al., 2010).

Lund et al. point to a lack of research focused on examining the interrelation between SES-related factors and mental health, particularly in low-income countries (Lund et al., 2011).

Adverse childhood experiences

Adverse Childhood Experiences (ACEs) are defined as traumatic life experiences occurring before the age of 18, which a person remembers as an adult (WHO, 1999). ACEs include various forms of abuse and neglect of children as well as other adverse circumstances within the household or the wider environment of the child.

The study that has opened the door to research in this area was the CDC–Kaiser Permanente ACE study, which confirmed the interrelation between childhood experiences and health status and well-being in adulthood (Felitti et al., 1998).

This revolutionary study, showed that experiences that occur early in life interfere with developmental trajectories so that they show a connection with psychological and physiological consequences. For the person who experiences it, ACE increases the risk of developing health-damaging behaviors that can also be harmful to others. In addition, acting at the organic level, through the neuro-endocrine-immune system, serious somatic diseases (diabetes, cancer and cardiovascular diseases) can be related to ACE (Felitti et al., 1998).

In previous researches, certain variations are noticeable in the types of negative experiences that were examined. A study examining the prevalence of negative experiences in childhood - the ACE study in Serbia was conducted in 2018/2019 on a representative sample of 2,792 participants. The types of ACEs covered by this study are: 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; bullying and involvement in physical fight; community violence and collective violence.

The research showed that 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.

Also, about one third of the participants reported the experience of collective violence, about 1/4 psychological violence and 1/5 involvement in physical fight (UNICEF, 2019).

As psychosocial and health related issues found in those with a higher number of adverse experiences, the following are singled out: abortions, substance abuse, self-destructive behavior, mental health symptoms, physical illnesses, stronger support for corporal punishment as a disciplinary method (among those who are parents), more insecure attachment in romantic relationships (UNICEF, 2019).

Regarding mental health symptoms, dissociation, sleep disturbances, and sexual problems were associated with the experience of ACE. Also, these people had more frequent suicide attempts, as well as non-suicidal self-injury (NSSI). Children who were exposed to violence at home or at the community level were also exposed to violence and/or were personally violent towards others in the school environment.

In the context of personality, the authors of the ACE study in Serbia emphasized the importance of a comprehensive personality assessment, which would include the trait of Disintegration. 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 the ACE study from 2019, it was shown that a certain number of ACEs was significantly related to personality traits, among which the Disintegration trait stands out and positive correlation was shown - the higher the percentage of disintegration, the higher the number of ACEs. a. In the mentioned study, it was explained that people with the highest ACE scores can be described as odd, strange, willing to break the rules, flattering for profit and personal gain. It is also described that these people have a bad memory, that they are stubborn and quarrelsome, they often think that they are not popular, they do not like to be in the center of attention, and they are more inclined to feel less alive and optimistic (UNICEF, 2019).

Also, this study showed a negative correlation of ACE with personality traits such as Cooperation, Extraversion, Emotionality, Honesty-Humility, while a positive correlation was shown with Openness to experiences. The only personality trait that was not correlated with ACEs was Conscientiousness (UNICEF, 2019).

Adverse childhood experiences have a repercussion on life in adulthood, but not only in the domain of mental health. In a 2016 cross-sectional study, Atwoli et al report evidence of interrelation between a wide range of potentially traumatic events and chronic somatic conditions in a South African cohort (Atwoli et al., 2016).

They specifically singled out sexual violence, physical violence and the unexpected death of a loved one and the combined effect of several potentially traumatic events as factors that

significantly increased the chances of all or almost all assessed physical diseases (arthritis and respiratory system related issues stand out). The mechanisms that are believed to be the basis of the genesis of health problems are primarily the impact of potentially traumatic events on the neuro-endocrine system (Atwoli et al., 2016).

What is also important to mention is that Benevolent childhood experience – BCE are also related to health outcomes in adulthood, and in the context of ACE, in interference with them, they can have a protective effect (UNICEF, 2019).

ACE in the context of informal settlements

Multiple stressogenic factors characteristic of living in informal settlements have already been mentioned. These factors can significantly make people living in them more vulnerable to adverse health and socio-economic outcomes, as well as to new adverse and negative life experiences. People living in these settlements face a wide range of health risks (infectious diseases, climate change, small- and large-scale disasters). Children are particularly vulnerable, as the combination of malnutrition and gastrointestinal problems, such as diarrhea, leads to stunted growth and long-term effects on cognitive development. Starting at birth, health risks are compounded and health inequalities widen. In the literature, it is pointed out that informal settlements are particularly threatened by climate change, but also by health disasters, such as the COVID-19 pandemic. Gill et al examined the interrelation between the COVID-19 pandemic and socio-economic outcomes in informal settlements in Chile. It was shown that the loss of employment was higher compared to the general population, especially in the migrant population. Also, coverage of government services was not sufficient to mitigate poor outcomes (Gil et al., 2021). Additional and unforeseen risks can make life in informal settlements even more difficult and vulnerable (Ezeh et al., 2017; International Institute for Environment and Development, 2022).

It can be assumed that there is also an increased possibility that these people will experience more adverse life experiences in childhood. Researches on this topic in this population are rare, although the importance of this type of research is recognized, because ACEs are related not only with health outcomes in a specific individual, but also with transgenerational outcomes (Mitkovic Voncina et al., 2017). Accordingly, a study conducted in informal settlements in Kenya showed that offspring of mothers who experienced ACEs were at increased risk for mental health problems (Kumar et al., 2018).

Purpose of the study

The purpose of the study is to investigate the prevalence of ACEs and their consequences in terms of health and education outcomes in adult residents of informal settlements, aged 18-65 years.

The main objectives of the study relate to examining the interrelation of ACE with various indicators of psychological and physical functioning, among residents of informal settlements:

- study of the prevalence of ACE during the first 18 years of life, their interrelationship and socio-demographic correlates;
- research on differences in the prevalence of ACE during the first 18 years of life, between the general population of Serbia (ACE study in Serbia - UNICEF, 2019) and residents of informal settlements;
- research on the relationship between ACE scores and physical health problems among residents of informal settlements;
- investigating the relationship of ACE scores with mental health problems related to trauma, substance abuse, suicide, non-suicidal self-injury (NSSI) in residents of informal settlements;
- research on the relationship between ACE scores and personality traits among residents of informal settlements;
- investigating the prevalence and protective effects of benevolent childhood experiences on trauma-related mental health problems among residents of informal settlements.

Methodology

Sample description

The survey was conducted as cross-sectional research, conducted through a face-to-face methodology of data collection. For data collection, 16 trained research assistants were engaged, with long term experience in working with residents of informal settlements, as part of the engagement in the Center for Youth Integration, whose activities are described in more detail in the section on the research initiator, at the end of the text. The methodology of this research is based on the application of methodological procedures and instruments as in the ACE study conducted in Serbia in 2019 (UNICEF Serbia, 2019).

Since there are no precise data on number of residents of informal settlements, the sample is defined as quota sample. The sample size was determined based on several parameters, including the effect size and the number of groups to disaggregate the sample. The research was conducted on a sample of 505 adult residents of informal settlements, aged 18-65, on the territory of Belgrade.

Trained research assistants managed the questionnaire administration procedure and used an online platform for doing that. The procedure consisted of research assistants going to available informal settlements in Belgrade and the surrounding area, and interviewing all persons who wanted to participate, according to predetermined gender and age quotas. After the introduction, the respondents filled out the questionnaire using a tablet. The data collection process lasted from May to July 2023. Respondents who had reading difficulties were assisted by the research assistants to fill out the questionnaire through face-to-face interviews. All respondents signed an informed consent before participating in the research. The main exclu-

sion criteria were lack of knowledge of the language, the respondent's inability to complete the questionnaire or for any reason the inability to understand the questions.

Ethics

In this study, the same methodological approach modeled on the ACE study from 2019 was applied, and, as in that study, ethical protection measures were implemented in line with the UNICEF Procedure for Ethical Standards in Research (UNICEF Procedure for Ethical Standards in Research, Evaluation, Data Collection and Analysis; UNICEF, 2019).

Given that the protocol and the methodology of the ACE study from 2019 was approved by the Ethics Committee (EC) of the Institute of Mental Health in Belgrade, and that the same protocols and methods were used in the population of the same age, the existing EC approval is also applicable to this research (UNICEF, 2019).

All participants signed informed consent and all procedures were in accordance with the principles of the Declaration of Helsinki. Before the interview, the participants signed two copies of the informed consent, one of which was given to them. The second signed copy is stored at the Institute of Mental Health in a locked cabinet to which only members of the research team have access.

The signed consents will be kept for one year after the completion of the field research and will then be destroyed by the paper shredder machine. Participants could withdraw their consent at any time and request that their data be deleted. Respondents participated anonymously in the study. Collected data is stored in the application cloud. Only members of the research team have access to the data. The application uses Firebase Google cloud storage, which is a real-time database, with GDPR security standards. Subjects may withdraw their consent at any time and may request that their data be deleted.

Instruments

The basic package of research instruments was taken from the Survey of Adverse Childhood Experiences in Serbia, conducted under the auspices of UNICEF (UNICEF Serbia, 2019). The instruments were developed based on the methodology recommended by the US Centers for Disease Control and Prevention and WHO. The package includes questionnaires that assess ACEs and personal health history. All instruments were administered in the form of self-assessment, and the questions were formulated to be gender-specific.

ACE international questionnaire

In order to assess adverse experiences in childhood, it has been used the version of the ACE questionnaire from the aforementioned Research on adverse childhood experiences in Serbia (UNICEF, 2019).

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 the assessment of 18 ACEs: physical abuse, psychological abuse, sexual abuse, peer sexual violence, 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 the mother by the partner, abuse of the father by the partner, parent separation, psychological neglect, physical neglect, bullying, involvement in physical fights, violence in the community 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 tailed 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).

Health Appraisal Questionnaire

Questions about health-related behaviors and health problems were taken from health surveys directed by the Centers for Disease Control and Prevention (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).

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 (a=0.66), Depression (a=0.70), Dissociation (a=0.64), Sexual Abuse Trauma Index (a=0.62), Sexual Problems (a=0.73) and Sleep Disturbance (a=0.77). Total TCL-40 score demonstrates highly reliability (Cronbach's alpha=0.90).

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).

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.

Non-suicidal self-injury (NSSI) questionnaire

NSSI questionnaire 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 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.

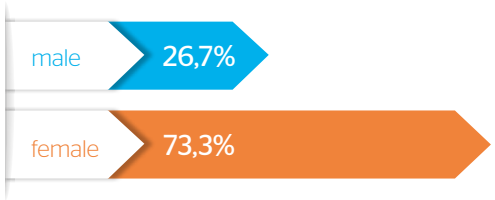
Results

In the following sections, the results of the research on Adverse Childhood Experiences – ACE, among residents of informal settlements will be presented. For the purpose of better understanding the context of our country and the position of this group of citizens, the findings of this study will be compared with the results obtained in 2018 in a large UNICEF study that examined ACE on a representative sample of Serbian residents. For a more detailed overview of the findings obtained on the national sample for the purpose of comparison with the findings that will be presented here, we suggest consulting the UNICEF (2018) report, which is listed in the bibliography.

Sample description

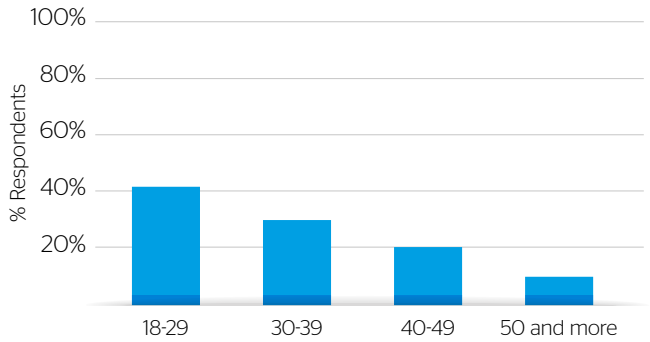
The study was conducted on a quota sample of respondents who live in informal settlements in the wider territory of Belgrade. The sample consisted of 505 respondents aged 18 to 65 years. The average age of the respondents is 33.6 years (SD=11,204). Women were significantly more represented in the sample (73.3%, N=370) compared to men (Figure 1). This distribution deviates from the UNICEF study in which women made up about 57% of respondents (φc =0.118**).

Figure 1. The gender ratio in the sample in percentages:



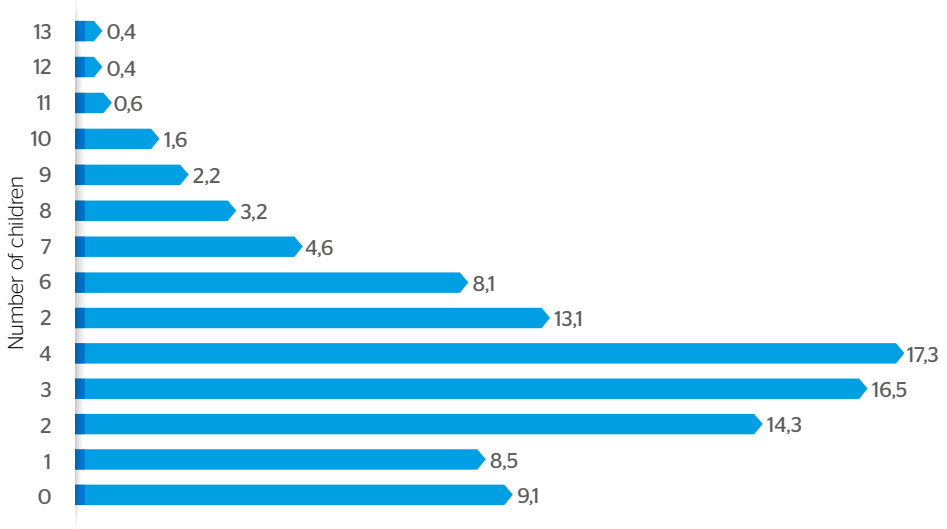
Regarding age, the sample was divided into four groups (Figure 2). The youngest age group, 18 to 29 years old, is the most frequent (41.4%). Then there are two middle age groups, 30 to 39 years old (29.5%) and 40 to 49 years old group (19.8%). Finally, the oldest group (50 and over) has the smallest share of representation (9.3%). This distribution also deviates from the one in the UNICEF study (φc=0.164**), as well as from the 2011 census data (23.68%, 21.63%, 20.83% and 33 .86% for each of the four mentioned age groups). Deviation can be a consequence of bias towards participation in the research. In addition, it is expected that the age structure among residents of informal settlements does not correspond to the distribution in the general population.

Figure 2. Distribution of age groups in the sample (percentages)



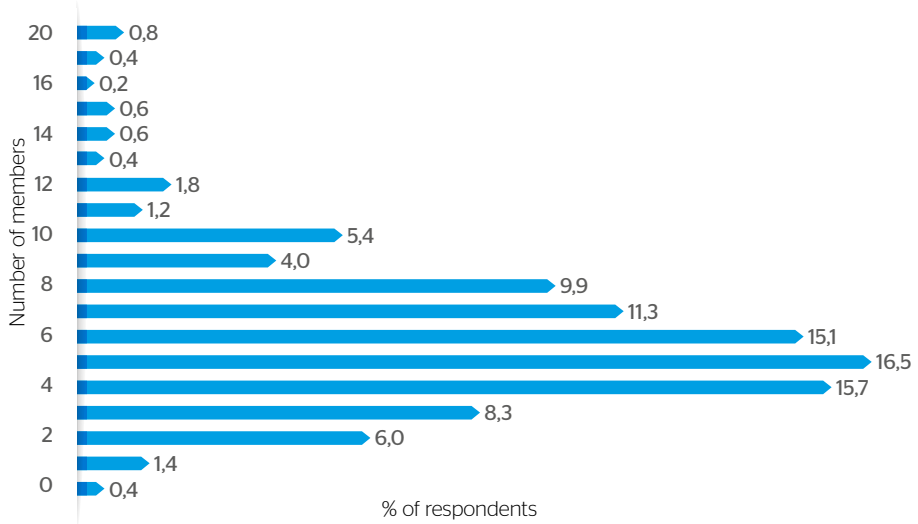
The average number of children of our respondents is 3.8. Less than one tenth of our sample has no children (9.1%). About 8% each have one (8.5%), or six children (8.1%). About 15% have two (14.3%), three (16.5%), four (17.5%) and five (13.1%) children. Less than 5% of respondents have seven (4.6%), eight (3.2%), nine (2.2%) and ten (1.6%) children, while less than 1% of respondents have eleven (0.6), twelve (0.4) and thirteen (0.4) children (Figure 3). The average number of children per respondent in informal settlements is 3.81, while the general population has 1.01 children per person. On average, our respondents have children earlier, already at 18 and a half years old, than the rest of the population, where the first child is born at the age of about 25.

Figure 3. The distribution of the number of children per respondent, in percentages



Respondents in our sample live in households with up to 20 members (0.8%). The largest number of them comes from households with 5 members (16.5%), and the smallest percentage (0.2%) of them comes from households with 16 members. The detailed distribution of the number of members in a house or apartment is given in Figure 4.

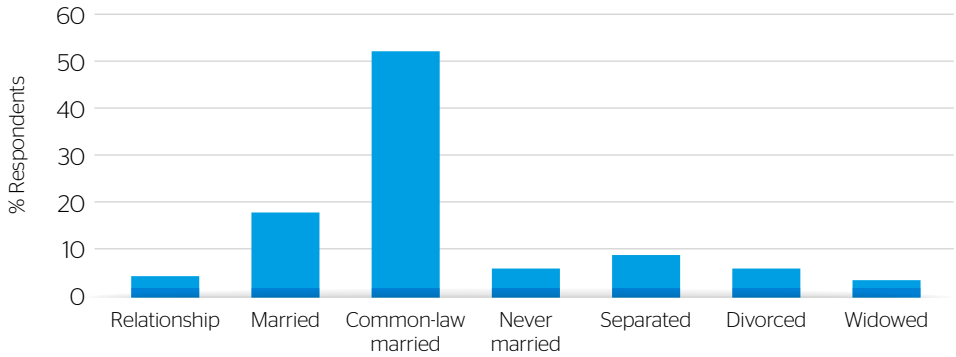
Figure 4. The distribution of the number of members in the household, in percentages



Regarding the romantic relationship status, the majority of respondents report that they are common-law married (52.5%). 17.6% of respondents are married, while the rest of them are separated (9.3%), divorced (6.7%), never married (5.9%), in a relationship (4.24%) or widow (3.8%) (Figure 5).

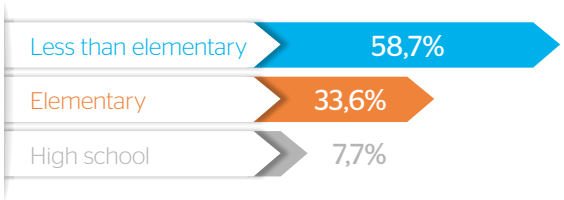
The distribution of respondents according to romantic relationship status also differed from the UNICEF study (φc=0.237**), where the biggest difference is observed in the most represented category, which is the general population of people who are married, and in this study, it is about cohabiting unions. Of the 477 respondents who were (were) married, 13% of them did not choose their spouse on their own. In the general population, only 0.8% of the population did not choose their spouse (φc=0.240**).

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



Only 7.7% of the respondents in this study completed high school. More than half did not even complete elementary school (58.7%), while 33.6% of the respondents had a basic level of education (Figure 6). Only 7.7% of respondents still attend school. When it comes to success during schooling, the largest share of respondents had a good result (50.7%). There were slightly fewer excellent ones (5.3%) than insufficient ones (8.1%). About a fifth had sufficient success (19.3%) and a little less very good (16.7%). More than a quarter of respondents (26.4%) had a lower grade for not displaying exemplary conduct - of the total percentage of respondents, 9.6% had it once, 7% twice and 9.8% more than twice.

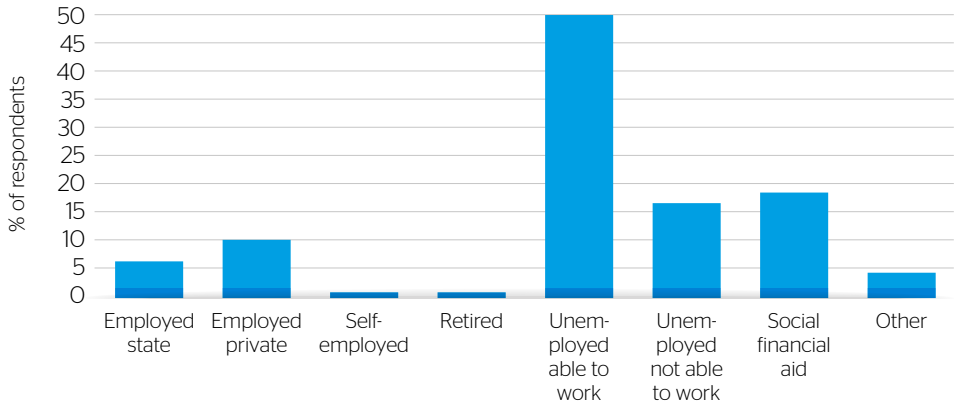
Figure 6. The education level distribution (percentages)



When it comes to the education of the parents of respondents in this sample, about half of their mothers (45.5%), as well as 24.5% of their fathers, have never attended school. Only 39.6% of fathers, as well as 25.6% of mothers, completed primary school. Overall, compared to the general population, this is one of the biggest deviations considering that in the general population 0.2% of the population falls into the category of uneducated (without completing primary school), while in informal settlements that percentage is 58.7.

About a quarter of respondents (22.4%) report that their family did not own their own house or apartment while growing up. When describing their current work status, the majority described themselves as unemployed, but able to work (51.8%). Only 16.1% of respondents are employed, in the state (6.2%) and private (9.9%) sectors, while four respondents (0.8%) are self-employed. A significant share of respondents are recipients of social assistance (14.1%), and a similar number of them are unemployed and report that they are unable to work (12.3%). There were only four (0.8%) people in the sample who are retired. A more detailed distribution of the respondents' employment status is given in Figure 7. The average income within the family of our respondents (when the incomes of all members are added) is 28,740 dinars. In order to compare - the average income at the family level in 2018, in the general population, was 108,110 dinars.

Figure 7. The employment status distribution (percentages)

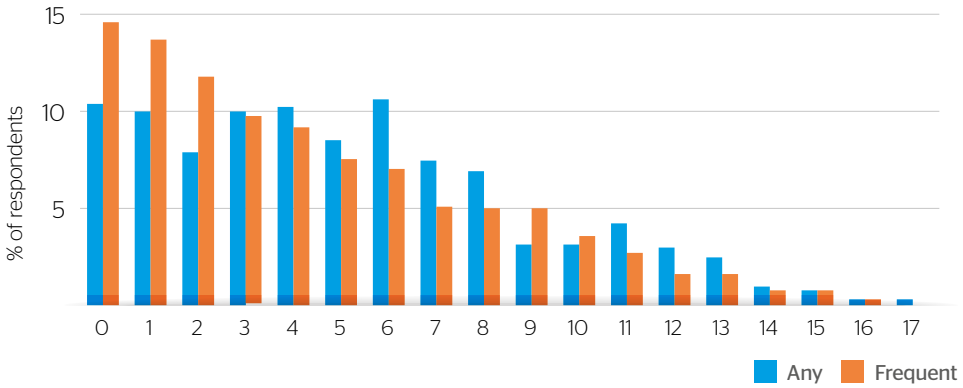


When it comes to physical characteristics, the average respondent is 165.7 cm tall and weighs 68.3 kg. Respondents who declared that they consume alcohol (334 respondents) report that they consumed it, for the first time, around the age of 18. When it comes to drugs, the average age when they used them for the first time is around 17 years old, as reported by 48 respondents (9.5%) who answered yes to this question. Individuals from the general population who have tried drugs do so two years later, on average, at 19. They use drugs three times in their lifetime, and for the residents of informal settlements, it is almost the same - 2.5 times in their lifetime.

Adverse childhood experiences

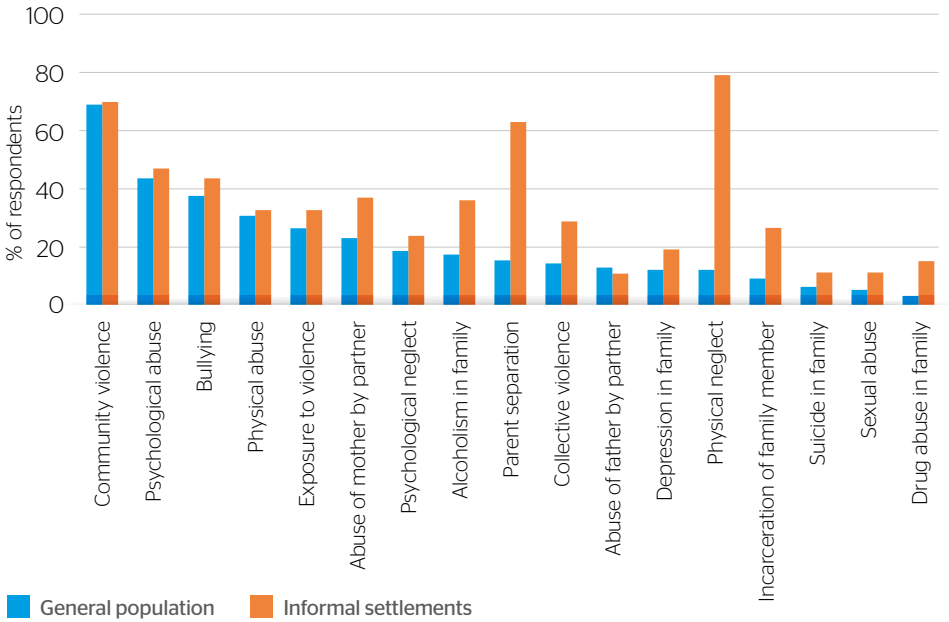
First, within the findings that will be presented below, ACE scores will almost always be shown in parallel according to two criteria: a binary criterion ("any") that tells whether an ACE was ever experienced during childhood or not; as well as according to the criterion of frequency or repetition ("frequent"), which represents a stricter criterion because it is counted only if an ACE was experienced at least 2-3 times. Some forms of the ACE do not have scores for the "frequent" criterion because they are measured only through binary questions. In the sample of our respondents, according to the less severe criterion Any, only 25 people never experienced any ACE, while one person experienced 16 different adverse experiences in childhood (Figure 8). When it comes to repeated, frequent ACEs, the highest prevalence of ACE scores is in different forms of abuse (psychological, sexual by adults and sexual by peers).

Figure 8. The prevalence, in percentages, of ACEs obtained using two scoring methods



Residents of informal settlements differ from the general population in experiencing all forms of ACE, except for experiencing physical abuse and abuse of the father by the partner. Namely, when looking at the criterion of ever experienced physical abuse, there is no difference between these two groups of respondents. However, when measured according to the stricter criterion of repeated experiences of physical abuse (frequent ACEs), residents of informal settlements show higher exposure. Abuse of the father by the partner is statistically identical in both groups, which is in accordance with the data of other researches that show that women are more often victims of physical violence at home (UNICEF, 2015) (Figure 9).

Figure 9. Comparison of the prevalence of ACE in the general population and in residents of informal settlements



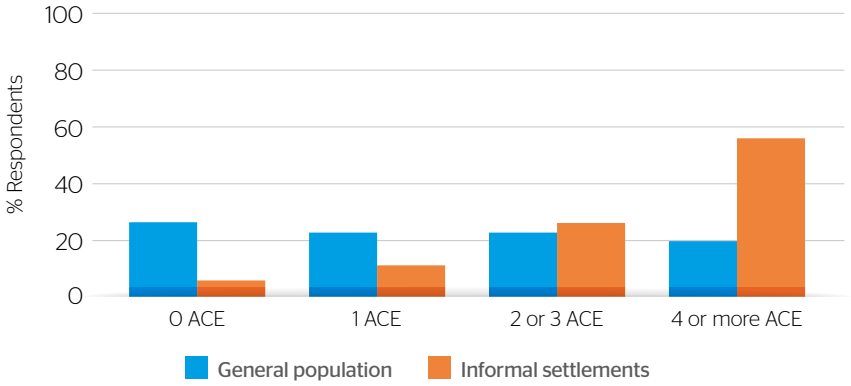
Another way to show the representation of ACEs is to group them into four categories according to the total number of ACEs experienced:

1) without any ACE (frequency 0)
2) one ACE
3) two or three ACEs
4) four or more ACEs

This categorization allows easier comparison of results with other ACE studies. Even 68.5% of respondents experienced four or more ACEs during childhood, while 41% of them in the general population. A fifth of them (20.6%) had two or three adverse experiences, while in the UNICEF study it was 29%. One ACE is reported by 7.9%, and in the general population this is reported by 16% of respondents. Finally, only 3% of residents of informal settlements report that they did not have any adverse life experiences while growing up, while 13% of people in the sample of Serbian residents did not have such experiences. We notice that in the sample of the general population, the largest share of residents has up to four ACEs, and in the case of residents from informal settlements, the distribution is just the opposite, so most of them experienced more than four ACEs during their childhood. And with repeated experiences ("frequent" ACEs), the distribution is similar. Just over half of respondents have experienced four

or more ACEs (54.7%) while 5% experienced no ACE. One ACE was experienced by 11.7%, and two or three by 28.7%. A direct comparison between the general population and residents of informal settlements can be seen in Figure 10.

Figure 10. Comparison of ACE categories in the general population and in residents of informal settlements ("frequent" score)



Relationship between different types of ACE

The ACEs covered in this study were selected based on the Serbian ACE study from 2019 and were: physical abuse, emotional abuse, sexual abuse, sexual abuse by peers, alcoholism in the family, drug abuse in the family, depression or other mental illness in the family, suicide in the family, incarceration of a family member, abuse of the mother by the partner, abuse of the father by the partner, parent separation, psychological neglect, physical neglect, bullying, involvement in physical fight, community violence and collective violence. In order to examine the relationships between different types of ACE, it was analyzed if different ACEs tend to group together based on some latent structure. To test this, the factor analysis was used, principal components method, with varimax rotation of principal axes. The findings show that all explored ACEs group into three factors or groups. All ACEs that fall into one of these three groups have relatively high intercorrelations (with each other) and relatively low, or no, correlations with ACEs from the other two groups. This means that the existence of one kind is related to a higher risk of other kinds from that same group.

Regardless of the applied analytical strategy, the methods of "any" experienced or "frequent" ACE create almost identical three groups of factors. Accordingly, the occurrence of one form of ACE may indicate that others related to it are also present.

The first factor or the first group of ACEs, consists mainly of those 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. (Table 1).

The second factor includes ACEs such as abuse within the family, parent-to-parent abuse, sexual abuse and physical neglect, and mostly refer to abuse and violence within the family, with the exception of sexual abuse, which does not have to be. What can be concluded is that sexual abuse often occurs with other forms of problems within the family (Table 1).

Within the third factor are grouped ACEs such as suicide in the family, depression, drug abuse, alcoholism in the family, parent separation, incarceration of a family member. Common to these types of ACEs is some form of pathology in the family that has direct emotional and psychological consequences for the child who grows up in such environment (Table 1).

Table 1. Factor loadings of ACEs — scoring method "any ACE"

ACE	Violence	Abuse and neglect within the family	Family pathology
Bullying	0,683		
Involvement in a physical fight	0,586		
Physical abuse	0,555		
Psychological abuse	0,552		
Community violence	0,552		
Collective violence	0,454		
Abuse of father by partner		0,719	
Psychological neglect		0,638	
Sexual abuse		0,490	
Abuse of mother by partner		0,458	
Physical neglect		0,299	
Suicide in family			0,729
Depression in family			0,606
Alcoholism in family			0,501
Drug abuse in the family			0,452
Incarceration of family member			0,427
Parent separation			0,317

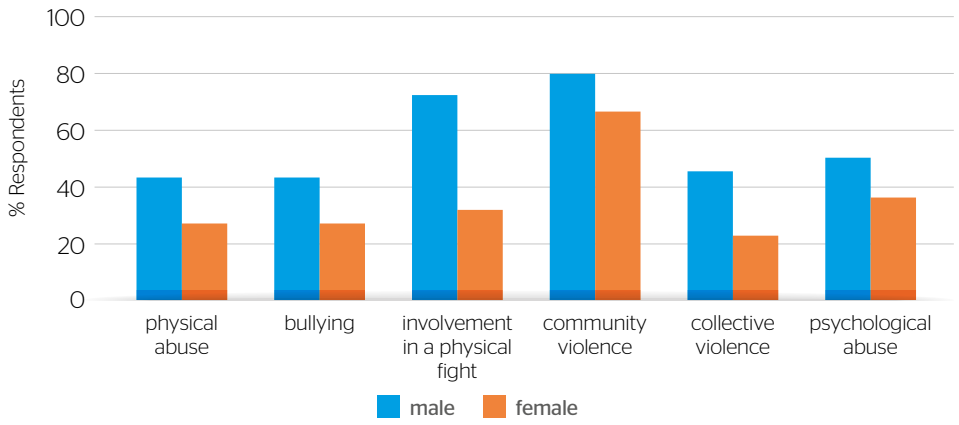
Overall, the different types of ACEs are interrelated, and are categorized into three groups. We understand them as three separate entities that we have named: Violence, Abuse and violence within the family and Neglect within the family. It can be concluded that adverse experiences such as involvement in a physical fight, community violence, collective violence, bullying, physical and psychological abuse would often occur together, and if any of them is found we might expect the other types to emerge. Additionally, psychological neglect, sexual abuse, abuse of both parents by the partner and physical neglect can occur together. Finally, suicide, drug and alcohol abuse in the family, parent separation and incarceration of family member are kinds of experiences which tend to appear together.

Socio-demographic correlates of ACE

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

- Physical abuse: any ACE score (φc =0.129**) and frequent ACE score (φc=0.090*)
- Bullying: any ACE score (φc=0.130**) and frequent ACE score (φc=0.130**)
- Involvement in a physical fight: any ACE score (φc=0.367**) and frequent ACE score (φc=0.348**)
- Community violence: any ACE score (φc=0.139**) and frequent ACE score (φc=0.107*)
- Collective violence: any ACE score (φc=0.219**) and frequent ACE score (φc=0.215**)

Figure 11. Significant gender differences in ACEs: less severe criterion (any ACE)

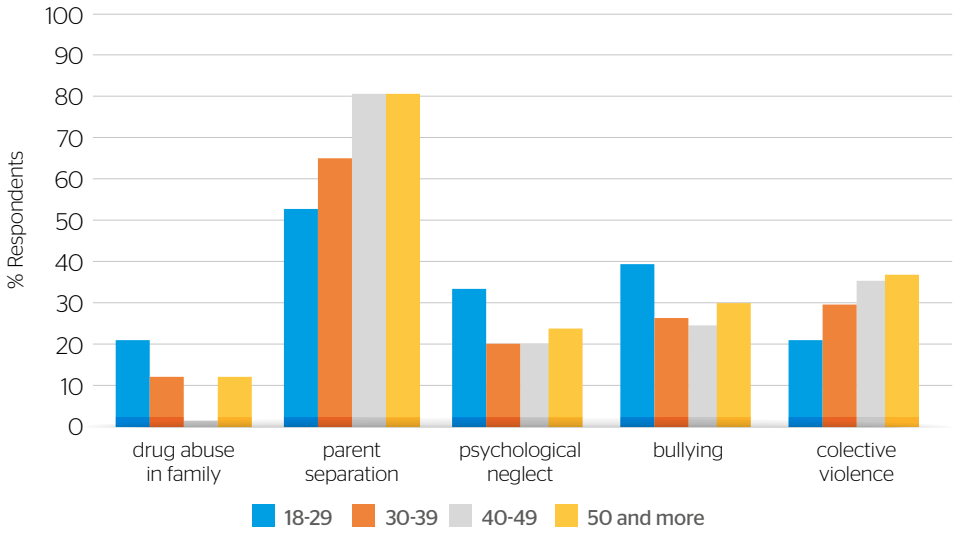


When these data are compared with the results of the national ACE study in Serbia, certain differences are detected. In this sample of respondents, men were more exposed to physical and psychological abuse, as well as collective violence. No differences were observed in exposure to depression in the family, which women are more exposed to in the general population.

It can be seen that among residents of informal settlements, boys are at a higher risk of experiencing more adverse experiences, although it should not be overlooked that ACEs in this group are certainly more pronounced in both genders comparing to the general population.

Age differences. Statistically significant differences were confirmed between participants of different age groups in several types of ACE, for any experienced ACE score. The group of respondents aged 18 to 29 more often than other age groups mentioned the following ACEs: drug abuse in the family (φc=0.203**), psychological neglect (φc=0.146**) and bullying (φc=0.131*). People between the ages of 40 and 49 mostly stated that they had divorced parents while growing up (φc=0.237**), while the oldest group of respondents, over 50 years of age, reported a higher experience of collective violence than in the other groups (φc=0.146*).

Figure 12. Significant age group differences on ACEs (any ACE scores)



Compared to age groups at the level of the general population of this country, residents of informal settlements differ in their exposure to drug abuse in the family, with the youngest group reporting that they were most exposed. There were no differences in exposure to mother abuse by partners between different age groups, which in the general population was most pronounced in the oldest generations. Bearing in mind that this type of ACE is strongly present among our respondents, and that age differences do not exist, it may be possible to conclude that gender-based violence persists continuously through generations. For three of the five ACEs where there were differences, the youngest respondents reported being the most exposed. It is possible that such a finding is recorded partly as a consequence of fresh memory, because the events from their childhood happened to them more recently than to

other age groups. Collective violence is mostly reported by the oldest respondents, which is not unexpected considering the war events in our region in the previous decades.

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. Income level was not related to the prevalence of the ACEs, regardless of the scoring method. Only with two ACEs, a negative connection of a weak intensity can be observed: the more the participants were exposed to physical neglect (rpbis=-0.140**, according to the criterion frequent) or collective violence (rpbis=-0.136**, according to the criterion any) they had lower incomes.

According to the any criterion, there are three weak but significant correlations: the more the participants were exposed to sexual violence (rpbis=0.103*), depression in the family (rpbis=0.095*) and psychological neglect (rpbis=0.200**), the higher income they have. These connections are not easy to explain, and it is necessary to investigate them in the future. The absence of recorded regularities between ACE and the level of income was also observed in the national Serbian ACE study. However, in this case, maybe "the floor effect" has happened, given that most of our respondents do not have high incomes, and that they are all similar to each other, and therefore there is no interrelation.

Relationship Status. When it comes to the presence of ACE depending on the status of romantic relationship, the findings are not unambiguous. Namely, one form of ACE is more present in those who are in a relationship, while the other is more present in those who are not.

More precisely:

- Respondents who report being in a relationship more often report that alcohol abuse in the family is present: any ACE score (φc=0.108*) and frequent ACE score (φc=0.108*)
- Respondents who are not in a relationship more often report physical abuse: any ACE score (φc=0.105*)

In this study fewer correlations of ACE and relationship status were found comparing to the study on the general population. It is possible that whether a person is in a relationship or not is not relevant for this group of viewpoints because "being alone" in this social environment is not the same as "being alone" for residents who live in much smaller family communities or who are home alone. To conclude, the dynamics of achieving a partner relationship and readiness to start one, as well as the benefit it can bring as a potential corrective experience of a large number of ACEs during the childhood, unfold differently in the two groups of respondents that we are comparing.

Physical health and ACEs

Physical health was assessed using questions about health-related behaviors and health self-assessment. When all ACEs are considered in summary (according to the frequency criterion), respondents with a lower score are less likely to have been vaccinated (r=-0.128**), they have a worse

assessment of their health status in general (r=-0.156**), feel an increased level of stress (r=0.237**) and more often have a sick family member (r=0.175**). It is interesting that the number of times the respondents visited the doctor has nothing to do with the experience of any of the ACEs.

About half of the respondents (44.3%, N=223) report that there are diseases in their family that a larger number of members have had. The extent of vaccination in informal settlements is 92% (N=460). Vaccination in informal settlements is in correlation with different types of ACE (any score), so those who were not vaccinated experienced sexual violence more often, reported incarceration of family member, were psychologically and physically abused. Illness of a family member is positively related to physical, psychological and sexual abuse, some mental illness and suicide in the family, parent separation and community violence.

A more negative assessment of the general health condition is in correlation with physical abuse, alcoholism, mental illness and suicide in the family, followed by parent separation, physical neglect and bullying. Also, the assessment of exposure to stress is positively correlated with as many as 11 out of 18 types of ACEs: physical and psychological abuse and neglect, alcoholism, mental illness and suicide in the family, incarceration of family member, abuse of the mother by a partner and bullying.

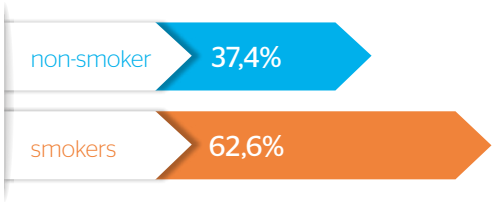
Finally, the health problems of this group of people can also be described by the fact that in the last year they visited a doctor an average of 5 times, compared to residents of the general population who do so three times.

We note that ACE high score is associated with various health outcomes. Therefore, as prevention method, it is necessary to have well-trained doctors who will be able to recognize the needs of children affected by some traumatic experiences, to provide them with adequate support and be ready to exchange information with experts from other relevant institutions.

Risky behaviors and ACEs

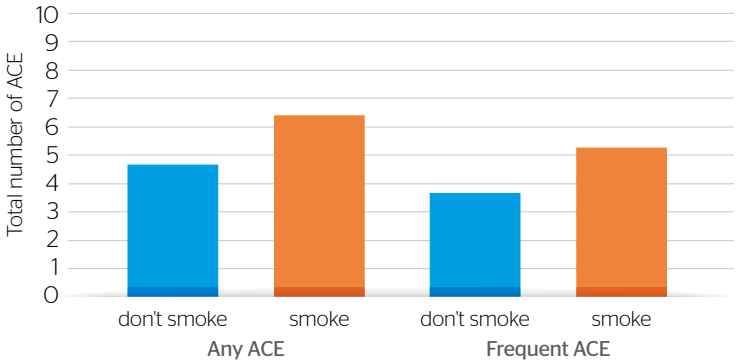
Previous findings also imply that different forms of ACE are associated with physical health, but are additionally associated with alcohol, tobacco, and substance abuse. Almost 2/3 of respondents are active smokers (62.6%, N=316) (Figure 13). A similar number of them consumed alcohol sometime in their life (63.6%, N=321), while 10% of them used drugs (N=53).

Figure 13. Smoking prevalence, in percentages



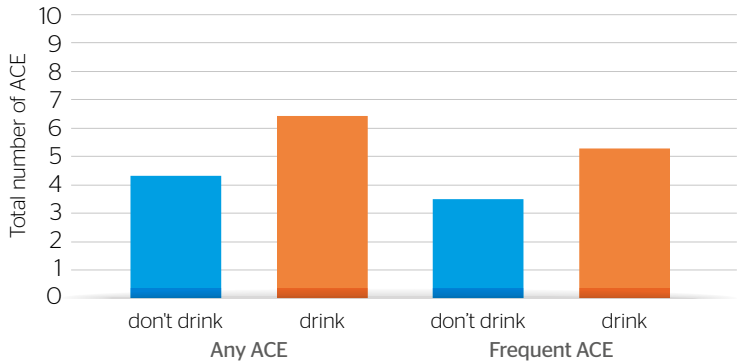
Generally, smokers have more than 6 ACEs (“any”), or more than 5 (“frequent”). It is likely that childhood exposure to ACEs led to tobacco use. However, this relationship is not cause-and-effect, but we are only talking about tendencies towards smoking based on the number of adverse experiences. Also, previous research confirms this finding by reporting a correlation between experiencing 4 or more ACEs and smoking later in life compared to those who did not experience ACEs at all (Bellis et al, 2014). Compared to the general population where smokers start using tobacco at age 19, our respondents smoke already at the age of 15. Smoking is correlated with ACE scores any (rpbis=.202**) and frequent (rpbis=.214 **) so on average, smokers have more ACEs than non-smokers.

Figure 14. Difference between smokers and non-smokers in total number of any or frequent ACEs



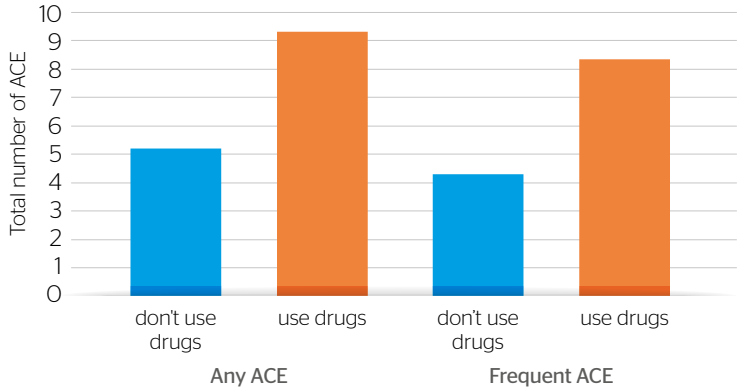
Despite the fact that the majority of respondents have tried alcohol (63.6%), there are significantly fewer of them than in the general population with that experience (70.4%). In addition, in informal settlements, people try alcohol for the first time at around 18 and a half years of age, unlike respondents from general population who do it already at a little less than 17 years of age. When asked about their consumption habits in the last month, our respondents report that they drank only 1.45 drinks, while the population of Serbia normally drinks 2.66 during that period. Alcohol consumption correlated with any (rpbis=.294**) and frequent (rpbis=.274**) ACE scores such that heavy drinkers had, on average, more ACEs experienced than non-drinkers.

Figure 15. Difference between those who drink and those who do not drink in total number of any or frequent ACEs



Only 10.5% of respondents stated that they had tried drugs at some point in their life. Respondents from these settlements try drugs earlier (17 years) compared to the general population (19 years), but use them slightly less times during their lifetime (2.46 times) than them (3.14 times). Drug abuse was correlated with any (rpbis=.372**) and frequent (rpbis=.370**) ACE scores, such that drug users had, on average, more ACEs experienced than nonusers. This finding is also in line with the results of a study that found a relationship between substance abuse and two or more ACEs in experience (Wade et al., 2016).

Figure 16. Difference between those who use and do not use drugs in total number of any or frequent ACEs



All these risk behaviors are associated with ACEs, so the consumption of tobacco, alcohol or drugs is consistently associated with higher ACEs. The consumption of these substances

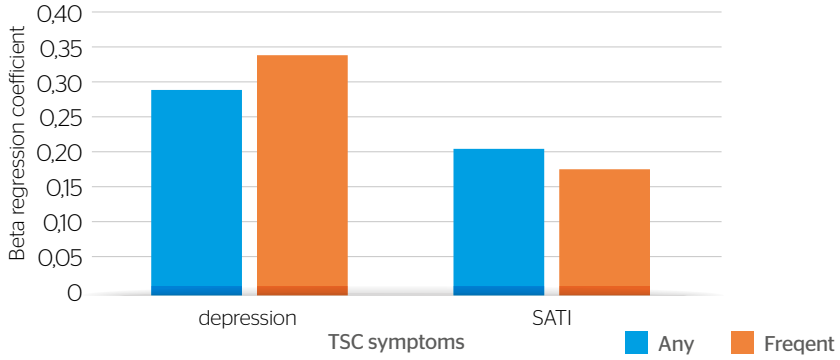
has far-reaching negative outcomes with damage to physical and mental health, but also an increased risk of engaging in criminal activities. Therefore, first of all, it is necessary to educate young people about the harmful consequences and then to prevent their use. The results of a study conducted on migrants complement our findings, given that these authors detected a correlation between alcohol and substance abuse and emotional abuse in childhood (Vasić et al., 2021). Prevention in this domain can be one of the links that will break the chain of adverse experiences that young people experience during their childhood in the form of ACEs, and then continue in adulthood through the abuse of harmful substances.

Mental health and ACEs

Using the TSC (Trauma Symptom Checklist) scale, trauma-related mental health symptoms are assessed across the following dimensions: dissociation, anxiety, depression, sexual abuse trauma index (SATI), sleep disturbance, and sexual problem.

The intensity of each symptom was analyzed in relation to ACE scores, according to both criteria. Findings show that ACE scores – any (r2=.235**) and frequent (r2=0.244**) successfully predict about 24% of the variance in mental health symptoms. The types of TSC that are significant predictors are depression (β=0.287**) and SATI (β=0.205*), both according to the criterion any and according to the criterion frequent (β=0.345**), that is (β=0.181**) (Figure 17). Experiencing more ACEs is associated with higher intensity of trauma-related mental health symptoms, particularly depression and sexual abuse trauma.

Figure 17. Relation between ACEs (any and frequent ACE scores) and mental-health symptoms expressed via regression (beta) coefficients



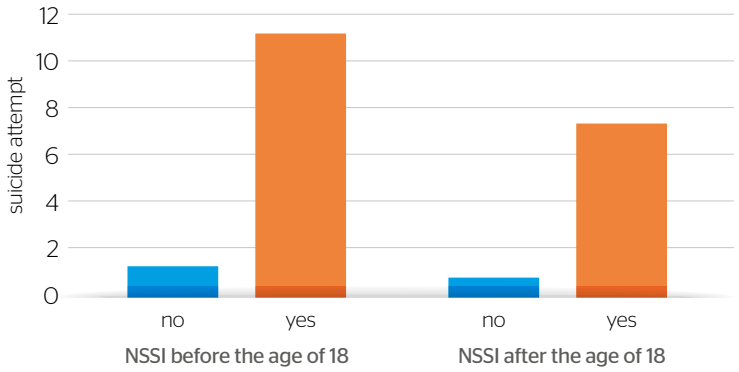
Suicide. In the sample, only about 2% of respondents attempted suicide, which corresponds to the prevalence of suicide attempts in the general population. Suicide attempt in 92.4% of cases is predicted by two types of ACE, namely drug abuse by parents and suicide attempt by parents (if we use the any ACE score), and by psychological neglect (if we look at repeated or

frequent ACE). The finding is consistent with a previous study that showed that the experience of ACE is related to suicide attempts later in life (Dube et al., 2001).

NSSI (Non-suicidal Self-Injury). The non-suicidal self-injury questionnaire (NSSI) was used to examine propensity to behaviors such as self-cutting, skin burning, breaking own bones, or similar.

Pearson's correlation coefficient shows that there is a moderate positive correlation between self-harm without suicidal intent before the age of 18 and in adulthood (r=0.380**). There is no statistically significant difference between males and females regarding NSSI either before or after the age of 18, in contrast to the general population where NSSI was more common in male respondents. However, in our sample there is a difference in how many times the respondents attempted suicide, both during childhood and in adulthood, so that those people who self-harmed more often attempted suicide (Figure 18).

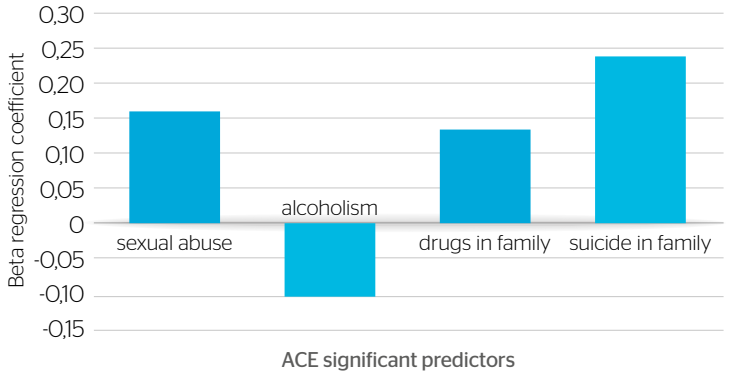
Figure 18. Difference in NSSI according to suicide attempt



When it came to predicting NSSI by age 18, ACE scores—either *any* (r2=0.177**) or *frequent* (r2=re0.191**)—were significant predictors. This finding suggests that 17.7% of the variability in such behaviors is related to ACEs. Individually, three types of any ACEs significantly predicted NSSI: suicide in family (β=.193**), violence against mother by partner (β=-0.135**), and violence against father by partner (β=0.260**), while psychological neglect (β=0.106*), as the fourth predictor, did the same according to the frequency criterion, in addition to the three mentioned. Positive correlations indicate that a higher degree of certain adverse experiences in childhood is associated with a higher frequency of NSSI, and negative correlations indicate that a lower degree of that ACE means more frequent NSSI.

Prediction of NSSI after age 18 shows similar prediction patterns. According to both criteria - either *any* (r2=0.151**) or *frequent* (r2=0.164**), significant predictors are sexual abuse (β=0.157**), alcoholism (β=-0.100*), drugs (β=0.131* *) and suicide in the family (β =0.242**).

Figure 19. Relations between any-experienced ACE and NSSI scores expressed via regression (beta) coefficients



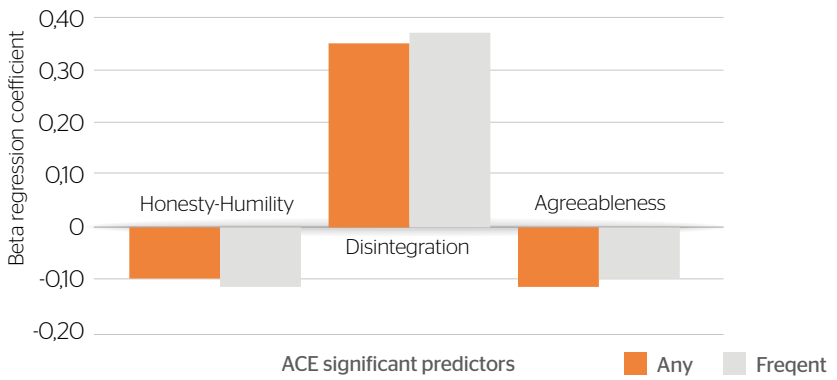
ACEs and personality

In this survey, relations between basic personality structure and ACEs were assessed. One of the ways to analyze these data is to try to predict ACE scores based on personality traits. The HEXACO questionnaire assesses six basic personality traits - 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 behavioral outcomes, independently from other personality traits measured in the HEXACO model.

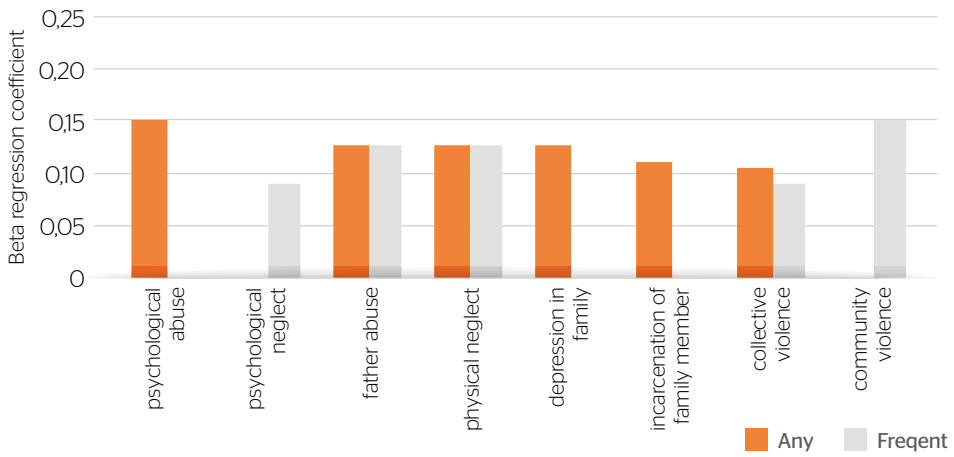
The HEXACO plus DELTA personality model significantly predicts the presence of ACE, regardless of whether it is measured via the any (r2=0.194**) or frequent score (r2=0.189**). The strongest predictor was the trait of Disintegration (β=0.359**; β=0.374**), while the other two significant predictors were Honesty-Humility (β=-0.102*; β=-0.114*) and Agreeableness (β=-0.119 *; β=-0.094*) (Figure 20). Therefore, people high on Disintegration and low on Honesty and Agreeableness behave and feel strange, unusual, less energetic and optimistic, they tend to experience unusual experiences, they tend to obtain profit for themselves, even outside the prescribed rules and norms, and they are not ready for cooperation. Findings show that such individuals have a higher number of ACEs.

Figure 20. Relations between any and frequent ACE scores and basic personality traits expressed via regression (beta) coefficients



Analysis of specific forms of ACE and DELTA showed again that Disintegration is the most consistent correlate. Significant correlations were obtained between Disintegration and psychological abuse (β=0.152* for any experienced ACE), father abuse by partner (β=0.125* for *any* experienced ACE and β=0.125* for *frequent* ACE) and family depression (β= 0.131*), incarceration of family member (β=0.110* for *any* experienced ACE), physical neglect (β=0.127* for *any* experienced ACE and β=0.126* for *frequent* ACE) and collective violence (β=0.109* for *any* experienced ACE and β=0.096* for *frequent* ACE), psychological neglect (β=0.094* for *frequent* ACE) and community violence (β=0.150** for *frequent* ACE) (Figure 21).

Figure 21. Relations between ACE scores (any and frequent) and Disintegration trait expressed via regression (beta) coefficients



In a national UNICEF study, all personality traits, except conscientiousness, were in correlation with different types of ACE. In our study with residents of informal settlements, this relationship was found with only three. We cannot offer a well-founded argumentation as to why such differences should be expected, so the results of this part of the research should be interpreted carefully. The content of the questionnaires that were given to measure personality traits is the most complex to understand, and taking into account literacy level of population in our sample, it is possible that there was a very pronounced misunderstanding of the questions asked. On the basis of the correlation-regression methodology that we used, it is not possible to draw conclusions about causal relationships between ACE and personality. It is possible to assume that adverse life experiences during childhood favor the development of personality as described above or perhaps that people with a certain personality structure are more susceptible or exposed to ACE experiences. However, testing these assumptions requires a different type of research.

Benevolent Childhood Experiences

We examined the frequency of 10 experiences that represent benevolent childhood experiences (BCEs). Figure 22 shows the percentage of respondents who experienced a different number of examined BCEs. Only 4% of people in our sample have either none or one BCE, and almost a quarter of them have experienced 10 BCEs. There is a statistically significant difference in the number of positive experiences experienced by residents of informal settlements and the rest of the population. However, in absolute terms it is smaller than one would probably expect, so our respondents have an average of about 8, and the others 8.6 BCE in childhood.

Figure 22. Number of BCEs among participants

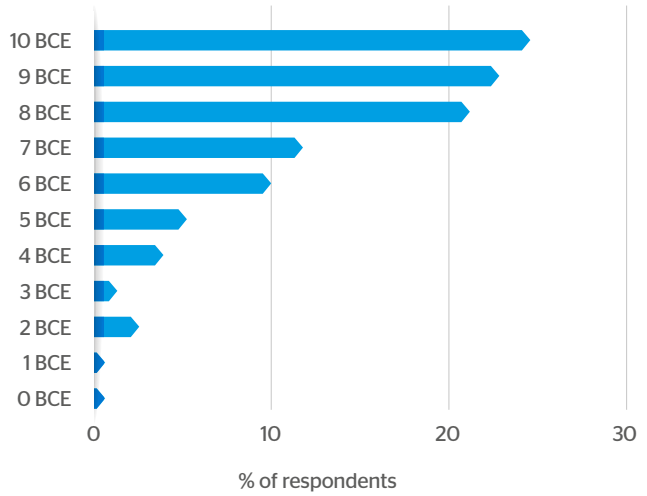
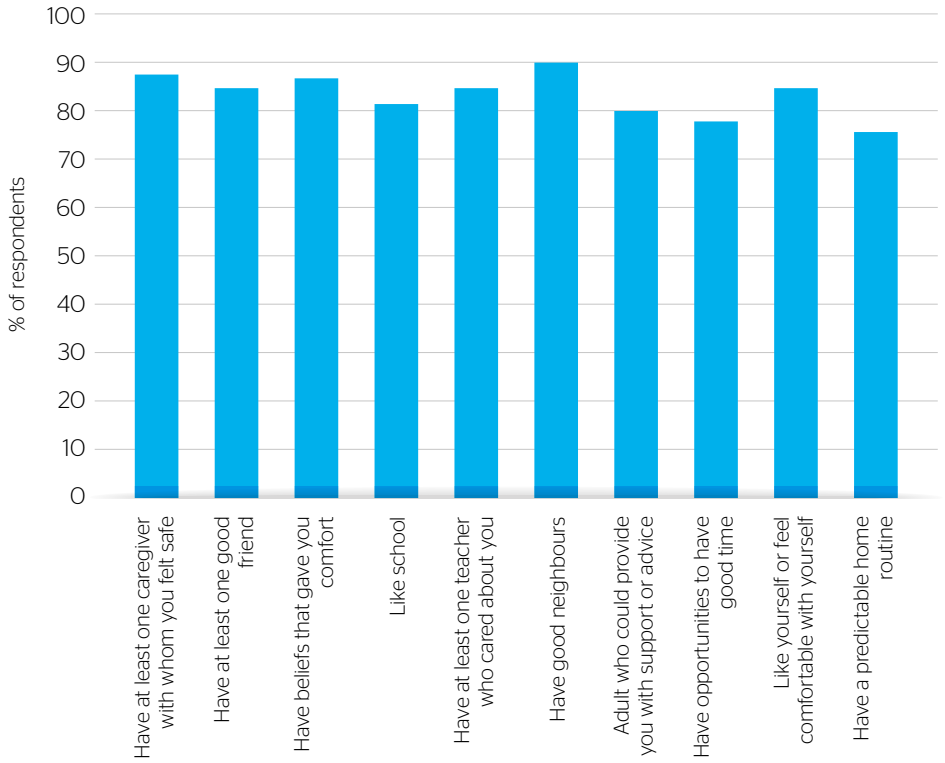


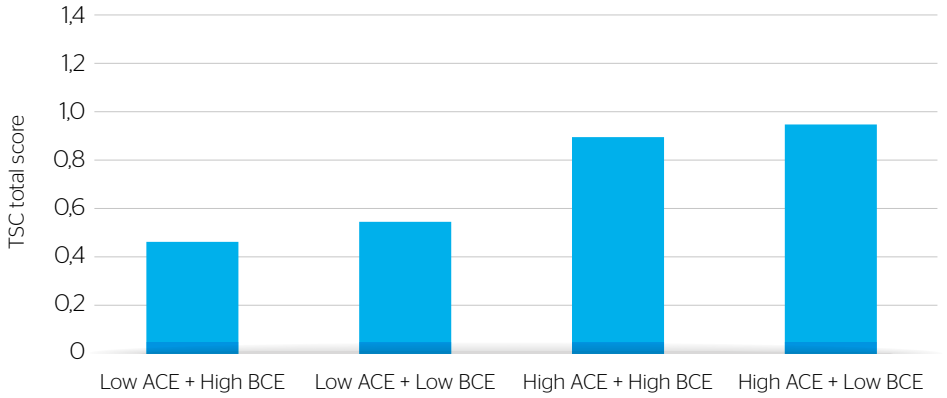
Figure 23. Frequency of different BCEs among participants



As expected, respondents with fewer BCEs had a higher number of ACEs (Rho=-0.224** for *any* experienced ACE and Rho=-0.213** for *frequent* ACE score).

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 (η^2=0,177**). 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 24.)

Figure 24. Traumatic symptoms in four groups of participants clustered according to ACEs/BCEs number



When gender and age are considered in the analysis, the presence of two BCEs significantly predicts the occurrence of weaker traumatic symptoms: the opportunity to have good time (β=-0.213**) and predictable home routine (β=- 0.144**). Additionally, in this analysis, gender turned out to be a significant predictor of TSC, in a sense that men have weaker symptoms (β= 0.143**). When further multivariate analysis was conducted to test whether BCE has a compensatory effect on the adverse effects of ACE, BCE score appeared to have no significant contribution in explaining the variance of trauma-related symptoms. Having in mind that in the general population study, the experience of positive experiences suppressed adverse experiences to some extent, the absence of this effect in informal settlements population is a warning finding.

The finding that the highest trauma-related symptom severity is present in those with a high number of adverse experiences and a low number of benevolent experiences, and lowest trauma-related symptom severity is present in those with low adversity and highly present positive experiences is completely in line with the finding obtained in the general population.

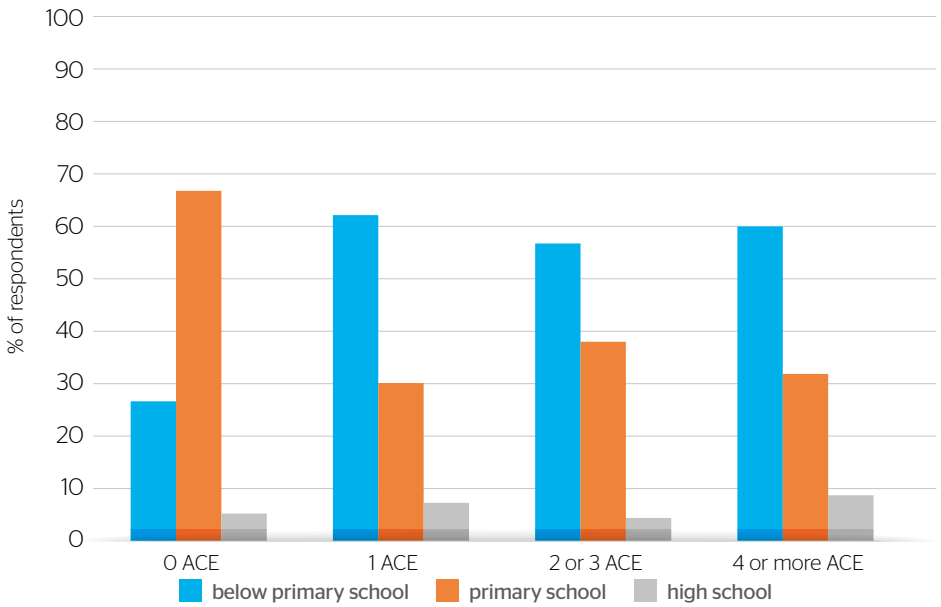
As the authors there suggest, these two extremes support the view that ACEs represent a risk, and BCE can be a protective factor when it comes to mental health, which is in line with some earlier research (e.g. Chung, et al., 2008). Therefore, despite the existence of a high number of adverse experiences in childhood, if positive experiences are present, fewer symptoms related to trauma will manifest compared to a situation where there is a small number of positive experiences. It is particularly noteworthy that this group of residents does not differ much in terms of exposure to benevolent experiences during childhood from the rest of the population. Despite this, it seems that the negative effects caused by negative experiences in the form of ACEs are much stronger and given the greater presence of ACEs in these residents, it turns out that BCE cannot sufficiently correct them.

All these results tell us about the importance of creating stimulating environments for children, so that even in the presence of numerous adverse experiences, which life in such a community imposes, their consequences can be mitigated and thereby create conditions for a better quality of life later on. The role of state institutions, but also of other members of society, is crucial in creating such opportunities for children living in these environments.

Education and ACEs

Not a single respondent from the sample of residents of informal settlements has a university degree. The majority of respondents did not complete primary school (58.71%), and only a third (33.61%) of them have a primary school diploma. Slightly less than 8% of respondents completed high school. These data, even at first glance, differ enormously from the data from the representative sample, which we discussed when describing the sample. The groups of respondents according to the level of education did not statistically significantly differ from each other in ACE scores, according to any criterion of experienced ACE.

Figure 25. Education level and frequent ACEs



Correlations of ACE scores with school performance and conduct marks were not significant, while there were associations of various problems at school and ACE. Namely, a positive correlation was established between the attitude of the teacher (insulting, threatening

or hitting) towards the student and the total scores of *any* ACE (r=0.140**) and *frequent* ACE (r=0.156**), but also between the attitude of other students towards our respondents (insulting, mocking, hitting) and both ACE scores (for *any* r=0.321**, for *frequent* r=0.344**). This means that students who more often experience insults, mocking, hitting or threats by teachers or their peers have more ACEs than those who do not.

Of all the levels of education, residents of informal settlements mostly stay in primary school (even if they leave it, they usually attend it for a while). Therefore, it is necessary that the basic cycle of education is one of the mechanisms to support children who experience abuse and neglect. First of all, it is necessary for teachers and professional associates to understand the background and issues of the problems that these children have in their biological families. After that, programs to protect students from violence, abuse and neglect should primarily be created to target them. Our findings confirm the presence of peer violence and a special focus should be directed to strengthening peer support for vulnerable students and preventing this type of violence. Good friends from childhood, as we have seen, represent one of the positive life experiences that can strengthen students and make them resilient despite the adversities they face, but also give them an incentive for further academic achievements, which are evidently limited for this group of children. If we all agree that the essential goal of this society is to protect students from abuse and neglect, then the Ministry, teachers, professional associates, the local community, other parents and everyone who is part of the school in any capacity - must contribute to this goal.

Limitations

Despite the numerous advantages and importance of this research, it is important to point out the limitations, which are especially important to take into account when interpreting the results.

The first limitation refers to the cross-sectional study design, which does not allow for conclusions on causal relationships. The obtained correlations suggest that there is a tendency towards certain regularities, specifically about the harmful influence of ACE on future life outcomes, but not enough to claim a direct influence of ACE on some specific outcome. In addition, the retrospective testimonies that the respondents gave us (recalling what happened during the first 18 years of life) can give a distorted picture, since they rather reflect the subjective experience of the respondents from this time distance. In this regard, it should be borne in mind that the oldest people in the sample are most affected by this memory distortion.

Also, the self-assessment method increases the chances of bias in terms of array responses (random filling, yes and no, etc.). Also, it is important to emphasize that the research assistants had previously cooperated with the respondents, so the respondents' consent to participate in the research could have been guided by that. Additionally, our sample was drawn from suburban informal settlements in Belgrade, and there may be changing patterns in rural and other regions in Serbia. In order to be able to make more reliable generalizations, further studies should include different populations.

Although in the research used instruments for the assessment of adverse life experiences and other relevant instruments have been validated around the world, and also in the Serbian study, it is possible that they are still not comprehensive when it comes to this population. Namely, considering the specificity of the conditions in which the residents of informal settlements live and the existential difficulties, it could be expected that they experience some forms of ACE that were not examined, and which should be done in future studies. Finally, the questionnaire form of research, with a large number of questions, sometimes in a complex sentence form, despite research efforts to simplify the procedure, could be difficult and incomprehensible for people with low education, so it could give somewhat distorted data.

Conclusions and practical implications

This study examined adverse life experiences (ACEs) in residents of informal settlements and health, social and educational outcomes in adulthood. It is the first study of its kind in our region which deals with ACE experiences among a marginalized population group as well as the only one after the large UNICEF study that was conducted on a national sample in Serbia.

People living in informal settlements are significantly affected by the high intensity of experiencing ACEs, in many segments, far more than the general population. However, some of the expected connections between gender and age on the one hand, and adverse experiences on the other, were not detected. It seems that all residents, regardless of whether they are men or women and to which generation they belong, have in common a high exposure to traumatic events and adverse repercussions in the form of diseases, risky behaviors, poorer educational achievements, etc.

Research has shown that members of this population have a child at an earlier age, which is in accordance with existing data that adolescent girls in Roma settlements more often start sexual relationships, but at the same time, a higher percentage of them report unmet needs for using more modern types of contraception (UNICEF, 2020). This study showed a significantly lower coverage of education than it was described in the existing literature, as well as a low employment rate. Residents of informal settlements are at a higher risk of trying psychoactive substances earlier, although, compared to the general population, they use them less often later in life. Those who suffered adverse experiences in the family are more inclined to have a more negative perception of the general health condition (physical abuse, alcoholism, mental illness and suicide in the family, parent separation, physical neglect and bullying). A correlation between multiple ACE experiences and depression, sexual abuse trauma, and alcohol use has been confirmed.

In the context of personality, the trait of Disintegration is detected in individuals with ACE experience, and Humility and Agreeableness are low, which could characterize these individuals as odd and self-serving. ACE is also associated with later self-injury, and people who frequently self-injure (NSSI) have been shown to be more likely to attempt suicide. Bearing in mind the

Research on Adverse Childhood Experiences among Residents of Informal Settlements
Belgrade, 2024.

findings of this study, it is extremely important to consider the role of society, institutions and individuals in terms of supporting this population, especially children exposed to adverse life experiences. Prevention programs are necessary in order to improve quality of life and mitigate the effects of adverse circumstances experienced by this population. Interventions in informal settlements must be organized at multiple levels through a multisectoral approach.

At the basic level, in addition to adequate food and learning opportunities, young children must be provided with safe and responsible care and guidance. Furthermore, it is necessary to involve the community at the level of the local environment in which the settlement is located, which is familiar with the specifics of life in that area and can help ensure that this group of residents are provided with adequate services. Otherwise, important for the successful functioning of society, and in this case of particular importance, is the cooperation between different experts who deal with care and protection, first of all doctors, teachers and social workers, so that children at risk of ACE can be recognized in a timely manner and systematically monitored for a long period of years in different contexts.

School is one of the most important institutions that play an important role in the development process, and a place where potential risks for mental health can be identified, or it can be suspected that a child is exposed to adverse life experiences. This study confirmed the lower coverage of education in the population living in informal settlements, and this coverage is significantly lower compared to the data obtained as part of the MICS 6 program (UNICEF, 2020). These data indicate that it is necessary, in the future, to develop strategies that would enable more and more Roma children, and especially residents of informal settlements, to have access to education. This provides potential protection, both through learning and strengthening socio-emotional competences, and work on health-emotional literacy, which is indicated in the literature as an important factor that contributes to seeking help when needed (Patel et al., 2010). In addition, through support for education, it is potentially possible to act on the improvement of socio-economic status and better employment opportunities.

Chronic stress that affects various aspects of life, poverty and constant financial and existential uncertainty - have far-reaching consequences for this group of the population, as evidenced by the detected presence of ACE. In addition to those "specificities" that refer to residents of informal settlements, the previous years of life in Serbia for the majority of citizens were accompanied by various stressors that had a negative impact on the mental health of the population. In addition, the COVID-19 pandemic and the accompanying reduced capacity of hospital services contributed to the deterioration of people's physical health. The psychological circumstances in society were affected by the appearance of additional fear and anxiety during the period of "lockdown", the inability to perform work activities, inadequate communication of information, etc. (PIN, 2020).

The unavailability of adequate medical care has particularly affected vulnerable groups of the population, those to whom resources such as health support are, apart from pandemic, not easily accessible, as is the case with residents of informal settlements. These types of so-

called health disasters, such as the COVID-19 pandemic, which put populations at risk at even greater health and existential risk, point to the importance of designing health strategies to reduce existing and prevent potential risks. The improvement of health coverage would imply further work on services and checking whether they are: a) available and b) culturally and overall acceptable and adequate.

In the context of health, it is also important to improve the health literacy of this population - both in terms of mental and physical health. Health literacy means the ability to recognize problems, both symptoms and knowledge of treatment options (Patel, 2020). It is one of the factors that could support turning to health services, but also reduce the stigma and difficulties in the community that a person may experience in the context of problems and asking for help. Given that the higher frequency of ACEs in this population has been shown, as well as the fact that BCE can reduce the consequences of ACEs to a lesser extent, it would be important to consider the possibilities of educating parents about non-violent educational practices, educating young people to recognize adverse experiences, educating all of them to understand possible consequences in order to encourage them to ask for professional help. The role of the school and health system is indispensable in this context as well, therefore it is important to emphasize the referral system and inform and educate professionals about it. Timely and adequate reaction and referral by persons who are in constant contact with the child can often be crucial (UNICEF, 2022).

To make it concrete and to summarize, the recommendation is that this population as a whole community be covered by preventive activities that are divided into three preventive domains: Universal (primary) prevention includes advisory work with parents on issues of family planning, prenatal and postnatal health care of the mother and child, parenting schools for future parents, counseling and education of parents and children on issues of abuse, neglect and disciplining of children using methods of positive discipline, etc.

Selective (secondary) 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. Indicated (tertiary) 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.

One of the possible examples of inclusive programs is the “Music Art Project - Music of Hope”, which aims at the social inclusion of school-age children through music. The program includes free music lessons provided to children by a professional team, with financial assistance to their families (Music Art Project). We believe that this program can serve as an example of good practice, because its focus is not only on inclusion, but also on strengthening resilience through the support of children’s creative potential and mutual connection.

Research on Adverse Childhood Experiences among Residents of Informal Settlements
Belgrade, 2024.

In order to talk about mental health, general health and the risks that threaten them, it is necessary to look at the importance of environments where people live, grow, interact, learn, feel and think. Informal settlements, with their specific structure and shortcomings, interfere in numerous ways with the trajectories of psychophysical development, so it is important to point out the necessity of solving elementary needs in the context of housing. This very fact confirms how it is necessary to improve multisectoral cooperation. Collaboration of decision-makers in the fields of infrastructure, health, education and other relevant institutions is crucial in order to create the conditions for children and young people living in informal settlements to have an equal chance to fulfill their rights to live in a safe and clean environment, right to grow, progress, learn, be protected from violence and abuse, and finally – right to have equal chances in life.

Literature

A11 Initiative for Economic and Social Rights. (2018). Report based on the questionnaire prepared by the Special Rapporteur on the right to adequate housing on the occasion of the preparation of her forthcoming report to the General assembly on the issue of informal settlements and human rights. Available at:
https://www.ohchr.org/sites/default/files/Documents/Issues/Housing/InformalSettlements/InitiativeEconomicSocialRightsSerbia.pdf

A11 Initiative for Economic and Social Rights. (2019). What does life look like in informal collective centers in Serbia. Available at:
https://www.a11initiative.org/wp-content/uploads/2020/06/Kako-izgleda-%C5%BEivot-u-neformalnim-kolektivnim-centrima_kona%C4%8Dna-verzija.pdf

Adler, N. E., & Ostrove, J. M. (1999). Socioeconomic status and health: what we know and what we don't. *Annals of the New York academy of Sciences*, 896(1), 3-15.
https://doi.org/10.1111/j.1749-6632.1999.tb08101.x

Atwoli, L., Platt, J.M., Basu, A., Williams, D.R., Stein, D.J., Koenen, K.C. (2016). Associations between lifetime potentially traumatic events and chronic physical conditions in the South African Stress and Health Survey: a cross-sectional study. *BMC Psychiatry*, 16(1), 214.
https://doi.org/10.1186/s12888-016-0929-z

Center for Youth Integration. Visited: October 30th 2023. Available at:
https://cim.org.rs/.

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.
https://doi.org/10.1016/j.ambp.2007.12.003

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. doi:10.1001/jama.286.24.3089

Ezeh, A., Oyebode, O., Satterthwaite, D., Chen, Y.F., Ndugwa, R., Sartori, J., Mberu, B., Melendez-Torres, G.J., Haregu, T., Watson, S.I., Caiaffa, W., Capon, A., Lilford, R.J. (2017). The history, geography, and sociology of slums and the health problems of people who live in slums. *Lancet*, 4;389(10068):547-558. https://doi.org/10.1016/S0140-6736(16)31650-6

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. https://doi.org/10.1016/S0749-3797(98)00017-8

Friedberg, R, Baiocchi, M., Rosenman, E., Amuyunzu-Nyamongo, M., Nyairo, G., Sarnquist, C. (2023). Mental health and gender-based violence: An exploration of depression, PTSD, and anxiety among adolescents in Kenyan informal settlements participating in an empowerment intervention. *PLoS One*,18(3), e0281800. https://doi.org/10.1371/journal.pone.0281800

Gil, D., Domínguez, P., Undurraga, E.A., Valenzuela, E. (2021). Employment Loss in Informal Settlements during the Covid-19 Pandemic: Evidence from Chile. J Urban Health, 98(5):622-634. https://doi.org/10.1007/s11524-021-00575-6

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. *TheLancetPublicHealth*, 2(8), e356–e366. https://doi.org/10.1016/S2468-2667(17)30118-4

International Institute for Environment and Development, Article Risks to health in informal settlements, 2022. Available at: https://www.iied.org/risks-health-informal-settlements.

Music Art Project. Visited: October 30th 2023. Available at: https://www.musicartpro.rs/.

Oyekunle, V., Tomita, A., Gibbs, A. (2023). High levels of poor mental health among young men in urban informal settlements in South Africa: a community-based study of social determinants. *Psychology, Health & Medicine*, 28:9, 2606-2620. https://doi.org/10.1080/13548506.2022.2088816

Patel, V., Lund, C., Hatherill, S., et al. (2010). Mental disorders: equity and social determinants. In: Blas E, Sivasankara Kurup A, eds. Equity, social determinants and public health programmes. *Geneva: World Health Organization*, 115–34. Available at: http://guamhealthpartners.com/photo_albums/pdfs/equity-social-determinants-and-public-health-programmes-oms.pdf.

Sidoti, C. (1996). Housing as a human right. National Conference on Homelessness Council to Homeless Persons. Visited: October 15th 2023. Available at: https://humanrights.gov.au/sites/default/files/content/pdf/human_rights/housing.pdf

Tsenkova, S., Potsiou, C., Badyina, A. (2009). SELF-MADE CITIES In Search of Sustainable Solutions for Informal Settlements in the United Nations Economic Commission for Europe Region. UNITED NATIONS New York and Geneva. Visited: October 21st 2023. Available at: https://unece.org/sites/default/files/2022-01/SelfMadeCities_E.pdf.

WadeJr, 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. *ChildAbuse&Neglect*, 52, 135–145. https://doi.org/10.1016/j.chiabu.2015.11.021

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. Visited: August 24th 2023. Available at: https://iris.who.int/handle/10665/65900?locale-attribute=ru&locale=ar&mode=full.

UN. (2018). Special Rapporteur on adequate housing as a component of the right to an adequate standard of living, and on the right to non-discrimination in this context. Delivered to: The General Assembly at its 73rd session. Visited: August 24th 2023. Available at: https://www.ohchr.org/en/documents/thematic-reports/a73310rev1-report-special-rapporteur-adequate-housing-component-right

UN Sustainable Development Goals. (2015). Visited: September 30th 2023. Available at: https://serbia.un.org/sr/sdgs

UN-Habitat. (2015). Habitat III Issue Paper 22—Informal Settlements. New York, NY: UN-Habitat. Visited: August 23rd 2023. Available at: https://www.alnap.org/help-library/habitat-iii-issue-papers-22-informal-settlements.

UN HABITAT. (2020). Informal Settlements in the Arab Region. United Nations Human Settlements Programme (UN-Habitat) Headquarters. Visited: September 10th 2023. Available at: https://unhabitat.org/sites/default/files/2020/02/1-200210_regional_is_report_final_4.0.pdf.

UNICEF Procedure for Ethical Standards in Research, Evaluation, Data Collection and Analysis. Visited: November 4th 2023. Available at:
https://www.unicef.org/media/54796/file

UNICEF (2015) Manual for the prevention of gender-based violence. Ministry of Education, Science and Technological Development. Visited: October 15th 2023. Available at:
https://www.unicef.org/serbia/publikacije/priru%C4%8Dnik-za-prevenciju-rodno-zasnovanog-nasilja.

UNICEF (2019). Adverse childhood expiriences (ACEs study). UNICEF Serbia. Visited: October 21st 2023. Available at:
https://www.unicef.org/serbia/publikacije/studija-negativnih-iskustava-u-detinjstvu

UNICEF. (2020). Statistical snapshot Serbia Multiple Indicator Cluster Survey 2019 and Serbia – Roma settlements MICS 6 Multiple Indicator Cluster Survey 2019. Visited: October 24th 2023. Available at:
https://www.unicef.org/serbia/media/16296/file/Statisti%C4%8Dki%20rezime%20-%20Istra%C5%BEivanje%20vi%C5%A1estrukih%20pokazatelja%20za%202019.%20godinu%20.pdf.

UNICEF. (2022). Be the hand that loves and word that guides. Visited: October 30th 2023. Available at:
https://www.unicef.org/serbia/media/23461/file/Budi%20ruka%20koja%20voli%20i%20re%C4%8D%20koja%20sokoli%20priru%C4%8Dnik.pdf.

Vasic, J., Grujicic, R., Toskovic, O., & Pejovic Milovancevic, M. (2021). Mental health, alcohol and substance use of refugee youth. *Frontiers in psychiatry*, 12, 713152. 10.3389/fpsyt.2021.713152

Zhang, Y., Su, D., Chen, Y., Tan, M., Chen, X. (2022). Effect of socioeconomic status on the physical and mental health of the elderly: the mediating effect of social participation. *BMC Public Health*, 29, 22(1), 605. 10.1186/s12889-022-13062-7.

Zivkovic, L., Djordjevic, A. (2015). General Characteristics of Substandard Roma Settlements in Serbia and Proposal for Further Development Initiatives for the Improvement of the Living Conditions of the Roma Community. *Project„Mapping of substandard Roma settlements in GIS"* Visited: October 10th 2023. Available at:
https://www.osce.org/files/f/documents/c/7/159746.pdf.

Thank you to CWS EUROPE who recognized, from the very beginning, the importance of conducting this study, thank you to the RESEARCH TEAM who put at disposal all their knowledge and sensitivity for this topic and target group, thank you to the CYI INTERVIEW TEAM who confirmed, once again, their experience, commitment and love towards these families, and finally, thanks to all the RESIDENTS OF INFORMAL SETTLEMENTS for their trust and courage.

Center for Youth Integration

Centar za integraciju mladih
Center for Youth Integration

27 Šajkaška street
11000 Belgrade
Serbia
+381113390258
office@cim.org.rs

www.cim.org.rs