



**World Health
Organization**

REGIONAL OFFICE FOR **Europe**

**SURVEY OF ADVERSE CHILDHOOD
EXPERIENCES AMONG YOUNG PEOPLE
IN THE FORMER YUGOSLAV
REPUBLIC OF MACEDONIA**





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Abstract

This survey of adverse childhood experiences was undertaken in 1277 students aged over 18 years from a representative sample of high schools and universities in the former Yugoslav Republic of Macedonia. The study findings show a high reported prevalence of physical abuse (21%), emotional abuse (10.8%), sexual abuse (12.7%), physical neglect (20%) and emotional neglect (30.6%). Both sexes were affected though sexual abuse and physical neglect were higher in males and emotional neglect was higher in females. Household dysfunction was also common: 10% witnessed violent treatment of their mother, 3.7% lived with someone who abused drugs, 10.7% lived with an alcoholic, in 6.9% a household member had a mental illness, and in 5% a household member had been incarcerated, and 3.8% had experienced parental separation. Adverse childhood experiences were linked to health-risk behaviours. For example, emotional abuse doubled the likelihood of drug abuse, tripled the likelihood of attempting suicide, and increased the likelihood of early pregnancy 3.5 times. Physical abuse increased the likelihood of early pregnancy 8.3 times and doubled the likelihood of attempting suicide. There was a general trend that as the number of adverse childhood experiences increased, so did health-risk behaviours, implying an association with longer-term poor health outcomes.

Keywords

CHILD ABUSE – PREVENTION AND CONTROL
VIOLENCE
WOUNDS AND INJURIES – PREVENTION AND CONTROL
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA
EUROPE

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Table of Contents

Acronyms.....	v
Acknowledgements.....	vi
Foreword.....	vii
Executive summary.....	viii
1. Introduction.....	1
1.1 Rationale for conducting a survey of adverse childhood experiences in the former Yugoslav Republic of Macedonia.....	1
1.2 Aim, objectives and scope of the study.....	3
1.3 For whom is this research intended?.....	3
2. Conceptual definitions of child maltreatment.....	5
2.1 Child maltreatment.....	5
2.2 Physical abuse.....	5
2.3 Sexual abuse.....	5
2.4 Emotional (psychological) abuse & neglect.....	5
2.5 Physical neglect.....	5
3. The consequences of child maltreatment.....	7
3.1 Immediate and long-term consequences.....	7
3.2 Impact of multiple forms of abuse.....	8
3.3 The costs of child maltreatment.....	9
4. Ecological model of risk and protective factors.....	11
4.1 Risk factors.....	11
4.2 Protective factors.....	11
5. Methodology.....	13
5.1 Research design.....	13
5.2 The instrument – ACE Questionnaire.....	13
5.3 Pilot study.....	13
5.4 Main study.....	14
5.5 Legal and ethical approval.....	14
5.6 Sampling.....	14
5.7 Response rates.....	15
5.8 Data analysis.....	15
5.9 Administering the study.....	15
6. Results.....	17
6.1 Sociodemographic characteristics of respondents.....	17
6.2 History of exposure to adverse childhood experiences.....	18
6.2.1 Physical abuse.....	18
6.2.2 Physical (corporal) punishment.....	19
6.2.3 Psychological (emotional) neglect and abuse.....	19
6.2.4 Sexual abuse.....	20
6.2.5 Sexual abuse by peers.....	21
6.2.6 Physical neglect.....	22

6.3 Household dysfunction	22
6.4 Number of adverse childhood experiences – ACE Score.....	23
6.5 Interrelationships between categories of adverse childhood experiences.....	24
6.6 Health-risk behaviours	26
6.6.1 Cigarette smoking.....	26
6.6.2 Alcohol and substance use by students	26
6.6.3 Sexual behaviour	26
6.6.4 Suicide attempts.....	26
6.7 The interrelatedness of ACEs (childhood abuse and neglect, household dysfunction) and health-risk behaviours.....	28
7. Discussion.....	33
8. Conclusions	37
8.1 Limitations of the study.....	38
9. Next steps.....	39
10. References	41
Annex 1	45
A1.1 Maltreatment by category	45
A1.2 Household dysfunction by category.....	45
A1.3 Health-risk behaviour by category	46

Acronyms

ACE	adverse childhood experiences
CAN	child abuse and neglect
CDC	United States Centers for Disease Control and Prevention
CI	confidence interval
CIS	Commonwealth of Independent States
CM	child maltreatment
CMPR	child maltreatment prevention readiness
CSW	Centres for Social Work
CRC	Convention on the Rights of the Child
DALYs	disability-adjusted life years
EU	European Union
GBD	global burden of disease
GDP	gross domestic product
GSHS	Global Schools-based Student Health Survey
HALE	healthy life expectancy
HIC	high-income countries
LMIC	low- and middle-income countries
OR	odds ratio
SEE	southern and eastern Europe
UCP	University Clinic of Psychiatry, Skopje

Acknowledgements

This report has been written by:

- Marija Raleva, University Clinic of Psychiatry, Skopje
- Dimitrinka Jordanova Peshevska, WHO Country Office, Skopje, and
- Dinesh Sethi, WHO Regional Office for Europe, Copenhagen.

We are particularly grateful to the members of the scientific research team: Marija Raleva, University Clinic of Psychiatry, Skopje, Dimitrinka Jordanova Peshevska, WHO Country Office, Skopje, Izabela Filov, School of Medicine, Bitola, Antoni Novotni, Kadri Hadzihamza and Liljana Trpchevska, University Clinic of Psychiatry, Skopje. The statistical analysis was performed by Rozalinda Isjanovska, Institute of Epidemiology and Biostatistics, Skopje.

We are also grateful to the members of the Ethical Committee for their support and guidance: Biljana Janevska, Institute of Forensic Medicine and Deontology, Suzana Simonovska, Institute of Gender Studies at the Faculty of Philosophy, Skopje.

Special thanks to Head of WHO Country Office, Skopje, Marija Kisman, for encouragement and support.

We are very grateful to the following university professors: Ljupco Nestorovski, Abdylmenaf Bexheti, Dragana Batik, Biljana Malenko, Burbuqe Kaprolli and the following high school teachers: Valentina Jordanova, Biljana Kokalevska, Nedret Feleki, Florentina Hani, who have facilitated smooth implementation of the research in the field.

We are particularly grateful to the Ministry of Health, Ministry of Labor and Social Policy, Ministry of Education and Science in the country for continuous support in this area.

The following WHO staff provided detailed, helpful and thorough review comments: Francesco Mitis and Valentina Baltag.

We are particularly grateful to our peer reviewers for their very helpful comments and for contributing to improving the completeness and accuracy of this publication:

- Alexander Butchart, WHO, Geneva
- Michal Molcho, National University of Ireland, Galway, Ireland.

Particular thanks to Carinne Allinson for valuable comments and editing of this publication.

Special thanks to Predrag Kitanovski for the layout of the publication and photography of the cover page.

The WHO Regional Office for Europe wishes to thank the Norwegian Directorate of Health and the Government of Norway for the continuous technical and financial support in the area of violence prevention.

Foreword

Violence has for a long time been considered a criminal justice and human rights concern. In recent decades, however, it has been clearly recognized as a public health problem. Health systems have a key role to play in advocacy and providing preventive programmes and services for victims of maltreatment who have been harmed physically, sexually or mentally.

The Ministry of Health has worked collaboratively with the WHO Regional Office for Europe on highlighting the problem of violence at country level through its biennial collaborative agreements. Since 2002, violence prevention has been a priority on this shared agenda. This has ranged from the launch of the World report on violence and health and establishing a National Commission on Violence and Health, which led to the development and launch of the National report on violence and health in 2006, and more recently, this survey of adverse childhood experiences.

The current report fits in with the priority given to violence prevention in the former Yugoslav Republic of Macedonia. This study used the survey methodology made available in Preventing child maltreatment: a guide to taking action and generating evidence and applied it to a representative sample of secondary school and university students aged over 18 years. Its findings are striking; child maltreatment and other adverse childhood experiences are very prevalent, whether it is physical abuse, which 21% of young adults report having experienced in childhood, or emotional neglect, reported by 30.6%. Furthermore, the study also finds a strong association between adversity in childhood and health-risk behaviours, implying that these would result in ill health later in life. This is of particular concern in the European Region, where there is a renewed focus on the life course approach and the prevention of noncommunicable disease. The scientific evidence informs us that reducing the cycles of violence by investing in nurturing relationships and improving social cohesion across the generations at country level are worthwhile investments.

One of the aims of the report is to stimulate a national policy dialogue on how to address the problem of child maltreatment. In response, the Ministry of Health and Ministry of Labour and Social Policy have shown leadership in developing an action plan to prevent child maltreatment and are working with other sectors to take this forward. Child maltreatment is a health and social problem and its prevention requires joint actions by different sectors in a collaborative way. Decisive action is needed to fill these gaps and to take effective steps using the evidence on prevention to secure the safety and well-being of children.

Gauden Galea, Director, Division of Noncommunicable Diseases,
WHO Regional Office for Europe

Executive summary

Introduction

Reducing the cycles of violence by investing in nurturing relationships and improving social cohesion across the generations at country level is considered worthwhile investment. In consideration of this commitment, the Ministry of Health drew attention to the problem of violence at country level through its biennial collaborative agreement 2002–2003 with the WHO Regional Office for Europe, putting violence prevention as a priority on its agenda. To accomplish this commitment, a need for better, reliable data on the nature and extent of violence against children was clearly imposed. Providing quality epidemiological data is essential, not only to quantify the magnitude of child maltreatment as a public health problem in the country, but also for the identification of risk factors and protection as well as in order to be able to undertake efficient and adequate preventive programmes.

The aim of the study was to collect data and determine the magnitude, scope and extent of the problem of adverse childhood experiences (ACE), including different types of child maltreatment and household dysfunction, among secondary school and university students in the former Yugoslav Republic of Macedonia and its impact on health-risk behaviours.

In accordance with expectations, this study provided data which will fully contribute to bridge the gaps as necessary for applying a public health approach to the problem of child maltreatment, and to further encourage the implementation of evidence-based interventions in the sectors of health, social services and the law on child maltreatment prevention and child protection.

Methodology and data analysis

The ACE study used a random selection of a representative sample of students in year four of secondary school (aged 18 and above) and first- and second- year university students. The sample consisted of 664 secondary school students (258 males and 406 females). The university student sample consisted of 613 students (343 females and 270 males).

This study examined the prevalence of ACE among secondary school and university students in the former Yugoslav Republic of Macedonia at national level. ACE questionnaires were used for this study. Questionnaires (male and female version) consisting on 68 questions, examining various types of child maltreatment (CM), childhood adversities and other risk factors were applied.

Results

Sociodemographic characteristics: the number of students that took part in the study was 1277. The majority (58.6%) were female and 41.6% were male. This discrepancy between males and females was owing to the fact that more male students refused to participate in the study. The majority of students came from families with moderate (55.5%) and satisfactory (28.7%) socioeconomic status, in which parents have at least secondary school education and they both work, with 90.1% of the fathers in employment, and 62.8% of mothers.

Adverse childhood experiences and household dysfunction

Male and female students had almost equal experience of violent treatment of their mother (which might be considered as equivalent to domestic violence) within their families (11% females and 9% males). The most common situation was witnessing her being repeatedly hit for several minutes or pushed, slapped or having something thrown at her. Although these are families that are considered socioeconomically satisfactory

Summary of exposure to adverse childhood experiences

Physical abuse

In our study physical abuse was measured by experiences of being pushed, grabbed or having something thrown at one, or even more severe experiences such as being hit so hard that one had marks or was injured, which happened sometimes, often or very often. More than one fifth (21%) of all students were exposed to different forms of physical abuse during childhood so that they were pushed, grabbed or had something thrown at them, or had marks or were injured.

Corporal punishment

In the former Yugoslav Republic of Macedonia corporal punishment is a common way of disciplining children. Parents apply this method almost equally with boys and girls. 71.7% of females and 73.5% of males had sometimes or often been spanked, which means that the majority of children had such experiences during their childhood.

Physical neglect

Physical neglect was reported by 15.5% of females and 26.3% of males. There is a statistically significant difference between males and females in their exposure to deliberate physical neglect ($p < 0.005$).

Psychological abuse

- Psychological abuse can be experienced actively and take the form of insults, name calling, threats or rejection, which is psychological abuse in a narrow sense of the word, or more passively by experiencing behaviours such as ignoring, isolation, hatred – which is known as psychological neglect.
- The results showed that 10.8% of all participants in the study had experienced psychological abuse (11.7 % females and 9.6% males). Around 30.6% of all participants had experienced psychological neglect (35.5% females and 23.7% males).

Sexual abuse

- Although in the majority of studies females are more prone to sexual abuse than males, our study showed a different pattern. Sexual abuse was reported by 7.3% of females and 20.8% of males. All forms of sexual abuse were experienced far more by males than females, and the difference is statistically significant ($p < 0.05$).
- Being sexually abused by peers was more frequently experienced by males than females (3% males versus 1.7% females). Again, this reversed pattern suggests that girls might underreport sexual abuse by peers as well as sexual abuse by adults, accepting cultural stereotypes of not revealing sexual abuse.

(in which mothers work and earn a salary), in 10% of cases the mothers were subjected to violence. This violence is also an adversity in childhood and is a pattern of behaviour that is usually transmitted from one generation to the next.

The most common type of household dysfunction was living with a family member who abuses substances. Overall, 13.4% of students (12% female and 15.3% male) lived with someone who misused alcohol or

used illicit drugs, and 10.7% lived with someone who was alcoholic (10.4% female and 11.7% male), thus confirming the hypothesis that the underlying factor for domestic violence in the majority of cases is alcoholism. Overall, 3.6% of students lived with a family member who used illicit drugs, with significantly more male students (5.5%) than female students (2.3%) thus affected ($p < 0.05$).

The second most common childhood adversity was mental illness and a family member suffering from depression (6.9% of students affected – 7.6% female and 5.9% male), followed by a household member in prison (experienced by 5% of students – 4.5% female and 5.7% male), parental separation or divorce (experienced by 3.8% of students – 4.4% female and 3% male). Living in such circumstances, overall 4% of students had run away from home (3.3% female and 7% male), which is a statistically significant difference ($p < 0.05$).

Results showed evidence that boys and girls are equally exposed to ACE. An almost equal percentage of female and male students (28% and 31% respectively) experienced one type of ACE. The experience of two types of ACEs together is not equally distributed between female and male students (14.4% and 17% respectively) but there is no statistical significance. About 10% of female respondents and 9.3% of male respondents had experienced three types of ACEs. Four or more types of ACEs were experienced by an almost equal percentage of female and male students (9% and 10% respectively).

Health-risk behaviours and adverse childhood experiences

Results showed that alcohol use and smoking were the most common health-risk behaviour consequences. Of the 1277 respondents, 27.6% claimed to be current drinkers, and 3.5% reported having driven a car while drunk. More than a fourth of the total number of respondents reported being smokers at the time of the survey, with 7.1% having started smoking at the age of 15 or even younger. Similarly, 5.3% of students had used illicit drugs. In terms of risky sexual behaviour, 12.3% had engaged in early sex and 25.8% had had sex with three or more partners. Two percent of girls had got pregnant at the age of 18 years or younger, and a third of these pregnancies was considered as unintended first pregnancies. Attempted suicide (3.1%) was a life-threatening health-risk behaviour.

The results demonstrated a relationship between ACEs and later manifestation of health-risk behaviours among young people. Emotional (psychological) abuse increased the likelihood of drug abuse twice, of committing suicide almost three times, and of an early pregnancy 3.5 times. Physical abuse increased the likelihood of smoking 1.5 times, of an early pregnancy 8.3 times, and almost doubled the chances of attempted suicide. Sexual abuse increased the likelihood of drink-driving 1.5 times and almost doubled the likelihood of having multiple sexual partners. Emotional neglect increased the likelihood of an early pregnancy 3.5 times, and physical neglect doubled the likelihood of driving while drunk and of engaging in early sex. Household dysfunction such as substance abuse in the family doubled the likelihood of starting smoking early, and increased the chances of attempting suicide 2.3 times. Violence towards the mother, i.e. domestic violence, increased the chances of smoking by two, the chances of an early start to smoking by more than three, and almost quadrupled the likelihood of drug abuse; the increase for early pregnancy was 21 times, and four times for attempted suicide. Having a family member who had been imprisoned almost doubled the odds for engaging in early sex and increased by 3.5 times those for attempting suicide. Parental separation or divorce increased the likelihood for drug abuse almost twice and 1.5 times for having multiple partners. Overall, these results showed that being exposed to negative experiences during childhood is likely to result in a number of risky behaviours in adolescence and young adulthood.

Moreover, the general trend indicates that there is a relatively strong graded relationship between health-risk behaviours and the number of adverse childhood experiences. Significantly, illicit drug use was found to be 2.2 times more likely as the number of ACEs reached three or more ($OR = 2.216$, 95% $CI = 1.110-4.426$). The odds of being a smoker were also found to increase as the number of adverse experiences increased to four or more ($OR = 1.561$, 95% $CI = 1.049-2.324$). Experiencing unwanted pregnancy was found to be 3.5 times more likely ($OR = 3.459$, 95% $CI = 1.055-11.338$) as the number of adverse childhood experiences reached three, and attempted suicide ($OR = 3.347$, 95% $CI = 1.525-7.346$) was found to be 3.3 times more likely as the number of adverse childhood experiences reached four or more.

Discussion and conclusions

The results confirmed the conclusions of previous studies that childhood experience of abuse is associated with risks for poor health in later life. In general, the more adverse experiences encountered in childhood, the higher the probability that an individual engages in risky lifestyle habits and consequently might suffer from poor health.

Current findings indicate that physical abuse and neglect, as well as psychological neglect, were the most frequently reported forms of childhood adverse experiences. This is not unusual since psychological violence is considered to underpin all forms of abuse, including physical and sexual.

Surprisingly, reported exposure to sexual abuse was higher among males in this study than females. This may be due to the type of indicators used in the survey, which focused on age difference with the perpetrator (which was defined as “five years or more”).

Among the most frequent household dysfunctions were alcohol and illicit drug use by a family member and violence towards the mother.

This study also showed that the various forms of childhood maltreatment and household dysfunctions co-occur. More than one third of the respondents who had experienced all categories of abuse (physical, sexual and emotional) also felt psychologically neglected. Emotional neglect cuts across all forms of abuse and household dysfunction. Similarly, physical neglect is also represented in all forms of abuse and household dysfunction. There was also relative co-occurrence of physical and emotional abuse and mental illness in the family, and having a family member in prison was associated with physical and emotional neglect.

Next steps

As a result of the study findings, the establishment of a National Commission on Child Abuse and Neglect was initiated by the Minister of Labour and Social Policy, leading to the preparation of a National Action Plan on Child Abuse and Neglect. Development of a single form (protocol for child abuse and neglect) will help to avoid secondary victimization of the child victim and will provide for overall review of individual cases of violence.

The findings confirmed alcohol consumption as a major risk factor for child abuse and neglect (CAN) in the family, so specific, targeted preventive programmes should address alcohol misuse.

Specific gender-sensitive programmes should be developed to tackle the issue of sexual abuse separately for girls and boys. The boys do not necessarily recognize this type of behaviour as abusive, and the girls should be encouraged to disclose and seek access to services. Programmes for targeting dating violence should also be developed, changing the traditional norms and attitudes towards the gender roles, moral judgment, and development of social skills for nonviolent communication.

The international published literature informs us of numerous evidence-based preventive interventions such as those on parent training programmes, home visitation programmes, multicomponent programmes combining these with preschool enrichment, and hospital-based educational programmes to prevent the shaken baby syndrome and public awareness campaigns to change cultural norms that support corporal punishment of children. These programmes need to be adapted and mainstreamed into social, health and educational policy.

1. Introduction

The *World report on violence and health* states that no country or community is untouched by violence (1). With the World Health Assembly resolution 56.24 (2), violence has been put on the international agenda as a leading worldwide public health problem. This has led to developing national plans of action, strengthening data collection and research, improving services for victims of violence and focusing more on primary prevention. The challenge of child abuse and neglect has brought children as a vulnerable group to the attention of political and professional audiences as an important public health issue. In 1999, the WHO Consultation on Child Abuse and Neglect came up with a definition of child abuse or maltreatment which was subsequently accepted and used as a referent definition (1).

Issues concerning child abuse and neglect transcend national borders, affecting developing as well as developed countries. As the 2006 United Nations landmark study on violence against children stresses, violence against children cuts across boundaries of geography, race, class, religion and culture (3). It is a truly global phenomenon that occurs in some low- and middle-income countries at higher rates than in wealthier countries. The central message of the United Nations study on violence against children is that “no violence against children is justifiable, and all forms of violence are preventable”. Therefore, governments, ministries, professional communities, civil organizations, civil society and citizens need to understand this message and translate it into action to mark a definitive turning point: an end of justification of violence against children, whether accepted by ‘tradition’ or disguised as ‘discipline’ (3).

In the former Yugoslav Republic of Macedonia the prevalence of violence and abuse of children – physical, emotional and sexual as well as deliberate neglect – by parents and other close family members has only begun to be acknowledged. It needs to be documented as mandated by law.¹

The basic assumption of the Convention on the Rights of the Child (CRC) is that the family is the natural environment for the growth and well-being of all its members – particularly for children (3). Living in a family environment is the greatest potential for protecting children from all forms of abuse. It is also an empowering potential for growth and development and at the same time encourages children to protect themselves. But under some particular circumstances families can fail to fulfill their protective role and might become prone to violence against their most vulnerable members – young children. In recent times the issue of child abuse and neglect has been brought to the attention of the general public, breaking the silence about violence against children at home, resulting in an increased number of reported cases. Addressing this issue and reflecting it in appropriate national policies and programmes would help children overcome such experiences and lessen the devastating consequences for children’s health and well-being.

1.1 Rationale for conducting a survey of adverse childhood experiences in the former Yugoslav Republic of Macedonia

Despite the undisputed impacts of the burden of violence, limited attention has been paid to child maltreatment as a public health problem. There are several reasons for this relative inaction, one of which is the lack of reliable and valid information on child maltreatment that makes the size of the problem visible to policy-makers. There is a clear need for better, more reliable data on the nature and extent of violence against children. Providing quality epidemiological data is of essential importance not only for quantifying the magnitude of child maltreatment as a public health problem in the country, but also for the identification

¹ Law on the Family (Official Gazette, nos. 80/92, 9/96, 38/20004, 33/06 and 84/08), as it uses the term “family violence”, and Law on the Protection of Children (Official Gazette, nos. 98/2000, 65/04).

of risk factors and protection, as well as to enable efficient and adequate preventive programmes to be undertaken. This gap can be overcome by providing standardized, community-based data on the nature and extent of child maltreatment. In the decade since the first ACE study results were published (4), a number of other initiatives in developed and developing countries have begun examining the consequences of child maltreatment and other traumatic stressors for health-risk behaviours and long-term chronic disease consequences. These include a comparative risk assessment of child sexual abuse to inform the global burden of disease (GBD) estimates (1); the Global Schools-based Student Health Survey (GSHS) (5); and the introduction of the International Child Abuse Screening Tool (ICAST) by the International Society for Prevention of Child Abuse and Neglect (ISPCAN) (3), and country-specific projects.²

These developments have occurred in a context of raised global awareness of the consequences of child maltreatment following the launch of reports such as the *World report on violence and health* (1) and the *World report on violence against children UN Secretary-General's study on violence against children* (3), in which the ACE study and other findings about childhood adversity play a prominent role in highlighting the long-term consequences of child maltreatment. Most recently, both CDC's Violence Prevention Division and WHO's Department of Violence and Injury Prevention and Disability in Geneva have prioritized child maltreatment prevention and there is widespread interest at country level in (i) conducting surveys to examine the prevalence and consequences of child maltreatment, and (ii) commencing the development of policies and programmes designed to prevent child maltreatment and mitigate its acute and long-term consequences.

According to the UNICEF *Study on institutional response to violence against children* in the former Yugoslav Republic of Macedonia published in 2005 (6), over 40% of key government institutions responsible for detecting, reporting and referring cases of abuse and violence – such as the police, Centres for Social Work (CSWs), and schools – did not have a system for officially recording and referring cases of child abuse. Since then a number of initiatives and documents have been produced in order to prevent violence and protect children from abuse, as well as to combat family violence.

The *Report on violence and health in Macedonia and guide for prevention* stated that prevention of violence against children is a priority for the country. Among the key points that were addressed are: strengthening primary prevention with an emphasis on “Improvement of the system of identification, estimation and evidence of cases of child abuse in all sectors, particularly in the health sector, as well as additional forms for registration of violence or injury” (7).

In addition to these recommendations, the GSHS was conducted in the country in 2007/2008³ with the aim of providing accurate data on health behaviours and protective factors among students in order to:

- help the country develop priorities;
- establish programmes and advocate for resources for school health programmes and policies;
- establish trends in health behaviours for use in the evaluation of health promotion among youth and in schools; and
- enable the country to make comparisons within and between countries regarding the prevalence of healthy behaviours (5).

One of the outcomes of the interministerial working group Action Plan to Prevent and Combat Sexual Abuse against Children and Paedophilia was a study designed to analyse data on the extent as well as the dynamics and manifestations of child sexual abuse in the country, which also identified precisely the characteristics of child victims and the profile of the perpetrators. Furthermore, it also provided information on the existing capacities of state institutions to protect children from sexual abuse in the country (8).

2 Balkan Epidemiological Study on CAN (BECAN) 2009–2012, conducted in nine Balkan countries including the former Yugoslav Republic of Macedonia, using the same methodology, such as the ICAST Tool adapted for this research (www.becan.eu).

3 The first GSHS in former Yugoslav Republic of Macedonia was conducted in 2002 on a sample of 4800 students aged 11, 13 and 15 nationwide.

Recognizing the importance of the assessment of child maltreatment prevention readiness (CMPR), WHO's Department of Violence and Injury Prevention and Disability in Geneva, supported by the Fetzer Institute, launched a project on CMPR in the country (with five other countries) to assess how 'ready' (in terms of awareness, willingness, ability and capacity) the country was, at national and local level, to implement evidence-based child maltreatment prevention programmes on a large scale. This research was conducted in 2010–2011 and the report is currently being prepared for publication. The main recommendations of the study refer to: strengthening political priority of CM prevention and its evidence-based long-term effectiveness as a starting point for any further activity; strengthening the collection of scientific data on child maltreatment and its prevention on the ground, and increasing the influence of the scientific evidence on policy-makers and health practitioners; disseminating the information on magnitude, types, consequences, costs and risk factors of child maltreatment; supporting interinstitutional and intersectoral collaboration in research; increasing current programme implementation and evaluation of evidence-based preventive programmes in schools and kindergartens; and providing training in CM prevention for a wide range of professionals in the field.

General objectives of the study have been defined through extensive discussion with stakeholders based on their expertise and knowledge of national and local priorities, local culture, attitudes and conditions as well as availability of resources.

1.2 Aim, objectives and scope of the study

The aim of the study was to collect data and determine the magnitude, scope and extent of the problem of ACEs, including different types of child maltreatment and household dysfunction, among secondary school and university students in the former Yugoslav Republic of Macedonia and assess its impact on health-risk behaviours such as smoking, alcohol and drug abuse, suicidal behaviour, applying WHO/CDC-recommended methodology. The study will also contribute to the specific need for setting up policies and programmes for child maltreatment prevention and victim services.

To achieve this, the following specific objectives were defined:

- to collect data on prevalence of different types of child abuse;
- to identify the risk factors for child abuse, including household dysfunction;
- to identify multiple types of maltreatment and their impact on health-risk behaviours;
- to assess interrelationship and cumulative influence of multiple categories of ACEs; and
- to assess and recommend preventive measures and policy guidelines using the study results.

The study was conducted at national level, based on a national estimate of CM prevalence among university and secondary school students, on a nationally representative sample.

1.3 For whom is this research intended?

A large portion of child maltreatment is never reported to child protection and law enforcement authorities. Most children suffer in silence, and sometimes this suffering becomes their reality. As adults they might come to the attention of health, legal and social services sectors, which are the most affected by the consequences of child maltreatment and most involved in efforts to deal with it. It is expected that this study will provide data which will contribute to bridge the gaps in knowledge necessary for applying a public health approach, detecting the magnitude and extent of the problem, and identifying risk and protective factors, which will further encourage the implementation of evidence-based interventions in the sectors of health, social services and the law. It is expected that the results from this study might provide support to:

- policy-makers at national level;
- programme planners at national and local level; and
- service providers (governmental organizations and nongovernmental organizations) at local level.

2. Conceptual definitions of child maltreatment

2.1 Child maltreatment

Child maltreatment is defined as “all forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child’s health, survival, development or dignity in the context of a relationship of responsibility, trust or power” (1,9).

As already stated, the *World report on violence and health* and the 1999 WHO Consultation on Child Abuse Prevention distinguish four types of child maltreatment:

- physical abuse;
- sexual abuse;
- emotional and psychological abuse; and
- neglect.

2.2 Physical abuse

Physical abuse of a child is defined as the intentional use of physical force against a child that results in – or has a high likelihood of resulting in – harm for the child’s health, survival, development or dignity. This includes hitting, beating, kicking, shaking, biting, strangling, scalding, burning, poisoning and suffocating. There is evidence that a great proportion of physical violence against children in the home is inflicted with the object of punishing (1).

2.3 Sexual abuse

Sexual abuse is defined as the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared, or else that violates the laws or social taboos of society. Children can be sexually abused by both adults and other children who are – by virtue of their age or stage of development – in a position of responsibility, trust or power over the victim (1).

The definition for sexual abuse of children, initially described by Wyatt, states that an age difference of five or more years between the victim and the perpetrator should be taken into consideration because of possible misinterpretations of sexually abusive versus non-abusive experiences (10).

2.4 Emotional (psychological) abuse and neglect

Emotional or psychological abuse involves both isolated incidents as well as a pattern of failure over time on the part of a parent or caregiver to provide a developmentally appropriate and supportive environment. Acts in this category may have a high probability of damaging the child’s physical or mental health, or his/her physical, mental, spiritual, moral or social development. Abuse of this type includes rejecting, degrading, blaming, threatening, frightening, terrorizing, isolating, corrupting, discriminating against or ridiculing; exploiting and other non-physical forms of rejection or hostile treatment; and denying emotional responsiveness (1).

According to Garbarino et al. (p.8), ‘denying emotional responsiveness’ occurs when “The adult fails to provide responsive caregiving that then impairs the child’s emotional development. The core feature of this category is the caregiver’s ignoring and neglecting the child (i.e., an act of omission) and is sometimes

referred to as ‘emotional neglect’. This term is distinguished from ‘rejecting’ and ‘degrading’, which have an active quality (i.e., an act of commission) and constitute typical forms of emotional abuse.” (11)

Emotional neglect might be considered as part of emotional abuse or of neglect at the same time.

2.5 Physical neglect

Neglect includes isolated incidents as well as a pattern of failure over time on the part of a parent or other family member to provide for the development and well-being of the child – where the parent is in a position to do so – in one or more of the following areas (1):

- health;
- education;
- emotional development;
- nutrition; and
- shelter and safe living conditions.

The parents of neglected children are not necessarily poor. They may equally be financially well off. Neglect might be borderline when it comes to the issue of poverty and ignorance on the part of the caregivers about the developmental needs of children and should be very carefully assessed.

3. The consequences of child maltreatment

3.1 Immediate and long-term consequences

The consequences of child abuse and neglect are evidenced throughout the life span and include both immediate and long-term impact on physical as well as emotional well-being, development and health status later in childhood, adolescence and adult life. The abuse and neglect which the children experience in the context of their family at home and in the community can lead to lifelong consequences for their health.

Belsky's ecological model of child maltreatment is a typical model of a multi-level approach to the risk factors in a broader context: individual (including biological, behavioural, psychological) systems and processes, as well as broader ones such as the environment, society and culture. He proposes that child maltreatment is more likely to occur when there is a confluence of factors of four different levels: the psychological characteristics of the parents, the family setting and its dynamics, the immediate social network of the family members and the current state of society as it pertains to maltreatment (12–14).

In optimal development, the child successfully negotiates the progression of stage-salient issues and moves through a course of increasing competence and adaptation. The maltreatment may have a significant negative impact upon this progression. This notion of maltreatment's impact upon the child's progression through different developmental stages is consistent with one of the two major types of effects arising from child victimization, proposed by Finkelhor (15). Developmental effects "refer to deeper and generalized types of impact, more specific to children, that result when a victimization experience and its related trauma interfere with developmental tasks or dysfunctionally distort their course" (15, p.184).

Areas that can be affected include attachment, behavioural and emotional self-regulation, development of the self, cognitive and academic functioning and peer relations. These developmental outcomes in turn may have a significant effect upon the attainment of future developmental tasks. In contrast, localized effects are "those specific to the trauma experience but without major developmental ramifications ... these symptoms can be localized not only in the sense that they are short-term, which they often are, but also in the sense that they primarily affect behaviour associated with the victimization experience and similar classes of experience" (15, p.184).

Many retrospective and prospective studies have established that CM has strong, long-lasting effects on brain architecture, cognition and behaviour, leading to disruption in psychological and social functioning and mental health problems, health-risk behaviours, lower life expectancy and higher health-care costs (16–20). An earlier review of the literature by Browne and Finkelhor (21) shows that depression, feelings of isolation and stigma, poor self-esteem, distrust, substance abuse, and sexual maladjustment are the most frequently reported long-term effects of child abuse and neglect. More recent findings point to the same consequences but include a variety of other psychopathological disorders such as suicide, panic disorder, dissociative disorders, post-traumatic stress disorder, and antisocial behaviours (22–29). Child abuse and neglect also result in impaired brain development with long-term consequences for cognitive, language, and academic abilities (30,31).

Not only do traumatic experiences resulting from abuse lead to impaired brain functioning, but other adverse childhood experiences such as household insufficiencies and dysfunctions may also lead to negative psychosocial and health outcomes directly or indirectly (28,32). Such household insufficiencies include general poverty specific to lack of basic necessities such as food, shelter, clothing, education, and health. Children from families that report multiple experiences of food insufficiency and hunger are more likely to show behavioural, emotional and academic problems than children whose families do not report such

conditions in life (33). Moreover, household dysfunctions such as living with a family member who is an alcoholic, drug addict, mentally ill, or who has been imprisoned for certain crimes and offences, may also influence future life outcomes. For instance, children with family histories of substance abuse had higher levels of aggression, delinquency, sensation-seeking, hyperactivity, impulsivity, anxiety, negative affectivity, and difficulties in self-differentiation compared to children with no such histories (34–36). A family history of alcohol dependence has also predicted poor adolescent neuropsychological functioning (37–39).

The same is true with situations where a child grows up in a family where domestic violence is a common experience, or where parents are separated or divorced. Studies have shown that children who have lived under an environment of domestic violence exhibit clinical levels of anxiety or post-traumatic stress disorder (40). These children are at significant risk for law breaking, substance abuse, poor school attendance, and relationship problems.

What is the mechanism involved in childhood trauma that can affect future cognitions and behaviour? Recent studies on the neurobiological processes accompanying or underlying observed behaviour show that maltreatment can result in changes in the brain structure itself (19). Many of these changes in brain functioning are related to one's response to stress. Although moderate and predictable stress in childhood can help develop ways of coping with life in general, severe, repetitive, or chronic stress hampers normal brain functioning. Neural pathways are sensitized and regions of the brain that deal with anxiety and fear responses (e.g., hippocampus, sub-cortical and limbic systems) become overdeveloped. Studies have also shown that repeated abuse, with its resulting stress, can affect the neurochemical system resulting in changes in attention, impulse control, sleep patterns and fine motor control (19,41). In particular, children who have been subjected to abuse have abnormal secretions of cortisol (42). The tendency, therefore, is for individuals who are under constant threat of abuse to focus their brain's resources on survival and threat avoidance, to the detriment of other parts of the brain that are involved in more productive activities that include language development and active learning. If children are in a persistent state of hyper-arousal and hyper-vigilance, then they are likely to have difficulties responding normally to stimulations in daily life. These groups of children turn to high-risk behaviours to deal with stress and adverse life events.

3.2 Impact of multiple forms of abuse

For years, the study of the long-term consequences of childhood maltreatment has focused primarily on single types of maltreatment, particularly sexual or physical abuse. The recent literature includes an increasing number of studies that assess the impact of more than one type of abuse (22,43–46). These studies have shown that the long-term effects of childhood maltreatment are not necessarily the result of any single type of abuse, such as sexual abuse, but may be due to other pathological elements as well, such as psychological abuse, neglect and family disorganization (47).

Although the co-occurrence of multiple forms of childhood abuse and household dysfunction is common (4,48–51), no summary analysis of the interrelationships among multiple forms of ACEs has been reported. A full exploration of the interrelationships is critical to understanding the long-term effects of ACEs. Researchers who study only one or two of these childhood exposures are likely to miss the apparent negative effects of co-occurring traumatic or stressful experiences. Moreover, when such co-occurrence is ignored, researchers and clinicians may hold the implicit assumption that the meaning of the presence of one type of childhood adversity is the same in all cases, whether or not other types are also present. In fact, conditions such as substance abuse, domestic violence and criminal activity in the household frequently co-occur with other forms of childhood abuse. Without assessment of the impact of these other factors, long-term influence might wrongly be attributed solely to single types of maltreatment, and the cumulative influence of multiple categories of ACEs would go unassessed (4,51).

Previous studies have shown that ACEs can be viewed as a complex set of highly interrelated experiences that may include childhood abuse or neglect, parental alcohol and drug abuse, domestic violence, parental marital discord, and crime in the home (4,48–52).

Moreover, strong graded relationships have been reported between multiple categories of ACEs and many health-related problems, such as smoking, adult alcohol problems, drug abuse, unintended pregnancies, male involvement in teen pregnancy, sexually transmitted diseases, liver disease, and suicide attempts, as well as the leading causes of death in the United States (4,48,49,51–53). The health outcomes usually occur in highly interrelated forms. The likelihood that a person develops physical and mental health conditions such as heart disease, cancer or depression in adulthood is greater, the higher the number of ACEs experienced (48,53,54).

As stated in the WHO/ISPCAN publication *Preventing child maltreatment: a guide to taking action and generating evidence*, “health and social consequences of child maltreatment are more wide-ranging than death and injury alone and include major harm to the physical and mental health and development of victims. Studies have indicated that exposure to maltreatment and other forms of violence during childhood are associated with risk factors and risk-taking behaviours later in life. These include violent victimization and the perpetration of violence, depression, smoking, obesity, high-risk sexual behaviours, unintended pregnancy, and alcohol and drug use. Such risk factors and behaviours can lead to some of the principal causes of death, disease and disability – such as heart disease, sexually transmitted diseases, cancer and suicide. Child maltreatment therefore contributes to a broad range of adverse physical and mental health outcomes that are costly, both to the child and to society, over the course of a victim’s life” (9, p.11).

3.3 The costs of child maltreatment

In addition to the health and social costs associated with it, child maltreatment has a huge economic impact. The economic costs include:

- direct medical costs;
- lost earnings; and
- tax revenue loss due to premature death, special education, psychological and welfare services, protective services, foster care, preventive services, and adult criminality and subsequent incarceration related to child maltreatment.

To date, there has been no study in the country that estimates the costs of child maltreatment, and therefore its true economic costs to society are not known.

4. Ecological model of risk and protective factors

4.1 Risk factors

According to the ecological model (1,13,14) representing a hierarchical, multi-level model of risk factors, child maltreatment is best understood by analysing the complex interaction of a number of factors at different levels. Fig. 4.1 presents the ecological model outlining the interplay of these different factors. Experts in CM prevention in the country have highlighted certain risk factors specific to Macedonian society (listed below), identified through interviewing key informants in the course of carrying out a Readiness Assessment for the Prevention of Child Maltreatment.⁴

Fig. 4.1. Ecological model describing the risk factors for child maltreatment



- The first level of the model, that of the individual, deals with biological variables such as age and sex, together with factors of personal history that can influence an individual's susceptibility to child maltreatment or a caregiver's tendency to violent behaviour. In the Macedonian context, the risk factors most frequently encountered at this level in parents and caregivers are misuse of alcohol, being subjected to violence as a child, feelings of low self-esteem and self-worth, lack of self-control when upset or angry, and financial difficulties. The most frequently encountered risk factors in the child are hyperactivity and impulsivity (being a risk factor and consequence at the same time), exposure to dangerous behaviour problems such as intimate partner violence, and criminal behaviour.
- The relationship level examines an individual's close social relationships with family members or friends, which influence the individual's risk of both perpetrating and suffering maltreatment. At this level the most frequently encountered risk factors in the country are lack of awareness of child development, having unrealistic expectations, inflicting violent punishment, family break-down and violence.
- Factors at the community level relate to the settings in which social relationships take place – such as neighbourhoods, workplaces and schools – and the particular characteristics of those settings that can contribute to child maltreatment. The most frequent risk factors specific to this level in the country are high rates of unemployment and poverty, the easy availability of alcohol, and inadequate policies and programmes within institutions.
- Societal factors involve the underlying conditions of society that influence maltreatment. Most typical for Macedonian society are traditional norms that encourage the harsh physical punishment of children, economic inequalities, and lack of social, economic, health and education policies that lead to better living standards.

The risk factors listed above are not necessarily by themselves diagnostic of child maltreatment wherever they are detected. However, in places where resources are limited, such as in this country, children and families identified as having several of these factors should have priority for receiving services.

⁴ Report on assessment child maltreatment prevention readiness in the former Yugoslav Republic of Macedonia (in preparation).

4.2 Protective factors

There are also factors that may play a protective role and enhance the effect of resilience. These factors include:

- secure attachment of the infant to an adult family member;
- paternal involvement in care during early childhood;
- not associating with delinquent or substance-abusing peers;
- a warm and supportive relationship with a non-offending parent;
- a lack of abuse-related stress;
- living in communities with strong social cohesion; and
- positive, nonphysical disciplinary techniques.

It is clear that a stable family environment can be a powerful source of protection and at the same time support to children. Good enough parenting, strong attachment between parents and children, and positive nonphysical disciplinary techniques are likely to be protective factors.

The region is emerging quite rapidly now from a violent and painful process of societal transition which had a negative effect on a large part of the population and on the country in general, disrupting the social strata and leading to frequent violence as an expression of social anomie, and is also emerging from a past in which violent punishment and treatment of children in the home was more or less accepted. In this context, these protective elements should be encouraged, especially in communities with low existing levels of social cohesion.

5. Methodology

One of the most important scientific developments of the past decade has been proof of the links between child maltreatment, health-risk behaviours and certain chronic diseases. A blueprint for any new study investigating these links is provided by the ACE Study Questionnaires. This study examines the prevalence of ACE among secondary school and university students in the former Yugoslav Republic of Macedonia at national level, applying WHO/CDC-recommended methodology (9).

5.1 Research design

This study among adolescents and young adults made use of the cross-sectional design to assess prevalence and significant associations between adverse childhood experiences and health-risk behaviours. It was conducted in five main cities in the country in the first half of 2010. The target population group for this study were born in the late eighties and early nineties (18–20 years old).

5.2 The instrument – ACE Questionnaire

The ACE Questionnaires were used for this study (9). These questionnaires, developed by the United States Center for Disease Control and Prevention and Kaiser Permanente in 1997, have separate versions for male and female respondents and include the Family Health History and Physical Health Appraisal questionnaires for collecting information on childhood maltreatment, household dysfunction and other sociobehavioural factors (55). In our study we used the Family Health History questionnaire without applying the Physical Health Appraisal questionnaire, because the target population were adolescents and young adults, who are usually a healthy population group in terms of physical health.

The Family Health History questionnaire consists of 68 questions examining various types of child maltreatment, childhood adversities rooted in household dysfunctions, and other risk factors. All the questions are introduced with the phrase “While you were growing up, during your first 18 years of life, ...”. For the different types of possible maltreatment (physical abuse and neglect, corporal punishment, psychological/emotional abuse and neglect, sexual abuse), household dysfunction (substance abuse in the family, mental illness, domestic violence, criminal behavior in household, parental separation or divorce), and health risk factors (smoking, severe obesity, physical inactivity, depression, suicide attempts, alcohol and drug abuse, risky sexual behavior) see details in Annex 1.

The ACE Questionnaire was translated into Macedonian and Albanian, and adapted to the age of the target population. Cognitive testing of the questionnaire was done within a focus group of professionals in public health, mental health, psychology and law. Further testing was done during the pilot study.

The team of researchers reviewed the suggested questions on the ACE questionnaire and also convened an informal focus group of peers and asked them to review the questions as well. The focus group was asked to say:

- if the questions made sense to them;
- if the questions were phrased in an acceptable way; and
- if the questions were phrased in an accessible way.

They were also asked for their suggestions on how to phrase the questions correctly and their reactions to the questions were observed. After the focus group discussion the team reviewed the questionnaire and

deleted some questions and revised others. Additional questions were added for the specific situation in this country, regarding the socioeconomic status of the respondents' families.

5.3 Pilot study

Before conducting the study we performed a pilot study on a sample of 60 students (28 females and 22 males) from the secondary school of medicine in Skopje. Following the pilot study a second revision of the questionnaire was undertaken by a representative group of professionals in mental health, epidemiology, public health and pedagogy, taking into consideration the comprehension of the questionnaire for our target group/s and its cultural acceptability.

5.4 Main study

The study was organized in two phases:

1. satisfying legal and ethical criteria for the study and obtaining ethical approval; and
2. gathering data required for sampling.

5.5 Legal and ethical approval

For the purpose of this research, the required documentation (study rationale, ethics-related material such as student's informed consent and information letter) was submitted to the Ministry of Education for their assessment. The University Clinic of Psychiatry then received permission from the Ministry of Education to conduct the research in secondary schools and universities in the former Yugoslav Republic of Macedonia.

The relevant study documentation (including questionnaire, information letter and student's informed consent) was reviewed by the Ethical Review Board, consisting of three university professors from the University of Ss. Cyril and Methodius in Skopje: from the Institute of Gender Studies (Faculty of Philosophy), Institute of Forensic Medicine and Deontology (Medical Faculty) and University Clinic of Psychiatry (Medical Faculty).

For ethical issues, during the entire period of the study the team followed international and national ethical guidelines for the whole process. In order to ensure the rights of students were respected, they were asked to give consent themselves for their participation in the study, since they were over 16, and in accordance with national legislation their participation was fully voluntary.

The Student Informed Consent was accompanied by an information letter to inform students about the topic and the purpose of the research. It also contained the name and address of UCP as the institution in charge of carrying out the ACE study in the country, telephone helpline contacts and counselling service in the event of revelation of abuse or re-stimulation by the content of the questionnaire. The students were given a brief presentation of the rationale and the nature of the study by the field researchers in the classrooms, just before delivery. Additionally, students also had a chance to give their consent for their participation in the study after being informed about the research itself by the researchers.

The questionnaires were completed anonymously and students were asked not to write any information that may enable them to be identified. Survey procedures were designed to protect student privacy by allowing voluntary and anonymous participation. The fact that they could withdraw their participation at any time during the study without any further explanation was also stressed.

The sampled schools had to be contacted to ensure access. Contacts were made with the school principal and school psychologist or pedagogue. Interviewers experienced in conducting child abuse studies were recruited for this study. They were oriented and trained in data collection using the ACE questionnaires. Aside from sampling issues, ethics as well as data quality assurance were part of their training. After the training and meetings with school authorities, the group of researchers (supervisor and interviewers) was able to enter schools for the research purposes. The study was conducted in a very familiar and safe environment for students, namely their school classrooms (for secondary school students) and university lecture rooms (for university students).

5.6 Sampling

The ACE study used random selection of a representative sample of students in fourth year at secondary school (aged 18 and above) and first- and second- year university students. The sampling framework included all secondary schools containing fourth year (33 schools). Eleven schools were randomly selected to participate in the ACE study. The sample consisted of randomly selected classrooms from each school. All students attending school on the day of the testing in the sampled classrooms were eligible to participate in the ACE. All first- and second-year students from nine faculties at the four state university centres (in Skopje, Bitola, Tetovo, and Stip) were approached and offered the chance to take part in the study. Students came from four different geographical areas and from several different ethnic groups in the country (Macedonian, Albanian, Turkish and Other).

The sample consisted of 664 secondary school students (258 males and 406 females). The types of secondary schools selected for this study were general and vocational, thus obtaining stratified sampling considering different social strata. The secondary student group came from Skopje (N=203), Bitola (N=197), Tetovo (N=108), Struga (N=92), Stip (N=34) and Gostivar (N=30). The university student sample consisted of 613 students (343 female and 270 male) from the four state universities (56). The university students came from Skopje University (N=270), Bitola University (N=190), Tetovo University (N=97) and Stip University (N=56).

5.7 Response rates

For the ACE Study in the former Yugoslav Republic of Macedonia, 1277 questionnaires were completed in 11 schools and 9 faculties. The school and faculty response rate was 100% (all selected schools and faculties). The high response rate was obtained by fulfilling the following requirements:

- letter of support and letter of approval signed by the Minister of Education and Science;
- well trained field researchers (specialization/ masters degree/PhD); and
- at least two meetings with the school and faculty authorities (school principal/dean of the faculty) by the coordinator and field researchers prior to the field research itself.

The student response rate was 90.3% (1277 of 1414 students included in the sample). In the 11 secondary schools, all students attending selected classrooms and present that day at school were invited to participate in the study. The total number of non-responders in this group was 102 (13.3%), consisting of 98 male and 4 female students. Thirty-one male students refused to take part from the beginning (all from vocational schools). Seven hundred and sixty-six questionnaires were distributed and after the testing 695 were completed. Seventy-one questionnaires did not contain enough information to be included in the dataset. Sixty-seven male students and four female students did not complete the questionnaire. The total number of non-responders in the university group was 35 (5.4%), consisting of 30 male students and 5 female students. Six hundred and forty-eight questionnaires were distributed, 613 of which were taken into analysis. Overall, 137 students (128 male and 9 female students) failed to fill in the questionnaire, some of them replying that the questionnaire was “too long”, “difficult” or “unpleasant”. Nine of them wrote that it was painful to recall those events. The largest non-response rate was among students in vocational schools.

5.8 Data analysis

Data input and data analysis were done in the SPSS-15 programme, using the following methods:

- descriptive statistical methods (average, standard deviation, percentages, difference test for average and proportion);
- correlation;
- chi-square analysis; and
- logistic regression analysis.

Statistical significance was set at $p < 0.05$ for all analyses. The dataset was edited for inconsistencies. Missing data were not statistically imputed.

The prevalence of adverse childhood experiences and health-risk behaviours was determined. Estimates of odds ratio were computed to obtain a measure of association between adverse childhood experiences and health-risk behaviours. Logistic regression analysis was employed to adjust for the potential confounding effects of age, sex and socioeconomic status on the relationship between adverse childhood experiences and health-risk behaviours. Software that takes into consideration the complex sample design was used to compute prevalence estimates and 95% confidence intervals for all analysis. ACE data are representative of all students attending fourth year at secondary school or first or second year at university in the country.

5.9 Administering the study

The ACE study was administered by the University Clinic of Psychiatry, Department for Child and Adolescent Psychiatry. The survey relied upon the efforts of the coordinator, Scientific Steering Committee, Working Group and field researchers.

The Scientific Steering Committee consisted of a research coordinator, representatives of the Ministry of Education, WHO Country Office Skopje and WHO Regional Office for Europe, Violence and Injury Prevention. The Committee participated in the development of tools for the survey, the sampling strategy and the involvement of schools and universities. The Working Group included field researchers and representatives from the four universities who were responsible for the collection of data and school documentation. The students completed the self-administered questionnaire during one classroom period (45 minutes).

6. Results

6.1 Sociodemographic characteristics of respondents

The number of students that took part in the study is 1277. The majority (58.6%) are female and 41.6% are male. This discrepancy between males and females is owing to more male students refusing to participate in the study (Table 6.1.1).

Table 6.1.1. Sex and age of the students

Sex	N	%	Mean age	Standard deviation (\pm)
Female	749	58.6	19.83	2.44
Male	528	41.4	20.14	2.77
Total	1277	100	19.95	2.73

The average age of respondents does not differ significantly between sexes – 19.8 years for female respondents and 20.1 for male respondents.

The ethnic distribution represents approximately the ethnic structure of the population in the country. The majority are Macedonians (69.2%), then Albanians (24.6%), followed by other ethnic groups (6.3%) (Table 6.1.2).

Table 6.1.2. Ethnicity of the students

Ethnicity	Female		Male		Total	
	N	%	N	%	N	%
Macedonian	531	70.8	353	66.8	884	69.2
Albanian	170	22.7	144	27.3	314	24.6
Turk	20	2.7	23	4.4	43	3.4
Serbian	13	1.7	3	0.6	16	1.3
Vlach	5	0.7	1	0.2	6	0.5
Roma	3	0.4	3	0.6	6	0.5
Other	7	0.9	1	0.2	8	0.6

The majority of students come from families with moderate (55.5%) and satisfactory (28.7%) socioeconomic status, in which parents have at least secondary school education and they both work. Of the sample fathers, 90.8% are in employment, and 62.8% of mothers are in employment (Table 6.1.3).

Table 6.1.3. Educational, employment and socioeconomic status of parents

Status	Female		Male		Total	
	N	%	N	%	N	%
Mother's education						
Without education	11	1.5	6	1.1	17	1.33
Primary school	150	20.0	131	24.8	181	22.0
Secondary school	427	57.0	259	49.1	686	53.7
University	156	20.8	123	23.3	279	21.8
Other	5	0.7	8	1.5	13	1.0
Mother working						
No	256	34.2	218	41.3	474	37.2
Yes	493	65.8	309	58.5	802	62.8
Father's education						
Without education	2	0.3	4	0.7	2	0.3
Primary school	61	8.1	61	11.5	61	8.1
Secondary school	473	63.2	302	57.2	473	63.1
University	201	26.8	153	29.0	201	26.8
Other	8	1.0	7	1.3	8	1.1
Father working						
No	65	8.7	57	10.8	122	9.5
Yes	680	90.8	471	89.2	1151	90.1
Socioeconomic status*						
Social help	22	2.9	15	2.8	37	2.9
Poor	23	3.1	27	5.1	50	3.9
Satisfactory	204	27.2	162	30.7	366	28.7
Moderate	435	58.1	274	51.9	709	55.5
Wealthy	61	8.1	44	8.3	105	8.2
Missing answers	4	0.6	6	1.2	10	0.8

* Categories defined by the State Statistical Office (SSO).

6.2 History of exposure to adverse childhood experiences

6.2.1 Physical abuse

Physical abuse is widespread among children around the world, who experience a wide range of practices by their parents with different intensity of hitting, kicking, shaking, beating, deliberate burning, strangulation, poisoning or suffocation.

In our study physical abuse is measured by experiences of being pushed, grabbed or having something thrown at one, or even more severe experiences such as being hit so hard that one had marks or was injured, which happened sometimes, often or very often (Table 6.2.1). In Tables 6.2.1 and 6.2.2, for the purposes of comparison incidence of physically abusive practices is presented with a range from threats that a child might be physically hurt to actual experience of physical harm.

Table 6.2.1. Experience of physical abuse among students by sex

Sex	N	%
Female	151	20.2
Male	118	22.3
Total	269	21.1

More than one fifth (21%) of all students (22% of males and 20% of females) were exposed to different forms of physical abuse during childhood such that they were pushed, grabbed or had something thrown at them, or had marks or were injured (Tables 6.2.1 and 6.2.2).

Table 6.2.2. Potential or actual exposure to physical abuse experienced sometimes or often by type and sex

Type of physical abuse	Female		Male		Total	
	N	%	N	%	N	%
Made you afraid that you might be physically hurt	193	25.8	111	21.0	304	23.8
Pushed, grabbed or threw something at you	84	11.2	52	9.8	136	10.7
Hit you so hard that you had marks or were injured	89	11.9	75	14.2	164	12.8

Boys reported being treated more violently in terms of being hit so hard that they had marks or were injured (14%), but girls experienced more acts of pushing, grabbing or being hit with something (11.2%). This kind of treatment might have some cultural background, inflicting more severe forms of physical violence on boys, considering it more appropriate in terms of their masculine endurance.

6.2.2 Physical (corporal) punishment

Corporal punishment is defined by the Committee on the Rights of the Child as “any punishment in which physical force is used and intended to cause some degree of pain or discomfort, however light” (57). While growing global concern over the prevalence of corporal punishment in the home – perpetuated by its widespread legality and social approval – has fostered interest in understanding its prevalence and forms, it has also generated debate. Most corporal punishment involves hitting (slapping, smacking, spanking) children with the hand or with an implement – whip, stick, belt, shoe. In the former Yugoslav Republic of Macedonia, corporal punishment is a common way of disciplining children. Parents apply this method almost equally with boys and girls. As many as 71.7% of females and 73.5% of males had sometimes or often been spanked, which means that the majority of respondents (almost three quarters of them) had had such experiences during their childhood (Table 6.2.3).

Table 6.2.3. Exposure to physical punishment experienced sometimes or often

Type of physical punishment	Female		Male		Total	
	N	%	N	%	N	%
Being spanked	537	71.7	388	73.5	925	72.4

A large number of respondents (41%) had been spanked in their early adolescent years (10–15 years) and 38% in their school years (5–10 years). During these intensive developmental periods corporal punishment is the main method of discipline which is used, even later in life up to the age of 18 (Table 6.2.4).

Table 6.2.4. Distribution of students by sex and age they were spanked

Age	Female		Male	
	N	%	N	%
1–5 years	21	3.9	10	2.6
5–10 years	205	38.5	146	37.6
10–15 years	202	38.0	173	44.6
15–18 years	103	19.3	59	15.2

6.2.3 Psychological (emotional) neglect and abuse

All physical and sexual abuse involves some psychological harm. But psychological abuse can also be experienced as active, in the form of insults, name calling, threats and rejection (which is psychological abuse in a narrow sense), or more passive, in the form of ignoring, isolation and hatred, which is known as psychological neglect.

Psychological neglect is a widespread practice of ignoring children and their emotional needs (Tables 6.2.5 and 6.2.6). More than 30% of students experienced some form of psychological neglect, 29% felt that someone in their family hated them, and 18% thought that their parents wished they had never been born. Girls are much more susceptible to such type of neglect than boys, which might be rooted in the female sensibility to recognize emotional signs and reactions more than boys. They had experiences of being hated (34.2%) and someone wishing they had never been born (22.2%). There is a statistical significance between males and females in terms of psychological neglect ($p < 0.05$).

Table 6.2.5. Experience of psychological neglect and abuse among students by sex

Type of childhood exposure	Female		Male		Total	
	N	%	N	%	N	%
Psychological neglect	266**	35.5**	125	23.7	391	30.6
Psychological abuse	88	11.7	51	9.6	139	10.8

** $p < 0.05$

Psychological abuse had been experienced by 10% of students – more females (11.7%) than males (9.6%) were often or very often afraid that they might be physically hurt or sworn at, insulted or put down, but this difference is not statistically significant.

Table 6.2.6. Experience of psychological neglect and abuse among students by type and sex

Type of childhood exposure	Female		Male		Total	
	N	%	N	%	N	%
Psychological neglect**						
Someone in your family hated you	256	34.2**	108	21.18	364	28.5
Parents wished you'd never been born	166	22.2**	69	13.2	235	18.4
Psychological abuse						
Made you afraid that you might be physically hurt	88	11.7	45	8.5	133	10.4
Swore at you, insulted you, or put you down	84	11.2	51	9.6	135	10.6

** $p < 0.05$

6.2.4 Sexual abuse

In general almost 13% of students experienced some kind of sexual abuse (Table 6.2.7). Sexual abuse as defined in this questionnaire ranges from being touched or fondled in a sexual way (experienced by 13% of students) or touching another's body in a sexual way (experienced by 11% of students), to attempted or actual sexual intercourse with someone five or more years older (Table 6.2.8). Although the majority of studies show females are more prone to sexual abuse than males, our study showed a different pattern. All forms of sexual abuse were experienced far more by males than females, and the difference is statistically significant ($p < 0.05$).

Table 6.2.7. Experience of sexual abuse among students by sex

Sex	N	%
Female	55	7.3
Male	110	20.8
Total	165	12.9

Table 6.2.8. Experience of different acts of sexual abuse among students by sex

Type of sexual abuse	Female		Male		Total	
	N	%	N	%	N	%
Touch or fondle your body in a sexual way	55	7.3	110	20.8**	165	12.9
Have you touch their body in a sexual way	39	5.1	103	19.0**	142	11.1
Attempt to have sexual intercourse	43	5.7	79	15.0**	122	9.5
Had sexual intercourse	23	3.1	59	11.2**	82	6.4

** $p < 0.05$

For those students who were sexually abused, in most cases the abuser was someone they knew (65% of females and 62% of males) but who did not live in their home (49% of females and 42% of males). The abuser was an unknown person for 20% of females and 32% of males. In most studies, the commonly reported perpetrators of sexual abuse are male family members. For nearly 36% of females and 21% of males the perpetrator was someone who should have cared for them, and for two thirds of females and 28% of males the perpetrator was someone they trusted (Table 6.2.9).

Table 6.2.9. Relationship to the abuser by sex

Relationship	Female		Male	
	N	%	N	%
Someone who is known but doesn't live in their home	27	49	46	41.8
Someone who lives in their home	9	16.4	23	20.9
Unknown person	11	20	35	31.8
Someone who should care for them	20	36.4	23	20.9
Someone they trusted	34	61.8	31	28.1

The way perpetrators involve children in sexual contact and activities related to it, in the majority of cases, was by trickery, verbal persuasion and pressure (36% of females and 27% of males), using threats to harm (23.6% of females and 17.2% of males) or physical force (16% of females and 14% of males). Alcohol or drugs were given by the perpetrator for 15% of females and 20% of males. Almost 30% of males did not answer this question, which might mean that they had been involved in sexual activities with their consent (Table 6.2.10).

Table 6.2.10. The method of involvement in sexual activities by perpetrator

Method of involvement	Female		Male	
	N	%	N	%
By trickery, verbal persuasion	20	36.3	30	27.2
Given alcohol or drugs	8	14.5	22	20
Threats to harm	13	23.6	19	17.2
Physically forced	9	16.3	15	13.6

6.2.5 Sexual abuse by peers

Sexual violence against girls may be driven by different motives. The desire to punish or humiliate girls on account of their sex and sexuality has its roots in gender inequality, stereotypes and socially imposed roles. The situation is similar with boys. Until recently there was almost no public discussion of sexual abuse of boys in the school context. The initiation into sexual activity for many boys is also humiliating and often involves older peers who are prone to bullying as well.

Sexual abuse by peers was experienced by 2.3% of students. Such an experience was more frequent for males than females (3% versus 1.7%). Again, this reversed pattern suggests that girls might underreport sexual abuse by peers as well as sexual abuse by adults, accepting cultural stereotypes of not revealing sexual abuse (Table 6.2.11).

Table 6.2.11. Experience of sexual abuse by peers

Experience of abuse	Female		Male		Total	
	N	%	N	%	N	%
Peer(s) threatened you with harm to have sexual contact	13	1.7	16	3	29	2.3

6.2.6 Physical neglect

Physical neglect is a form of child maltreatment practised by parents and other caregivers. It reflects the failure of a parent/caregiver to meet the needs of a dependent child, satisfying his/her developmentally specific needs for food, clothes or medical help, when they have the means, knowledge and access to services to do so. However, in many settings it is difficult to draw the line between what is done deliberately and what is caused by ignorance or lack of care possibilities. This is also a critical issue in resource-poor countries, such as this country, where the line between poverty and neglect remains ambiguous.

Physical neglect is significantly more experienced by males (26.3%) than females (15.5%) (Table 6.2.12): 22.3% of males had to wear dirty clothes as against 11.4% of females, and almost 19% of males did not have enough to eat, versus 12% of females (Table 6.2.13). There is a statistically significant difference between males and females in their exposure to deliberate physical neglect ($p < 0.05$).

Table 6.2.12. Exposure to physical neglect by sex

Sex	N	%
Female	116	15.5
Male	139	26.3
Total	255	20.0

Table 6.2.13. Exposure to physical neglect by type

Type of physical neglect	Female		Male		Total	
	N	%	N	%	N	%
Wear dirty clothes **	86	11.4	118	22.3	204	16.0
Not enough to eat **	89	11.9	98	18.6**	187	14.6

**p<0.05

6.3 Household dysfunction

Our study shows that almost equal numbers of female and male students had witnessed domestic violence in the form of violent treatment of their mother/stepmother (11% of females and 9% of males). Male and female students had almost equal experience of violent treatment of their mother (which might be considered as equivalent to domestic violence) within their families. The most common situation was seeing her being repeatedly hit for several minutes or pushed, slapped or having something thrown at her. Although these are families in which mothers work and earn a salary for the family, in 10% of cases they are treated violently. This violence is also an adversity in childhood and is a pattern of behaviour that is usually transmitted from one generation to the next (Table 6.3.1).

Table 6.3.1. Exposure to domestic violence experienced sometimes or often by type of abuse of mother

Type of physical abuse of mother by her partner	Female		Male		Total	
	N	%	N	%	N	%
Pushed, slapped or something thrown at her	81	10.8	48	9.0	129	10.1
Repeatedly hit her for several minutes	37	4.9	24	4.6	61	4.8

The most common type of household dysfunction was living with a family member who abused substances. Overall, 13.4% of students (12% of females and 15.3% of males) lived with someone who misused alcohol or used illicit drugs, and 10.7% lived with someone who was alcoholic (10.4% females and 11.7% males), thus confirming the hypothesis that the underlying factor for domestic violence in the majority of cases is alcoholism. Overall, 3.6% of students lived with a family member who used illicit drugs, with significantly more male students (5.5%) than female students (2.3%) living with such a family member ($p<0.05$). The second most common childhood adversity was mental illness or depression of a family member, with 6.9% of students being affected by this (7.6% of females and 5.9% of males), followed by imprisonment of a household member – experienced by 5% of students (4.5% of females and 5.7% of males), then parental separation or divorce – experienced by 3.8% of students (4.4% of females and 3% of males). Living in such circumstances, overall 4% of students had run away from home (3.3% females and 7% males, which is a statistically significant difference ($p<0.05$)).

The percentage of students exposed to different forms of household dysfunction according to sex showed that there is no statistically significant difference between girls and boys in their adverse childhood experiences, taking into consideration household dysfunction, in the majority of categories, except for experiences connected to illicit drug use in the family and running away from home (Table 6.3.2).

Table 6.3.2. Exposure to household dysfunction (divorce, substance abuse, mental illness, and imprisonment of a family member [FM])

Type of household dysfunction	Female		Male		Total	
	N	%	N	%	N	%
Parents divorced or separated	33	4.4	16	3.0	49	3.8
Substance abuse by FM	90	12.0	81	15.3	171	13.4
Alcohol misuse by FM	78	10.4	58	11.7	136	10.7
Illicit drug use by FM**	17	2.3	29	5.5**	46	3.6
Mental illness of FM	57	7.6	31	5.9	88	6.9
FM in prison	34	4.5	30	5.7	64	5.0

**p<0.05;

6.4 Number of adverse childhood experiences – ACE score

Considering all types of childhood abuse among students, it is evident that they are not equally distributed between females and males. For females, emotional neglect and physical abuse are the most common types of abuse, followed by physical neglect, emotional abuse and sexual abuse. Males show a different pattern of abuse by type – neglect is more prevalent than in females, with physical neglect being most common, followed by psychological (emotional) neglect, and then come all forms of abuse: physical abuse, sexual abuse and emotional abuse. There is a statistically significant difference between males and females in the prevalence of sexual abuse, physical neglect and emotional neglect, the first two being more common for male students and the latter being more common for female students (for p<0.05) (Table 6.4.1).

Table 6.4.1. Exposure to abuse and household dysfunction by sex

Type of exposure	Female		Male		Total	
	N	%	N	%	N	%
Type of abuse						
Physical abuse	151	20.2	118	22.3	269	21.1
Emotional abuse	88	11.7	51	9.6	139	10.9
Sexual abuse*	55	7.3	110	20.8*	165	12.9
Physical neglect*	116	15.5	139	26.3*	255	20.0
Emotional neglect*	266	35.5*	125	23.7	391	30.6
Type of household dysfunction						
Separated/divorced parents	33	4.4	16	3.0	49	3.8
Substance abuse by a FM #	90	12.0	81	15.3	171	13.4
Alcohol misuse by a FM	78	10.4	58	11.7	136	10.7
Illicit drug use by a FM**	17	2.3	29	5.5**	46	3.6
Mental illness in the family	57	7.6	31	5.9	88	6.9
FM attempted or committed suicide	15	2.0	6	1.1	21	1.6
Mother treated violently	82	10.9	48	9.1	130	10.2
FM in prison	34	4.5	30	5.7	64	5.0
FM committed crime	15	2.0	13	2.5	28	2.2

*p<0.01 **p<0.05; # Both alcohol misuse and illicit drug use

All types of child maltreatment (physical abuse, sexual abuse, psychological abuse, psychological neglect and physical neglect) and all types of household dysfunction (domestic violence, household substance abuse, mental illness in household, parental separation or divorce, criminal household member) are considered as

ACEs (ten in total) (48–50). They usually occur in highly interrelated forms. The summary of ACE scores is given in Table 6.4.2. It is evident that males and females are equally exposed to adverse childhood experiences.

Table 6.4.2 shows the number of adverse childhood experiences to which respondents were exposed. In general, almost two thirds of students (64%) had suffered from any type or combination of different types of adverse childhood experiences. Males were more frequently exposed to ACEs (67%) than females (62%), but there was no statistically significant difference. One type of ACE was experienced by 29% of students, with almost equal percentages for female students (28%) and male students (31%). The experience of two types of ACEs occurring together was common for 15% of students (17% of males and 14.4% of females). Three types of ACEs were experienced by almost 10% of students (10% of females and 9.3% of males). Four or more types of ACEs were experienced by 9.5% of students, with an almost equal percentage of male (10.4%) and female (9%) students.

Table 6.4.2. ACE score by sex

Sex	Number of ACEs									
	1		2		3		≥4		Total	
	N	%	N	%	N	%	N	%	N	%
Female N=749	213	28.4	108	14.4	76	10.1	66	8.8	463	61.7
Male N=528	161	30.5	90	17.0	49	9.4	55	10.4	355	67.3
Total	374	29.3	198	15.5	125	9.8	121	9.5	818	64.0

6.5 Interrelationships between categories of adverse childhood experiences

Table 6.5.1 shows the interrelationships between categories of adverse childhood experiences, i.e. between different types of abuse and household dysfunctions. More than one third of the respondents who had experienced all categories of abuse (physical, sexual and emotional) also felt psychologically neglected (felt they were not loved or their parents wished they had never been born). This percentage ranged from 33% for sexual abuse, 52% for physical abuse, up to 68% for emotional abuse. Two thirds of those who were emotionally abused also suffered physical abuse and emotional neglect. Emotional neglect cuts across all forms of abuse and household dysfunction (33–68%). Similarly, physical neglect is also present in all forms of abuse and household dysfunction (25–43%). The most common household dysfunction experienced by those who were abused as children was parental substance abuse (mainly alcohol abuse), for 21–25% of respondents, and domestic violence (i.e. mother treated violently), for 15–19%. There was also relative co-occurrence of physical and emotional abuse and mental illness in the family for 16–19% of respondents. Having a family member in prison was associated with physical (42%) and emotional (50%) neglect.

6.6 Health-risk behaviours

Health behaviour risk factors that were taken into consideration in this study are smoking, severe obesity, physical inactivity, depression, suicide attempts, alcoholism, drug use and number of sexual partners. Our study showed that alcohol use (82.2% of students), cigarette smoking (28.8% of students), early sex (18% of students), risky sexual behaviour (18% of students), suicide attempts (6.3% of students) and early smoking (5.4% of students) were the most worrying health-risk behaviours in this sample.

6.6.1 Cigarette smoking

Studies show that the overwhelming majority of smokers start smoking before they reach adulthood. Among those young people who smoke, nearly one quarter smoked their first cigarette before they reached the age of 10 (58). Smoking, although prohibited in public buildings, is still very widespread behaviour in the country. An almost equal percentage of female and male students smoke (27% and 28% respectively), but males on average start smoking earlier (at the age of 16) than females (at the age of 17), and smoke twice as much as girls (20 cigarettes a day on average). Students who smoke are usually brought up in a smoking environment, where fathers (64–68%) and mothers (33–43%) smoke (Table 6.6.1).

Table 6.5.1. Relationship between categories of different types of abuse and household dysfunction

First category of childhood exposure	N*	Physical abuse	Emotional abuse	Sexual abuse	Physical neglect	Emotional neglect	Parental divorce	Substance abuse	Mental illness	Mother treated violently	Imprisonment
Number and percentage (%) exposed to another category											
Physical abuse	269		80 (29.7%)	49 (18.2%)	85 (31.6%)	139 (51.6%)	14 (5.2%)	60 (22.3%)	42 (15.6%)	41 (15.2%)	19 (7.1%)
Emotional abuse	139	80 (67.5%)		27 (19.4%)	58 (41.7%)	95 (68.3%)	17 (12.2%)	34 (24.5%)	26 (18.7%)	26 (18.7%)	15 (10.8%)
Sexual abuse	165	49 (29.7%)	27 (16.4%)		45 (27.3%)	55 (33.3%)	7 (4.2%)	35 (21.2%)	13 (7.9%)	26 (15.6%)	28 (17.0%)
Physical neglect	255	85 (33.3%)	58 (22.7%)	45 (17.6%)		129 (60.6%)	21 (8.2%)	54 (21.2%)	37 (14.5%)	33 (13.0%)	27 (10.6%)
Emotional neglect	391	139 (35.5%)	95 (24.3%)	55 (14.1%)	129 (33.0%)		25 (6.3%)	83 (21.2%)	58 (14.8%)	51 (13.0%)	32 (8.2%)
Parental divorce	49	14 (28.6%)	17 (34.7%)	7 (14.3%)	21 (42.8%)	25 (61.0%)		13 (26.5%)	13 (6.5%)	6 (12.2%)	3 (6.1%)
Substance abuse	171	60 (35.1%)	34 (19.9%)	35 (20.5%)	54 (31.6%)	83 (48.5%)	7 (4.1%)		33 (19.3%)	29 (17.0%)	11 (6.4%)
Mental illness	88	42 (47.7%)	26 (29.5%)	13 (14.8%)	37 (42.0%)	58 (66.0%)	13 (14.8%)	33 (37.5%)		13 (14.8%)	17 (19.3)
Mother treated violently	130	41 (31.5%)	26 (20.0%)	26 (20.0%)	33 (25.4%)	51 (39.2%)	6 (4.6%)	29 (22.3%)	13 (10.0%)		11 (8.5%)
Imprisonment	64	19 (29.7%)	15 (23.4%)	18 (28.1%)	27 (42.2%)	32 (50.0%)	59 (34.7%)	11 (17.2%)	17 (26.6%)	11 (17.2%)	

*Number exposed to first category. For example, among 269 persons who were physically abused, 80 (29.7%) also experienced emotional abuse.

Table 6.6.1. Smoking among students by sex

Smoking characteristics	Female		Male		Total	
	N	%	N	%	N	%
Currently smoking	203	27.1	140	28.0	343	26.9
Age of starting to smoke	Average 17 years		Average 16 years			
Number of cigarettes smoked per day	Average 10 cigarettes		Average 20 cigarettes			
Father smoking	507	67.7	336	63.6	843	66.0
Mother smoking	321	42.9	175	33.1	496	38.8

There is a strong association between both fathers (Pearson chi-square 10.72, $p < 0.01$) and mothers (Pearson chi-square 26.12, $p < 0.01$) smoking for females who reported smoking. Mothers have a stronger influence on daughters' smoking behaviour than fathers; this may be because mothers constitute a stronger role model. Also, smoking by mothers is statistically significantly associated with sons smoking.

6.6.2 Alcohol and substance use by students

Prevalence of current alcohol use by students shows that almost equal percentages of females (28%) and males (27%) used alcohol. Both started drinking early, but males at 14 and females at 15 (Table 6.6.2).

Table 6.6.2. Alcohol use among students by sex

Type of alcohol use	Female		Male		Total	
	N	%	N	%	N	%
Currently using alcohol	210	28.0	142	26.9	352	27.6
Age when started drinking	Average 15 years		Average 14 years			
More than six drinks in a single session 3x or more in last 30 days	38	3.3	61	11.3	99	7.8
Problems with alcohol	38	5.1	46	8.7	84	6.6
Living with someone who was alcoholic	78	10.4	58	11.0	136	10.7

A significantly higher percentage of males (11.3%) had consumed six or more drinks in a single drinking session on three or more occasions during the previous month, in comparison to 3.3% of females. Male students reported having a problem with alcohol significantly more often than female students (8.7% of males versus 5.1% of females). Both sexes had similar experience of living with an alcoholic family member (10% females and 11% males).

According to our study the prevalence of lifetime drug use is 5.4%. Male students (7.6%) reported ever having used drugs significantly more than female students (3.6%). Males tried illicit drugs for the first time between 12 and 14 years of age. Fewer female students (1.6%) than male students (3.5%) had used drugs more than three times during their life, and 2.3% of females and 5.5% of males lived with someone in the family who used illicit drugs (Table 6.6.3).

Table 6.6.3. Illicit drug use among students by sex

Drug-use characteristics within first 18 years of life	Female		Male		Total	
	N	%	N	%	N	%
Illicit drug use**	27	3.6	40	7.6**	67	5.2
Age when first tried drugs	Average 14 years		Average 12 years			
1–2 times	9	1.2	11	2.0	20	1.6
3–10 times	9	1.2	14	2.6	23	1.8
More than 10 times	3	0.4	5	0.9	8	0.6
Problems with drug use	1	0.1	2	0.4	3	0.2
Living with someone who used drugs	17	2.3	29	5.5	46	3.6

**p<0.05

6.6.3 Sexual behaviour

Overall, 45.3% of students had had sexual intercourse, but significantly more males (70%) than females (30%) were sexually active (for p<0.05). On average, males started their sexual life two years earlier than females, at the age of 16. One fourth of all students had had intercourse with more than three partners (almost 50% of males and 6.5% of females). Thus, the males engaged more frequently in risky sexual behaviour, reporting having had significantly more partners than the females (for p<0.05). Two per cent of female respondents had been pregnant, and 3.6% of male respondents had got a girl pregnant (Table 6.6.4).

Table 6.6.4. Sexual behaviour among students by sex

Type of sexual behaviour	Female		Male		Total	
	N	%	N	%	N	%
Having sexual intercourse**	219	29.2	360	69.2**	579	45.3
Age at first sexual intercourse	Average 18 years		Average 16 years			
Have you ever been pregnant?	15	2.0				
Have you ever got a girl pregnant?			19	3.6		
Had 1 sexual partner	155	20.7	87	16.5	242	19.0
Had 3 or more sexual partners**	49	6.5	254	49.1**	303	23.7

**p<0.05

6.6.4 Suicide attempts

Overall, suicide attempts were reported by 2.8% of respondents. There was a statistically significant difference between the sexes (p<0.05), with 4.7% for females and 0.8% for males. The age when suicide was first attempted for both sexes was 14. In 1.2% of females and 0.2% of males the attempt(s) resulted in injury, which indicates that the attempt was very serious. More than one attempt was made by 1.5% of females and 0.4% of males (Table 6.6.5).

To assess the ACE as risk factors for suicide attempts during childhood and adolescence we examined the association between the type of ACE and suicide attempts. There are significant associations between attempted suicide and household dysfunction, primarily living with a family member who had attempted suicide (Pearson chi-square 28.1, p<0.01), living with a family member who was mentally ill (Pearson chi-square 23.4, p<0.01) and having an alcoholic family member (Pearson chi-square 17.3, p<0.01) for female respondents only.

Table 6.6.5. Suicide attempts by sex

Type of suicide behaviour	Female		Male		Total	
	N	%	N	%	N	N
Suicide attempt	35	4.7**	4	0.8	39	3.1
Age	Average 14 years		Average 14 years			
Suicide attempt resulting in injury	9	1.2	1	0.2	10	0.8
More than one suicide attempt	11	1.5	2	0.4	13	1.0
A family member being mentally ill or depressed	47	6.3	26	5.0	73	5.7
A family member having attempted or committed suicide	15	2.0	6	1.1	21	1.6

**p<0.05

There are statistically significant associations between attempted suicide and all types of abuse for both sexes. For female students there are statistically significant associations between attempted suicide and being physically abused so that one had marks or was injured (Pearson chi-square 99.9, $p<0.01$), suicide attempt and emotional abuse (Pearson chi-square 72.99, $p<0.01$), between attempted suicide and being physically abused by kicking, grabbing or pushing (Pearson chi-square 12.9, $p<0.05$), and between attempted suicide and sexual abuse (Pearson chi-square 6.96, $p<0.01$). For male students there are significant associations between attempted suicide and physical abuse with marks or injury (Pearson chi-square 130.1, $p<0.01$) and between attempted suicide and physical abuse by being kicked, grabbed or pushed (Pearson chi-square 27.9562, $p<0.01$).

6.7 The interrelatedness of ACEs (childhood abuse and neglect, household dysfunction) and health-risk behaviours

Table 6.7.1 indicates that alcohol use and smoking were the most common health-risk behaviour consequences. More than a quarter of the 1277 respondents reported being smokers at the time of the survey, with 7.1% starting smoking at age 15 or younger. Similarly, 27.6% of the 1277 respondents claimed to be current drinkers. Of these, 3.5% reported having driven a car while drunk. About 5.3% had ever used illicit drugs. In terms of risky sexual behaviour, 12.3% had engaged in early sex and 25.8% had had sex with three or more partners. For females, 2% had got pregnant at age 18 or younger, with one third considered unintended first pregnancies. Other health-risk behaviours included attempted suicide (3.1%).

Table 6.7.1 also shows the relationship between ACEs such as all types of abuse during childhood and household dysfunction and later manifestation of health-risk behaviours among young people, and adjusted relative odds of health-risk behaviours by type of adverse childhood exposure. If a respondent was exposed to one ACE, the probability of exposure to any category of health-risk behaviour increased substantially. Those respondents who had been emotionally (psychologically) abused were twice as likely to abuse drugs and almost three times as likely to attempt suicide (both are statistically significant), and 3.5 times more likely to have an early pregnancy. Physical abuse increases the chances for smoking 1.5 times (statistically significant), increases the chances for early pregnancy 8.3 times and almost doubles the chances of attempting suicide. Sexual abuse increases the chances for drink driving 1.5 times and almost twice for having multiple sexual partners (statistically significant). Those who had been emotionally neglected were 3.5 times more likely to get pregnant early and those who had been physically neglected were twice as likely to drive when drunk, twice as likely to engage in early sex (both are statistically significant) and three times as likely to be pregnant early. Moreover, substance abuse in the family doubled the chances of starting smoking early and increased the chances 2.3 times for attempting suicide (both are statistically significant). Violent treatment of the mother, i.e. domestic violence, doubled the chances of smoking, more than tripled the chances of starting smoking early, almost quadrupled them for drug abuse and attempted suicide, and increased the chances 21 times for early pregnancy (all are statistically significant). Having a family member who had been in prison increased the odds of engaging in early sex almost twice and 3.5 times for attempting suicide (statistically significant). Parental separation or divorce increased the likelihood for drug abuse almost twice and 1.5 times for having multiple sexual partners. Overall, these results show that being exposed to negative experiences during childhood could result in a number of risky behaviours in adolescence and young adulthood.

Table 6.7.1. Prevalence and adjusted relative odds of health-risk behaviours by type of ACE

Type of ACE	Smoker		Early smoking ≤15 years		Alcohol use		Drink-driving		Drug abuse		Early sex ≤16 years		Multiple sexual partners >3		Early pregnancy ≤18 years #		Suicide attempts		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
Prevalence	343	26.9	90	7.1	352	27.6	45	3.5	67	5.3	157	12.3	330	25.8	15	2.0	39	3.1	
Adjusted relative odds																			
Emotional abuse	1.334	0.912–1.952	0.861	0.335–2.213	1.329	0.874–2.022	0.484	0.114–2.056	2.238	1.170–4.428**	1.436	0.879–2.346	1.436	0.879–2.346	3.436	0.309–38.841	2.354	1.082–5.119*	
Physical abuse	1.445*	1.08–1.993	1.371	0.729–2.578	1.206	0.883–1.648	1.042	0.483–2.248	1.475	0.845–2.578	0.939	0.643–1.371	1.252	0.849–1.846	8.313	0.745–92.781	1.760	0.872–3.549	
Sexual abuse	1.035	0.712–1.505	1.085	0.492–2.395	0.657	0.459–0.940	1.385	0.634–3.949	0.949	0.467–1.929	1.121	0.745–1.687	1.558	1.033–2.348*	0.00		2.0	0.801–4.995	
Emotional neglect	1.050	0.802–1.374	1.283	0.710–2.319	0.922	0.710–2.319	0.612	0.264–1.414	1.261	0.738–2.156	0.932	0.652–1.331	0.862	0.586–1.268	3.384	0.304–37.615	1.064	0.543–2.084	
Physical neglect	0.895	0.652–1.228	1.004	0.503–2.003	0.875	0.642–1.192	2.007	1.020–5.01*	1.004	0.503–2.003	1.735	1.219–2.470*	1.420	0.974–2.071	2.647	0.237–29.602	0.717	0.274–1.871	
Substance abuse in family	1.396	0.986–1.977	2.152	1.115–4.4152*	0.954	0.662–1.375	1.275	0.544–2.985	1.434	0.754–2.725	0.803	0.507–1.273	1.073	0.676–1.702	0.00		2.229	1.026–4.845**	
Mother treated violently	1.808	1.235–2.647*	3.025	1.548–5.909*	1.351	0.871–2.095	1.160	0.397–3.390	3.675	2.024–6.670*	1.205	0.720–2.18	1.631	0.955–2.784	21.778	1.928–246.04*	4.082	1.981–8.411*	
Family member in prison	1.410	0.819–2.427	1.135	0.341–3.773	0.925	0.525–1.629	1.685	0.492–5.769	1.577	0.601–4.140	1.916	1.013–3.624**	1.510	0.736–3.099	0.00		3.449	1.268–9.382**	
Mental illness	1.139	0.706–1.838	0.255	0.035–1.880	1.23	0.678–1.859	0.00		1.350	0.557–3.273	0.674	0.337–1.350	0.572	0.265–1.235	6.403	0.565–72.597	1.979	0.743–5.269	
Parental divorce or separation	1.215	0.651–2.269	0.480	0.064–3.567	1.010	0.526–1.939	0.776	0.102–5.909	1.697	0.576–5.004	1.309	0.580–2.956	1.496	0.625–3.580	0.00		0.594	0.0791–4.454	

Odds ratios adjusted for age, sex, SES; # Among 749 women; ** p<0.05; * p<0.01

In Table 6.7.2 the prevalence and relative odds of health-risk behaviours by number of ACEs are shown, adjusted for age, gender, education, and socioeconomic status. The general trend indicates that there is a relatively strong graded relationship between health-risk behaviours and number of ACEs. Significantly, illicit drug use was found to be 2.2 times more likely as the number of ACEs reached three or more (OR=2.216, 95% CI=1.110–4.426). The odds of being a smoker was also found to increase as the number of ACEs increased to four or more (OR=1.561, 95% CI=1.049–2.324). Having an unwanted pregnancy was found to be 3.5 times more likely (OR=3.459, 95% CI=1.055–11.338) as the number of ACEs reached three and attempted suicide (OR=3.347, 95% CI=1.525–7.346) was found to be 3.3 times more likely as the number of ACEs reached four or more.

Table 6.7.2. Prevalence and odds of health-risk behaviours by number of ACEs

Type of health-risk behaviour		Number of ACEs				
		0 (N=457)	1 (N=374)	2 (N=198)	3 (N=125)	≥4 (N=121)
Current smoker	prevalence %	24.5	28.6	23.2	32.0	36.4
	OR (95% CI) §		1.085 (0.829–1.420)	0.749 (0.524–1.070)	1.351 (0.904–2.020)	1.561 (1.049–2.324)**
Early smoking initiation (≤15y)	prevalence %	3.3	1.1	3.5	6.4	6.4
	OR (95% CI) §		0.839 (0.448–1.572)	0.834 (0.370–1.884)	1.802 (0.822–3.950)	1.712 (0.781–3.756)
Current alcohol use	prevalence %	71.5	72.7	77.3	70.4	70.2
	OR (95% CI) §		0.980 (0.747–1.285)	1.172 (0.825–1.664)	1.0052 (0.689–1.607)	0.877 (0.577–1.333)
Drink-driving	prevalence %	2.2	3.7	4.0	4.0	2.5
	OR (95% CI) §		1.61 (0.584–2.309)	1.304 (0.582–2.921)	1.476 (0.555–3.924)	0.739 (0.221–2.472)
Illicit drug use	prevalence %	3.5	5.3	4.5	8.8	9.1
	OR (95% CI) §		0.961 (0.558–1.657)	0.794 (0.384–1.643)	2.216 (1.110–4.426)**	1.808 (0.906–3.608)
Early sex (≤16y)	prevalence %	15.6	19.0	17.8	20.0	22.3
	OR (95% CI) §		1.035 (0.738–1.451)	0.837 (0.543–1.288)	1.293 (0.774–2.160)	1.321 (0.802–2.176)
Multiple sexual partners (≥3)	prevalence %	14.2	18.2	19.2	18.4	22.3
	OR (95% CI) §		1.051 (0.736–1.502)	1.007 (0.648–15.65)	1.265 (0.727–7.202)	1.427 (0.842–2.417)
Early pregnancy (≤18y) (#)	prevalence %	0	0.5	0	1.4	1.5
	OR (95% CI) §		1.226 (0.092–1.854)	0	4.850 (0.430–54.675)	5.132 (0.455–57.909)
Unwanted pregnancy (#)	prevalence %	2.1	1.0	1.8	5.5	1.5
	OR (95% CI) §		0.412 (0.092–1.854)	0.768 (0.170–3.475)	3.459 (1.055–11.338)**	0.749 (0.96–5846)
Suicide attempt	prevalence %	2.2	2.4	3.0	4.0	7.4
	OR (95% CI) §		0.736 (0.344–1.576)	1.019 (0.418–2.484)	1.335 (0.507–3.516)	3.347 (1.525–7.346)**

OR, odds ratio; CI, confidence interval.

Among 749 women; § Adjusted for age, sex and SES; **p<0.05

However, associations between the number of ACEs and certain health-risk behaviours, such as early smoking, current alcohol use, drink driving, engaging in early sex, and having early or unintended first pregnancy, were not so clear.

7. Discussion

The target population for this study was born in the late eighties and early nineties (18–20 years old) and was brought up in a relatively unstable and violent environment in a country undergoing societal transition, surrounded by ethnic and civil wars in the region. This might have had an impact on their development, putting them at greater risk of experiencing multiple forms of adverse childhood experiences.

The results of this study indicate that physical abuse is among the most common type of abuse. Both girls and boys were exposed to threats, as well as actual physical abuse, which do not differ significantly. However, there are surveys that show that girls (between 8 and 14 years) are more frequently victims of physical abuse in the context of family violence (51.1%), as reported to the official services for social work in the country (59). In GSHS 2007/2008 in the country, 18.7% of students reported being physically attacked one or more times during the previous 12 months, and male students were physically attacked significantly more often than female students (5). Surveys from around the world also suggest that physical abuse of children in the home is widespread in all regions. In a survey of students aged 11 to 18 in Iran, 38.5% reported experiences of physical violence at home which had caused physical injury ranging from mild to severe (60).

Almost two thirds of students experienced corporal punishment as a method of disciplining children. The international multicentre comparative study on prevalence of child abuse in five SEE countries (Lithuania, Latvia, Estonia, Moldova and the former Yugoslav Republic of Macedonia) showed that the prevalence of corporal punishment in this country was the lowest compared to the other four countries. The authors concluded that although corporal punishment of children is widespread in the country, the relatively low percentage of prevalence was due to the fact that children are brought up in a culture which recognizes corporal punishment as a legitimate way of disciplining children, developing tolerance towards it (61). During the Campaign *Childhood without violence* in 2006, and replicated in 2009 (in seven eastern European countries including the former Yugoslav Republic of Macedonia), a sample of adult citizens was questioned concerning: 1) their attitudes toward parental use of corporal punishment of children; and 2) their perceptions of the scale of such behaviour among parents. According to the results of the interviews, 14% of interviewees (in 2006) and later only 1.5% (in 2009) felt corporal punishment was justified if it was in accordance with the belief system of the parent (almost 10 times fewer in 2009 than in 2006). In 2006 38% and in 2009 33% thought that it was justified in some situations, and 44% (in 2006) and 65% (in 2009) thought that it should never be used (62,63). This change in the perception of using corporal punishment as a method of disciplining children over the last decade is the result of increased public awareness campaigns against CAN in the country.

Regarding the prevalence of psychological abuse and neglect, in our study over 30% of students experienced some form of psychological neglect, significantly more females ($p < 0.05$). Psychological maltreatment appears to be just as damaging as physical and sexual abuse, as it puts its victims at equal risk of developing physical and mental health problems (64,65). Individuals who experience psychological abuse are more prone to develop chronic physical and mental illnesses such as depression, injury, drug addiction and alcoholism (66,67). Psychological abuse, like other types of abuse, may also result in poor self-esteem that may lower capacities to combat the effects of future abusive events (68). Little is known about the global extent of this form of abuse/neglect of children except that it frequently accompanies other forms: a strong coexistence between psychological and physical abuse of children in violent households has been established (52). A study conducted by the World Studies of Abuse in the Family Environment (World SAFE) project across five countries indicated that insulting, threatening children with abandonment, and cursing them varied across countries according to cultural practices: in Philippines 48% of mothers threatened to abandon the child, in Egypt 51% cursed the child, but only 10% threatened abandonment (69).

The most problematic results were found in relation to sexual abuse. Females reported 7.3% sexual abuse and males reported 20.8%. There are several possible explanations for these findings. Females tend to underreport sexual abuse, even in an anonymous questionnaire. The shame, secrecy and denial associated with familial sexual abuse of children foster pervasive cultures of silence, where children (especially girls) cannot speak about sexual abuse they have suffered. Males, on the other hand, tend to overreport sexual abuse, not necessarily recognizing this type of behaviour as abusive when it is with someone five or more years older. Some boys perceive these activities as normal sexual activity with older girls or women, stressing their sexuality, identifying themselves with the dominant male role. A review of epidemiological surveys from 21 countries, mainly high- and middle-income countries, found that at least 7% of females (ranging up to 36%) and 3% of males (ranging up to 29%) reported sexual abuse during their childhood (70). According to the UNICEF Sexual Abuse Study on reported cases of child sexual abuse (CSA) in the country, the majority of cases registered during 2008 in CSW files and in judicial verdicts involved girls, but boys aged up to 6 years of age were more susceptible to sexual abuse in comparison with girls of the same age. Furthermore, as children grow older (after their 10th year) the risk for sexual abuse increases for girls (8). For two thirds of sexually abused students in our study the abuser was someone they knew, and for almost one third of them the perpetrator was someone who should be caring for them. Similarly, in Finkelhor's review of epidemiological surveys, between 14% and 56% of sexual abuse of girls, and up to 25% of sexual abuse of boys, was perpetrated by relatives and stepparents. Most children do not report the sexual abuse they experience at home because they are afraid of what will happen to them and their families, that their families will be ashamed of or reject them, or that they will not be believed (71). Also, the UNICEF study reported that 37% involved sexual abuse by a father, stepfather or a close male relative (8).

The results regarding peer sexual abuse showed that 2.3% of students were sexually abused by peers, more frequently for males than females. Sexual violence, including sexual harassment by peers towards girls and boys, may be particularly common and extreme in places where other forms of school violence are also prevalent (1,72,73).

Our study showed that physical neglect was experienced significantly more by males (26.3%) than females (15.5%) in terms of wearing dirty clothes and not having enough to eat ($p < 0.05$). However, it is difficult in resource-poor countries, such as ours, to draw a line between poverty and neglect. The last GSHS study showed that 1.9% of students went hungry most of the time because there was not enough food in their home, with significantly more male students affected than female students (5). On the other hand, research of sex difference in neglect in some countries, such as India and Nepal, suggests that girls suffer relatively more neglect than boys throughout early childhood – they are given food of inferior quality and less often given health care (74).

One of the most serious risk factors for abuse and neglect of children was household dysfunction in all its forms – violent treatment of the mother (or stepmother) in the family, alcoholism, drug abuse, mental illness and depression, family member committing suicide, family member committing serious crime, divorce and separation of parents. Exposure of children to family violence is as harmful as exposing them to direct violence. They can be psychologically harmed by witnessing violence against another family member, especially a mother, which is also considered as emotional abuse (52). Our study shows that more than 10% of students had witnessed domestic violence in the form of violent treatment of their mother/stepmother. Although these are families in which mothers work and earn a salary, in 10% of cases they are treated violently. This finding goes along with the common finding of substance abuse by a family member (either alcohol or illicit drug use). Overall, 13.4% of students lived with someone who misused alcohol (10.7%) or used illicit drugs (3.6%). Thus, alcohol consumption in the family might be the most common risk factor for domestic violence and child maltreatment. Dube et al. (49) found strong relationships between parental alcohol abuse and each of the 10 ACEs. The association to each ACE was highest among respondents who grew up with two parents who abused alcohol compared with those without alcohol-abusing parents. The childhood adversities which also contribute to child maltreatment were mental illness and depression of a family member, 6.9% of students being affected by this, a household member in prison (experienced by 5% of students), and parental separation or divorce (experienced by 3.8% of students). Living in such circumstances, overall 4% of students had run away from home (significantly more males than females). It

is estimated that every year 133 to 275 million children worldwide witness violence between their parents/carers on a frequent basis, usually fights between parents, or between their mother and her partner (73). Violence against women in the home is often linked with violence against children. This association has been observed in a variety of geographically and culturally distinct settings and countries: in China, Columbia, Egypt, India, Mexico, Philippines, and South Africa a strong relationship between those two types of violence has been found (69). In a study on family violence (January–June 2005) in all CSW in the country, 41% of cases concerned children, of whom 69% were direct victims of violence and 31% were indirect victims of family violence, living in inappropriate family environments that had a negative influence on their overall psychological, physical and social development (59).

According to our study the health-risk behaviours of most concern included cigarette smoking (28.8%), alcohol use (by 27.6% of students), early sex (18.0%), risky sexual behaviour (18%), attempted suicide (6.3%) and early smoking (5.4%). An almost equal percentage of male and female students smoked (27% of females and 28% of males), but males on average started smoking earlier (at the age of 16) than females (at the age of 17), and smoked twice as much as females. According to the results of the GSHS 2007/2008, overall 14.1% of students smoked cigarettes, male students (12.5%) smoked cigarettes significantly less than female students (15.9%), starting to smoke at the age of 13 or younger (5).

Worldwide, alcohol use causes 3% of deaths (1.8 million) annually, which is equal to 4% of the global disease burden (75). Young people who drink are more likely to use tobacco and other drugs and engage in risky sexual behaviour than those who do not drink (76,77). Alcohol use is a serious risk behaviour which can impair adolescents' psychological and physical health and development and influence their relationships with peers, school and family (78). Our study shows that alcohol use is widespread among students and its prevalence rate is almost 28% by both sexes, and they start drinking at the age of 14–15. Prevalence of alcohol use by students in the GSHS 2007/2008 in the country was 39.4%, which is even higher than in this study, and male students significantly more often than female students reported current alcohol use (5).

Our study showed that in general, almost half of students had had sexual intercourse, but significantly more males (70%) than females (30%) were sexually active, starting their sexual life two years earlier, at the age of 16, and engaging in risky sexual behaviours significantly more often than females. A similar finding was reported in a recent study on adolescent sexual behaviour (70), showing that male adolescents were far more sexually active than female adolescents of the same age. The ratio was almost 3:1 for males. The GSHS 2007/2008 study also showed that a significantly larger number of male students (19.5%) than female students (4.1%) had had sexual intercourse, more often having first sexual intercourse before the age of 13 (5). The findings from these different studies are consistent with the dominant cultural norms considering sexual activity and gender, but on the other hand these findings seriously question the border between normative sexual behaviour of young people and sexual abuse. They may also explain previously discussed significantly increased rates of experience of sexual abuse among male students in comparison to female students.

Suicide is the third leading cause of death among adolescents (79). Each year, about 4 million adolescents worldwide attempt suicide, which is more common for females than for males (1). Our study confirmed this finding, that females significantly more often attempt suicide, significantly more often have more than one attempt, and the attempt(s) more often resulted in injury, which indicates that the attempt was very serious. In the GSHS 2007/2008, the same pattern of suicidal behaviour was found. During adolescence, girls who are under stress are more likely to suffer from emotional and psychosomatic problems, following the pattern of internalizing psychopathological manifestations (such as anxiety, depression, somatization) which might lead to suicidal behaviour, but boys under stress have more behavioural and conduct problems, following the pattern of externalization (80,81). The immediacy of the developmental stress and potential abuse and household dysfunction are experiences not easily elaborated by children and adolescents, as a result of which at certain points suicide may appear to be the only solution. The impact of pain and anxiety caused by emotional, sexual and physical abuse or witnessing domestic violence are experiences that children suffer in silence and suicide attempt is perceived as the only way out or an appeal for help.

This study, as many earlier ACE studies, shows that health outcomes usually occur in highly interrelated forms. A strong graded relationship was reported between the number of adverse experiences in childhood (multiple forms of CAN and household dysfunction) and self-reports of health-risk behaviours in adolescence (such as cigarette smoking, alcoholism, drug abuse, obesity, attempted suicide and sexual promiscuity in later life) (4,51). Similarly, the likelihood that a person develops physical and mental health conditions such as heart disease, cancer, and depression in adulthood, increased with the frequency of childhood adverse experiences reported (48,52,53). In our study illicit drug use was found to be 2.2 times more likely as the number of ACEs reached three or more, and the odds of being a smoker also increased as the number of ACEs increased to four or more. Having an unwanted pregnancy was found to be 3.5 times more likely as the number of ACEs reached three, and attempted suicide 3.3 times more likely as the number of ACEs reached four or more.

8. Conclusions

This was a survey of 1277 students aged 18 years and older, to describe their ACEs and demonstrate how these experiences may be associated with health-risk behaviours.

The results confirmed conclusions of previous studies that childhood experiences of abuse are high and that these are associated with risks for poor health in later life. In general, the more adverse experiences encountered in childhood, the higher the probability of engaging in risky lifestyle habits and consequently suffering from poor health.

Findings indicated that physical abuse and neglect as well as psychological neglect were the most frequently reported forms of childhood adverse experiences. This is not unusual since psychological violence is considered to underpin all forms of abuse (82), including both physical and sexual.

Surprisingly, exposure to sexual abuse was reported by more males in this study than females. This may be due to the type of indicators used in the survey, which focused on age difference with the perpetrator, defined as “five years or more”.

Among the most frequent household dysfunctions were alcohol and illicit drug use by a family member and violent treatment of the mother.

This study also showed that the various forms of childhood maltreatment and household dysfunctions co-occur. More than one third of the respondents who had experienced all categories of abuse (physical, sexual and emotional) also felt psychologically neglected. Emotional neglect cuts across all forms of abuse and household dysfunction. Similarly, physical neglect is also represented in all forms of abuse and household dysfunction. There was also relative co-occurrence of physical and emotional abuse and mental illness in the family, and having a family member in prison was associated with physical and emotional neglect. This accords with the findings of Arata et al. (83), who found that co-occurring maltreatment was more common than single type maltreatment. Individuals who experience multiple types of maltreatment, especially physical abuse and emotional abuse, emotional abuse and neglect, and emotional abuse and sexual abuse, are considered the most symptomatic. Growing research evidence shows that the total of lifetime victimization is as important, if not more important, than individual categories of victimization in predicting psychological distress (47,82).

In terms of health-risk behaviours, most respondents reported alcohol use, smoking and risky sexual activities. About 82% of respondents had ever used alcohol, and about 30% had ever smoked. Furthermore, this study showed that about 18% of the respondents had engaged in sex before the age of 16, and with more than three partners.

A relatively strong dose–response relationship was observed between the number of ACE exposures and most (but not all) health-risk behaviours. As the number of adverse childhood experiences increased, use of illicit drugs, smoking, engaging in risky sexual behaviours and suicide attempts also became more prevalent. Associations were unclear with some health-risk behaviours such as early smoking, engaging in early sex, having an unintended first pregnancy. These findings may, therefore, imply that the number of adverse childhood experiences is highly associated with the development of health-risk behaviours, which as well as other factors can influence behavioural and health outcomes in adulthood.

In a middle-income country like the former Yugoslav Republic of Macedonia, it could be hypothesized that students may have been more exposed to these type of negative experiences, partly or mainly because of

poverty and its social effects. However, sociocultural factors can also be cited as important reasons for the development of certain risk behaviours in developing countries. In this country, for example, peer influence seems to be the strongest factor for adolescents starting and continuing to smoke and drink alcohol. Alcohol consumption is generally a form of socialization that binds relationships among friends. On the other hand, early sex and having multiple sexual partners may be the result of pressure exerted by the media and internet, which affects their ideas on sexuality and sexual behaviour, especially for males (70).

8.1 Limitations of the study

The results of this study are subject to certain limitations. This study was conducted in a representative sample of high school and university students aged over 18 years and as such the results of the study cannot be readily generalized to the whole population. These students may represent higher socioeconomic levels of society and levels of ACE may be comparatively higher in people from lower socioeconomic class. Further, responses were based on self-reports. A potential weakness of studies of this kind is the likelihood of respondents giving socially desirable answers.

The percentage of male respondents who refused to participate in the study was higher than female respondents, mainly due to the length of the questionnaire and possible lack of insight into their own adverse childhood experiences, as observed by the researchers. It is not known whether there was nonresponder bias, however. Response rates overall were high, though lower in males.

A potential weakness of studies with retrospective reporting of childhood experiences is the possibility of recall bias, such as the likelihood that more recent and severe experiences are being reported. Differential recall is also a possibility, depending upon the nature and significance of the events (e.g., sexual abuse compared with emotional neglect).

9. Next steps

The most important contribution of this study is to provide evidence that child maltreatment is a public health problem in the former Yugoslav Republic of Macedonia. This is in contrast to the common notion in our society (and many other societies) that child abuse and neglect is simply a social and juridical problem. As evidenced by the findings, childhood abuse and neglect are major risk factors that may lead to health-risk behaviours and later disability, morbidity and other adverse health outcomes in adulthood.

In the light of the recent study findings, and the WHO recommendations set out in the *World report on violence and health (1)*, the health sector needs to rise to the challenge of implementing the following proposed recommendations for the prevention of child abuse and neglect.

- **Development and implementation of a multisectoral national action plan on child abuse and neglect, with full implementation of the international and national legislation for prevention of child abuse and neglect and enforcement of legislation with preventive measures, treatment, social care and support for victims of violence.**

At present the national system has only addressed the problem of child sexual abuse, reflected in the interministerial National Action Plan to Prevent and Combat Sexual Abuse against Children and Paedophilia. Current findings indicate that physical abuse and neglect, as well as psychological neglect, are the most frequently reported forms of childhood adverse experiences, which lead to health consequences regardless of type of abuse. In order to fine-tune these findings, several meetings with the main stakeholders in the country have been organized to present the findings and facilitate a national response and holistic approach to prevent and combat child abuse and neglect. As a result of these efforts, the formation of a National Commission on Child Abuse and Neglect was approved by the Minister of Labour and Social Policy to prepare a National Action Plan on Child Abuse and Neglect.

- **Strengthening of capacities for data collection and needs assessment through development of an integrated system for monitoring of child abuse and neglect.**

In order to develop effective preventive strategies in this country, there is a need for better information, particularly on the number and types of child abuse and neglect, circumstances in which it occurs, risk population, risk factors and trends. Development of a unified reporting form – protocol for child abuse and neglect, which should be completed by every professional who has contact with a victim of violence – will help in avoiding secondary victimization of the victim and will provide for overall review of the case. Education and seminars should be provided for all relevant sectors (health professionals, social workers, police, teachers, NGOs) on implementation of protocols and evidencing violence against children.

- **Supporting the future research into risk factors, causes, consequences, costs and prevention of child abuse and neglect, including promotion of safety.**

The findings have confirmed alcohol consumption as a major risk factor for CAN in the family. Although some preventive measures have been undertaken, implementation of focused treatment programmes for perpetrators of violence with alcohol misuse is also needed as an addition to the piloted programme for psychosocial treatment of perpetrators of DV.

Beside the ACE Study, several other surveys have been finalized or are in process of finalization, such as: the Fetzer research study which has addressed community readiness on child maltreatment prevention

in the country, the BECAN study on incidence and prevalence of CAN among 11-, 13- and 16-year-old students in schools, including assessment of their parents' practices and attitudes. These researches will give additional value in the further development of national policies and programmes.

- **Promotion of primary prevention of child abuse and neglect and other childhood experiences.**

The international published literature (1,9) informs us of numerous evidence-based preventive interventions such as parent training programmes, home visitation programmes, multicomponent programmes combining home visitation with preschool enrichment, hospital-based educational programmes to prevent abusive head trauma, and school-based programmes to train children against sexual abuse and public awareness campaigns to change cultural norms that support corporal punishment of children. These programmes need to be adapted and mainstreamed into social, health and educational policy. Capacities need to be built in these sectors both in the government and nongovernmental institutions for prevention of child abuse and neglect at all levels.

Within the UN joint project 2008–2012 on Strengthening National Capacity to Prevent Domestic Violence, three national campaigns were conducted, with a particular focus on children in one of them. This kind of public awareness raising should continue on a regular basis. These campaigns need to be accompanied by the implementation of preventive programmes for which there is evidence of effectiveness.

- **Strengthening response and support for child victims of child abuse and neglect with an extension of the role of the health sector in secondary and tertiary prevention of child abuse and neglect; improvement of the quality of health care; piloting and implementing services on evidence-based practices; establishing services for children who witness violence.**

Within the UN joint project 2008–2012 on DV, child victims of violence were highlighted as a particularly vulnerable group which needs a specific approach. A counselling service for child victims of violence has been initiated and piloted in Skopje. On the basis of the evaluation, a scaling-up plan will be developed. The project also included capacity-building training for health professionals based on WHO TEACH-VIP modules, with a focus on CAN, for family doctors/primary health care practitioners, paediatricians and school doctors.

- **Integrating prevention of child abuse and neglect into social and education policy, as well as promotion of gender and social equality and realization of the rights of child victims of child abuse and neglect in various school programmes; prevention and education campaigns.**

Specific gender-sensitive programmes should be developed to tackle the issue of sexual abuse separately for girls and boys. Programmes to target dating violence should also be developed, changing the traditional norms and attitudes towards the gender roles, moral judgment, and development of social skills for nonviolent communication.

10. References

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Annex 1

A1.1 Maltreatment by category

- Physical abuse
Questions: Did a parent or other adult in the household...
 - sometimes, often or very often push, grab or slap you?
 - sometimes, often or very often hit you so hard that you had marks or were injured?
- Corporal punishment
Question: How often were you spanked (as a form of discipline)?
 - sometimes, often or very often spanked (as a form of discipline).
- Emotional abuse
Questions: Did a parent or other adult in the household...
 - often or very often swear at, insult or put you down?
 - sometimes, often or very often act in a way that made you afraid that you would be physically hurt?
- Emotional neglect
Questions:
 - Did you ever not feel loved?
 - Did you rarely, sometimes, often or very often think your parents wished you had never been born?
 - Did you rarely, sometimes, often or very often feel that someone in your family hated you?
- Sexual abuse
Questions: Did an adult or older relative, family friend or stranger at least five years older...
 - touch or fondle your body in a sexual way?
 - have you touch their body in a sexual way?
 - attempt to have any type of sexual intercourse with you?
 - actually have any type of sexual intercourse with you?
- Physical neglect
Questions:
 - Did you ever have to wear dirty clothes?
 - Did you sometimes, often or very often not have enough to eat, even when there was enough food?

A1.2 Household dysfunction by category

- Substance abuse
Questions: Did you...
 - live with anyone who was a problem drinker or alcoholic?
 - live with anyone who used street drugs?
- Mental illness
Questions:
 - Was a household member depressed or mentally ill?
 - Did a household member attempt suicide?
- Domestic violence – violent treatment of mother
Questions: Was your mother or stepmother...

- sometimes, often or very often pushed, grabbed or slapped or did she have things thrown at her?
- sometimes, often or very often kicked, beaten, hit with a fist, or with a hard object?
- ever hit repeatedly, for a period of at least a few minutes?
- ever threatened with or hurt by a knife or gun?

- Criminal behaviour in household
 - Did a household member ever go to prison?
 - Did anyone in your household ever commit a serious crime?

- Parental separation or divorce
 - Were your parents ever separated or divorced?

A1.3 Health-risk behaviour by category

Questions on:

- smoking
- severe obesity
- physical inactivity
- depression
- suicide attempts
- alcoholism
- drug use
- risky sexual behaviour

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