Adverse Childhood Experiences: Prevalence and Related Factors in a Representative Sample of Young Adults in Albania

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Abstract

Background: Adverse childhood experience (ACE) comprises a wide range of childhood abuse and neglect and household dysfunction forms that have a deep impact on the future health of affected individuals.

Aim: The aim of this study was to assess the prevalence of ACE and the factors related with it in a sample of young adults in Albania.

Methods: In 2015 a cross-sectional survey was carried out employing a representative sample of young adults (n=957) studying in four public universities in Albania (530 females or 55.4%); mean age: 22.5 years. The Family Health History questionnaire (containing 68 questions) was used to collect information on a wide range of childhood experiences. The ACE questionnaire containing 10 variables was retrieved and an ACE score was calculated. General Linear Model was used to compare the mean number of ACEs across categorical independent variables.

Results: The prevalence of at least one ACE in this sample of students was 69.5% whereas the prevalence of ≥4 ACEs was 16.2%. The most prevalent ACE was emotional abuse (35.4%), followed by physical neglect (34.3%), violent treatment of mother (23.9%), physical abuse (21%) and substance abuse (18.7%). The prevalence of physical abuse, sexual abuse and substance abuse was significantly higher among males than females. Male sex, low parental education, father's unemployment and young age of mother at birth were all significantly associated with a higher mean number of ACEs compared to their respective counterparts.

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Conclusion: The prevalence of child maltreatment in Albania is rather high. Appropriate, carefully planned and well-thought strategies and interventions are needed for the prevention of adverse childhood experience in Albania.

Keywords: Albania, adverse childhood experience, child abuse, prevalence, cross-sectional.

INTRODUCTION

Abuse, neglect and potentially traumatic events to which children are exposed to during their childhood (0-17 years), otherwise known with the term adverse childhood experiences (ACE), can have a deep impact on health and wellbeing of these individuals later in life (1). The most common forms of ACE include violence, abuse, neglect, witnessing violence at home or community, having family members affected by suicide ideation, attempt or completion, and environment issues that jeopardize the sense of safety and stability while growing up such as being surrounded by persons that abuse with psychoactive substances or have mental and/or legal problems (1).

Adverse childhood experiences are very common. The Adverse Childhood Experiences Study, the largest study of its kind including over 17,000 respondents across the United States during 1995-1997, and the latest wave that included ACE module during 2013-2014, reported that about two-thirds of adults have experienced at least one form of ACE and more than 20% experienced three or more ACEs (2). A systematic review and meta-analysis published in 2017 including a total of 253,719 participants reported that the prevalence of zero ACEs ranges between 12% and 67% whereas the prevalence of at least four ACEs ranges from 1% to 38% (3).

ACEs are associated with an increased risk of a wide range of health problems later in life. According to a 2017 systematic review and meta-analysis, individuals with at least four ACEs had a significantly increased risk to experience a wide range of physical, mental and sexual health problems, violence and psychoactive substances use compared to individuals not experiencing any ACE (3). Experiencing at least four ACEs significantly increased the likelihood of: diabetes, cardiovascular diseases, cancer, liver and respiratory diseases by 1.5, 2.1, 2.3, 2.8 and 3.1 times, respectively; smoking, heavy and problematic alcohol use, problematic drug use by 2.8, 2.2, 5.8 and 10.2 times, respectively; engaging with multiple sexual partners, early sexual initiation, teenage pregnancy, sexually transmitted infections by 3.6, 3.7, 4.2 and 5.9 times, respectively; anxiety, depression and suicide attempt by 3.7, 4.4 and 30.1 times, respectively; violence victimization and perpetration by 7.5 and 8.1 times respectively; also, the likelihood of poor self-rated health and low life satisfaction was 2.2 and 4.4 times higher among individuals experiencing at least four ACEs compared to those reporting none (3). In England and Wales individuals with at least four ACEs had a significantly higher relative risk of behavioral risk factors (alcohol, smoking, drug use and high BMI) and causes of ill health (including cancer, depression, anxiety, violence, diabetes, heart disease, stroke, etc.) compared to individuals reporting no ACE (4). About one third of anxiety and depression cases in North America and more than a quarter of respective conditions in Europe are attributed to ACEs (5). Costs associated with ACE are considerable as well (4-6). According to a recent paper, the total

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annual costs attributable to ACEs are estimated at 1,329 billion USD in North America and Europe alone with about three-quarters of these costs encountered among individuals reporting at least two ACEs (5).

Adverse childhood experiences can have a considerable impact on health and health behaviors of affected individuals across their lifespan. In this context, the aim of this study was to assess the prevalence of ACE and the factors associated with it in a representative sample of young adults in Albania.

METHODS

Study design and sampling

This is a cross-sectional study conducted in 2015 among 957 students from public universities in Tirana, Elbasan, Shkodra and Vlora. This study employed the same methodology applied for the conduction of the Community Survey on Prevalence of Adverse Childhood Experiences in Albania, during 2011-2012, the details of which are explained elsewhere (7).

In summary, the statistical software WinPepi was used to calculate the minimal sample size for testing of various hypothesis of the study. The level of alpha error was set at 5%, the power of the study at 80% (beta error 20%), the assumed rate was set at 50% (maximizing the sample size) and the acceptable difference at 3.5%. By applying these parameters, WinPepi yielded a sample size of 784 individuals. We decided to interview 1000 students in order to account for potential non-response bias. The number of students to be interviewed in each university was proportional to the university's size meaning that bigger universities would be represented by a higher number (proportion) of students in the overall sample. The selection of students was carried out through a multistage cluster sample with probability proportional to size procedure for each academic year of the included universities (7).

Overall, from 1000 distributed questionnaires, 957 of them were returned and filled in, yielding an overall response rate of 95.7% (957/1000).

Data collection procedures and instruments

The Family Health History questionnaire was used to collect information on child abuse and neglect, household challenges, and other socio-behavioral factors (8). In this questionnaire containing 68 questions, which is slightly different for males and females, but retaining the same core questions, all ACE questions refer to the respondent's first 18 years of life.

In this study, the popular ACE questionnaire instrument, containing 10 questions exploring a wide range of domains (9) was used. The 10 questions cover various domains of abuse or maltreatment, neglect and household challenges such as: 1) emotional/psychological abuse (covering 2 items), 2) physical abuse (covering 2 items), 3) sexual abuse (covering 4 items), 4) emotional neglect (covering 5 items), 5) physical neglect (covering 5 items), 6) parental separation or divorce (covering 1 item), 7) violent treatment of mother (covering 4 items), 8) substance abuse (2 items), 9) mental illness (covering 2 items) and

10) criminal behavior in household (covering 1 item) (2,9,10).

In addition to ACE questions, the questionnaire contained other items exploring basic socio-demographic and socioeconomic characteristics of respondents and their families, such as sex, age, place of residence, mother and father education level and employment status, duration of living in the actual residence address, frequency of moving from one home place to another, etc.

The self-administered questionnaire was distributed to the selected students and they were asked to fill it in anonymously and with maximal sincerity.

The study was approved by the Albanian Committee of Medical Ethics and Ministry of Education.

Statistical analysis

In accordance with ACE questionnaire guidelines, for each of the 10 questions, a "yes" or "no" answer was given; each "yes" answer was given 1 point and 0 point was given for a "no" answer; "yes" answers are summed to yield the final ACE score, which can range from a minimum of 0 to a maximum score of 10 with higher ACE score meaning higher exposure to more kinds of adverse childhood experiences (9). Usually, an ACE score of 4 or more is considered a significant risk factor for many unfavorable health outcomes (3).

The numerical variable was used as the dependent variable in General Linear Models in order to compare the mean number of ACE events across categories of independent variables included in the study and check for any statistically significant difference, adjusting for confounding effects of age and sex. For comparison of categorical variable, the Fisher's exact test was used whereas for the comparison of mean values of dependent variable across categories of independent variables the student's t test was used.

In all instances an association was regarded as statistically significant when the p-value yielded by the respective statistical test was <0.05. All the analysis has been carried out using the Statistical Package for Social Sciences, (SPSS), version 20.0.

RESULTS

The general characteristics of participating students are presented in Table 1. Mean age of participants was 22.5 years and 55.4% were females. More than three quarters of participants were born in urban areas and similarly as many were never married. Virtually all participants were of Albanian ethnicity (99.7%). About half of participants' mothers and fathers had middle education level whereas higher proportions of mothers than fathers were not employed (48.6% vs. 15.5%, respectively). About one quarter of students declared that they have been changing residencies 1 time during childhood and 20% did so 2 or more times; 6% of respondents had been living in the actual residency for less than 2 years (Table 1).

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Table 1. Basic characteristics of participating students

Variable	Absolute number	Percentage
Total	*957*	*100.0*
Age-group (tertiles)		
18-21 years	318*	33.6
22-23 years	251	26.5
>23 years	378	39.9
Age (mean ± standard deviation)	22.5 ± 1.99	
Sex		
Male	427	44.6
Female	530	55.4
Place of birth		
Urban	766	86.8
Rural	116	13.2
Marital status		
Never married	817	85.6
Married, separated, divorced, cohabiting	137	14.4
Ethnicity		
Albanian	949	99.7
Egyptian	2	0.2
Roma	1	0.1
Mother's education level		
Low (8 years or less)	163	17.2
Middle (9-12 years)	492	52.0
High (>12 years)	292	30.8
Father's education level		
Low (8 years or less)	127	13.5
Middle (9-12 years)	476	50.4
High (>12 years)	341	36.1
Mother's employment status		
Full-time	339	36.1
Part-time	144	15.3
Not employed outside the home	456	48.6
Father's employment status		
Full-time	507	56.0
Part-time	258	28.5
Not employed outside the home	140	15.5
Frequency of changing residencies during childhood		
Did not move		
One time	495	54.5
≥2 times	230	25.3
	184	20.2
How long living in the actual residence		
<2 years		
≥2 years	55	6.0
	857	94.0
Age of mother at participant's birth (quintiles)		
≤22 years		
23-24 years	195	21.0
25-27 years	155	16.7
28-30 years	197	21.2
>30 years	202	21.8
	179	19.3

* Any discrepancy with the total number is due to missing information.

The prevalence of different types of ACE and number of ACEs in total and by sex is displayed in Table 2. The most prevalent form of ACE was "emotional abuse" and "physical neglect" reported by 35.4% and 34.3% of participants, without significant gender differences (p>0.05). Significantly higher proportions of males than females have experienced physical abuse (25.1% vs. 17.7%, respectively), sexual abuse (15.2% vs. 7.7%, respectively), and substance abuse (25.1% vs. 13.3%, respectively) whereas the reverse trend was noticed for "mental illness" the prevalence of which was significantly higher among female participants (8.1%) than males (3.1%). The prevalence of "parental separation/divorce", "violent treatment of mother", "emotional neglect" and "criminal behavior in household" did not show significant gender differences (Table 3). The prevalence of at least one ACE was 69.5%, significantly higher among males (70.1%) than females (64.4%). The mean number of ACEs was 1.65, significantly higher among males (mean number 1.77) than females (mean number 1.53)

Table 2. Prevalence of adverse childhood experiences by gender

Type of ACE	Total % (95%CI) *	Male % (95% CI)	Female % (95% CI)	p-value †
Childhood abuse and neglect				
1. Emotional abuse	35.4 (32.3, 38.6)	38.1 (33.3, 43.0)	33.3 (29.2, 37.6)	0.143
2. Physical abuse	21.0 (18.4, 23.8)	25.1 (20.9, 29.6)	17.7 (14.5, 21.3)	0.009
3. Sexual abuse	11.2 (9.1, 13.6)	15.2 (11.7, 19.2)	7.7 (5.4, 10.7)	0.001
4. Emotional neglect	9.1 (7.3, 11.2)	9.4 (6.7, 12.7)	8.8 (6.5, 11.7)	0.815
5. Physical neglect	34.3 (31.2, 37.6)	33.6 (28.9, 38.5)	34.9 (30.7, 39.4)	0.720
Household dysfunction				
6. Parental separation/divorce	2.1 (1.3, 3.3)	1.9 (0.8, 3.7)	2.3 (1.2, 4.0)	0.821
7. Violent treatment of mother	23.9 (21.2, 26.8)	21.5 (17.6, 25.9)	25.8 (22.0, 29.8)	0.138
8. Substance abuse	18.7 (16.2, 21.4)	25.1 (21.0, 29.6)	13.3 (10.5, 16.6)	<0.001
9. Mental illness	5.8 (4.4, 7.5)	3.1 (1.7, 5.2)	8.1 (5.9, 10.8)	0.001
10.Criminal behavior in the household	4.7 (3.4, 6.2)	4.7 (2.9, 7.2)	4.6 (3.0, 6.8)	1.000
Number of ACE 0 1 2 3 4 5 6	30.5 (27.2, 34.0) 26.8 (23.6, 30.2) 16.1 (13.5, 19.0) 10.3 (8.2, 12.8) 8.9 (7.0, 11.3) 5.0 (3.5, 6.8) 2.3 (1.4, 3.7)	25.1 (20.6, 30.0) 27.1 (22.5, 32.0) 18.2 (14.3, 22.7) 12.5 (9.3, 16.5) 10.5 (7.5, 14.2) 5.4 (3.3, 8.3) 1.1 (0.3, 3.5)	35.6 (30.8, 40.7) 26.6 (22.2, 31.4) 14.1 (10.7, 18.0) 8.2 (5.7, 11.5) 7.4 (5.0, 10.6) 4.5 (2.7, 7.1) 3.5 (1.9, 5.8)	NA
Number of ACE None At least one	30.5 (27.2, 34.0) 69.5 (66.0, 72.8)	25.1 (20.6, 30.0) 74.9 (70.1, 79.4)	35.6 (30.8, 40.7) 64.4 (59.3, 69.2)	0.001
Mean number of ACEs (± SD)	1.65 ± 1.63	1.77 ± 1.56	1.53 ± 1.68	0.042

Note: NA – not applicable due to small numbers.

* 95% Confidence Interval (lower limit, upper limit)

† p-value according to Fisher's exact test for comparing proportions or student's t test for two independent samples when comparing mean values.

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Table 3 displays the mean number of ACEs by basic characteristics of participating students. The mean ACE number was significantly higher among males than females, among students with low mother and father education compared with students reporting middle and high parental education, among students whose father was unemployed, as well as those changing the place

Table 3. Mean values of ACE by basic characteristics of participating students

Characteristic	Mean *	95% CI *	p-value *
Age-group			
18-21 years	1.60	1.39-1.81	0.432
22-23 years	1.62	1.39-1.85	0.538
>23 years	1.72	1.52-1.92	Reference
Sex			
Male	1.79	1.61-1.96	0.034
Female	1.51	1.34-1.68	Reference
Place of birth			
Urban	1.63	1.49-1.76	0.268
Rural	1.84	1.50-2.18	Reference
Marital status			
Never married	1.67	1.53-1.79	0.411
Married, separated, divorced, cohabiting	1.52	1.19-1.84	Reference
Mother's education level			
Low (8 years or less)	2.08	1.79-2.35	<0.001
Middle (9-12 years)	1.77	1.61-1.94	<0.001
High (>12 years)	1.23	1.01-1.43	Reference
Father's education level			
Low (8 years or less)	2.43	2.11-2.75	<0.001
Middle (9-12 years)	1.69	1.52-1.86	0.005
High (>12 years)	1.32	1.13-1.51	Reference
Mother's employment status			
Full-time	1.66	1.46-1.85	0.900
Part-time	1.69	1.37-2.01	0.800
Not employed outside the home	1.64	1.47-1.82	Reference
Father's employment status			
Full-time	1.55	1.39-1.71	<0.001
Part-time	1.58	1.35-1.82	0.001
Not employed outside the home	2.26	1.95-2.57	Reference
Frequency of changing residencies during childhood			
Did not move	1.52	1.35-1.69	0.011
One time	1.76	1.54-2.03	0.427
≥2 times	1.93	1.66-2.20	Reference
How long living in the actual residence			
<2 years	1.77	1.30-2.24	0.646
≥2 years	1.66	1.53-1.78	Reference
Age of mother at participant's birth			
≤22 years	2.36	2.10-2.62	<0.001
23-24 years	1.79	1.50-2.09	0.003
25-27 years	1.60	1.35-1.85	0.031
28-30 years	1.42	1.18-1.67	0.214
>30 years	1.19	0.94-1.46	Reference

* Mean values (range of ACE summary score from 0 to 6), 95% confidence intervals and p-values from General Linear Model. Mean values are adjusted for age and sex.

of residence frequently, students whose mother was young when they were born (≤22 years, 23-24 years and 25-27 years) compared with those not reporting this. Students born in rural areas also showed higher mean ACE score compared to those born in urban areas, but this difference did not reach statistical significance [Table 3].

DISCUSSION

The present cross-sectional survey carried out in a sample of young adults attending public universities in Albania in 2015 generated novel and interesting evidence regarding the prevalence of adverse childhood experiences (ACE), ACE types and the factors associated with ACE. The overall prevalence of at least one ACE was 69.5% meaning that more than two out of every three young adults have been experiencing one or more adverse events during their childhood. However, the mean number of ACE was 1.65, significantly higher among boys than girls. The most prevalent type of ACE was "emotional abuse", reported by 35.4% of all students and "physical neglect" noted in 34.3% of cases. Male sex, low parental education (both mother's and father's education), unemployment of father, frequent change of residence and younger age of mother at birth were all associated with significantly higher mean ACE number compared to their respective counterparts.

Our results are in general concordant with international reports and within reported ranges. A survey among 1200 respondents in Hungary found that the prevalence of at least one ACE was

25% and the prevalence of 4 or more ACEs was 5% (11); the corresponding figures from a survey in England among 3885 respondents were 47% and 8.3% (12), 85% vs. about 5% among adolescents in Brazil (13), and 73.2% vs. 9.2% in Philippines (14), thus being within previously reported estimates (3).

Compared to the ACE study carried out in Albania in 2011-2012 (7), our current estimates are rather similar. For example, the prevalence of at least one ACE in 2011-2012 and 2015 was 72.4% and 69.5%, respectively, whereas the respective prevalence of ≥4 ACEs was 14.1% and 16.2% (calculated from Table 2).

Noticeably, the prevalence of ≥4 ACEs in Albania in 2015 (16.2%) is quite high and comparable to some studies in the USA; the highest prevalence of ≥4 ACEs is reported in USA (38%) in a small sample of 210 individuals, in Saudi Arabia (32%) and Sri Lanka (31%) (3).

Also, the prevalence of emotional abuse was very high in Albania, across both ACE studies in 2011-2012 (51%) and 2015 (34.5%), compared to corresponding figures from other studies (11,13,14). Emotional abuse refers to swearing, insulting or putting the child down by household members or acting in a way that make them think that they could be physical hurt (10). Anecdotal evidence suggests that this form of communication with children is rather widespread in Albania and is often used to persuade children to "hear" or obey to what adults in the household are saying to them. In this context, the Albanian Demographic and Health

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Survey (ADHS) 2017-2018 found that 42% of children aged 2-14 years were subjected to emotional aggression, such as yelling at them, 32% were subjected to some form of physical aggression and about 48% of children of this age were disciplined by using some form of psychological/emotional or physical abuse (15). These findings suggest that some form of emotional abuse might be part of the cultural environment of Albanians. However, the use of emotional or physical aggression as a form of child discipline seems to be in decline in Albania (15).

On the other hand, only 4% of male respondents and 3% of female respondents in Albania believe that physical punishment is necessary for the proper upbringing of the child (15), but in our study the prevalence of physical abuse was rather high (at 21%), being much higher than in other countries (11-14). Compared to 2011-2012 ACE study in Albania (7) the prevalence of childhood physical and emotional abuse, emotional neglect, parental divorce, violent treatment of mother and mental illness seem to have declined in Albania in 2015 whereas the prevalence of physical neglect, sexual abuse, substance abuse and criminal behavior in the household seem to have increased. More studies are needed to replicate these findings, determine the time trends and starting to plan for the appropriate interventions.

In Albania it seems that ACE is more prevalent among male children with a few exceptions such as mental illness in the family and parental divorce, findings that are somewhat contradictory

to international reports. For example, the prevalence of both physical and sexual abuse in Albania seems to be consistently higher among male than female children, in both ACE studies in Albania in 2011-2012 (7) and the actual study in 2015, but other international studies have reported inverse gender trends for the majority of ACE types (11,13,14). However, in many countries male children are at greater risk of harsh physical punishment, which is part of the local cultural norms and beliefs (16). In Albania this seems to be a cultural factor as well but for sure there is need for further research to understand these gender trends in Albania and highlight the factors associated with them.

Similarly, to our findings, the young age of mother at child's birth, low level of education of parents and unemployment are associated with significantly increased risk of physical and psychological abuse on their children (16). In general, male parents or caregivers are more likely to be abusive to children but women might take the lead as well in some countries such as in China, Chile, Finland and India; in over 90% of cases the sexual abuse of children is conducted by males (16).

The risk of child abuse is increased with increasing number of children and household overcrowding, frequent changes of family composition; also parents or caregivers with mental illness or low self-esteem, stressed or socially isolated, those abusing with psychoactive substances and those being maltreated when they were as children have a higher risk to abuse their

own children as well (16). Intimate partner violence also increases the risk of child abuse (16). In addition, poverty, low social capital and societal factors including cultural values, gender equalities with regard to income, cultural norms, child and family policies, extent of preventive health care for infants and children, the strength of social welfare system, the nature and extent of social protection and the responsiveness of criminal justice system are believed to play a role in ACE (16). It is clear that child abuse is a complex phenomenon involving children's, family and caregivers' characteristics, community and societal factors as described above, an ensemble known as the ecological model for understanding violence, which can all interact in complex ways finally influencing on the well-being of children and families (16).

Health consequences of ACE are multiple, with profound effects on the affected individuals and are very costly for the society (3). On the other hand, preventing adverse childhood experience calls for multilevel intervention aiming to strengthen family economic support, promote social norms that protect against violence and adversity, ensure the best possible start in life for children, improving education, establish youth programs and improve treatment systems (17).

CONCLUSION

The results of this study suggest that adverse childhood experience in Albania is rather prevalent, affecting more male than female children through mechanisms believed to be influenced by the prevailing values and cultural norms. Parental education and employment seem to strongly influence child abuse and neglect and could represent a potential path for intervention in order to reduce ACE prevalence and the consequences associated with such childhood events. Further research is needed to better highlight and understand the factors associated with ACE in Albania.

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Conflict of interest

The authors declare that they have no conflict of interest.

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