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Position Paper

## An examination of individuals with and without involvement in crime in terms of family climate and childhood traumas

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## ABSTRACT

The purpose of this research is to examine the effect of family climate and childhood trauma on individuals with involvement in crime compared to individuals with no involvement in crime. The data were collected using a sociodemographic information form, the Family Climate Scale (FCS), and the Childhood Trauma Questionnaire (CTQ). FCS cognitive cohesion subscale scores were significantly lower in the case group than in the control group, while CTQ emotional abuse, physical neglect, emotional neglect, sexual abuse, and overprotection subscale, and total CTQ scores were significantly higher. Within that context, we recommend that interventions targeting the families of children and young people and other adults with whom they are in contact be prioritized in endeavors to prevent child delinquency and also chronic criminality persisting in adulthood.

## 1. Introduction

The latest [World Prison Population List](#), published in December 2021, reports that there may be more than 11.5 million prisoners across the world ([World Prison Brief \(2021\)](#) and 590,467 in Türkiye are currently imprisoned ([Directorate General For Prisons and Detention Houses, 2022](#)). Imprisonment is conceptualized as a stressful, isolating, and stigmatizing life event ([Moore et al., 2021](#)). Congenital factors, psychiatric problems, physical defects, and more importantly negative environmental conditions, negative parental attitudes, and negativities within the family are known to increase the tendency to crime ([Saladino et al., 2021](#)).

Scientific studies on the subject clearly show that violence-based negative child-raising styles and chronic childhood trauma beginning at an early age are associated with psychopathologies emerging at all stages of individuals' development ([Downey and Crummy, 2022](#); [Cruz et al., 2022](#)). Negative life events characterized by dysfunctional family dynamics and incorrect child-rearing styles can lead to the development of both long-term destructive psychological effects and trauma-related psychopathologies ([Öztürk and Derin, 2020](#)). The role of parents in children's development is a highly important one, and several studies have shown that children's antisocial behavior also affects their development. Antisocial behaviors include not conforming to societal norms, harming others, and empathy deficiency, and they generally result in adverse outcomes. Items emphasizing the effect of negative parental factor on the development of antisocial behaviors include low love and lack of support, neglect, hostility and aggression, normalization of

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violence, and model adoption and mimicking. Studies in the literature have consistently detected such negative parental factors in the histories of individuals with antisocial behaviors. In order for children to develop in a healthy manner and avoid antisocial behavior, it is therefore important for parents to show their children love, interest, and support, to create a healthy home environment, and to adopt positive role models (Huffman and Oshri, 2022; Tehrani and Yamini, 2020). Another important point in the context of involvement in crime is child abuse and neglect. Parental aggression toward the child and behavior entailing violence have been to increase children's crime-related aggressive behavior (Randour et al., 2021). Stein (2013), one of those researchers to reveal powerful correlation between childhood traumas, dissociation, and crime through systematic and intensive studies, interprets the dissociation developing during or after negative life events characterized by dysfunctional familial dynamics and violence-focused negative child raising styles as an attempt at self-expression. Research on the subject has shown that instrumental support, either interactive or emotional, is associated with a significantly lower probability of re-imprisonment and with lower levels of substance use and crime (Mowen et al., 2019). The concept of family climate, which considers the family as a cultural whole with its intergenerational relations, communication and characteristics, as opposed to classic perspectives concerning the family, is defined as a psychological atmosphere encapsulating the quality of relationships and communication among individuals in the family and social interactions, thoughts, values and beliefs passed down through generations (van Steijn et al., 2015). Research on this subject has observed that family climate is associated with the development of individuals' identity styles, emotional intelligence, suicidal ideations, academic performance and social competence (García and Serra, 2019; Martínez-Monteagudo et al., 2019; Uwaoma et al., 2023).

The World Health Organization (WHO) defines childhood trauma as life events involving abuse and neglect adversely affecting children's lives and physical and mental health. According to the WHO, in order for a life event involving abuse and neglect to qualify as childhood trauma, the individual concerned must be younger than 18 (WHO, 2022). Child neglect and abuse are actions or lack of actions inflicted on the child by the mother and father or caregiver, which are regarded as unethical and deleterious by professionals, and that prevent or restrict the child's development (Martínez-Monteagudo et al., 2020). Sexual, physical, and emotional traumatic events occurring during childhood are one of the most difficult experiences for individuals during that period when their coping skills have not yet fully developed (Perry and Szalavitz, 2015). Studies have reported that adolescent detainees involved in crime experience difficulties in regulating their emotions and register higher childhood trauma scores than those with no criminal involvement (Gedik Küçük and Belma Gölge, 2019; Beşer et al., 2019). A study of Turkish convicted criminals reported that 33.2% had experienced childhood trauma (Cantürk et al., 2021), while research from the UK reported that 65.65% of female prisoners, 64.39% of prisoners convicted of sex crimes, and 42.7% of low-risk prisoners in terms of violence had experienced childhood trauma (Stensrud et al., 2019). The results of a systematic review evaluating the trauma histories of women criminals concluded that a history of sexual abuse in childhood, physical and emotional neglect, the presence in the home of an individual with a psychological disorder, and familial instability due to divorced or unmarried parents were the most widespread forms of abuse (Neofytou, 2022). However, Maxfield (2004) emphasized that chronic childhood traumas beginning at early ages increase the probability of developing violence-oriented behavior by more than 200%, particularly in the pre-adulthood period. While violent behavior accompanies dissociative experiences in adolescents with chronic childhood traumas, these violent behaviors are closely associated with self-harm behaviors and attempted suicide (Öztürk and Derin, 2020).

As shown above, studies in the literature have evaluated childhood traumas and familial attitudes among prisoners on a distinct and separate basis. However, we encountered no research evaluating family climate and childhood traumas together and comparing these with individuals with no involvement in crime. The purpose of this research is to examine the effect of family climate and childhood trauma on individuals with involvement in crime compared to individuals with no such involvement.

## 2. Methods

### 2.1. Study design

This research was conducted as a case controlled study aimed at comparing family climate and childhood traumas in individuals with and without involvement in crime.

### 2.2. Population and sample

The research population consisted of convicted prisoners and detainees in Turkish prisons and places of detention. The size of the study sample was calculated as 327 cases and 327 controls, from an unknown population size, by performing  $G \times$  power analysis among convicted prisoners and detainees in a penal institution in Turkey (effect size 0.5; alpha error: 0.01; power 0.97). The numbers of the case and control groups were increased to 360 each against the possibility of factors such as the data collection form being incomplete or withdrawal from the research. Eighteen members of the case group and two of the control group were excluded from the analysis due to leaving the great majority of the questions blank. The research thus consisted of 342 participants in the control group and 358 in the control group.

### 2.3. Inclusion criteria

The case group inclusion criteria were being a convicted prisoner or detainee, voluntary participation in the research, being able to read and understand Turkish, and age over 18. The control inclusion criteria were age 18 or over, the absence of any problem in reading and understanding Turkish, living in neighborhoods with a low socioeconomic level in the province in which the prison where

the case group data were collected stands, and willing participation in the study. Exclusion criteria for the case group were not being convicted prisoner or detainee, not voluntary participation in the research, having problems in reading and understanding Turkish, and being younger than 18 years of age. The exclusion criteria for the control group were being younger than 18 years of age, having problems in reading and understanding Turkish, not living in neighborhoods with a low socioeconomic level in the province in which the prison where the case group data were collected stands, and not willing participation in the study.

#### 2.4. Data collection

The research data were collected between 15 September and 30 October 2022. Case group data were collected by means of an appropriate form at face-to-face interviews conducted by a researcher working in a prison. The control group data were also collected at face-to-face interviews by the researchers in provincial districts with a low socioeconomic level in order to ensure similar characteristics to those of the case group. The participants in the control group were contacted via local registration officials in the selected neighborhoods and in public spaces such as parks, malls, and cafeterias, and were then invited to take part in the research. Individuals invited to take part in the study were informed about its aim and contents and that taking part was based on the principle of voluntary participation. Participants contacted via local registration officials were invited to the registration building, where an appropriate questionnaire was administered. Participants contacted in public spaces such as parks, malls, and cafeterias were administered the questionnaire in a setting appropriate to a public space. The questionnaires were completed in approximately 15 min.

**Data Collection Form.** The data collection form consisted of a sociodemographic information form, the Family Climate Scale (FCS), and the Childhood Trauma Questionnaire (CTQ).

**Sociodemographic Information Form.** This consisted of 14 questions investigating the individual's age, sex, marital status, economic status, education level, maternal and paternal education level, family type, and factors such as smoking, and alcohol and substance use.

**Family Climate Scale (FCS).** The FCS was developed by Björnberg and Nicholson in 2007 for the purpose of examining characteristics associated with the individual's family climate, and was adapted into Turkish and validated by Gönül et al. (2018). The scale consists of 34 items on a five-point Likert-type scale, - Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree. It consists of three subscales - intergenerational authority (such as, 'The older generation imposes the rules in the family, and The authority of older members cannot be questioned. '), cognitive cohesion (such as, 'We hold similar views/opinions regarding most issues,' and 'Our attitudes and beliefs are very similar. '), and relatedness (such as 'The emotional bonds between us are very strong, 'The members of the family bestow confidence on one another by their presence. '). The first 21 items measure the relatedness subscale, items 22–28 the intergenerational authority subscale, and items 29–34 the cognitive cohesion subscale. Higher scores on a subscale indicate that this area is the subject of greater importance and experience within the family, while lower scores indicate that the scale is the subject of less importance and experience. Items 1, 6, 15, 21, 26, 28, 30, and 32 are reverse scored. The Cronbach alpha internal consistency coefficient for the entire scale is 0.91. Subscale coefficients are 0.87 for intergenerational authority, 0.95 for relatedness, and 0.87 for cognitive cohesion. The reliability coefficients for the test-retest application were .79 for relatedness, 0.80 for intergenerational authority, and 0.82 for cognitive cohesion.

**Childhood Trauma Questionnaire (CTQ).** The CTQ was originally developed by Bernstein et al. (1994), and was adapted into Turkish by Şar et al. (2020). It consists of 33 items and six subscales, the total of which yield the total CTQ score. Possible total scores range between 25 and 150. The total score is calculated as the sum of the emotional abuse (items 3,8,14, 18, 25), physical abuse (items 9,11,12, 15,17), physical neglect (items 1, 2,4,6, 26), emotional neglect (items 5,7,13, 19, 28), and sexual abuse (items 20, 21, 23,24, 27), and excessive control (items 29–33) sections. The Cronbach alpha score of the CTQ-33 was 0.87.

#### 2.5. Statistical analysis

Data analysis was performed on SPSS version 23.0 software. Percentage, arithmetical mean, and stand deviation values were calculated in order to examine the participants' sociodemographic characteristics. Skewness and kurtosis analyses were applied to evaluate the normality of distribution of the scale scores, values between  $-1.5$  and  $+1.5$  being regarded as normal (Tabachnick and Fidell, 2013). The independent- Samples T test was applied to compare the group' scale scores. P values  $< .05$  were regarded as statistically significant.

#### 2.6. Ethics

Approval for the research was granted by the Batman University ethical committee (no. 2022/02–04, dated February 16, 2022). Written permission was also obtained from the Turkish Ministry of Justice General Directorate for Prisons and Houses of Detention, to which the prison where the research was conducted is affiliated (no. 616/69,060, dated May 18, 2022). Written voluntary consent was obtained from the prisoners and detainees due to take part in the study.

### 3. Results

The great majority of the participants in the case group were men (93.6%); 48.2% of the case group were aged 25–36, 50.9% were single, 46.5% were elementary school graduates, 55.6% had been raised in extended families, the fathers of 43% and the mothers of 67.5% were illiterate, and 81.9% had worked in paid jobs as children. The great majority of the members of the case group smoked

(83.6%), although most did not use alcohol (54.7%) or narcotic substances (54.7%). Mean ages at the onset of smoking and alcohol and substance use were 15.65, 19.25, and 18.88 years, respectively.

The great majority (89.4%) of the control group were also men. 43.6% were aged 25–36, 58.4% were married, 32.7% were high school graduates, 54.5% were raised in extended families, the fathers of 46.1% and the mothers of 58.9% were illiterate, and 53.1% had worked in paid jobs as children. A large part of the control group (45.8%) stated that they had never smoked, 62.2% that they had never used alcohol, and 98.6% that they had never used narcotic substances. Mean ages at the onset of smoking and alcohol and substance use in the control group were 17.68, 18.38, and 19.80 years, respectively (Table 1).

The case and control groups were similar in terms of such sociodemographic characteristics as sex, age group, education level, the type of family during childhood, maternal and paternal education levels, age at onset of alcohol use, and age at onset of narcotic use ( $p > .05$ ). However, the two groups differed in terms of marital status, working during childhood, smoking status, age at starting smoking, and alcohol and narcotic use ( $p > .05$ ) (Table 1).

A comparison of the groups' ages at starting to smoke and use alcohol and substances showed that the mean age at starting smoking

**Table 1**  
Case and control group demographic characteristics.

	Case group		Control group		p
	Number	Percentage	Number	Percentage	
<b>Sex</b>					
Female	22	6.4	38	10.6	.068
Male	320	93.6	320	89.4	
<b>Age</b>					
18–24	100	29.2	104	29.1	.369
25–36	165	48.2	156	43.6	
37–45	49	14.3	65	18.2	
46 or above	28	8.3	33	9.1	
Mean age	30.85 ± 9.05 (min = 18, max = 70)		31.22 ± 9.50 (min = 18, max = 70)		.590
<b>Marital status</b>					
Married	148	43.3	209	58.4	
Single	174	50.9	142	39.6	.000
Divorced/separated	20	5.8	7	2	
<b>Education level</b>					
Literate	61	17.8	93	26	
Elementary school	159	46.5	112	31.3	.806
High school	97	28.4	117	32.6	
University or above	25	7.3	36	10.1	
<b>Family type during childhood</b>					
Nuclear	137	40.1	149	41.6	
Extended	190	55.5	195	54.4	.632
Fragmented	15	4.4	14	3.9	
<b>Paternal education level</b>					
Illiterate	147	43	165	46.1	.080
Elementary school	145	42.4	156	43.6	
High school or above	50	14.6	37	10.3	
<b>Maternal education level</b>					
Illiterate	231	67.5	211	58.9	
Elementary school	98	28.7	146	40.8	.262
High school or above	13	3.8	1	0.3	
<b>Childhood employment</b>					
Worked	280	81.9	168	46.9	
Did not work	62	18.1	190	53.1	.000
<b>Smoking status</b>					
Smoker	286	83.6	88	24.6	
Quit	19	5.6	106	29.6	.000
Never smoked	37	10.8	164	45.8	
<b>Age at starting smoking</b>	15.65 ± 4.12 Min: 7 Max:36		17.68 ± 3.88 Min:9 Max:35		.000
<b>Alcohol use</b>					
User	67	19.6	53	14.8	
Quit	96	28.1	82	23	.012
Never used	179	52.3	222	62.2	
<b>Age at onset of alcohol use</b>	19.25 ± 4.44 Min 10 Max 38		18.38 ± 4.05 Min:9 Max:35		.075
<b>Substance use</b>					
User	41	12	3	0.8	
Quit	114	33.3	2	0.6	.000
Never used	187	54.7	353	98.6	
<b>Age at onset of substance use</b>	18.88 (5.16) Min 9; Max 40		19.80 (4.86) Min:15 Max:25		.700

was significantly lower in the case group than in the control group ( $t = -5.455$ ;  $p = .000$ ), while no significant difference was found in terms of the other variables ( $p > .05$ ).

When the participants were compared in terms of family climate, the case group's cognitive cohesion score was lower than that of the control group, while no difference was observed between the groups in terms of relatedness and intergenerational authority or total FCS scores.

In terms of childhood traumas, the case group registered significantly higher emotional abuse, physical neglect, sexual abuse, overprotection-control, and total CTQ scores than the control group, while no significant difference was observed in the groups' physical abuse scores (Table 2).

Effect size measurements were performed significant differences between the case and control groups. CTQ total score, physical neglect, emotional neglect, and overprotection-control exhibited a moderate effect size, and cognitive cohesion, emotional abuse, and sexual abuse a small effect size (Table 2).

#### 4. Discussion and conclusion

The purpose of this research was to compare the effect of family climate and childhood on trauma on individuals with involvement in crime with individuals with no such involvement. FCS cognitive cohesion subscale scores in this study were significantly lower in the case group than in the control group. No significant difference was observed between the two groups' FCS relatedness and intergenerational authority subscale or total FCS scores. Familial effects occupy a prominent place in most leading theoretical explanations of crime. Numerous parental factors in the early period of life increase the probability of antisocial behavior. Negative attitudes such as low affection and displaying very little interest, failing to be supportive, disproportionate neglecting-rejecting-hostile behavior, and psychological-verbal-physical aggression play an important role in the parental histories of antisocial individuals (DeLisi and Vaughn, 2016). It may therefore be concluded that negative childhood experiences are one of the most important predictive factors in crime and reoffending (Morelli, 2019). A transfer of criminal behavior from the parental generation to the child generation has generally been reported in the literature (Howitt, 2021). Indeed, the results of a study from Finland provide striking data regarding crime being passed on over three generations. That study found that the parents of individuals consistently involved in murder were five times more likely to commit any type of crime than the members of the control group (Putkonen et al., 2007). Analysis of numerous studies examining criminal populations in the context of the family reveals results confirming the effect of family patterns on the emergence of criminal behavior. For example, Basto-Pereira and Farrington (2022) performed a systematic investigation of previously published meta-analyses for the purpose of summarizing information regarding predictors of the development of criminality and to describe these in order of their effect sizes. Those authors concluded that the most powerful predictors of general criminality were associated with family/parent dimensions (parental supervision/parental warmth, and family structure), and also identified familial problems as one of the main predictors of the persistence of crime. Frequent intrafamilial conflicts, lack of discipline or supervision, single-parent children, weak parental attachment, and low levels of intrafamilial harmony, communication, and support are important familial factors that can lead individuals to delinquency (Mwangangi, 2019). Research has also identified delinquent peer groups, school or employment problems, family problems, various mental health problems, and alcohol/substance dependence as important factors leading to criminal behavior (Basto-Pereira and Farrington, 2022). Various longitudinal studies have found that poor parental control, impulsivity, low IQ, family separation, social inequality, school problems, and antisocial disorder represent risk factors for criminal and behavioral disorders (Farrington, 2021). A study from Portugal involving 50 adolescents who were under the supervision of the Juvenile Justice System due to committing criminal acts reports that 38% of the participants stated that there was no parental discipline or control in their daily lives, while 34% said that there was no father figure in their families (Lemos and Faisca, 2015). Similarly, a recent study reported a higher probability of delinquency among young people living with a single parent (Cho and Braaten, 2021). A study of middle school students in South Korea found that boys in early adolescence and with weak parental attachment were at a greater risk of committing crime (Kweon et al., 2017). Analyses from a six-year longitudinal study of high school students in China also revealed an association between family functioning and higher levels of criminal behavior, with adolescents with lower family functions exhibiting more delinquent behavior (Shek and Lin, 2016). Our results are consistent with the findings of

**Table 2**

A Comparison of the case and control groups' mean FCS and CTQ scores.

Variables	Case group (n = 342)	Control group (n = 358)	Statistical values		Effect sizes Cohen's d
	Mean ± SD	Mean ± SD	t	p	
FCS total score	131.08 ± 22.69	133.95 ± 22.32	-1.688	.092	
Relatedness	85.52 ± 17.01	87.61 ± 15.91	-1.673	.095	
Intergenerational authority	25.04 ± 5.28	24.51 ± 5.12	1.325	.186	
Cognitive cohesion	20.51 ± 3.34	21.82 ± 4.83	-4.184	.000	-.314
CTQ total score	67.66 ± 16.51	56.97 ± 12.34	9.656	.000	.735
Emotional abuse	8.45 ± 4.51	6.71 ± 3.55	5.682	.000	.432
Physical abuse	20.32 ± 4.50	20.34 ± 4.11	-.076	.940	
Physical neglect	9.98 ± 4.47	7.86 ± 3.44	6.989	.000	.532
Emotional neglect	10.73 ± 4.78	8.08 ± 3.88	8.006	.000	.608
Sexual abuse	6.74 ± 3.99	5.41 ± 1.72	5.706	.000	.438
Overprotection-control	11.41 ± 4.36	8.55 ± 4.36	8.668	.000	.656

those studies. However, although family-related factors are a key element in the developmental course of criminal behavior, they are not its only predictor. DeLisi et al. (2018) showed that the temperament factor provides a powerful and comprehensive explanation, with predictive ability, of antisocial behavior, while Trivedi-Bateman and Crook (2022) revealed that empathy plays an important role in turning to crime. The absence of any significant difference between the case and control groups in terms of the FCS relatedness and intergenerational authority subscales and total FCS scores in the present study suggests that various factors, or combinations thereof, such as temperament, empathy levels, personal characteristics, or ineffective coping skills may have represented the driving force behind the tendency to crime among the members of the case group. It is of crucial importance to realize that criminal behavior is affected by a highly complex interaction of different factors and not solely family-associated ones. Indeed, family-related factors are not the sole determinant of criminal behavior, and other factors such as temperament, empathy levels, personal characteristics, coping skills, peer group influence, economic factors, educational opportunities, substance abuse, community environment, the media, and culture can also contribute to a tendency to criminality (Szabó et al., 2022). No difference was determined between the groups in terms of relatedness or intergenerational authority scores. However, the cognitive cohesion score in the case group was lower than that in the control group. The low level of cognitive cohesion in the case group may be interpreted as indicating that incompatibilities such as values, beliefs, and perspectives in family relationships may represent a factor affecting delinquency.

Within the context of childhood traumas, CTQ emotional abuse, physical neglect, emotional neglect, sexual abuse subscale scores, overprotection-control subscale scores, and total CTQ scores were significantly higher in the case group than the control group, although no difference was determined in terms of the physical abuse subscale. In agreement with our own findings, a systematic review of available data regarding the frequency of adverse childhood experiences among young people with documented involvement in criminality concluded that approximately 87% of such individuals in 13 countries had been subjected to at least one traumatic event (Malvaso et al., 2022). A study of 25,956 adolescents aged 12–16 from nine Western European countries showed that physical maltreatment in children was associated with lower self-control, lower ethical values, and greater exposure to criminogenic situations (Lemos and Faisca, 2015). The relatively low maltreatment rate in that research may be ascribed to the small sample size.

Significantly higher CTQ emotional abuse, physical neglect, emotional neglect, and sexual abuse subscale scores and total CTQ scale scores were determined in our case group compared to the control group. The literature contains consistent evidence showing that childhood traumas are significantly associated with involvement in criminal actions. Analyses from studies on the subject show that exposure to mistreatment in childhood is the most significant predictor, after family-related factors, of general delinquency (Basto-Pereira and Farrington, 2022). Exposure to sexual abuse and issues concerning sexual boundaries is associated with early sexual abuse behavior and indicators of non-violent criminal behavior beginning in adolescence (Puzkiewicz and Stinson, 2019), while childhood trauma is significantly associated with violence reported by participants (DeLisi et al., 2018).

Since the members of both groups in the present study were young adults and adults, it may be hypothesized that the adverse childhood experiences to which they were subjected may have affected the chronicity of criminality in the study group. Several important studies have suggested that adverse experiences during childhood affect the chronicization of criminal behavior. For example, Fox et al. (2015) investigated a group of juvenile delinquents in the US state of Florida and demonstrated that every additional adverse experience inflicted on a child (emotional abuse, physical abuse, intrafamilial substance use, intrafamilial mental illness, and witnessing intrafamilial violence) exacerbates the likelihood of engaging in severe, violent, and chronic criminal behavior by 35%. Similarly, another study of child delinquents in Florida, by Baglivio et al. (2015), concluded that a higher number of adverse childhood experiences constituted a significant predictor of more chronic patterns of delinquency. Another study conducted with structural equation modeling reported that negative childhood experiences exert both direct and indirect impacts on recidivism, the probability of which rises in line with the type of trauma inflicted on individuals (Wolff and Baglivio, 2017).

CTQ overprotection-control subscale scores in the present study were higher in the case group than in the control group. Overprotection and control refer to parents exerting excessive supervision of their children and preventing them acquiring independence. This may lay the foundation for the emergence of problems such as emotional difficulties and lack of self-confidence, internal conflict and rebellion, deficiency in social skills, risk-taking and impulsivity, and lack of independence. The interaction of all these factors should of course be evaluated together with other factors including the individual's persona characteristics, environmental agents, and support systems (Brock and Kochanska, 2016; Sumari et al., 2021).

We think that the results of this study performed in order to examine the effects of family climate and childhood trauma on individuals with involvement in crime compared to those with no such involvement, will provide important data for policy-makers and specialist in the fight against crime in terms of understanding the association between such factors as childhood traumas and family climate on involvement in criminality. In conclusion, a comparison of the FCS and CTQ total and subscale scores in our case and control groups yielded findings implicating general childhood traumas and intra-familial cognitive dissonance as factors predicting the tendency of the participants in our case group to commit criminal acts. Interventions aimed at the families of children and young people and other adults with whom they come into contact may therefore be recommended in the context of endeavors to prevent juvenile delinquency and chronic criminality persisting into adulthood. From that perspective, it is important that interventions be applied using a holistic approach, since criminal tendencies generally derive from the complex interaction of factors such as family dynamics, socioeconomic status, trauma, substance use, mental health problems, and educational opportunities. In addition, interventions can reduce the likelihood of engaging in criminal activity by focusing on family units and support systems and encouraging healthy emotional development, communication, and interpersonal relationships. Our families support the idea of an important role for programs aimed at families, and particularly parents, for the purpose of preventing crime from the outset (see Farrington, 2021, for example). Programs aimed at preventing recidivism should consider and respond to all the factors described above (such as failure at school, psychopathology, families, relationships with peers, and dependence problems), and intervention should be performed for each one. Since the majority of these determinants can be prevented or ameliorated by means of a healthy family environment,

programs encouraging desirable parenting and the strengthening of families must represent the principal policy priority. Programs aimed at childhood traumas must be enhanced. These should include measures aimed at enhancing awareness, help centers aimed at protecting children exposed to violence, children's helplines, and counseling and outreach services intended to support families (UNICEF, 2014). The adoption of these policies will entail a number of difficulties, such as privacy issues and personal freedoms, legal amendments, ethical concerns, costs, societal acceptance, and political and administrative obstacles. A cautious and balanced approach should therefore be adopted in the development and deployment of such measures. This should also be applied in a manner that is respectful of human rights, be kept under control through legal regulations, and be compatible with ethical and societal values.

Future research into re-offending rates, the types of crime involved, and the presence in families of members engaged in criminal activity may also provide more detailed data on the emergence criminal behavior and recidivism. The present research was performed as a cross-sectional study. Further studies may make it possible to identify the effects of family climate and childhood traumas over time by monitoring individuals involved in crime over longer periods. We also recommend that research examine protective factors against involvement in crime in which individuals from different cultures are also included.

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## Declaration of competing interest

The authors report no conflict of interest, and no relevant financial or non-financial interests to disclose.

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