Original Article

Investigating the Criminals Exposed to Inter-partner Violence and Child Abuse: A Case–control Study

Abstract

Introduction: There are numerous studies on the intergenerational transmission of violence and criminal acts. However, the role of the confounding factors has been suggested as social and contextual factors. This study investigated whether violent criminals are more exposed to both their parents' inter-partner violence (IPV) and their own childhood abuse in comparison to noncriminal people after controlling for potentially confounding factors. **Methods:** This is a retrospective study on 101 Iranian young medical students at the Qazvin University of Medical Science (control) and 98 young adults who have been imprisoned in Choobindar prison due to violent crimes. Two groups have been assessed by Adult Recall Version of The Revised Conflict Tactics Scales: CTS2-CA and CTSPC-CA questionnaires. **Results:** Logistic regression of IPV and demographic variables showed that $\exp(\beta)$ for father's and mother's education in criminals is 0.307 and 0.203, respectively. Father's and mother's education were significant predictors of inter-partner violence among criminals with odds ratio of 0.24 and 0.29, respectively. Furthermore, childhood psychological aggregation and neglect are meaningful factors. **Conclusion:** After controlling for potentially confounding risk factors, multinomial logistic regression analyses revealed that a history of witness IPV is not associated with the criminal act. The family context is important which they grew up in, such as mother's and father's education. Many criminal acts are the result of a combination of several factors, such as psychological, educational, cultural, social, and economic factors.

Keywords: *Childhood violence exposure, crime, inter, Iran, partner violence, risk factors*

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Introduction

Over 20 years, there are a number of studies on the intergenerational transmission of violence in terms of being exposed to inter-partner violence (IPV) and child abuse leading to criminal acts later in life.[1,2] Clearly, child abuse is one of the social problems that can be considered as one of the priorities of mental and social health issues. This is due to the wide range of effective factors and profound effects on the development of the child, family, and the community. Since children are the most vulnerable in the society, child abuse and child neglect are the most common and complex social and psychological problems of the societies.[3] The history of child abuse in childhood has long-lasting and unpleasant effects on the development and adaptability of personality in adulthood.[1,4-6] Despite many parents are unaware of the adverse consequences of

domestic violence,[7] family plays a major role in the incidence of child abuse and the likelihood of certain criminal offenses, including child abuse, punishment, and improper parenting behaviors in childhood. Factors such as stress, paternalistic values, poverty, mental illness, and personality disorders are the major causes of family violence and abuse. The long-term negative consequences of this kind of abuse include high risks of substance addiction, obesity, violence, depression, and suicide.[8-11]

IPV is a generally acknowledged factor which consists of a wide range of violence that many children experience. The child can also be victimized by such violence between the adults. Parental conflict is the leading cause of domestic violence. This concept predicates the multiple exposures of the children at home to the occasions that (at least) one adult is using violent actions to influence another adult.[12] It is a negative behavior in terms of cultural values and threatening the family's strength. IPV varies from severe physical abuse

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to what is sometimes referred to as marital conflict.[13] Children whose mothers experience IPV are at greater risk of having developmental difficulties and being subject to abuse themselves,[2] especially; child abuse is a medical and public health concern that threats nearly 12 in every 1000 children annually.[14] This violence is determined by race, socioeconomic status, and family structure.[15] Domestic violence is viewed as a major risk factor for delinquency, especially for violent crimes.[16]

Most of the previous studies have proposed that exposure to IPV or child abuse may encourage later violence in adolescence and adulthood, including aggressive and violent behaviors and criminal acts. However, there is some evidence suggesting that exposure to domestic violence may be a risk factor for later misbehaviors. There are a number of studies on the role of confounding social and contextual factors as multifactorial reasons that are associated with domestic violence and later criminal acts.[17,18] Therefore, it is time to pay attention to domestic violence and health consequence in the parents, children, and elders, and investigate the violence-related behavior of the offenders.[19]

On the other hand, criminal acts have been a public concern for a long time[20] which caused major economic and social problems in most developing countries. The main risk factors of criminal act in the literature are economic and social conditions, discrimination, unemployment, poverty, unsuccessful marriage, living in poor neighborhoods, and family background (e.g. the family argument, divorce, the death of a parent, child neglect,[17,21-23] moral defect,[11,24] and the history of child abuse[25]).

Since the incidence of crime in some societies has been increasing in recent years, it is essential to identify and manage the causes and factors associated with this phenomenon to reduce this social problem. Therefore, this study aimed to investigate the history of child abuse and conflict in parental relationships based on the demographic characteristics of the criminals and medical students in Qazvin. This case–control study aimed to control some information bias and limitations of the previous studies. For example, Conflict Tactics Scales (CTS) questionnaire[26] includes a variety of variables with frequency scores on how many times the conflict happened, so the response category score is calculated by taking the average of all items within a particular scale/subscale with a sum and a mean score.[27] Furthermore, we measured the types of behaviors in both mean and dichotomous way as "present" or "not present." Furthermore, the failure to partial out the associations between perpetration and receipt of IPV could be related to the lack of consistency in predictions of violence perpetration and victimization;[27] therefore, we have controlled it by designing our study as a retrospective study based on measurable outcomes.

Methods

Design

Questionnaires were conducted on 101 criminals in the Choobindar Prison in Qazvin as a case group, and 98 medical students at the Qazvin University of Medical Sciences as a control group, from July 2013 to January 2014. This study was approved by the Human Ethics Committee of Qazvin University of Medical Sciences, and all participants provided written informed consent before participating in the study.

Participants

The sample size was calculated using the Cochran formula with the standard error of 5% and a confidence level of 95%. According to the Cochran formula, the total number of the subjects for this study was 199 people, 98 Iranian young adult students who studied in the Qazvin University of Medical Science as the Control group and 101 young adults who were imprisoned in Choobindar Prison as the case group. The inclusion criteria included (1) age between 18 and 28 years old; (2) criminals in the case group were imprisoned in Qazvin Choobindar Prison; (3) medical students in the control group were enrolled in the Qazvin University of Medical Science; and (4) the age range which may be considered as a confounding factor with a standard deviation (SD) of ± 3 years. Individuals were excluded from the study if (1) they did not agree to participate in the study and (2) criminals who were imprisoned related to nonviolent activities.

Measures

To achieve the research objectives, we used the standard survey questions " Adult Recall Version of The Revised Conflict Tactics Scales: CTS2-CA and CTSPC-CA."[28]

(1) In the first part, sociodemographic characteristics of the participants were documented in the sociodemography form. It included age, gender, marital status (married, divorced, and widow) of the parents, occupational level of the parents categorized as low (unskilled/unemployed workers), medium (partially skilled workers), and high (skilled workers), parents' education (duration of the education: lower than high school, high school, and college and higher), and homeownership (owned or rented).

In the second part, four domains that included child neglect, physical abuse, psychological abuse, and nonviolent acts were evaluated by the relationship between the parents' questionnaire (CTS2-CA) which was completed by the adults to report on their childhood experiences when they were ~ 13 years old. In general, child abuse is measured using the CTS2[26] to assess the range of tactics used in response to the conflict with a family member; however, we used CTS2-CA (excluding the sexual coercion scale) with 33-item using a 6-point scale ranging from "never" to "20 or more times". There are also options of "Never

in the last year, but it did happen before that," and "This has never happened" in the response. It is scored and calculated as mean ± SD and dichotomous variables. Internal consistency reliability of the subscales ranged from 0.79 to 95. The validity construct of the CTS has been demonstrated in a number of studies (0.19–0.80) with a mean of approximately 0.40.

In the third part, 16 items in 4 domains of nonviolent discipline, physical assault, psychological aggregation, and child neglect based on the Parent–child Conflict Tactics Scale,[29] which was used as a framework to guide the areas of investigation. The participants were asked to indicate how often their parents had used the activities on this list when they were 13 years old and behaved badly (CTSPC-CA).[28] Scores of 0 and 7 indicate that there was no violent act or it happened before that time. Scores of 1 to 6 indicate that the acts have happened once or up to 20 times (according to the questionnaire structure). The alpha reliability for the Persian version of CTSPC with 18 items was 0.72. The intraclass correlation for test–retest of the CTSPC was 0.87.[30]

Statistical analysis

The chronicity of the items was calculated by the median and 80th percentile in each domain and was analyzed by the Mann–Whitney U-test. It enables to indicate how often the items have happened during their childhood. Then, the responses were dichotomized into zero (no) and one time or more (yes) as a percentage of domains in two groups based on the frequency of acts. Continuous variables were expressed as means and dichotomous variables as absolute numbers and percentages. Data were analyzed by the Chi-square test. A logistic regression model was used to determine the probabilities of using childhood abuse, IPV, and some sociodemographic variables between the groups. Regression coefficients were backward steps and the β value was reported for each dependent variable and was calculated with all other continuous variables. $P < 0.05$ was considered significant.

Results

The current study compared both the history of physical assault, psychological aggregation, neglect, nonviolent discipline, and the history of conflict between the parents in childhood in two groups of individuals, criminals, and medical students. According to the answers to the questionnaire, the average age of the criminals and students was 25.8 ± 6.5 and 22.83 ± 1.95 years, respectively; 74.3% and 54.5% of the participants were male in the case and control groups, respectively. Furthermore, 70.4% and 94.9% of the individuals in the case and control groups lived in urban areas. The percentage of homeowners was 79.6% and 96.9% in the students and 69.4% and 94.1% in the criminals, respectively. Other demographic characteristics in the

Table 1: Demographic variables of participants in the two groups

Variables	Mean±SD		t	P
	Students	Criminals		
Age	22.82±1.95	25.81±6.49	−4.41	<0.001
Father's age	54.77±6.23	57.45±10.40	−2.15	0.033
Mother's age	49.18±5.15	52.18±10.52	−2.52	0.013
	Students, *n* (%)	Criminals, *n* (%)	χ^2	P
Marital status of parents				
Divorced	1 (1)	6 (5.9)	5.52	0.137
Death	2 (2.1)	0 (0)		
Married	95 (96.9)	95 (94.1)		
Family number			16.94	0.001
3	7 (7.1)	7 (7.3)		
4	34 (34.7)	12 (12.5)		
5	30 (3.6)	28 (29.2)		
≥6	27 (27.6)	49 (51)		
Gender				
Male	54 (54.5)	75 (74.3)	8.48	0.005
Female	45 (45.5)	26 (25.7)		
Occupation				
Low	0 (0)	30 (30.3)	190.15	<0.001
Medium	0 (0)	67 (67.7)		
High	99 (100)	2 (2)		
Education				
No education	0 (0)	13 (13.1)	182.62	<0.001
Lower than high school	0 (0)	49 (49.5)		
High school	0 (0)	33 (33.3)		
College and higher	99 (100)	4 (4)		
Place of living				
Urban	93 (94.9)	69 (70.4)	20.49	<0.001
Rural	5 (5.1)	29 (29.6)		
Household				
Tenant	20 (20.4)	30 (30.6)	2.68	0.140
The owner	78 (79.6)	68 (69.4)		
Father's education				
No education	2 (2.1)	40 (41.2)	119.17	<0.001
Lower than high school	8 (8.3)	45 (46.4)		
High school	24 (25)	8 (8.2)		
College and higher	62 (64.6)	4 (4.1)		
Father's occupation				
Low	1 (1)	5 (5.2)	50.88	<0.001
Medium	31 (32.3)	74 (77.1)		
High	64 (66.7)	17 (17.7)		
Mother's education				
No education	1 (1)	49 (49.5)	115.43	<0.001
Lower than high school	18 (18.4)	42 (42.4)		
High school	35 (35.7)	7 (7.1)		
College and higher	44 (44.9)	1 (1)		
Mother's job				
Low	58 (59.2)	94 (94.9)	37.0	<0.001
Medium	9 (9.2)	3 (3)		
High	31 (31.6)	2 (2)		

SD: Standard deviation

two groups are shown in Table 1. The results showed that there was a significant difference in parents' education level and occupation between the two groups ($P < 0.05$). A majority of criminal convictions were drug-related criminals (28.7%), thieves (21.8%), and murderers (20%).

We analyzed the score of questions in two ways: (1) based on dichotomized responses into zero (no) and one time or more (yes) and (2) the frequency of at least one history of IPV. The results showed that there is a significant difference between the two groups, and the conflict between parents is higher among criminals [Tables 2 and 3].

Since the distribution of the variables was abnormal, the Mann–Whitney U-test was used to compare the median value of the two groups. The comparison on the

80th percentile showed that the prisoners had 0.85 times parents' physical assaults, more than the control group. Regression coefficients (backward stepwise) and the β value for each dependent variables (criminals = 1, students = 0) showed that the increase in the level of parents' education can decrease the risk of becoming criminals [Table 4].

Furthermore, we analyzed the history of adult-recalled childhood abuse in two ways: (1) the presence or absence of child abuse and (2) mean ± SD of the frequency [Tables 5 and 6]. The results indicate that the experience of childhood abuse differs significantly among the prisoners.

As shown in Table 7, for the child abuse behaviors, the most important variable involved in the criminals is the psychological aggregation (β = 2.10, odds ratio [OR] = 8.9). Second, neglectful behavior (β = 1.28, OR = 3.6) is prevalent. It should be noted that the negative β coefficient reflects the inverse relationship between the parents' nonviolent behaviors toward a child and the commission of a crime. This suggests that the more positive parenting behaviors with children, the lower the likelihood of committing a crime.

Discussion

In this case–control study, a total of 199 individuals aged between 18 and 28 years were investigated in two groups, criminals and medical students. The current study is one of the few studies that included two methods of quantification (dichotomous and continuous) and analysis (logistic regression and *t*-test) to assess the consistency of the results.

The first analysis examined the interaction with the parents in all four areas. There was a significant difference between the mothers' and fathers' physical assaults,

Table 2: Compare the history of inter-partner violence (yes or not present) between the two groups

Variables	No −/ Yes +	Students, *n* (%)	Prisoners, *n* (%)	χ^2	*P*
Parent's physical assaults	−	94 (95.9)	66 (65.3)	29.50	<0.001
	+	4 (4.1)	35 (34.7)		
Parent's psychological aggregation	−	89 (90.8)	71 (70.3)	13.29	<0.001
	+	9 (9.2)	30 (29.7)		
Physical assaults by the mother	−	0	0	-	-
	+	98 (100)	101 (100)		
Psychological aggregation by the mother	−	88 (89.8)	72 (71.3)	10.81	0.001
	+	10 (10.2)	29 (28.7)		
Physical assaults by the father	−	95 (96.9)	69 (68.3)	28.11	<0.001
	+	3 (3.1)	32 (31.7)		
Psychological aggregation by the father	−	89 (90.8)	71 (70.3)	13.29	<0.001
	+	9 (9.2)	30 (29.7)		
Parents nonviolent acts	−	30 (30.6)	9 (8.9)	14.86	<0.001
	+	68 (69.4)	92 (91.1)		

Table 3: Compare the history of inter-partner violence between the two groups (conflict tactic scales 2-child assessment)

Variables	Students (*n*=98)			Criminals (*n*=101)		
	Mean±SD	Median	80th percentile	Mean±SD	Median	80th percentile
Parents' physical assaults	0.045±0.16	0	0.031	0.78±1.76	0	0.86
Z, P			−4.55, 0.001			
Parents' psychological aggregation	0.58±1.13	0.1	0.6	2.46±3.87	0.2	5
Z, P			−0.2.16, 0.031			
Physical assaults by the mother	0.043±0.25	0	0	0.51±1.3	0	0.27
Z, P			−5.15, <0.001			
Psychological aggregation by the mother	0.63±1.25	0.2	0.64	2.3±3.85	0.2	5
Z, P			−1.41, 0.16			
Physical assaults by the father	0.052±0.21	0	0	1.06±2.5	0	1.44
Z, P			−4.46, <0.001			
Psychological aggregation by the father	0.54±1.09	0	0.6	2.62±4.33	0.2	5.4
Z, P			−2.19, 0.029			
Parents' nonviolent acts	15.19±5.62	15.58	20.83	8.19±6.61	7.83	15.17
Z, P			−6.88, <0.001			

SD: Standard deviation

Table 4: Multinomial logistic regression variables by backward stepwise (Wald) for inter-partner violence and demographic variables between the two groups

Variables	*B*	SE	Wald	df	Significant	Exp(β)	95% CI.for EXP (*B*)	
							Lower	Upper
Father's education	−1.179	0.360	10.704	1	0.001	0.307	0.152	0.623
Mother's education	−1.596	0.460	12.026	1	0.001	0.203	0.082	0.500
Physical assault by the father	1.635	0.963	2.881	1	0.090	5.128	0.777	33.853
Constant	6.546	1.002	42.670	1	0.001	696.504		

SE: Standard error, CI: Confidence interval

Table 5: Comparing the history of adult-recalled childhood abuse (yes or no) between the two groups (Parent-child Conflict Tactics Scales-child assessment)

Variables	Yes +/ No −	Student, *n* (%)	Prison, *n* (%)	χ^2	*P*
Child physical assault	−	93 (93.9)	67 (66.3)	23.80	<0.001
	+	6 (6.1)	34 (33.7)		
Child psychological aggregation	−	93 (93.9)	67 (66.3)	23.80	<0.001
	+	6 (6.1)	34 (33.7)		
Child neglect	−	94 (94.9)	67 (67.0)	25.15	<0.001
	+	5 (5.1)	33 (33.0)		
The nonviolent act to Child	−	19 (19.2)	19 (19.2)	0	1
	+	80 (80.8)	80 (80.8)		

psychological aggregation, and nonviolent interaction with the parents between the two groups. Therefore, there was a significant association between childhood exposure to parents' IPV conflict and committing crimes in adulthood. Some studies identified family IPV as an effective factor in committing a crime.[31] The results of a previous study revealed that after controlling for a number of relevant factors, IPV exposure significantly predicted antisocial behavior in adolescents, which is a risk factor for being in a violent relationship and committing a violent crime in young adulthood.[32] Thus, early detection and early intervention may break the cycle of violence and prevent future generations from being exposed to the epidemic of IPV.[2,33]

However, after controlling for demographic variables by logistic regression analysis, there is a weak association between the exposure to IPV in early life and committing a crime in adulthood. This is similar to the other studies where it has been well-documented that domestic violence is more common in the family context in which multiple dysfunctional features are present.[18,34] These features include social disadvantage, poverty, low socioeconomic characteristics, limited parental education, parental criminality, parental alcohol abuse, and drug abuse.[18,34]

In general, child abuse is a set of adverse parental behaviors, and the children's ill responses to personal, familial, and societal impacts are inevitable. Since childhood is considered as a developmental period with very high vulnerability to physical and psychosocial

risks,[35] it was suggested that more research should be done to better understand the associations between being a victim of child abuse and becoming an adult IPV perpetrator. This is because it is critical to establish more effective, efficient, and equitable care, particularly for adults who face health risks due to early life abuse.[36] Therefore, the results of our study can support a strong association between child abuse in early life and adulthood criminal behaviors.

In our study, the prevalence of divorce in the parents of the criminals was higher than that in the control group (0.05 vs. 0.01), however, without statistical significance. Furthermore, gender plays a significant role to predict criminal behavior in prisoners who exposed to childhood abuse when they were 13 years old; therefore, the gender-specific prevalence of violence is confirmed in this study.[37] In summary, our study suggests that experiencing child abuse has a stronger influence than witnessing IPV on shaping future violent behaviors, consistent with a previous study.[18]

Limitations

The assessment of IPV and childhood abuse was based on self-report data. It is possible that errors due to recall bias may contribute to the disassociation between the exposure to family violence and adulthood criminal act. Second, there is a weak threat to the validity of the conclusions due to the moderate sample size (approximately 98–101). Future study can increase the sample size. Third, our study did not include certain confounders, including the family history of committing a crime, personality issue, dating experience, intellectual and social intelligence, criminal record, the first experience of committing a crime or the impulse to commit a crime, and the motivation to commit a crime. More comprehensive studies are needed to determine the crimes as a result of socio-familial, economic, and cultural harms for better understanding of the drive of criminal acts.

Conclusion

There is an association between childhood exposure to IPV and child abuse and the probability of criminal behaviors in adulthood. Taking together with previous studies, serious criminal behavior is the consequence of a combination of

Table 6: Compare the history of adult-recalled childhood abuse between the two groups (Parent-child Conflict Tactics Scales-child assessment)

Variables	Students			Criminals			P
	Mean±SD	Median	80th percentile	Mean±SD	Median	80th percentile	
Childhood physical assault	0.19±0.45	0.045 (0, 0.18)	0.18	1.07±3.14	5.5 (0.66, 11.33)	2.30	0.001
Childhood psychological aggregation	0.69±1.33	0.28 (0, 0.78)	1.0	3.11±4.77	0.18 (0, 1.95)	6.51	0.005
Child neglect	0.28±0.91	0 (0, 0)	0.2	2.71±4.28	0.2 (0, 5)	5.36	<0.001
Childhood nonviolent acts	8.63±4.91	8.33 (5.1, 10.17)	12.33	6.85±6.64	5.5 (0.66, 11.33)	12.83	0.006

SD: Standard deviation

Table 7: Multinomial logistic regression variables by backward stepwise (Wald) for Parent-child Conflict Tactics Scales-child assessment questionnaire and demographic variables between the two groups

Variable	B	SE	Wald	P	OR
Childhood psychological abuse	2.10	0.94	5.04	0.025	8.21
Childhood positive parenting	−0.89	0.29	9.54	0.002	0.41
Child neglect	1.28	0.55	5.44	0.02	3.6
Father's education	−1.42	0.39	13.76	0.001	0.24
Mother's education	−1.23	0.44	7.66	0.006	0.29
Gender[a]	−1.56	0.68	5.18	0.023	0.21
Place of living	1.64	0.8	4.22	0.04	5.15
Constant	4.37	1.3	11.3	0.001	79.28

[a]Male=1, female=2 independent variable. SE: Standard error, OR: Odds ratio

many factors including various psychological, educational, cultural, social, and economic factors.

Conflicts of interest

There are no conflicts of interest.

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