

Mental Distress and Behaviors among Male and Female Physically Abused High-Risk 7th Grade Youths— School District A, 2004

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Definition

- **Physical Child Abuse:**^{1,2}
 - Intentional use of physical force against a child by a caregiver
 - Results in, or has the potential to result in, physical injury

1. Leeb et al., 2006

2. Basile & Saltzman, 2002



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Public Health Problem

- **2nd most common form of child abuse (behind neglect)¹**
- **28.4% of adults (ages 18-26 years) in the US reported physical abuse prior to the 6th grade²**

1. Child Trends Databank™. Child Maltreatment. Available at <http://www.childtrends.databank.org>

2. Hussey, Chang, & Kotch, 2006



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Public Health Problem

- Over \$90 billion in estimated costs:¹
 - Direct-\$24 billion annually
 - Indirect-\$69 billion annually

1. Fromm, 2001



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Consequences of Early Physical Abuse

- Mental and behavioral problems¹
 - Depressed mood
 - Suicide ideation
 - Low self esteem



1. CDC. Child Maltreatment: Fact sheet. Available at <http://www.cdc.gov/ncipc/factsheets/cmfacts.htm>



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Consequences of Early Physical Abuse

■ Mental and behavioral problems¹

- Depressed mood
- Suicide ideation
- Low self esteem



- Conduct disorder
- Increased aggression
- Delinquency



1. CDC. Child Maltreatment: Fact sheet. Available at <http://www.cdc.gov/ncipc/factsheets/cmfacts.htm>



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Study Objective

- **Investigate potential interaction between sex and early physical abuse among high-risk youths**
 - **Suicidality**
 - **Victimization by a peer or date**
 - **Violence perpetration on a peer or date**
 - **Criminal activity**
 - **Friendships with those engaging in criminal activity**
 - **Illegal drug use**



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Study Design and Data Source

- **Study Design:**

- Cross-sectional study

- **Data Source:**

- “Youth Violence Survey: Linkages among different Forms of Violence”
- Data collected April 2004
- Anonymous self-administered questionnaire
- School-based survey



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Study Setting

- Youths resided in a high-risk community
- Community was selected based on factors such as:
 - Poverty & unemployment
 - Serious crimes
- All public schools participated



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Study Population

- **7th Grade population**
 - Earliest grade surveyed
 - Characterize mental and behavioral health needs in early adolescence
 - **1,473 (83%) youths participated**
 - **10 schools**
 - **All youth participants were English speaking**



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Exposure Variable

Early Physical Abuse (PA)

- Dichotomized (did/did not) experience physical abuse before the age of 10 years

“Before you were 10 years old, did you ever have injuries, such as bruises, cuts, or broken bones, as a result of being spanked, struck, or shoved by your parents or guardians or their partners?”



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Outcome Variables

Suicidality in the past 12 months

- had thoughts of suicide
- Had planned suicide
- had attempted suicide

Victimization in the past 12 months

- been victimized by a peer
- been victimized by a date



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Outcome Variables

Violent behavior in the past 12 months

- perpetrated peer violence
- perpetrated date violence

Illegal drug use in the past 12 months

- Used illegal drugs on 2-3 days or more per month



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Outcome Variables

Criminal activity (ever/never)

- Engaged in criminal activities such as robbery, vandalism, or drug dealing

Friends committed crimes in the past 12 months

- Had friends who committed robbery or vandalism or dealt drugs



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Statistical Analysis

- **Bivariate analysis:**
 - Chi-square tests

- **Multi-variable analysis:**
 - Adjusted prevalence ratios (APR)
 - Compare outcomes between those who did/did not experience early PA
 - Controlled for other forms of maltreatment and race/ethnicity



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Statistical Analysis

- Poisson regression with robust variance estimates adjusted for clustering within schools¹
- Tests for Interaction
 - Sex*early PA

1. Barros & Hirakata, 2003



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Statistical Analysis

- Values were significant at $p \leq 0.005$
 - Bonferroni adjustment = $0.05 / 10$ outcomes
- Stata SE



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Descriptive Characteristics

N=1,473

Females

Males

Total

Race/Ethnicity

No.

(%)

No.

(%)

No.

(%)

Hispanic

400

(52.3)

357

(50.0)

757

(51.5)

African American

195

(25.5)

192

(26.7)

387

(26.1)

White

123

(16.1)

127

(17.7)

250

(16.9)

Other

47

(6.1)

43

(6.0)

90

(6.1)



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Descriptive Characteristics

N=1,473

Maltreatment	Females		Males		Total	
	No.	(%)	No.	(%)	No.	(%)
Early physical abuse	149	(19.5)	132	(18.4)	281	(18.9)
Early sexual abuse	62	(8.1)*	39	(5.4)*	101	(6.8)
Witnessed family violence bef. 10	233	(30.5)*	147	(20.5)*	380	(25.6)
Ever Witnessed violent crimes	453	(59.2)	457	(63.6)	910	(61.3)

***significant difference, $p \leq 0.05$ level**



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Early PA and Suicidality

Outcome	Early PA	Sex	Early PA*Sex APR (95%CI) ¹
	APR (95%CI) ¹ (0=no, 1=yes)	APR (95%CI) ¹ (0=Female, 1=Male)	
Thoughts of Suicide	2.6 (2.3-3.0)*	0.5 (0.3-0.8)*	0.9 (0.5-1.6)
Planned Suicide	2.1 (1.8-2.5)*	0.6 (0.4-0.9)	0.7 (0.4-1.3)
Attempted Suicide	2.5 (1.9-3.3)*	0.6 (0.4-1.0)	0.7 (0.5-1.0)

¹Adjusted for experiencing early sexual abuse, witnessing violence between caregivers, witnessing community violence, and race/ethnicity

***statistically significant, $p \leq 0.005$**



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Early PA and Victimization

Outcome	Early PA	Sex	Early PA*Sex APR (95%CI) ¹
	APR (95%CI) ¹ (0=no, 1=yes)	APR (95%CI) ¹ (0=Female, 1=Male)	
Peer Victim	1.2 (1.1-1.3)*	0.9 (0.8-1.0)*	1.0 (0.9-1.1)
Date Victim ²	1.3 (1.1-1.5)*	1.1 (1.0-1.2)	1.1 (0.8-1.4)

¹Adjusted for experiencing early sexual abuse, witnessing violence between caregivers, witnessing community violence, and race/ethnicity

²Females: 419; males: 398

***statistically significant, $p \leq 0.005$**



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Early PA and Violence Perpetration

Outcome	Early PA	Sex	Early PA*Sex APR (95%CI) ¹
	APR (95%CI) ¹ (0=no, 1=yes)	APR (95%CI) ¹ (0=Female, 1=Male)	
Peer Violence	1.2 (1.0-1.3)	0.9 (0.7-1.1)	1.3 (1.2-1.5)*
Date Violence ²	1.3 (1.0-1.6)	0.8 (0.7-0.9)*	1.2 (0.9-1.6)

¹Adjusted for experiencing early sexual abuse, witnessing violence between caregivers, witnessing community violence, and race/ethnicity

²Females: 419; males: 398

***statistically significant, $p \leq 0.005$**



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Early PA and Illegal Drug Use

Outcome	Early PA	Sex	Early PA*Sex APR (95%CI) ¹
	APR (95%CI) ¹ (0=no, 1=yes)	APR (95%CI) ¹ (0=Female, 1=Male)	
Illegal Drug Use	1.8 (1.3-2.3)*	2.1 (1.4-3.2)*	0.9 (0.5-1.5)

¹Adjusted for experiencing early sexual abuse, witnessing violence between caregivers, witnessing community violence, and race/ethnicity

***statistically significant, $p \leq 0.005$**



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Early PA and Criminal Activities

Outcome	Early PA APR (95%CI) ¹ (0=no, 1=yes)	Sex APR (95%CI) ¹ (0=Female, 1=Male)	Early PA*Sex APR (95%CI) ¹
Engaged in Criminal Activities	1.3 (1.1-1.5)*	1.3 (1.2-1.4)*	0.8 (0.7-0.9)*
Friends Engaged in Criminal Activities	1.4 (1.1-1.6)*	1.1 (1.0-1.3)	1.0 (0.8-1.2)

¹Adjusted for experiencing early sexual abuse, witnessing violence between caregivers, witnessing community violence, and race/ethnicity

***statistically significant, $p \leq 0.005$**



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Summary

- **19% reported severe early physical abuse**
- **Early PA was associated with suicidality, victimization, having friends who engage in criminal behavior, and illegal drug use similarly for both males and females**



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Summary

- **Early PA and Perpetrating peer violence**
 - APR was higher for males
- **Early PA and Criminal activity**
 - APR was higher for females



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Limitations

- Limited external validity
- Self-reported data
- Recall bias
- Cross-sectional study design
- No measure of abuse after age of 10 years
- Unable to control for other forms of abuse



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Recommendations

- **Prevention of early PA**
 - Home visitations^{1,2}
- **Treatment and services for victims**
 - Cognitive behavioral therapy²
 - School based curricula³

1. Bilukha et al., 2005

2. CDC. Guide to preventive community services, 2007

3. Hahn et al., 2007



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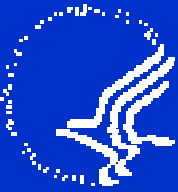
Disclaimer:

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Thank You

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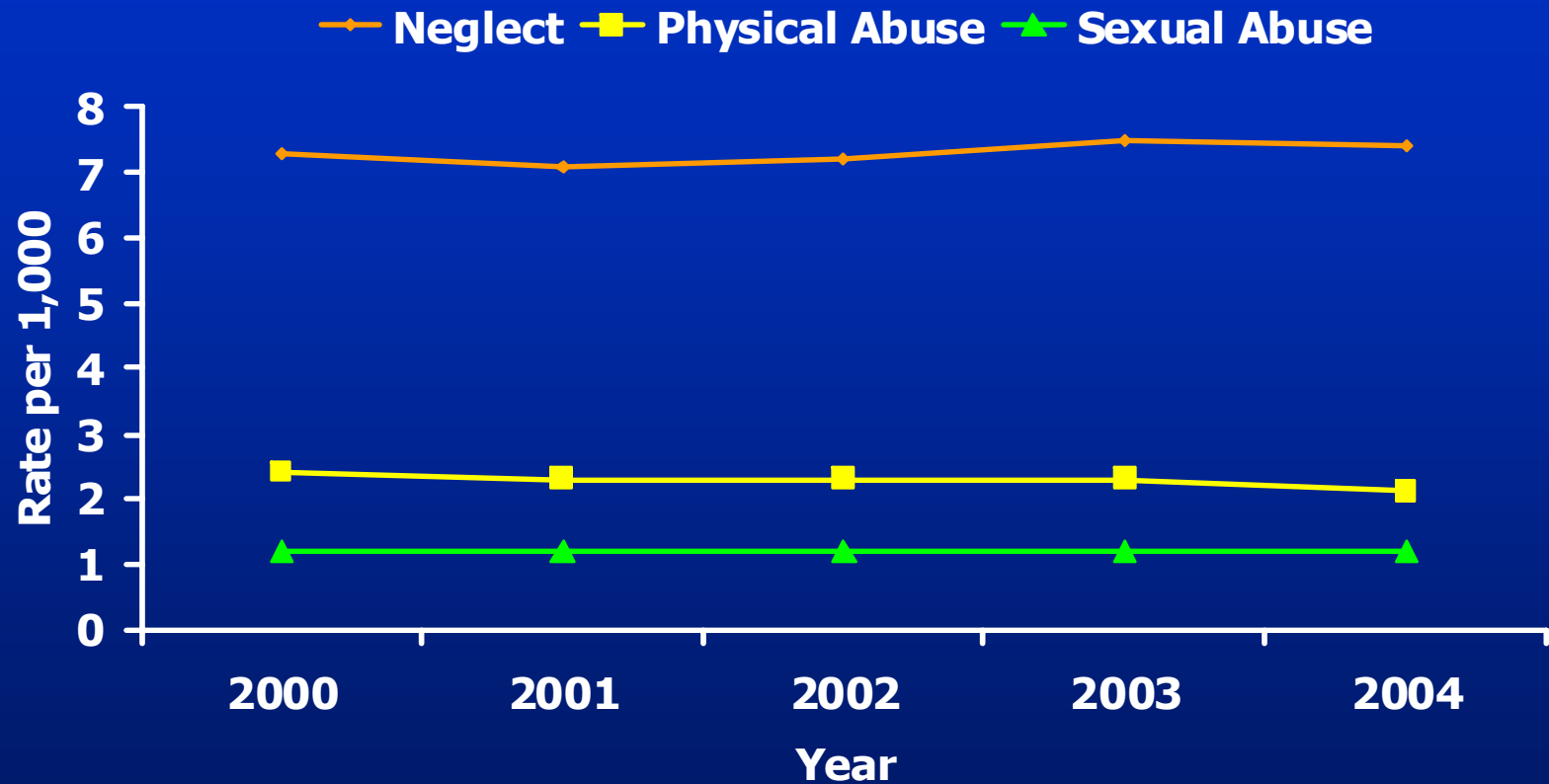




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Child Maltreatment Trends, 2000-2004*



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Potential Mechanisms

- **Mental and behavioral Health**
 - Major depression
 - Post traumatic stress disorder
 - Conduct disorder or opposition defiant disorder
 - Modeling or social learning
- **General physiologic health**
 - Elevated levels of cortisol
 - Alterations in serotonin and noradrenaline release
- **Poly-victimization**
 - Chronic stress



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Background References

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Statistical References

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Model Comparisons

Peer Perpetration (Males)	PR or OR	95% Confidence Interval
Mantel-Haenszel	1.46	1.32-1.61
Poisson regression	1.46	1.26-1.69
Poisson regression with robust variance	1.46	1.32-1.61
Log-binomial regression	1.39	1.30-1.48
Logistic regression	2.14	1.72-2.68



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Model Comparisons (with/without) Clustering

Peer Perpetration (Males)	PR or OR	95% Confidence Interval
Poisson regression with robust variance	1.49	1.24-1.80
Poisson regression with robust variance (cluster: school id)	1.49	1.24-1.80



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