

Patterns of Child Sexual Abuse Reporting and Inflammation in Young Adults

Elinam D. Dellor, MPH¹

Dawn M. Upchurch, PhD, LAc²

¹Doctoral Candidate, UCLA Fielding School of Public Health; Email: edellor@ucla.edu

² Professor, UCLA Fielding School of Public Health; Email: upchurch@ucla.edu

Introduction

- Childhood sexual abuse (CSA) linked to
 - Depression
 - PTSD
 - Cardiovascular disease
 - Stroke
- Measurement of CSA
 - Official reports (child protective services; police record)
 - Retrospective self-reports

Retrospective Self Reports

- Documented CSA vs. Adult Reports (Goodman et al, 2003; Williams, 1994)
 - 1/5 to 1/3 fail to report
- Stability of self-reports over time (Fergusson et al, 2000; Goldberg and Freyd, 2006)
 - Kappa: 0.24 to 0.64
 - Percent Agreement: 79 to 91%

Reasons for Inconsistencies

- 1) Difficulty remembering CSA over time

- 2) Coping processes
 - Repression
 - Avoidance
 - Reconstruction of histories
 - Manifest as differences in mental health and lifestyle behaviors

Purpose

1. Examine the stability of CSA reporting over two time points

Hypothesis 1: Inconsistent reporting over time

2. Examine whether patterns of CSA reporting are associated with higher levels of inflammation (CRP)

Hypothesis 2a: Respondents with no history of CSA will have lowest mean CRP levels

Hypothesis 2b: Inconsistent respondents will have highest CRP levels

Hypothesis 2c: Consistent reporters will fall in the middle

Data Source

- The National Longitudinal Study of Adolescent to Adult Health (Add Health)
 - Nationally representative
 - 4 waves from 1994-2008
- Analytic Sample
 - Interviewed at Waves I, III and IV
 - Valid sample weights
 - Valid measures of CRP at Wave IV
 - Excluded: Pregnant at Wave IV, Other Race

**Table 1. Weighted Demographic Characteristics of Young Adults-Wave IV
(Add Health 1994-2008, N=9,268)**

	% or Mean (SD)
Age (years)	28.20 (1.9)
Gender	
Male	49.00
Female	51.00
Race/Ethnicity	
NH White	70.90
NH Black	13.90
Hispanic	11.30
NH Asian	3.80
YA Education Level	
Less than high school	8.10
High school graduate	17.10
Some college	43.30
College graduate	19.60
Advanced degree	11.70
Household Income	
Less than 24,999	15.80
25,000 - 49,999	33.00
50,000 - 74,999	22.90
75,000 +	28.30

**Table 2. Weighted Family Background Characteristics-Wave I
(Add Health 1994-2008, N=9,268)**

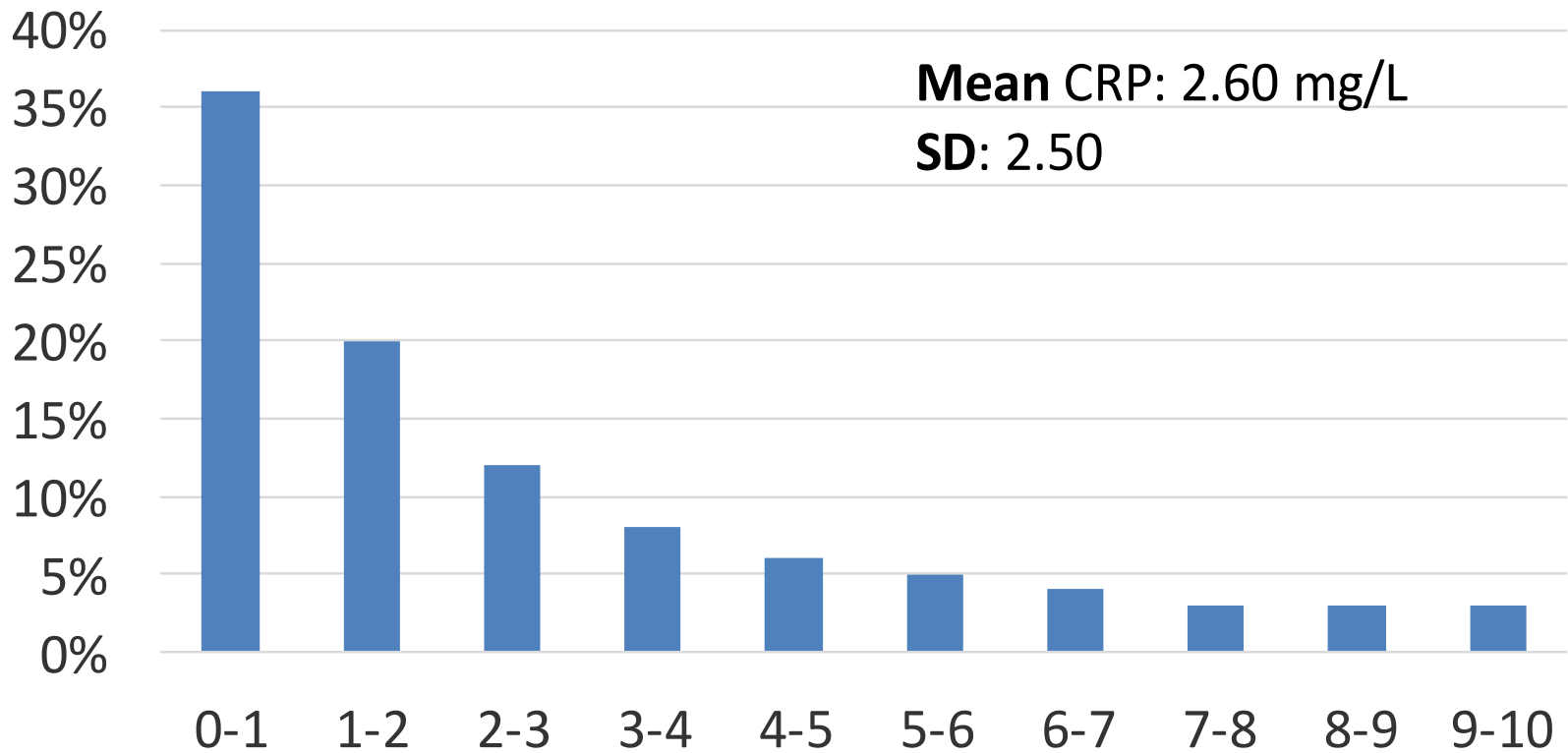
	% or Mean (SD)
<i>Family Background</i>	
Parent's Education	
Less than high school	13.50
High school graduate	26.50
Some college	25.10
College graduate	23.20
Advanced degree	11.70
Family Household Income	
Less than 24,999	30.00
25,000 - 49,999	36.00
50,000 - 74,999	22.00
75,000 +	12.00

Outcome Variable-CRP

- Collected at Wave IV
 - Dried blood spots
 - Assayed using sandwich ELISA
 - Validity study of DBS and paired plasma samples highly correlated ($r=0.98$)



Sample Distribution of CRP 1 mg/L intervals



Independent Variable-CSA

- Wave III (2001; Ages 18-26)
 - (By the time you **started 6th grade**), how often had one of your parents or other adult caregivers touched you in a sexual way, forced you to touch him or her in a sexual way, or forced you to have sexual relations?

- Wave IV (2008; ages 24-32)
 - (**Before your 18th birthday**), how often did a parent or adult caregiver touch you in a sexual way, force you to touch him or her in a sexual way or force you to have sexual relations?

**Table 3. Weighted Distribution of CSA Report Patterns Wave III-Wave IV
(Add Health 1994-2008, N=9,268)**

	% (n)
<i>Pattern of CSA Reporting</i>	
Consistent Non-reporters (<i>No to No</i>)	92.00 (8,583)
Consistent Reporters (<i>Yes to Yes</i>)	2.00 (139)
Inconsistent Reporters (<i>No to Yes</i>)	2.90 (261)
Inconsistent Reporters (<i>Yes to No</i>)	3.10 (285)

Note: Analyses Weighted

**Table 4. Weighted Distribution of Mean CRP by CSA Reporting Patterns
Wave III-Wave IV
(Add Health 1994-2008, N=9,268)**

	Mean CRP (SD) ^a
<i>Pattern of CSA Reporting</i>	
Consistent Non-reporters (<i>No to No</i>)	2.60 (2.50)**
Consistent Reporters (<i>Yes to Yes</i>)	3.00 (2.60)
Inconsistent Reporters (<i>No to Yes</i>)	2.75 (2.30)
Inconsistent Reporters (<i>Yes to No</i>)	3.00 (2.60)

Note: Analyses Weighted

^aWald test

** p≤0.01

Table 5. Weighted OLS Regression of Log CRP by WIII-WIV CSA Reporting Patterns (Add Health 1994-2008, N=9,268)

	Model 1 ^a
<i>Pattern of CSA Reporting</i>	
Consistent Non-reporters (<i>No to No</i>)	--
Consistent Reporters (<i>Yes to Yes</i>)	0.19 (0.13)
Inconsistent Reporters (<i>No to Yes</i>)	0.21 (0.08)**
Inconsistent Reporters (<i>Yes to No</i>)	0.17 (0.08)*

R²=.0020

Note: Analysis weighted; * p≤0.05, ** p≤0.01

^a Bivariate Association

**Table 6. Weighted OLS Regression of Ln CRP by WIII-WIV CSA Reporting Patterns
(Add Health 1994-2008, N=9,268)**

	Model 2 ^b
<i>Pattern of CSA Reporting</i>	
Consistent Non-reporters (<i>No to No</i>)	--
Consistent Reporters (<i>Yes to No</i>)	0.06 (0.13)
Inconsistent Reporters (<i>No to Yes</i>)	0.11 (0.08)
Inconsistent Reporters (<i>Yes to No</i>)	0.16 (0.08) *

R² = 0.04

Note: Analysis weighted: * p ≤ 0.05

^b Adjusts for young adult and childhood socio-demographic characteristics

**Table 7. Weighted OLS Regression of Ln CRP by WIII-WIV CSA Reporting Patterns
(Add Health 1994-2008, N=9,268)**

	Model 3 ^c
<i>Pattern of CSA Reporting</i>	
Consistent Non-reporters (<i>No to No</i>)	--
Consistent Reporters (<i>Yes to Yes</i>)	- 0.00 (0.10)
Inconsistent Reporters (<i>No to Yes</i>)	0.10 (0.10)
Inconsistent Reporters (<i>Yes to No</i>)	0.10 (0.10)
Smoking	
Never	--
Former	0.05 (0.04)
Intermittent	0.02 (0.05)
Current	0.11(0.04)**
Depression (CESD)	- 0.01 (0.01)
BMI (kg/m²)	0.07 (0.00)***

R²=0.23

Note: Analysis weighted; * p<0.05, ** p<0.01, *** p<0.01
b Adjusts for young adult and childhood socio demographic characteristics, mental health and health behaviors

Conclusions

- Limitation
 - No corroborating reports
- Discussion
 - Paradoxical nature of disclosure
 - Both incidence of CSA and willingness to disclose are important
 - Need to incorporate disclosure process in future research.

Next Steps

- Other types of childhood maltreatment
- Adult Interpersonal Violence

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Data Source

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Weighted Regression of CRP by Sexual Abuse Reporting Patterns-Females (N=4,731)

	Model 1 ^a	Model 2 ^b	Model 3 ^c
<i>Sexual Abuse Reporting</i>			
No at both waves (Ref)	--	--	--
Yes at both waves	0.05 (0.14)	0.03 (0.14)	-0.08 (0.12)
Inconsistent No to Yes	0.08 (0.10)	0.07 (0.09)	0.08 (0.09)
Inconsistent Yes to No	0.08 (0.11)	0.09 (0.11)	0.05 (0.08)
<i>Socio-demographic Characteristics</i>			
Age		0.02 (0.14)	0.00 (0.01)
<i>Race/Ethnicity</i>			
NH White (Ref)		--	--
NH Black		0.02 (0.07)	-0.13 (0.06)*
Hispanic		0.14 (0.06)*	0.05 (0.05)
NH Asian		-0.48 (0.09)***	-0.31(0.08)***
<i>Young Adult Education Level</i>			
Less than high school		0.06(0.09)	0.11 (0.10)
High school graduate		0.14 (0.06)**	0.09 (0.05)
More than high school (Ref)			
<i>Young Adult Household Income</i>			
Less than 24,999		0.16 (0.08)*	0.05 (0.6)
25,000 - 49,999		0.17 (0.06)**	0.03 (0.06)
50,000 - 74,999		0.19 (0.06)**	0.11 (0.06)
75,000 + (Ref)			
<i>Parent's Income</i>			
Less than 24,999		0.10(0.07)	0.02 (0.06)
25,000 - 49,999		0.11 (0.06)	0.00 (0.06)
50,000 - 74,999		0.03 (0.06)	-0.00 (0.06)

**Weighted Regression of CRP by Sexual Abuse Reporting Patterns-Females
Cont' d (N=4,731)**

	Model 1 ^a	Model 2 ^b	Model 3 ^c
Parent's Education			
Less than high school		0.01 (0.07)	-0.02 (0.06)
High school graduate/GED		0.10 (0.05)*	0.03 (0.04)
More than high school (Ref)			
<i>Covariates</i>			
Smoking			
Never (Ref)			
Former			0.06 (0.05)
Intermittent			0.05 (0.07)
Current			-0.08 (0.05)
Depression (CESD)			-0.014 (0.01)
BMI (kg/m ²)			0.07 (0.00)***

Note: Analysis weighted: NH=Non-Hispanic; * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

^aBivariate Association;

^bAdjusts for young adult and childhood socio-demographic characteristics

^c Adjusts for smoking, depression and BMI.

Weighted Regression of CRP by Sexual Abuse Reporting Patterns-Males (N=4,537)

	Model 1 ^a	Model 2 ^b	Model 3 ^c
<i>Sexual Abuse Reporting</i>			
No at both waves (Ref)			
Yes at both waves	0.28 (0.28)	0.20 (0.27)	0.26 (0.27)
No to Yes	0.29 (0.18)	0.25 (0.17)	0.20 (0.16)
Yes to No	0.26 (0.12)*	0.22 (0.12) *	0.11 (0.10)
<i>Sociodemographic Characteristics</i>			
Age		0.04 (0.01) ***	0.04 (0.10)
<i>Race/Ethnicity</i>			
NH White (Ref)			
NH Black		-0.07 (0.06)	-0.01 (0.05)
Hispanic		-0.07 (0.07)	-0.04 (0.07)
NH Asian		-0.3 (0.09)***	-0.22 (0.07)
<i>Young Adult Education Level</i>			
Less than high school		0.07 (0.09)	0.03 (0.08)
High school graduate		0.03 (0.05)	0.03 (0.05)
More than high school (Ref)			
<i>Young Adult Household Income</i>			
Less than 24,999		0.06 (0.09)	0.09 (0.07)
25,000 - 49,999		0.07 (0.06)	0.05 (0.05)
50,000 - 74,999		0.04 (0.05)	-0.00 (0.05)
75,000 + (Ref)			
<i>Parent's Income</i>			
Less than 24,999		0.32 (0.10)**	0.22 (0.08)**
25,000 - 49,999		0.33 (.07)***	0.21 (0.06)***
50,000 - 74,999		0.17 (0.07)**	0.11 (0.06)

Weighted Regression of CRP by Sexual Abuse Reporting Patterns-Males (N=4,537)

	Model 1 ^a	Model 2 ^b	Model 3 ^c
Parent's Education			
Less than high school		0.13 (0.09)	0.07 (0.07)
High school graduate/GED		0.12 (0.05)**	0.08 (0.04)*
More than high school (Ref)			
<i>Covariates</i>			
Smoking			
Never (Ref)			
Former			0.05 (0.05)
Intermittent			0.01 (0.07)
Current			0.27 (0.5)***
Depression (CESD)			0.01 (0.01)
BMI (kg/m ²)			0.07 (0.00)***

Note: Analysis weighted: NH=Non-Hispanic; * p≤0.05, ** p≤0.001, *** p≤0.001

^aBivariate Association;

^bAdjusts for young adult and childhood socio-demographic characteristics

^c Adjusts for smoking, depression and BMI.



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