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Impact of Adverse Childhood Experiences on HIV Risk Behaviors using a Nationally Representative Sample from 2011 and 2012

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Impact of Adverse Childhood Experiences on HIV Risk Behaviors using a Nationally Representative Sample from 2011 and 2012

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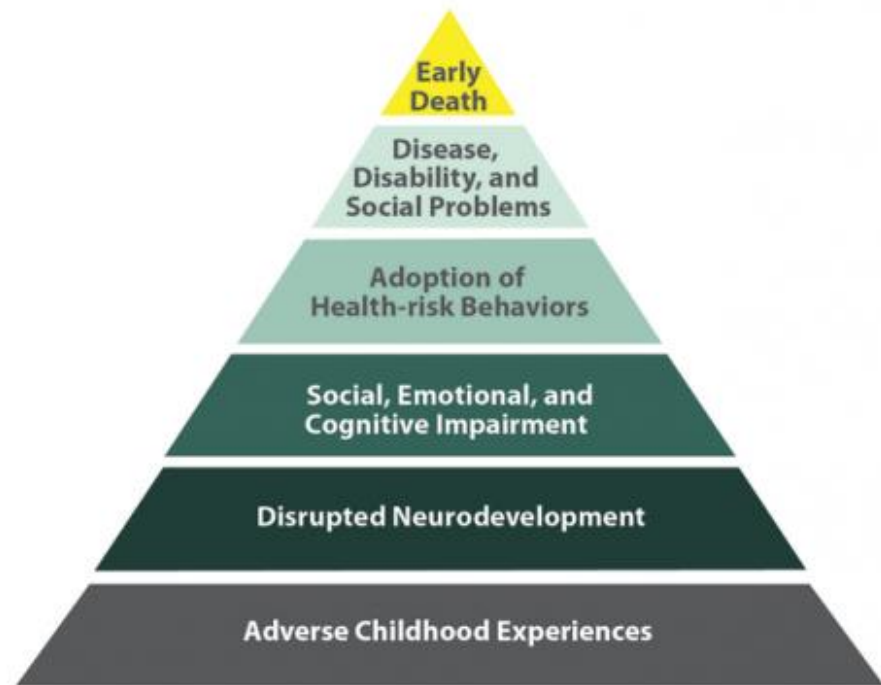
Outline

- Background & current literature
- Research question
- Methodology
- Results
- Discussion
- Conclusion



Adverse Childhood Experiences (ACEs)

- 2015
 - 683,000 victims of child abuse & neglect
 - 1,670 children died



Mechanism by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan



BRFSS Adverse Childhood Experience (ACE) Module

Prologue: I'd like to ask you some questions about events that happened during your childhood. This information will allow us to better understand problems that may occur early in life, and may help others in the future. This is a sensitive topic and some people may feel uncomfortable with these questions. At the end of this section, I will give you a phone number for an organization that can provide information and referral for these issues. Please keep in mind that you can ask me to skip any question you do not want to answer. All questions refer to the time period before you were 18 years of age. Now, looking back before you were 18 years of age---

- 1) Did you live with anyone who was depressed, mentally ill, or suicidal?
- 2) Did you live with anyone who was a problem drinker or alcoholic?
- 3) Did you live with anyone who used illegal street drugs or who abused prescription medications?
- 4) Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?
- 5) Were your parents separated or divorced?
- 6) How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up?
- 7) Before age 18, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. Would you say—
- 8) How often did a parent or adult in your home ever swear at you, insult you, or put you down?
- 9) How often did anyone at least 5 years older than you or an adult, ever touch you sexually?
- 10) How often did anyone at least 5 years older than you or an adult, try to make you touch sexually?
- 11) How often did anyone at least 5 years older than you or an adult, force you to have sex?

Response Options

Questions 1-4

1=Yes
2=No
7=DK/NS
9=Refused

Question 5

1=Yes
2=No
8=Parents not married
7=DK/NS
9=Refused

Questions 6-11

1=Never
2=Once
3=More than once
7=DK/NS
9=Refused

HIV

- 2016
 - 40,000 new HIV diagnoses
- Risks:
 - Unprotected sex
 - Sharing needles/syringes

HIV CAN BE TRANSMITTED THROUGH...



**Sexual
Contact**



**Pregnancy, Childbirth
& Breast Feeding**



**Injection
Drug Use**



Current Literature

- STDs increase with number of ACEs
- Increase in ACEs linked with increased HIV risk behaviors
- Child sexual abuse exposure led to multiple sexual partners and drug use



How do ACEs impact HIV risks among adults in the US?



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Methodology

- Behavioral Risk Factor Surveillance System, 2011-2012
- Landline and cell phones for sampling
- ACE module:
 - Minnesota, Montana, Vermont, Washington, Wisconsin, Iowa, North Carolina, Tennessee



Methodology

- Outcome-HIV risk (yes/no)
 - Intravenous drug use
 - Treated for STD or VD
 - Given/received money for sex
 - Anal sex without a condom



Methodology

- Predictors-ACEs (yes/no)
 - 11 individual ACEs
- Compiled ACEs into 2 categories:
 - Abuse
 - Household Dysfunction



Analysis Steps

- Weighted
- Descriptive statistics
 - Population by sociodemographic
 - Sociodemographic with HIV risk
 - ACEs with HIV risk
- Simple and Multiple Logistic Regression
 - 11 individual ACEs with HIV risk
 - Abuse & household dysfunction with HIV risk



Descriptive Statistics



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Unweighted (N=151,289)

HIV Risk - Yes: 2,914 (1.93%)
HIV Risk - No: 139,902 (92.47%)

Weighted (N=59,207,640)

HIV Risk - Yes: 1,976,959 (3.34%)
HIV Risk - No: 53,398,594 (90.19%)

	Demographic Category	HIV Risk Yes (%)	HIV Risk No (%)
Age	18-34	7.92	92.08
	35-54	2.71	97.29
	55+	0.85	99.15
Sex	Male	4.02	95.98
	Female	3.15	96.85
School	High school or below	4.06	95.94
	Some college or above	3.22	96.78
	<\$15,000	6.30	93.70
Income	\$15,000-<\$25,000	4.85	95.15
	\$25,000-<\$35,000	3.87	96.13
	\$35,000-<\$50,000	3.12	96.88
	>\$50,000	2.33	97.67
Marital Status	Married/widowed	1.45	98.55
	Divorced/Separated /Never Married	6.45	93.55
	White	2.96	97.04
Race	Black	6.26	93.74
	Hispanic	6.57	93.43
	Other	4.67	95.33



	N %	Weighted %	HIV Risk Yes (%)	HIV Risk No (%)
<u>Household dysfunction</u>				
Y	29,038 (19.19)	20.53	5.88	2.93
N	122,251 (80.81)	79.47	94.12	97.07
<u>Lived with anyone mentally ill, depressed or suicidal</u>				
Y	11,888 (15.75)	17.00	7.29	2.70
N	63,572 (84.25)	83.00	92.71	97.30
<u>Lived with parental alcoholic</u>				
Y	18,263 (24.14)	24.79	5.91	2.70
N	57,388 (75.86)	75.21	94.09	97.30
<u>Lived with parental drug abuser</u>				
Y	5,854 (7.74)	10.55	11.14	2.58
N	69,816 (92.26)	89.45	88.86	97.42
<u>Live with anyone who served time in prison</u>				
Y	3,860 (5.09)	7.93	11.18	2.82
N	71,964 (94.91)	92.07	88.82	97.18
<u>Parents were divorced or separated</u>				
Y	16,142 (21.34)	27.42	6.14	2.46
N	59,490 (78.66)	72.58	93.86	97.54
<u>Parents slapped, hit, kicked, punched or beat each other up</u>				
Y	11,505 (15.38)	16.97	6.32	2.92
N	63,313 (84.62)	83.03	93.68	97.08



	N %	Weighted %	HIV Risk Yes (%)	HIV Risk No (%)
<u>Abuse</u>				
Y	29,577 (19.55)	20.69	5.62	2.99
N	121,712 (80.45)	79.31	94.38	97.01
<u>Parents slapped, hit, kicked, physically hurt you in any way</u>				
Y	11,434 (15.18)	16.46	7.32	2.75
N	63,871 (84.82)	83.54	92.68	97.25
<u>Parents swore, insulted or put you down</u>				
Y	24,122 (32.26)	34.94	5.79	2.29
N	50,645 (67.74)	65.06	94.21	97.71
<u>Child sexual abuse</u>				
Y	12.06	11.44	8.34	2.85
N	87.94	88.56	91.66	97.15
<u>Forced to touch sexually</u>				
Y	5,459 (7.28)	7.19	8.97	3.04
N	69,565 (92.72)	92.81	91.03	96.96
<u>Forced touch sexually</u>				
Y	7,795 (10.39)	9.78	8.45	2.95
N	67,197 (89.61)	90.22	91.55	97.05
<u>Forced sex</u>				
Y	3,105 (4.14)	4.34	12.17	3.06
N	71,924 (95.86)	95.66	87.83	96.94



Simple Logistic Regression



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ACEs	OR	<u>Unadjusted</u> 95% Confidence Limits	P-value
Lived with anyone mentally ill, depressed or suicidal	2.83	2.61-3.08	<0.0001
Lived with parental alcoholic	2.27	2.09-2.45	<0.0001
Lived with parental drug abuser	4.74	4.35-5.15	<0.0001
Live with anyone who served time in prison	4.33	3.95-4.75	<0.0001
Parents were divorced or separated	2.59	2.40-2.80	<0.0001
Parents slapped, hit, kicked, punched or beat each other up	2.24	2.06-2.44	<0.0001
Parents slapped, hit, kicked, physically hurt you in any way	2.80	2.57-3.04	<0.0001
Parents swore, insulted or put you down	2.62	2.42-2.83	<0.0001
Forced to have sex	4.39	3.92-4.92	<0.0001
Forced to touch them sexually	3.15	2.84-3.49	<0.0001
Forced touch sexually	3.03	2.76-3.33	<0.0001



ACEs	OR	<u>Unadjusted</u> 95% Confidence Limits	P-value
Abuse	1.93	1.82-2.05	<0.0001
Household dysfunction	2.07	1.95-2.20	<0.0001



Multiple Logistic Regression



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Adjusted Model: N=58,622

ACEs	OR	95% Confidence Limits	P-value
Lived with anyone mentally ill, depressed or suicidal	1.12	1.12-1.13	0.0684
Lived with parental alcoholic	1.15	1.11-1.12	0.0816
Lived with parental drug abuser	1.74	1.72-1.75	<0.0001
Live with anyone who served time in prison	1.34	1.33-1.35	<0.0001
Parents were divorced or separated	1.07	1.07-1.08	0.2193
Parents slapped, hit, kicked, punched or beat each other up	0.84	0.83-0.85	0.0105
Parents slapped, hit, kicked, physically hurt you in any way	1.52	1.51-1.53	<0.0001
Parents swore, insulted or put you down	1.30	1.29-1.31	<0.0001
Forced to have sex	1.70	1.68-1.72	<0.0001
Forced to touch them sexually	1.14	1.13-1.15	0.2629
Forced touch sexually	1.40	1.39-1.42	0.0023



		<u>Adjusted Model: N=58,622</u>		
Socioeconomic Status		OR	95% Confidence Limits	P-value
Age	18-34		Reference	
	35-54	0.41	0.41-0.41	<0.0001
	55+	0.21	0.21-0.21	<0.0001
Sex	Male vs Female	1.44	1.43-1.45	<0.0001
Married	Currently Married/Widowed		Reference	
	Other	2.31	2.30-2.33	<0.0001
School	Some college or above vs others			
Income	<\$15,000		Reference	
	\$15,000-<\$25,000	1.24	1.23-1.25	<0.0001
	\$25,000-<\$35,000	1.35	1.34-1.36	<0.0001
	\$35,000-<\$50,000	1.11	1.10-1.12	<0.0001
	>\$50,000	0.87	0.86-0.88	<0.0001
Race	White		Reference	
	Black	1.55	1.54-1.57	<0.0001
	Hispanic	1.30	1.29-1.32	<0.0001
	Other	1.21	1.20-1.23	<0.0001

ACEs	OR	Adjusted (N=58,622)	
		95% Confidence Limits	P-value
Abuse	1.42	1.30-1.55	<0.0001
Household dysfunction	1.41	1.29-1.54	<0.0001



		Adjusted (N=58,622)		
Socioeconomic Status		OR	95% Confidence Limits	p-value
	18-34		Reference	
Age	35-54	0.44	0.41-0.48	<0.0001
	55+	0.17	0.15-0.19	<0.0001
Sex	Male vs Female	0.14	1.07-0.22	0.0001
	Currently		Reference	
Married	Married/Widowed			
	Other	2.40	2.22-2.61	<0.0001
School	Some college or above vs others			
	<\$15,000		Reference	
	\$15,000-<\$25,000	0.94	0.85-1.04	0.2093
Income	\$25,000-<\$35,000	0.92	0.81-1.03	0.1502
	\$35,000-<\$50,000	0.81	0.72-0.92	0.0006
	>\$50,000	0.69	0.62-0.77	<0.0001
	White		Reference	
	Black	1.48	1.34-1.62	<0.0001
Race	Hispanic	1.48	1.32-1.67	<0.0001
	Other	1.14	0.99-1.31	0.0741



Discussion

- Living with parent who abused drugs increased HIV risks by 74%
 - OR: 1.74, $P < 0.0001$
- Forced to have sex as a child increased HIV risks by 70%
 - OR: 1.70, $P < 0.0001$
- Age was protective against HIV risks (MLR)
 - OR: 0.21, $P < 0.0001$
- Divorced, separated, or never married was positively associated with HIV risks
 - OR: 2.31, $P < 0.0001$



Strengths & Limitations

- Cross-sectional data
- ACE questions refer to before the age of 18
- BRFSS HIV risks from adults ages 18 or older



Conclusion

- Exposure to certain ACEs increased odds of HIV risks
- Longitudinal studies needed to confirm causality
- Education and prevention measures necessary



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Questions?

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