

Life Course Pathways to Sexually Transmitted Infections among College Students in Sierra Leone

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- ❑ College students engage in poor health behaviors increasing their risk for sexually transmitted illnesses (STI)s.
- ❑ Over 80% of girls aged 15–19 in some 31 African countries report sexual activity (DHS, 2010).
- ❑ About 26% college students in South Africa, for example, reported ever being pregnant or fathering a pregnancy as compared with only 8% of U.S. students (Heeren, et al. 2007).
- ❑ 15% of South African university students reported a history of STIs as compared to only 2% of U.S. students.

Background

- ❑ The devastating civil war (1991-2002) took the nation's education system as an early casualty
- ❑ 1,270 primary schools were wiped out, 67% school aged were forced out of school
- ❑ Today, SL youth stay in school less longer compared to any SSA
- ❑ There is a serious problem of teenage pregnancy and any child found pregnant is banished from school by the ministry of education

Background

- ❑ Formal schooling for women is the single most consistent life course to low fertility
- ❑ UNESCO (The Scientific and Cultural Organization), estimates that for each additional year of education in Sierra Leone, there is a 10% reduction in fertility
- ❑ Yet, the literacy rate among 15 to 24-year-olds is below 60% in SL, and the total adult literacy rate is even lower, at about 43%

Background

- ❑ *Life course theory* stipulates that the *structural, social, and cultural* characteristics are important to analyze people's lives.
- ❑ It examines the human development in a longitudinal, dynamic, and transactional context
- ❑ It recognizes that the *timing* of significant events is critical in influencing one's trajectory

Theoretical Framework

- ❑ We know that adverse child childhood experience (ACE), early initiation of sexual activity (EISA), number of lifetime sex partners (NLSP), and negative mental health are all associated with greater odds of STI.
- ❑ In Sierra Leone, a country devastated by an 11 year civil war and a 2014 Ebola outbreak, we need more Theoretically Informed research in a understanding Some Pathways to college students' STIs prevalence
- ❑ There is a lack of research testing a more theoretically informed model, which explains pathways to STIs among college students

Gaps

- ❑ The study aims to apply the concepts of *life course* theory to understand why college students in Sierra Leone are at risk of STI
- ❑ The study examines the direct and indirect associations of ACE, early initiation of sexual activity, number of lifetime sex partners, mental health, and STIs.

Research Purpose

(H1) There will be significant associations between adverse childhood experience, early initiation of sexual activity, number of lifetime sex partners, mental health, and STI

(H2) There will be significant mediating effects of early initiation of sexual activities, number of sexual partners, and mental health on the relationship between ACE and STI among college student in Sierra Leone.

Hypothesis

Methods

Research Design

- Cross-sectional study
- Paper survey

Data Collection

- IRB permission (UTA & the IRB of the Office of the Sierra Leone Ethics and Scientific Review Committee)
- 338 students were recruited from two Universities in the north and south of Sierra Leone
- Class instructors informed the students about the study

Sample

- Final sample for analysis ($N=327$)

Research Design & Sample

Variable	% (<i>n</i>)	Mean	SD	Range
Gender				
Female	41.9 (137)			
Male	58.1 (190)			
Age		24.33	5.66	18 – 56
Educational level				
College freshman	84.1 (275)			
College Sophomore	3.1 (10)			
College Junior	6.4 (21)			
College Senior	4.6 (15)			
Master	1.8 (6)			
Family's income				
Lower than average	43.4 (142)			
Higher than average	8.6 (28)			
Similar to the average family	48.0 (157)			

Demographic Characteristics

Variable	% (<i>n</i>)	Mean	SD	Range
Early initiation of sexual activity (1 st Sex < 15)				
No	92.4 (302)			
Yes	7.6 (25)			
Number of lifetime sex partner		3.24	2.14	0 – 6
Experience with sexually transmitted infection (STI)				
No	68.5 (224)			
Yes	31.5 (103)			

Demographic Characteristics

❑ Endogenous Variable

- *Sexually Transmitted Infection*
- Have you ever been diagnosed with or had any of the following STIs? (None, Chlamydia, Gonorrhea, Syphilis, Herpes, HPV/Warts, HIV/AIDS, Hepatitis B, Hepatitis C, or Other) → (No=0, Yes=1)

❑ Exogenous Variable

- *Adverse Childhood Experience*
- Assessed using the World Health Organization's ACEs Questionnaire.

❑ Control variable - *Age*

Measures

□ Mediating Variables

- *Early Initiation of Sexual Activity* – How old were you when you had sexual intercourse for the first time? → 1ST SEX < 15 years old (Hillis, Anda, Felitti, Nordenberg, & Marchbanks, 2000).
- *Number of Lifetime Sex Partners* – During your life, with how many people have you had sexual intercourse?
- *Mental Health* – Depression (PHQ-9) & Anxiety (GAD-7)

Measures

- ❑ Missing Values – Multiple imputation
- ❑ Structural Equation Modeling (SEM), using Mplus version 7

1. Measurement Model

- CFI >0.95, TLI >0.95, & RMSEA <0.06 will serve as indications of an adequate fit (Schreiber et al., 2006).

2. Structural Model

Data Analysis

Results

Variable	Mean	SD	Range
ACE			
1) Physical neglect	1.71	0.94	1 – 5
2) Emotional neglect	3.33	0,99	1 – 5
3) Physical abuse	1.73	0.93	1 – 5
4) Emotional abuse	1.89	0.96	1 – 5
5) Sexual abuse	1.41	0.80	1 – 5
6) Domestic violence	2.05	1.02	1 – 5
7) Alcohol use of a house member	1.53	1.05	1 – 5
8) Incarceration of a house member	1.39	0.96	1 – 5
9) Some chronically depressed, mentally ill, institutionalized or suicidal	1.45	0.99	1 – 5
10) One or no parents, parental separation, or divorce	1.73	1.00	1 – 5
11) Bullying	2.06	1.10	1 – 5
12) Collective violence_1	2.50	1.12	1 – 5
13) Collective violence_2	1.42	0.71	1 – 5
Mental health			
1) Depression	1.81	0.53	1 – 3.3
2) Anxiety	1.75	0.66	1 – 4

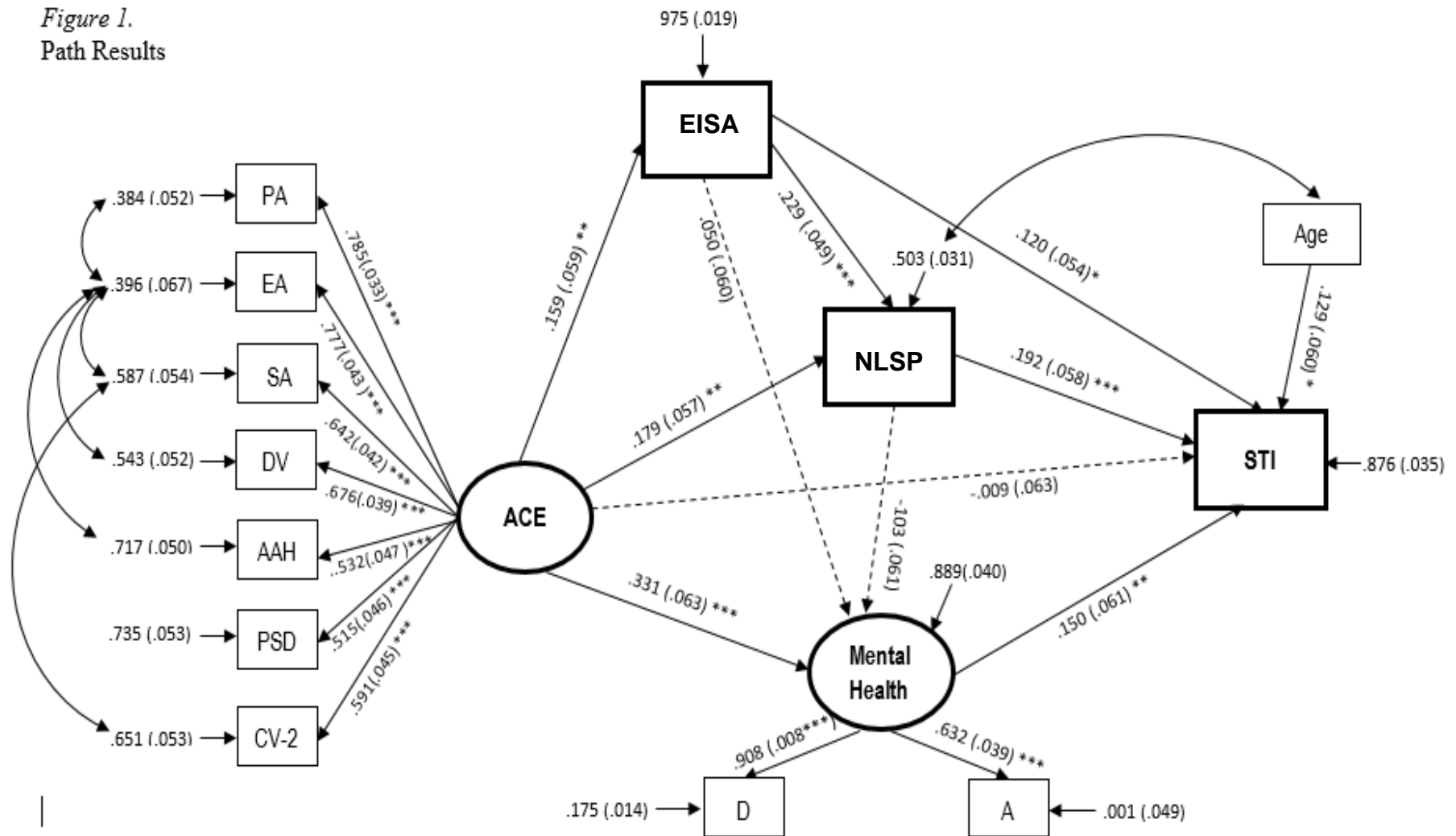
Model	χ^2 (p)	<i>df</i>	AIC	CFI	TLI	RMEA
Original model	529.71***	118	14,623.46	0.63	0.57	1.0
Post-hoc model	41.43***	22	6367.15	0.98	0.98	.05

CFA Model Fit Indices

Latent variable	Items	β	S.E.	$\beta / S.E.$	p	Composite reliability
ACE	Physical abuse	0.788	0.033	23.894	0.000	0.836
	Emotional abuse	0.776	0.044	17.503	0.000	
	Sexual abuse	0.637	0.043	14.990	0.000	
	Domestic Violence	0.682	0.038	17.835	0.000	
	Alcohol use of a house member	0.529	0.047	11.206	0.000	
	One or no parents, parental separation, or divorce	0.519	0.046	11.173	0.000	
	Collective Violence-2	0.581	0.045	12.974	0.000	
Mental Health	Depression	0.908	0.008	120.626	0.000	0.753
	Anxiety	0.633	0.039	16.287	0.000	

CFA Results

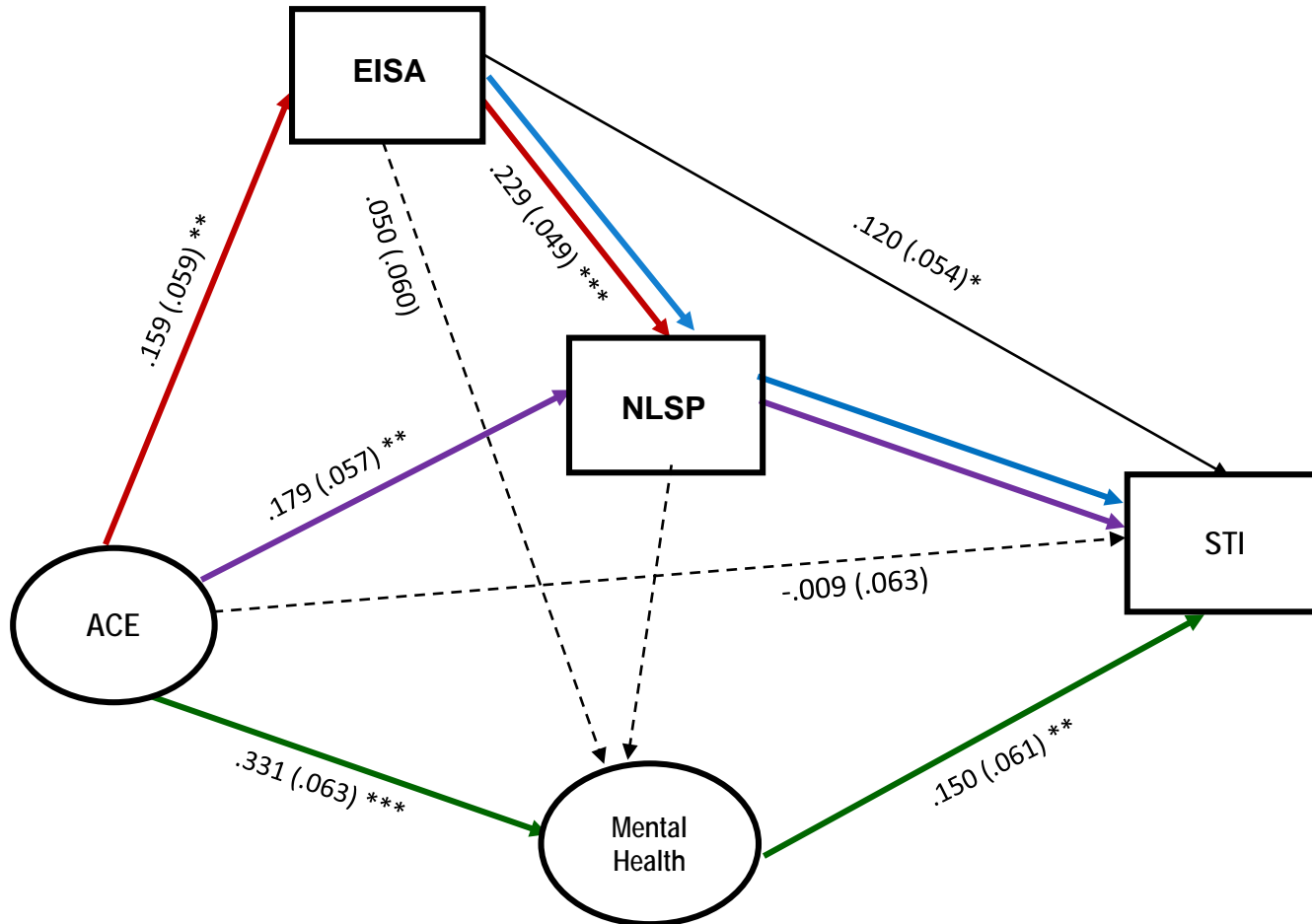
Figure 1.
Path Results



Path Results

Path	β	S.E	$\beta / S.E$	p
ACE → EISA → MH	0.005	0.007	0.807	0.420
ACE → EISA → NLSP	0.107	0.046	2.315	0.021
EISA → NLSP → MH	-0.043	0.027	-1.590	0.112
ACE → EISA → NLSP → MH	-0.003	0.002	-1.366	0.172
ACE → EISA → STI	0.012	0.007	1.695	0.090
ACE → NLSP → STI	0.022	0.010	2.217	0.027
ACE → MH → STI	0.032	0.015	2.192	0.028
ACE → EISA → MH → STI	0.001	0.001	0.767	0.443
ACE → NLSP → MH → STI	-0.002	0.001	-1.242	0.214
EISA → NLSP → STI	0.077	0.029	2.656	0.008
ACE → EISA → NLSP → MH → STI	0.000	0.000	-1.195	0.232

Path Results – Indirect Effects



Path Results - Indirect Effects

Discussion

(H1) Partially Supported

- Early initiation of sexual activity (EISA), number of lifetime sex partners (NLSP), and mental health directly increased a risk of STI, but ACE didn't directly increased a risk of STI.
- EISA and NLSP was not significantly associated with mental health

(H2) Partially Supported

- NLSP and mental health significantly mediated the relationship between ACE and STI, but EISA did not significantly mediate the relationship.
- The relationship between ACE and NLSP was mediated by ELSA
- The relationship between ELSA and STI was mediated by NLSP

Summary of Results

- ❑ College students who initiate sexual activity early engage in behaviors that place them at risk for STI.
- ❑ Such students are distinguishable from peers who initiate intercourse later because they often have a greater number of sexual partners.
- ❑ Although not tested, youth who initiate sex early often do not use condoms more consistently.
- ❑ Our data also indicate that college students impacted by mental health, they have increased vulnerability to STIs

Implications & Conclusions

- ❑ There is an assumption that college students are too busy and may not be sexually active. This is not the case. We are limited in identifying prevention and intervention programs to address this population.
- ❑ Although we know that adolescents engage in early sexual behavior, a majority deny it in self-reports due to social desirability. This is a difficult issue in assessing the true extent of sexual activity.
- ❑ Also, we are limited by not having information on whether college students reporting early experiences-feel that they were forced to have sex

Implications & Conclusions

- ❑ Cross-sectional study
- ❑ Based on self-reported responses – Social desirability bias and recall bias
- ❑ Culturally competent scales
- ❑ Non-probability sampling

Limitations

Questions/Comments?

Thank you!
