

Number of Psychosocial Strengths Predicts Reduced HIV Sexual Risk Behaviours Above and Beyond Syndemic Problems Among Gay and Bisexual Men

Trevor A. Hart^{1,3}, Syed Noor¹, Barry D. Adam^{2,4}, David Brennan³, Sandra Gardner^{3,4}, Winston Husbands⁵, Ted Myers³, Jessica Cattaneo⁵

1. Ryerson University, Toronto, ON,
2. University of Windsor, Windsor, ON,
3. University of Toronto, Toronto, ON,
4. Ontario HIV Treatment Network, Toronto, ON,
5. AIDS Committee of Toronto, Toronto, ON



Background

- HIV disproportionately impacts gay and bisexual men (GBM) in Canada and US
 - New infections attributed to sex between men:
 - 49.3% in Canada in 2013 (PHAC, 2014)
 - 65.0% in US in 2013 (CDC, 2015)
- There is clearly work to be done to reduce sexual risk behaviour among gay and bisexual men, given the high and steady HIV incidence among GBM

Background & Rationale

- When explaining HIV incidence rates, the literature tends to focus on individuals' deficits in knowledge, motivation, etc. (see Herrick et al., 2013)
 - Literature on syndemics examines concurrent problems experienced by gay and bisexual men (GBM)
 - A greater number of syndemic problems is associated with condomless anal sex (e.g., Stall et al., 2013; in Canada; Ferlatte et al., 2013; Tulloch et al., 2015)
- There is limited research studying the reasons GBM do, on average, practice consistently protected sex (Meyers et. al, 2010; Hart et. al, 2010)

Methods



Sample

- HIV-negative men who identify as gay or bisexual
- 18 years of age or older
- Engaged in sexual activity with another male within 3 months prior to the telephone screening
- Able to speak and read English
- Anticipated being able to attend all sessions
- N = 470

Variables - Risk Factors

- **The Heterosexist Harassment, Rejection and Discrimination Scale** (HHRD; Szymanski, 2006)
 - “How many times have you been treated unfairly by family members because you are a gay/bisexual man?”
 - How many times have you been treated unfairly by your employer, boss, or supervisors because you are gay/bisexual man?”
- **Commonly Used Scales for:**
 - Depression (CES-D; Radloff, 1977)
 - Polysubstance Use
 - Childhood Sexual Abuse (CTQ; Bernstein et al., 2003)

Variables - Protective Factors

- **Social support from Friends and from Family (two separate subscales)**
 - Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988)
 - “My family really tries to help me”
 - “I can talk about my problems with my friends”.
- **Cognitive social capital**
 - Short Social Capital Assessment Tool (SA-SCAT), with items were coded as no/yes (De Silva et al. 2006).
 - “Do you feel as though you are really a part of this community”.

Sexual Risk Behaviours

- (1) Condomless anal sex (CAS) with a serodiscordant casual partner
- (2) CAS with a serodiscordant (regular or casual) partner

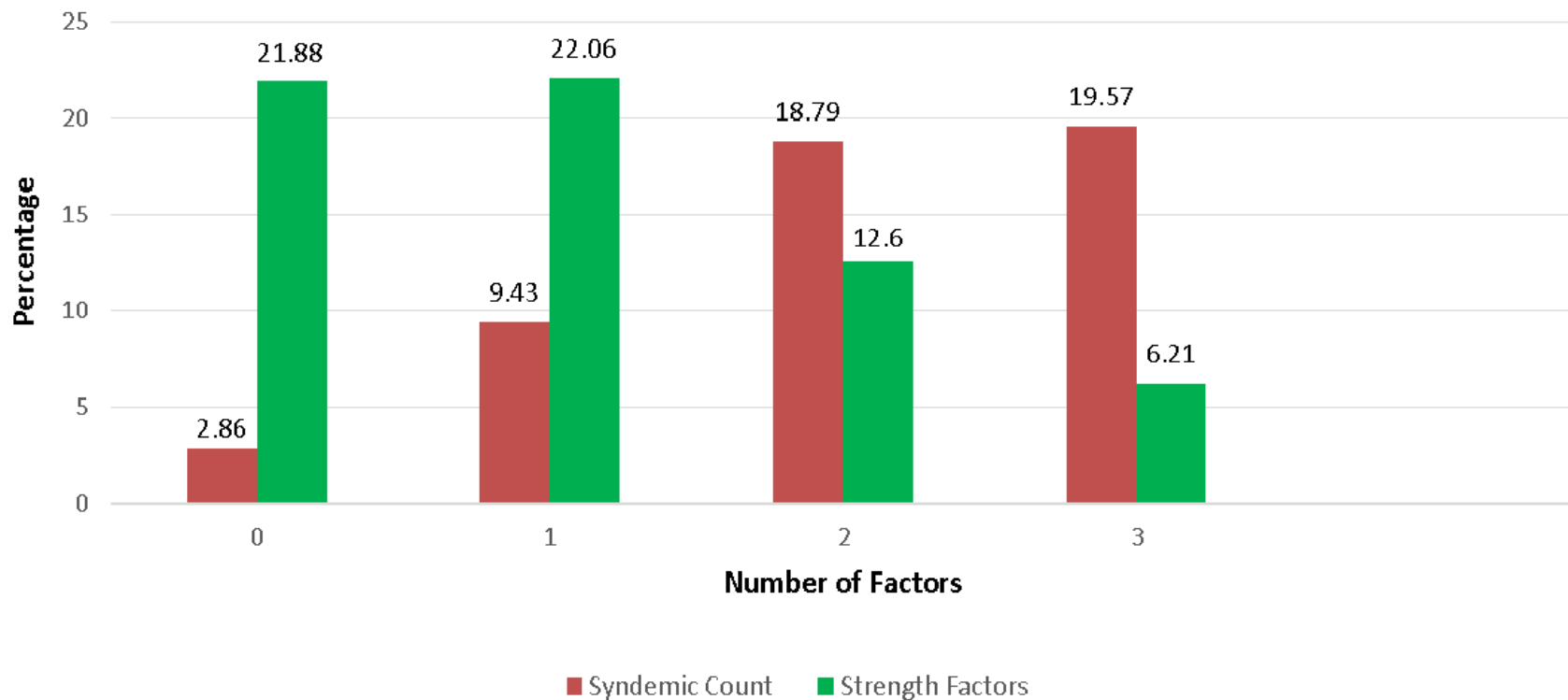
Temporality

- Syndemic risk factors: baseline
- Psychosocial Strengths: 3-month follow-up
- Sexual risk behaviour: 6-month follow-up

Results

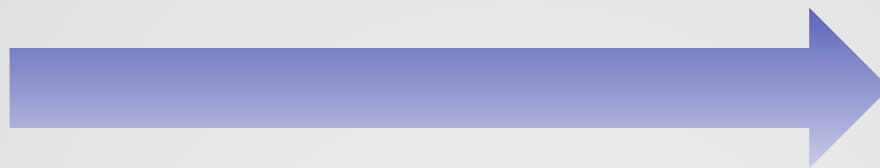
Associations Between Counts and High Risk Sex

Serodiscordant Condomless Anal Sex - Yes



Outcome 1: CAS with a serodiscordant casual partner

Syndemic
Count



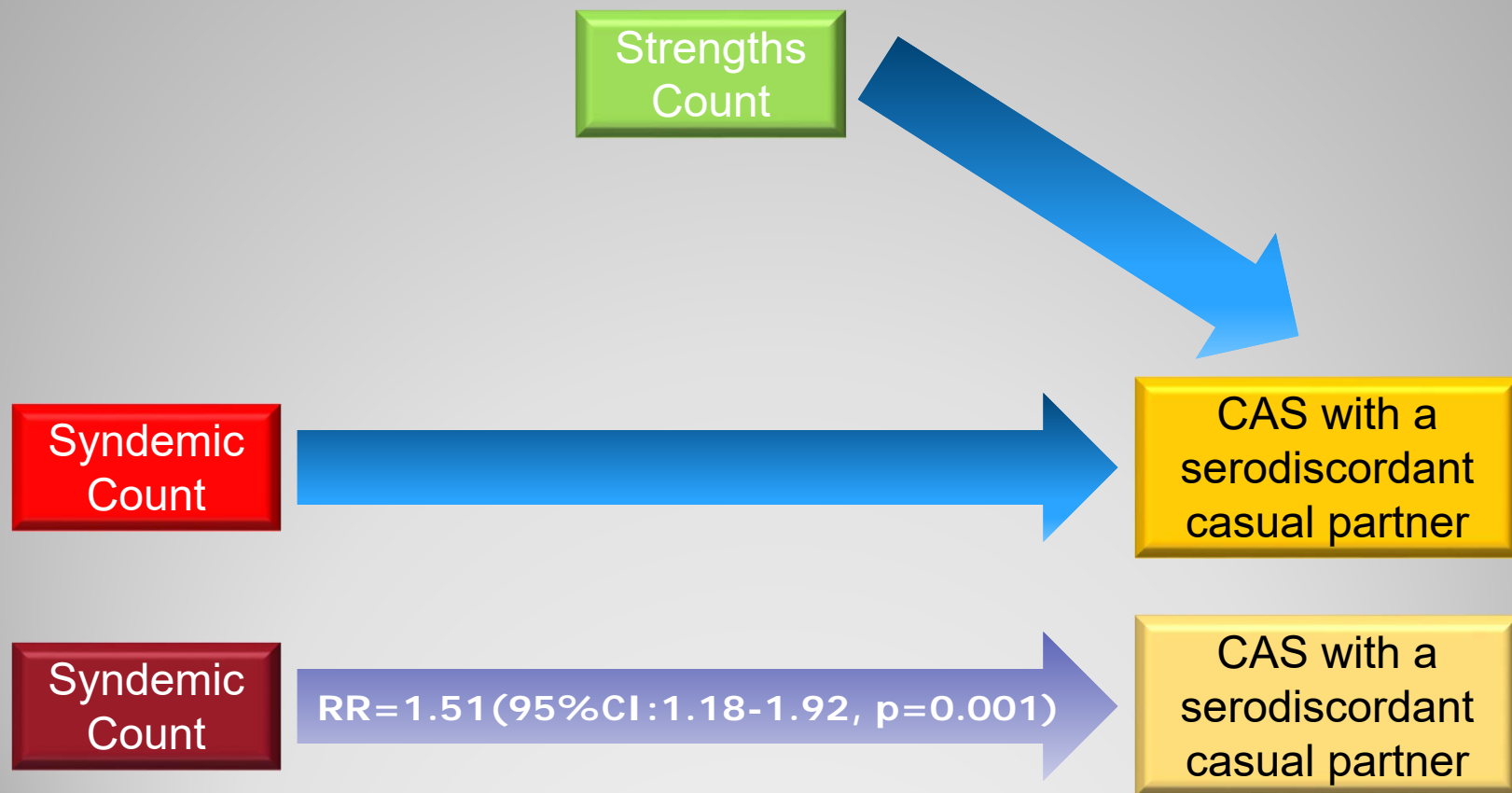
CAS with a
serodiscordant
casual partner

Outcome 1: CAS with a serodiscordant casual partner^a



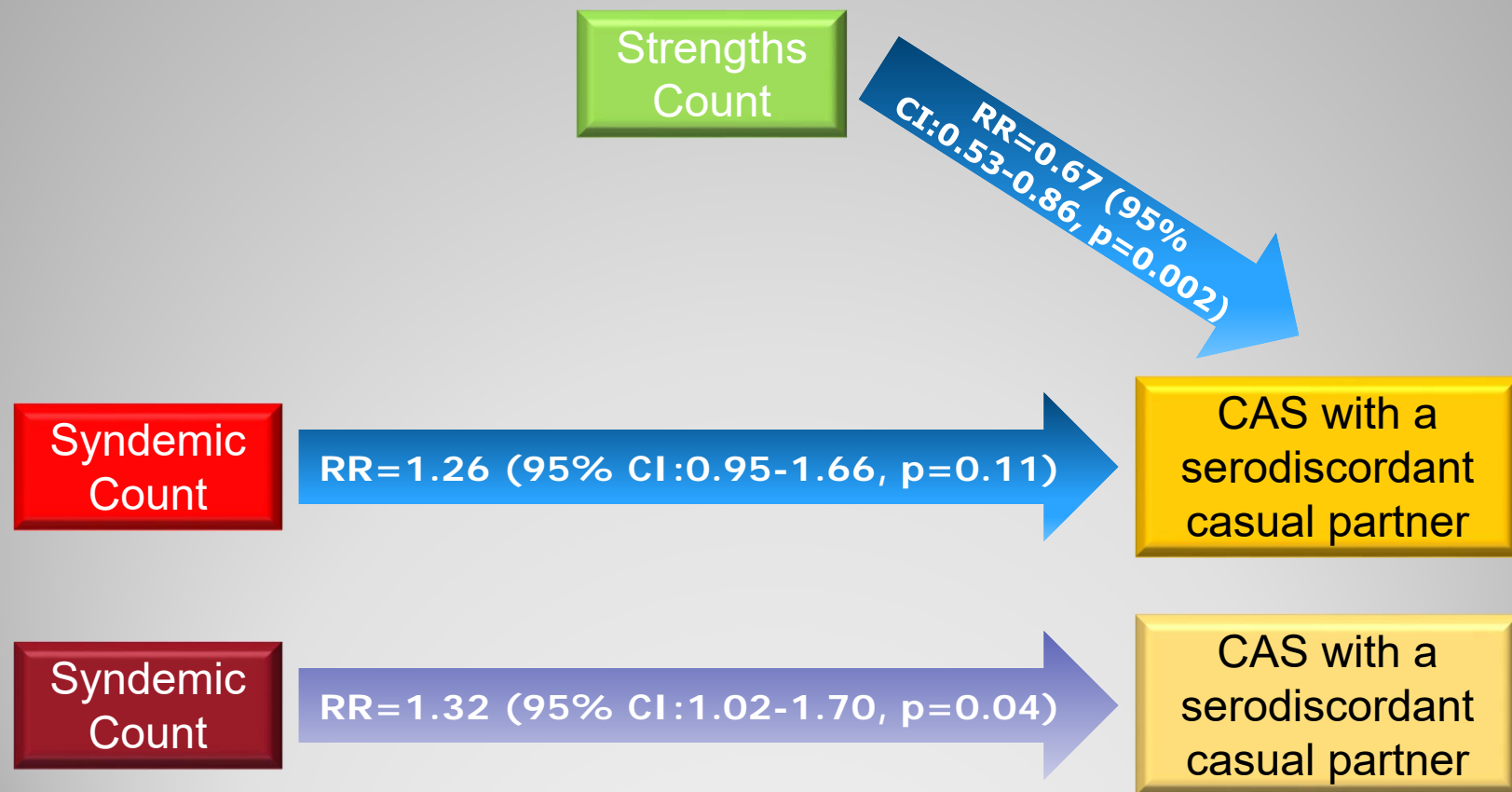
^a Negative binomial regression
RR: Relative Risk; CI: Confidence Interval

Outcome 1: CAS with a serodiscordant casual partner^a



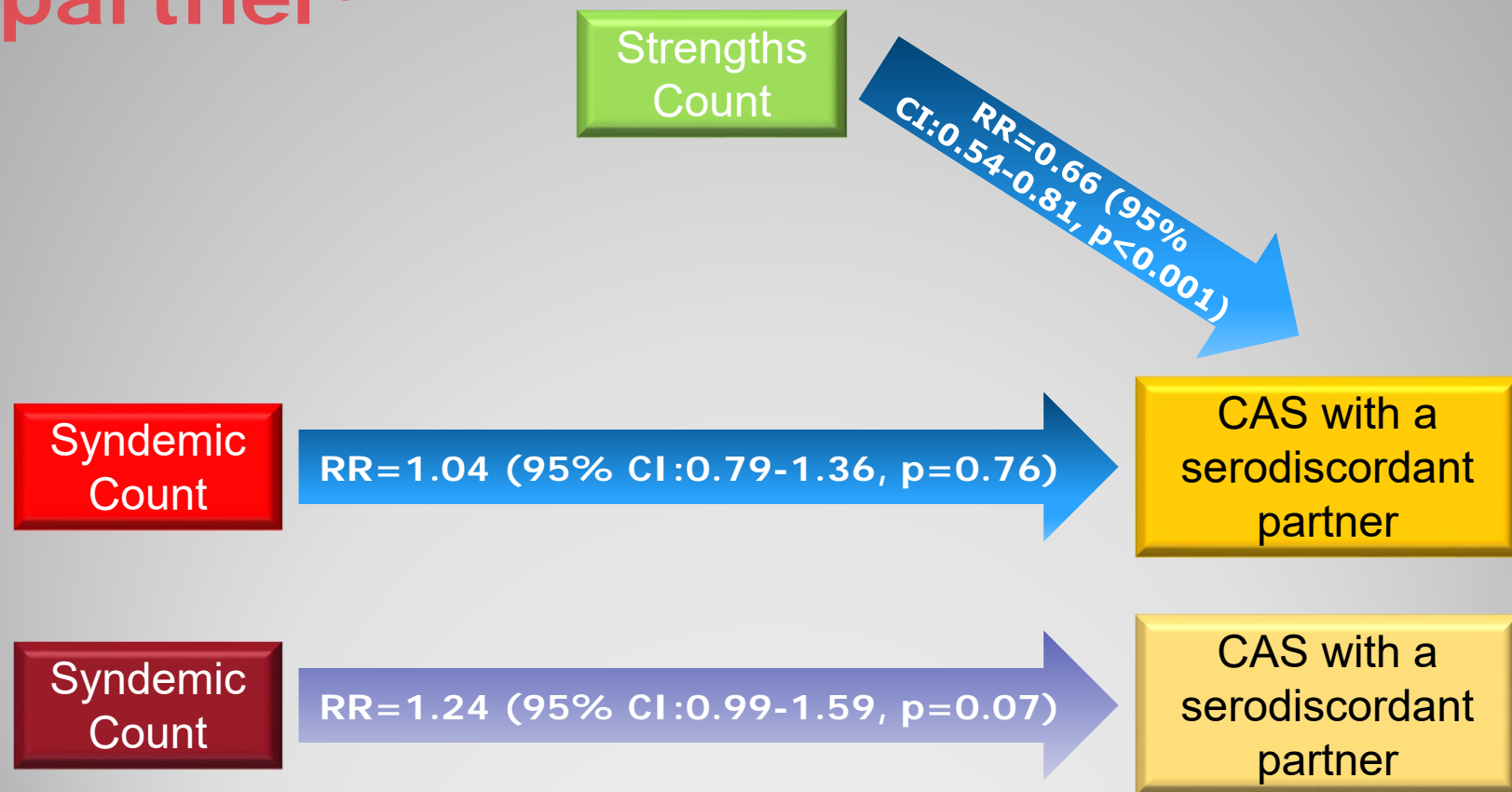
^a Negative binomial regression (allows for RR and excessive proportion of "0" in the data)
RR: Relative Risk; CI: Confidence Interval

Outcome 1: CAS with a serodiscordant casual partner^a



^a Negative binomial regression
RR: Relative Risk; CI: Confidence Interval

Outcome 2: CAS with a serodiscordant (regular or casual) partner^a



^a Negative binomial regression
RR: Relative Risk; CI: Confidence Interval

Summary of Results

- Strengths count predicts 6-20% less risk when accounting for syndemic psychosocial problem count
- Looking at strengths has added value
 - Strengths count added to the variance accounted for by syndemic count variables

Discussion & Implications

- Data support extensions of current public health and psychological theories
 - Gay men's resilience to the effects of syndemics (Herrick et al., 2011; Kurtz, Buttram, Surratt, & Stall, 2012)
 - Resilience and coping in Minority Stress Model (Hatzenbuehler, 2009; Meyer, 1995; 2003)
- Possibility of building on strengths in psychosocial interventions and therapy
 - We already do this in ASOs and in sex therapy (e.g., AIDS Committee of Toronto, 2016; Kleinplatz, 2003; Kleinplatz, Ménard, Paradis, Campbell, & Dalgleish, 2013).
 - Consistent with use of motivational interviewing to reduce sexual risk behaviours (Rongkavilit et al., 2015)

Limitations

- 3 timepoint study with 3 month intervals
 - Long term effects unknown
 - Cannot look at additive effects over time of strengths on sexual risk variables
- Self-reported data prone to bias
- Advertised as the *Gay Strengths Study*
 - Would this work in higher risk samples?

Future Directions

- **Do psychosocial strengths predict...**
 - Fewer STIs?
 - Other sexual risk behaviours?
 - Relationship quality?
- Long-term longitudinal work is needed to examine role of strengths over time
- Incorporating Gay Strengths into our intervention and support work!

Thanks!

To our funders:

CIHR CBR Operating Grant
OHTN Applied HIV Research Chairs (DB and TH)

To the HIV Prevention Lab members

To our gay and bisexual men participants

Study #2 Supplemental Slides

Participants

Characteristic	%
Race/ethnicity	
White, non-Hispanic	59
Black	7
South Asian	7
East/Southeast Asian	7
Middle Eastern/North African	2
Latin American/Hispanic	6
Aboriginal/Métis/Inuit	1
Mixed race	10
Other/Unidentified	1
Income, >\$40,000 CDN annually	32
Bachelor Degree/College Diploma or above	61

Participants (cont' d)

Characteristic	n	%
Born in Canada	282	60
In a long-term relationship (180+ days)	78	17
Sexual orientation		
Gay/Homosexual	402	86
Bisexual	48	10
Two spirit	6	1
Queer	6	1
Pansexual	4	1
Unidentified	2	1
	Mean ± SD	Range
Age, in years	35.27 ± 12.32	18-82

Syndemic Factors

Characteristic	n	%
Multiple “party drug” substance use		
No	410	87
Yes (2 or more)	59	13
CES-D		
Score ≤ 22	348	74
Score > 22	120	26
CTQ-SA		
Score ≤ 5	291	62
Score > 5	175	37

Strengths

Characteristic	n	%
Cognitive Social Capital		
Low (0-2)	118	29
High (>2)	279	68
MSPSS-Family		
Score ≤ 3	178	43
Score >3	224	54
MSPSS-Friend		
Score ≤ 3	83	20
Score >3	322	78

Sexual Risk Behaviours

Characteristic	%
CAS with a serodiscordant casual male partner	13
CAS with a serodiscordant (casual or regular) male partner	17

Appendix 1: correlations between syndemic factors

	1	2	3
1. Substance Use	1.00		
2. CES-D	0.06	1.00	
3. CTQ-SA	0.08	0.24***	1.00

Note: *p<0.05, **p<0.01, ***p<0.001

Appendix 2: correlations between strengths factors

	1	2	3	4	5
1. CSC	1.00				
2. ERQ- Reappraisal	0.15**	1.00			
3. HHI	0.24***	0.54***	1.00		
4. MSPSS- Family	0.20**	0.15**	0.33***	1.00	
5. MSPSS- Friend	0.31***	0.20***	0.44***	0.37***	1.00

Note: *p<0.05, **p<0.01, ***p<0.001

Appendix 3: correlations between syndemic and strength factors

	1	2	3	4	5	6	7	8
1. Substance Use	1.00							
2. CES-D	0.06	1.00						
3. CTQ-SA	0.08	0.24***	1.00					
4. CSC	-0.10	-0.27***	-0.14**	1.00				
5. ERQ-Reappraisal	-0.02	-0.26***	0.04	0.15**	1.00			
6. HHI	0.01	-0.49***	-0.08	0.24***	0.54***	1.00		
7. MSPSS-Family	0.01	-0.25***	-0.14**	0.20**	0.15**	0.33***	1.00	
8. MSPSS-Friend	-0.01	-0.28***	-0.10*	0.31***	0.20***	0.44***	0.37***	1.00

Note: *p<0.05, **p<0.01, ***p<0.001

Moderation Analyses

We tested the effect of the interaction (syndemic X strengths) using 'MFPI: Multivariable Fractional Polynomials Interaction' function in STATA

- Outcome 1: CAS with a serodiscordant casual partner
p=0.49
- Outcome 2: CAS with a serodiscordant (regular or casual) partner
p=0.60

No evidence for the buffering hypothesis!

Mediation Analyses

- Indirect effect of syndemic count via strengths count:
 - Outcome 1: CAS with a serodiscordant casual partner
 - $\beta=0.04$, BC 95%CI: 0.002, 0.09
 - Outcome 2: CAS with a serodiscordant partner
 - $\beta=0.05$, BC 95%CI: 0.02, 0.09

BC 95%CI: Bias Corrected Confidence Interval