

Egocentric and sociocentric social network HIV sexual risk norms and behaviors among people who inject drugs and high-risk networks

HPTN 037

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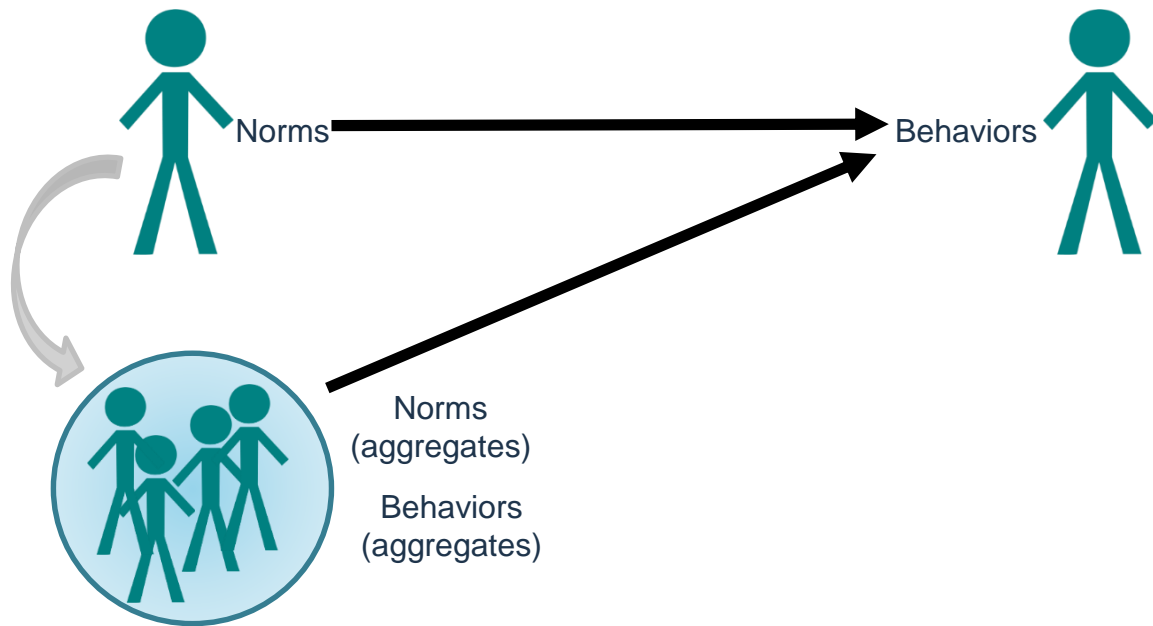
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Study Objectives

- To examine the associations between:
 - Egocentric social network sexual risk norms and behaviors, and sexual risk behavior among people who inject drugs (PWID)
 - Sociocentric social network sexual risk norms and behaviors among high-risk networks

HYPOTHESIS 1A.

PWID who endorse high-risk sexual norms and those who have an egocentric network which endorses high-risk sexual norms and/or reports high-risk sexual behaviors, would be more likely to report high-risk sexual behavior.



HYPOTHESIS 1B.

Sociocentric networks with a higher proportion of members who report high-risk sexual norms, would have a higher proportion of members who report high-risk sexual behavior.



Methodology

- HPTN 037: Philadelphia site
- Participants were 697 PWID and their drug and sexual risk networks
- 5 Behaviors and corresponding norms:
 - Multiple sex partners
 - Condom use with primary partner
 - Condom use with casual partners
 - Giving money/drugs for sex
 - Receiving money/drugs for sex
- Analysis plan:
 - Egocentric hypothesis: Logistic regression
 - Sociocentric hypothesis: Linear regression

Figure 1. Relationship between individual-level, egocentric, and sociocentric norms and behaviors

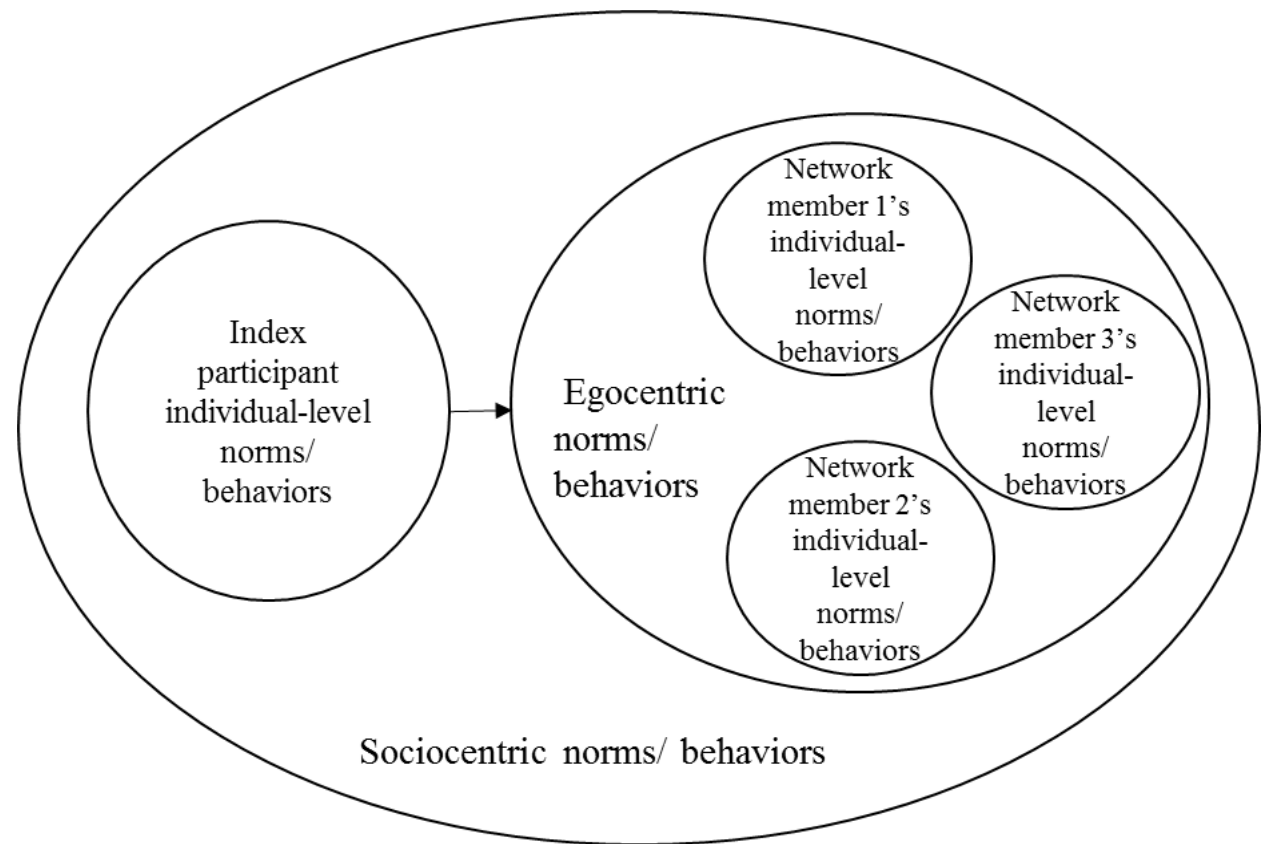


TABLE 1. CHARACTERISTICS OF INDEX PARTICIPANTS AND SOCIOCENTRIC SOCIAL NETWORKS IN THE PHILADELPHIA SITE OF HPTN 037 RANDOMIZED CONTROLLED TRIAL

Characteristics	Index Participants (N=232 index participants)		Networks (N=232 networks; N=232 index participants + 464 network members)	
	%	Median (Range)	Mean %	Median of means (Range)
Demographics				
Male sex	79.7		69.2	
Age		41 (19–65)		41.0 (20–58.8)
Non-Latino Black race/ethnicity	43.5		45.7	
Single marital status	72.4		73.4	
Education less than high school	32.8		33.7	
Sexual risk behaviors				
Multiple partners (>1)	43.1		38.7	
No condom use with primary partner	56.0		52.6	
No condom use with casual partner	64.7		64.3	
Giving of money or drugs for sex	21.1		15.2	
Receiving money or drugs for sex	14.7		15.9	
Perceived Sexual risk norms				
Friends have sex with multiple partners	86.6		72.2	
Friends do not use condoms with their primary partner	71.6		64.0	
Friends do not use condoms with casual partners	72.8		66.5	
Friends give money or drugs for sex	56.0		48.4	
Friends receive money or drugs for sex	69.8		62.0	

TABLE 2. PREDICTORS OF INDIVIDUAL SEXUAL RISK BEHAVIOR AMONG INJECTION DRUG USING INDEX PARTICIPANTS IN THE PHILADELPHIA SITE OF HPTN 037 RANDOMIZED CONTROLLED TRIAL

	Individual-level sexual risk behavior		Adjusted OR (95% CI)
Multiple partners (Model 1)	Yes, n (%)	No, n (%)	
Individual-level norm: Friends have sex with multiple partners			
No	7 (7.0)	24 (18.2)	Ref.
Yes	93 (93.0)	108 (81.8)	2.88 (1.08–7.71)
Egocentric network behavior: Multiple partners			
<25%	35 (35.0)	73 (55.3)	Ref.
25–74%	29 (29.0)	45 (34.1)	1.11 (0.52–2.35)
≥ 75%	36 (36.0)	14 (10.6)	4.96 (2.19–11.22)
No condom use with primary partner (Model 2)			
Egocentric network behavior: No condom use with primary partner			
<25%	35 (26.9)	43 (42.2)	Ref.
25–74%	35 (26.9)	32 (31.4)	1.42 (0.66–3.04)
≥ 75%	60 (46.2)	27 (26.4)	2.26 (1.14–4.48)
No condom use with casual partner (Model 3)			
Egocentric network behavior: No condom use with casual partner			
<25%	23 (15.3)	24 (29.3)	Ref.
25–74%	45 (30.0)	24 (29.3)	2.42 (0.94–6.19)
≥ 75%	82 (54.7)	34 (41.4)	2.86 (1.36–6.00)

All models adjusted for sex, age, race, marital status, educational attainment, and risk network size.

TABLE 2. PREDICTORS OF INDIVIDUAL SEXUAL RISK BEHAVIOR AMONG INJECTION DRUG USING INDEX PARTICIPANTS IN THE PHILADELPHIA SITE OF HPTN 037 RANDOMIZED CONTROLLED TRIAL

	Individual-level sexual risk behavior		Adjusted OR (95% CI)
Giving money or drugs for sex (Model 4)	Yes, n (%)	No, n (%)	
Individual-level norm: Friends give money or drugs for sex			
No	9 (18.4)	93 (50.8)	Ref.
Yes	40 (81.6)	90 (49.2)	3.82 (1.59–9.17)
Receiving money or drugs for sex (Model 5)			
Individual-level norm: Friends receive money or drugs for sex			
No	2 (5.9)	68 (34.3)	Ref.
Yes	32 (94.1)	130 (65.7)	6.60 (1.31–33.30)

All models adjusted for sex, age, race, marital status, educational attainment, and risk network size.

TABLE 3. PREDICTORS OF SOCIOCENTRIC SOCIAL NETWORK BEHAVIOR AMONG HIGH-RISK NETWORKS IN THE PHILADELPHIA SITE OF HPTN 037 RANDOMIZED CONTROLLED TRIAL

	b	(SE)	t-statistic	p-value
Multiple partners ^a				
Friends have sex with multiple partners	0.25	0.07	3.44	0.0007
No condom with primary partner ^b				
Friends do not use condoms all the time with their primary partner	0.11	0.07	1.59	0.1141
No condom with casual partner ^c				
Friends do not use condoms all the time with casual or occasional partners	0.09	0.07	1.27	0.2037
Give money or drugs for sex ^d				
Friends give money or drugs for sex	0.12	0.04	2.69	0.0076
Receive money or drugs for sex ^e				
Friends receive money or drugs for sex	0.09	0.05	1.93	0.0546
Dependent variable for each model was the corresponding sociocentric behavior. For example, for multiple partners, the dependent variable was the proportion of network members who reported multiple partner behavior. All models adjusted for network characteristics of sex, age, race, marital status, educational attainment, and network size. ^a R² = 0.1433; ^b R² = 0.1722; ^c R² = 0.0840 ; ^d R² = 0.1065; ^e R² =0.1216.				

Summary

- Summary:
 - Individual-level norms predicted individual-level multiple partner and exchange of sex for money/drugs
 - Egocentric behavior predicted individual-level multiple partner and condom use behavior
 - Egocentric norms were not associated with individual-level behaviors
 - Sociocentric norms predicted sociocentric multiple partner and giving money/drugs for sex
- Implications:
 - Findings support the development of interventions that target egocentric and sociocentric network normative and behavioral characteristics to decrease HIV sexual risk behavior among PWID

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