Intergenerational Communication and Sexual Activity
within an Adolescent Peer Network

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Combining conventional statistical methods and social network analysis, we examine the determinants of adolescent sexual activity and intergenerational communication among 15 to 19 year-olds residing in a micropolitan/rural area in upstate New York.

Adolescents were invited by their peers to participate in a health-related research intervention using Participant-Driven Recruitment (PDR). PDR is a socially embedded methodology that merges participatory research with Respondent-Driven Sampling (RDS), a chain-referral sampling method. The unit of analysis is the peer network formed by the sample's 126 adolescents through the recruitment process.

Our study goes beyond parental communication to include communication with other significant adults in the adolescent's life including grandparents, teachers and coaches. Adolescents were asked about their communication (at least once during their lifetime and during the month prior to the study) with an adult regarding six topics: alcohol, drugs, pregnancy, HIV/AIDS, sex, and STDs. Adolescents were also asked about their sexual activity, for the same two time measures.

Bivariate associations and odds ratios were assessed using a Chi-square test to determine the relationships between sexual activity and communication as well as socio-demographic variables. Multivariate logistic regressions were then performed, controlling for socio-demographic variables. RDS Analysis Tool was used to analyze social network data, including recruitment patterns, sample and population proportions, network size and homophily (the tendency for similar persons to form social ties). Lastly, NetDraw was used to derive graphics of the entire peer network, according to the communication and sexual activity distributions.

We find that adolescents who reported communicating at least once about alcohol, drugs, pregnancy, or sex were at significantly greater odds of having had sex at least once (odds ratios = 5.00; 4.87; 2.87; 3.23, respectively). Similarly, we find that adolescents who reported recently communicating about alcohol, drugs, pregnancy, sex or STDs were at significantly greater odds of recently having had sex (odds ratios = 4.86; 5.11; 2.59; 4.60; 6.19, respectively).

Multiple logistic regressions results suggest that of the behavioral and socio-demographic variables, being sexually active and being female were stronger predictors of intergenerational communication. Also worth noting is that adolescents who reported attending religious activities were over three times more likely to have communicated at least once during their lifetime with an adult about pregnancy. Moreover, adolescents who simultaneously engaged in alcohol, drug, and/or tobacco use were almost six times more likely to have recently communicated with an adult about drugs. Lastly, 16-19 year-olds were over four times more likely to have recently communicated about alcohol. Diagrams of the peer network illustrate how our variables of interest are related at individual, dyadic and structural levels.

We conclude that intergenerational communication about health-related topics can represent an important avenue for encouraging positive and healthy behaviors – hence the strong associations and increased likelihoods of adolescents engaging in sexual activity found in our study.

Table 1 – Percentage Distributions of Communication/Socio-demographic Variables and Odds Ratios of Engaging in Sexual Activity

	Sex at Least Once[a] % (n)	Sex During Past Thirty Days[b] % (n)
Alcohol Communication		
No	25.0 (8)	17.5 (40)
Yes	62.5 (104)	50.8 (65)
OR =	**5.00***	**4.86***
Drug Communication		
No	27.8 (18)	18.4 (38)
Yes	65.2 (92)	53.6 (56)
OR =	**4.87***	**5.11***
HIV/AIDS Communication		
No	60.0 (55)	22.2 (36)
Yes	55.8 (52)	42.1 (19)
OR =	0.84	2.54
Pregnancy Communication		
No	43.6 (39)	31.4 (35)
Yes	68.1 (69)	54.3 (35)
OR =	**2.76****	**2.59***
Sex Communication		
No	35.3 (17)	19.5 (41)
Yes	63.8 (94)	52.7 (55)
OR =	**3.23***	**4.60***
STD Communication		
No	58.7 (63)	23.1 (26)
Yes	61.4 (44)	65.0 (20)
OR =	1.12	**6.19****
Age		
15 years	48.6 (35)	24.3 (37)
16-19 years	66.3 (83)	42.2 (83)
OR =	**2.08†**	**2.27†**
Participants' Sex		
Male	58.1 (62)	40.3 (62)
Female	64.3 (56)	32.8 (58)
OR =	1.30	0.72
Race/Ethnicity		
White non-Hispanic	58.8 (102)	34.9 (103)
Non-white	75.0 (16)	47.1 (17)
OR =	2.10	1.65
Residence		
Rural Area	48.1 (27)	33.3 (27)
Micropolitan Area	64.8 (91)	37.6 (93)
OR =	1.98	1.21
Religious Activities		
No	66.7 (42)	30.2 (43)
Yes	57.9 (76)	40.8 (76)
OR =	0.69	1.59

[a] *Reference group*: those who reported always abstaining; [b] *Reference group*: those who reported always abstaining and those who ever had sex, but not within the past 30 days; Number in parenthesis represents sample size for each subgroup; OR = Odds Ratios; Statistical significance: *p<0.05; ** p<0.01; ***p<0.001; †p<0.10

Table 2 – Probability of Communicating with Adult at Least Once (Odds Ratios)

Communication Topic	Alcohol	Drugs	HIV/AIDS	Pregnancy	Sex	STD
Sexually Active (At Least Once)	**8.40†** [.91-77.54]	**7.40**** [1.69-32.38]	1.22 [.45-3.28]	**3.15*** [1.11-8.93]	3.20 [.78-13.15]	1.32 [.49-3.51]
+1 Risk (At Least Once)	**0.19†** [.03-1.33]	.66 [.15-2.86]	.60 [.17-2.02]	.61 [.17-2.16]	**0.16*** [.04-.72]	.40 [.11-1.43]
+2 Risks (At Least Once)	--	3.61 [.29-45.02]	.96 [.21-4.31]	1.97 [.37-10.46]	1.76 [.15-20.76]	1.00 [.25-4.03]
+3 Risks (At Least Once)	1.67 [.13-21.95]	1.22 [.24-6.15]	**0.35†** [.11-1.11]	1.53 [.45-5.21]	6.25 [.61-63.75]	.58 [.19-1.77]
Older Adolescents	.77 [.10-5.90]	.35 [.08-1.53]	1.35 [.50-3.61]	1.68 [.60-4.66]	1.28 [.27-6.09]	2.05 [.79-5.33]
Females	1.15 [.21-6.38]	.38 [.11-1.29]	**2.47*** [1.04-5.86]	**2.48*** [.96-6.38]	2.7 [.69-10.86]	.70 [.31-1.61]
Non-whites	**0.06*** [.00-.85]	**0.17†** [.02-1.11]	**0.20*** [.05-.91]	**.15**** [.04-.64]	.93 [.08-10.36]	.36 [.08-1.58]
Micropolitan Area	.25 [.02-2.77]	.91 [.26-3.22]	.55 [.20-1.47]	.92 [.32-2.60]	.42 [.09-1.96]	.92 [.35-2.41]
Religious	.93 [.13-6.49]	.81 [.23-2.84]	1.60 [.65-3.93]	**3.31**** [1.26-8.73]	2.60 [.73-9.28]	.91 [.38-2.19]]
Observations	**95**	**109**	**106**	**107**	**110**	**106**

Statistical significance: *p<0.05; **p<0.01; ***p<0.001; †p<0.10; Number in brackets indicate 95% Confidence Intervals

Table 3 – Probability of Communicating with Adult during the Past Thirty Days (Odds Ratios)

Communication Topic	Alcohol	Drugs	HIV/AIDS	Pregnancy	Sex	STD
Sexually Active (Past Thirty Days)	**8.77**** [2.08-37.01]	**3.36 †** [.89-12.57]	4.2 [.63-29.02]	1.59 [.41-6.26]	**5.85**** [1.77-19.30]	**36.29**** [2.30-572.07]
+1 Risk (Past Thirty Days)	1.42 [.36-5.54]	.53 [.14-2.06]	.23 [.03-1.65]	.32 [.06-1.61]	.80 [.22-2.91]	.10 [.00-2.76]
+2 Risks (Past Thirty Days)	1.62 [.32-8.14]	**5.61*** [1.12-27.95]	.23 [.02-2.21]	1.76 [.29-10.60]	.76 [.18-3.20]	**0.04*** [.00-.90]
+3 Risks (Past Thirty Days)	2.22 [.47-10.54]	.31 [.76-14.38]	.65 [.05-7.76]	3.08 [.57-16.71]	1.03 [.25-4.21]	1.06 [.03-41.52]
Older Adolescents	**4.15*** [1.29-13.36]	1.93 [.64-5.82]	1.25 [.29-5.42]	2.64 [.72-9.70]	1.07 [.38-3.06]	1.88 [.28-12.78]
Females	**10.76***** [3.11-37.17]	1.58 [.56-4.41]	**4.92*** [1.10-21.97]	**4.87**** [1.53-15.52]	**2.44†** [.92-6.47]	**4.53 †** [.89-23.07]
Non-whites	.41 [.07-2.47]	.31 [.05-1.83]	1.69 [.15-18.93]	1.38 [.14-13.32]	1.27 [.28-5.66]	4.58 [.08-255.46]
Micropolitan Area	1.32 [.40-4.38]	.36 [.10-1.26]	1.09 [.25-4.77]	.52 [.13-2.12]	.42 [.13-1.32]	.47 [.08-2.72]
Religious	**0.29*** [.09-.92]	.57 [.20-1.62]	3.28 [.59-18.10]	.90 [.24-3.31]	.64 [.23-1.76]	1.25 [.23-6.70]
Observations	**104**	**93**	**54**	**69**	**95**	**45**

Statistical significance: *p<0.05; **p<0.01; ***p<0.001; †p<0.10; Number in brackets indicate 95% Confidence Intervals

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Figure 1A-D – Visualizing the Peer Network according to Selected Characteristics

Alcohol Communication with an Adult (At Least Once)

Legend
Orange = Yes
Grey = No
Black = No Response

Seed
Seed
Seed
Seed
Seed
Non-Recruiting Seeds

Adolescents' Characteristics	Homophily
Alcohol Communication at least once	-0.00
No Alcohol Communication at least once	-1.00

1A – Communication with an Adult about Alcohol (At Least Once)

Drug Communication with an Adult (At Least Once)

Legend
Pink = Yes
Grey = No
Black = No Response

Seed
Seed
Seed
Seed
Seed
Non-Recruiting Seeds

Adolescents' Characteristics	Homophily
Drug Communication at least once	0.44
No Drug Communication at least once	0.24

1B – Communication with an Adult about Drugs (At Least Once)

Sex Communication with an Adult (At Least Once)

Legend
Green = Yes
Grey = No
Black = No Response

Seed
Seed
Seed
Seed
Seed
Non-Recruiting Seeds

Adolescents' Characteristics	Homophily
Sex Communication at least once	0.14
No Sex Communication at least once	-0.01

1D – Communication with an Adult about Sex (At Least Once)

Pregnancy Communication with an Adult (At Least Once)

Legend
Bright Blue = Yes
Grey = No
Black = No Response

Seed
Seed
Seed
Seed
Seed
Non-Recruiting Seeds

Adolescents' Characteristics	Homophily
Pregnancy Communication at least once	0.00
No Pregnancy Communication at least once	0.17

1C – Communication with an Adult about Pregnancy (At Least Once)