RELIGIOUS AFFILIATION & BIRTH CONTROL USE AT FIRST INTERCOURSE: EXAMINING POSSIBLE PATHWAYS

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BACKGROUND

- Approximately 48% of U.S. 17-year olds and 71% of 19-year olds have had sex (Finer,2013)

- Federally funded abstinence-only sex ed programs cannot educate adolescents about contraceptives or safe sex practices (Santelli, 2006)

- Older studies found that adolescents with frequent church attendance had lower rates of modern methods of contraception use (Studer & Thornton, 1987, Durant & Sanders, 1989)

- Some studies find fewer sexual partners and more consistent birth control use in religious teens (Miller & Gur, 2002, Wallace & Forman, 1998)

BACKGROUND

- Support for abstinence only programs is often motivated by religious beliefs (Santelli, 2006)

- Religious beliefs influence parent communication to teens about sex (Regnerus, 2005)

- Parent-child communication can influence teen knowledge, attitudes, and behaviors related to sex (Sommers & Paulson, 2000)

- Religious beliefs influence teen sexual behaviors (Sinha, Cnaan, Gelles, 2007)

RESEARCH QUESTIONS

Among 15-24 year olds who engage in premarital sex, is there an association between religious affiliation and the type of birth control used during first sexual intercourse, after adjusting for confounders?

- Does frequency of religious service attendance mediate the association between religious affiliation and the use of modern methods of birth control (i.e. birth control methods other than withdrawal or rhythm) during first sexual intercourse?

- Does parent-child communication about sex mediate the association between religious affiliation and the use of modern methods of birth control during first sexual intercourse?

- Does formal sex education mediate the association between religious affiliation and the use of modern methods of birth control during first sexual intercourse?

Control Variables:
Age
Race/ethnicity
Parent education

Potential Mediating Variables

•Frequency of religious service attendance

•Parent-child communication about safe sex

•Formal sex education about safe sex

Primary Independent Variable:
Religious Affiliation (categorical)
–None (Reference)
–Protestant
–Catholic
–Other

Outcome Variable:
Type of birth control method used during 1st sexual intercourse (categorical)

–None or Traditional method (rhythm and/or withdrawal with no other precautions)

–Modern method of birth control (MMBC), (e.g., use of condom, birth control pill, etc.)

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NATIONAL SURVEY OF FAMILY GROWTH

- National survey data collected 2006-2010
- Sampling units based on census blocks
- Computer-assisted in-person interviews
- Oversampled teens and minorities

METHODS: ANALYSIS

- Logistic Regression
- Stratified by gender
- Sample inclusion criteria:
    - reported had sex
    - first sex was not with spouse
    - Between ages 15-24
    - Not missing data on any of study variables
- Weighted with NSFG provided WQ16 variable
- Stata 11

LOGISTIC REGRESSION MODELS

- Model 1: Religion, controls & MMBC use at first intercourse – Focal Relationship

- Model 2: Religion, controls, sex education & MMBC use at first intercourse – Mediator

- Model 3: Religion, controls, parent conversations & MMBC use at first intercourse – Mediator

- Model 4: Religion, controls, religious service attendance at age 14 & MMBC use at first intercourse – Mediator

- Model 5: Religion, controls, all mediators, & MMBC use at first intercourse – Full Model

DEMOGRAPHICS SUMMARY

- Similar for males & females

- Approximately 50% White, 25% Black, and 25% Hispanic

- Parent education varied, most parents completed HS or higher

DEMOGRAPHICS

	Female		Male	
Race Ethnicity	n (total=2,754)	%	n (total=2,514)	%
Nonhispanic White	1,369	50	1,218	48
Nonhispanic Black	666	24	565	22
Hispanic	579	21	617	25
Other	140	5	114	5
Parent Education				
< HS	355	13	302	12
HS Grad	802	29	670	27
Some College	83	30	735	29
College	766	28	807	32

DEMOGRAPHICS (CONT.)

	Female		Male	
Religious Affiliation	n (total= 2,754)	%	n (total=2,514)	%
No Religion	374	14	326	13
Catholic	838	30	860	34
Protestant	1,349	49	1,160	46
Other	193	7	168	7
Religious Service Attendance Age 14				
Never	558	20	452	18
1-11 times / year	407	15	427	17
1-3 times/month	421	15	438	17
Weekly or More	1,368	50	1,197	47

DEMOGRAPHICS (CONT.)

	Female		Male	
Sex Ed	n	%	n	%
Abstinence-only/none	155	6	106	4
Beyond abstinence	2,599	94	2,408	96
Parent Conversations				
Abstinence-only or none	912	33	800	32
Beyond abstinence	1,842	67	1,714	68
Birth Control use at 1st Intercourse				
None or Traditional	684	25	482	19
Modern	2,070	75	2,032	81
Total				
	2,754		2,514	

Bivariate Associations Summary

- Similar for both genders
- Similar rates of sex education across religious groups
- Once/week or more most common rate of attendance for religious respondents

BIVARIATE ASSOCIATIONS: FEMALE

	No Religion	Protestant	Catholic	Other Religion
Formal Sex Education				
None/Abstinence-only	3.7	6.0	6.4	3.1
Beyond Abstinence	96.3	94.0	93.6	96.9
Parent Conversation				
None/Abstinence-only	30.2	29.2	38.2	44.0
Beyond Abstinence	69.8	70.8	61.8	56.0
Service Attendance at Age 14				
Never	63.1	11.0	15.3	23.3
1-11 times/year	17.1	12.8	15.5	20.8
1-3 times/month	7.8	16.4	16.2	18.1
Once a week or more	12	59.7	52.9	37.8

BIVARIATE ASSOCIATIONS: MALE

	No Religion	Protestant	Catholic	Other Religion
Formal Sex Education				
None/Abstinence-only	4.0	3.5	5.6	3.0
Beyond Abstinence	96.0	96.5	94.4	97.0
Parent Conversation				
None/Abstinence-only	34.4	27.9	34.8	38.7
Beyond Abstinence	65.6	72.1	65.2	61.3
Service Attendance at Age 14				
Never	61.7	9.1	14	15.5
1-11 times/year	19.9	15.4	17.4	18.4
1-3 times/month	8.6	18.9	18.4	19.6
Once a week or more	9.8	56.7	49.9	46.4

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FEMALE MODEL 1: RELIGION, CONTROLS, & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-value
Catholic	1.17 (0.87-1.57)	0.30
Protestant	0.83 (0.63-1.10)	0.20
Other Religion	0.72 (0.48-1.10)	0.12
Non-Hispanic Black (Control)	0.68 (0.54-0.86)	**<0.05**
Hispanic (Control)	0.62 (0.48-0.79)	**<0.05**
Other Race/Ethnicity (Control)	0.75 (0.49-1.13)	0.18
Parent Ed <HS (Control)	0.55 (0.42-0.72)	**<0.05**
Parent Ed Some College (Control)	1.17(0.93-1.46)	0.18
Parent Ed College Grad (Control)	1.37 (1.07-1.75)	**<0.05**
Age (Control)	0.97 (0.94-1.01)	0.12

MALE MODEL 1:RELIGION, CONTROLS, & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-value
Catholic	1.44 (1.02-2.05)	**<0.05**
Protestant	1.11 (0.81-1.52)	0.51
Other Religion	1.28 (0.78-2.12)	0.33
Non-Hispanic Black (Control)	0.59 (0.45-0.76)	**<0.05**
Hispanic (Control)	0.62 (0.46-0.84)	**<0.05**
Other Race/Ethnicity (Control)	0.65 (0.39-2.11)	0.10
Parent Ed <HS (Control)	0.65 (0.47-0.91)	**<0.05**
Parent Ed Some College (Control)	1.19 (0.91-1.56)	0.20
Parent Ed College Grad (Control)	1.47 (1.12-1.93)	**<0.05**
Age (Control)	0.91 (0.88-0.95)	**<0.05**

FEMALE MODEL 2:RELIGION, CONTROLS, SEX ED & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-value
Catholic	1.18 (0.88-1.60)	0.27
Protestant	0.84 (0.63-1.12)	0.24
Other Religion	0.72 (0.47-1.09)	0.12
Non-Hispanic Black (Control)	0.68 (0.54-0.86)	**<0.05**
Hispanic (Control)	0.62 (0.48-0.79)	**<0.05**
Other Race/Ethnicity (Control)	0.73 (0.48-1.12)	0.14
Parent Ed <HS (Control)	0.56 (0.43-0.74)	**<0.05**
Parent Ed Some College (Control)	1.16 (0.92-1.45)	0.21
Parent Ed College Grad (Control)	1.35 (1.05-1.72)	**<0.05**
Age	0.98 (0.94-1.1)	0.21
Sex Ed (+) (Mediator)	1.81 (1.3-2.52)	**<0.05**

MALE MODEL 2:RELIGION, CONTROLS, SEX ED & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-value
Catholic	1.44 (1.02-2.04)	**<0.05**
Protestant	1.10 (0.81-1.51)	0.53
Other Religion	1.27 (0.77-2.1)	0.77
Non-Hispanic Black (Control)	0.59 (0.45-76)	**<0.05**
Hispanic (Control)	0.64 (0.47-0.85)	**<0.05**
Other Race/Ethnicity (Control)	0.65 (0.39-1.1)	0.101
Parent Ed <HS (Control)	0.66 (0.47-0.92)	**<0.05**
Parent Ed Some College (Control)	1.19 (0.91-1.56)	0.209
Parent Ed College Grad (Control)	1.46 (1.11-1.93)	**<0.05**
Age (Control)	0.91 (0.87-0.95)	**<0.05**
Sex Ed (+)(Mediator)	1.82 (1.17-2.81)	**<0.05**

FEMALE MODEL 3: RELIGION, CONTROLS, PARENT CONVERSATION, & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-value
Catholic	1.18 (0.87-1.64)	0.281
Protestant	0.83 (0.63-1.10)	0.200
Other Religion	0.74 (0.49-1.12)	0.160
Non-Hispanic Black (Control)	0.68 (0.54-0.85)	**<0.05**
Hispanic (Control)	0.63 (0.49-0.81)	**<0.05**
Other Race/Ethnicity (Control)	0.79 (0.51-1.2)	0.266
Parent Ed <HS (Control)	0.57 (0.43-0.75)	**<0.05**
Parent Ed Some College(Control)	1.15 (0.92-1.45)	0.215
Parent Ed College Grad (Control)	1.35 (1.05-1.73)	**<0.05**
Age (Control)	0.98 (0.94-1.05)	0.245
Parent Conversations (+) (Mediator)	1.27 (1.17-1.54)	**<0.05**

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MALE MODEL 3: RELIGION, CONTROLS, PARENT CONVERSATION, & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-value
Catholic	1.42 (1.00-2.01)	0.051
Protestant	0.83 (0.79-1.49)	0.618
Other Religion	0.74 (0.77-2.11)	0.343
Non-Hispanic Black (Control)	0.56 (0.43-0.73)	**<0.05**
Hispanic (Control)	0.62 (0.46-0.86)	**<0.05**
Other Race/Ethnicity (Control)	0.72 (0.43-1.21)	0.218
Parent Ed <HS (Control)	0.69 (0.49-0.96)	**<0.05**
Parent Ed Some College (Control)	1.17 (0.90-1.53)	0.245
Parent Ed College Grad (Control)	1.44 (1.10-1.90)	**<0.05**
Age (Control)	0.92 (0.89-0.96)	**<0.05**
Parent Conversations (+) (Mediator)	1.61 (1.30-1.99)	**<0.05**

FEMALE MODEL 4: RELIGION, CONTROLS, RELIGIOUS SERVICE ATTENDANCE, & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-Value
Catholic	1.11 (0.81-1.53)	0.50
Protestant	0.78 (0.58-1.06)	0.12
Other Religion	0.68 (0.45-1.04)	0.45
Non-Hispanic Black (Control)	0.67 (0.53-0.84)	**<0.05**
Hispanic (Control)	0.62 (0.49-0.79)	**<0.05**
Other Race/Ethnicity (Control)	0.72 (0.49-1.13)	0.168
Parent Ed <HS (Control)	0.74 (0.48-0.72)	**<0.05**
Parent Ed Some College (Control)	1.17 (0.93-1.47)	0.177
Parent Ed College Grad (Control)	1.36 (1.06-1.75)	**<0.05**
Age (Control)	0.97 (0.94-1.01)	0.11
Service Attendance: 1-11/ Year (Mediator)	1.05 (0.96- 1.14)	0.26
Service Attendance: 1- 3/Month (Mediator)	1.11 (0.99-1.23)	0.06
Service Attendance: Weekly (Mediator)	1.04 (0.83-1.29)	0.73

MALE MODEL 4: RELIGION, CONTROLS, RELIGIOUS SERVICE ATTENDANCE, & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-value
Catholic	1.40 (0.94-1.99)	0.10
Protestant	1.05 (0.74-1.50)	0.79
Other Religion	1.22 (0.73-2.04)	0.44
Non-Hispanic Black (Control)	0.58 (0.45-0.75)	**<0.05**
Hispanic (Control)	0.61 (0.45-0.83)	**<0.05**
Other Race/Ethnicity (Control)	0.65 (0.39-1.09)	0.106
Parent Ed <HS (Control)	0.66 (0.47-0.92)	**<0.05**
Parent Ed Some College (Control)	1.19 (0.91-1.57)	0.20
Parent Ed College Grad (Control)	1.45 (1.11-1.91)	**<0.05**
Age (Control)	0.91 (0.88-0.95)	**<0.05**
Service Attendance: 1-11/Year (Mediator)	1.03 (0.94-1.12)	0.57
Service Attendance:1-3/Month (Mediator)	0.99(0.88-1.11)	0.83
Service Attendance: Weekly (Mediator)	1.15(0.89- 1.49)	0.28

FEMALE MODEL 5: RELIGION, CONTROLS, SEX ED, PARENT CONVERSATIONS, RELIGIOUS SERVICE ATTENDANCE, & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-Value
Catholic	1.12 (0.82-1.54)	0.47
Protestant	0.79 (0.58-1.07)	0.13
Other Religion	0.69 (0.46-1.06)	0.46
Non-Hispanic Black (Control)	0.67 (0.53-0.84)	<0.05
Hispanic (Control)	0.63 (0.50-0.81)	<0.05
Other Race/Ethnicity (Control)	0.76 (0.49-1.16)	0.49
Parent Ed <HS (Control)	0.57 (0.44-0.76)	<0.05
Parent Ed Some College (Control)	1.15 (0.91-1.44)	0.24
Parent Ed College Grad (Control)	1.33 (1.04-1.70)	<0.05
Age (Control)	0.98 (0.95-1.02)	0.34
Sex Ed (+) (Mediator)	1.74 (1.24-2.45)	<0.05
Parent Conversations (+) (Mediator)	1.23 (1.01-1.49)	<0.05
Service Attendance: 1-11/Year (Mediator)	1.05(0.96-1.15)	0.253
Service Attendance: 1-3/Month	1.11 (1.00- 1.24)	<0.05
Service Attendance: Weekly	1.05(0.85- 1.31)	0.643

MODEL 5:MALEFEMALE MODEL 5: RELIGION, CONTROLS, SEX ED, PARENT CONVERSATIONS, RELIGIOUS SERVICE ATTENDANCE, & MMBC USE AT 1ST INTERCOURSE

	OR (CI)	P-Value
Catholic	1.35 (0.93-1.96)	0.11
Protestant	1.03 (0.72-1.45)	0.88
Other Religion	1.21 (0.72-2.04)	0.463
Non-Hispanic Black (Control)	0.57 (0.43-0.72)	**<0.05**
Hispanic (Control)	0.63 (0.46-0.85)	**<0.05**
Other Race/Ethnicity (Control)	0.73 (0.43-1.23)	0.235
Parent Ed <HS (Control)	0.70 (0.50-0.99)	**<0.05**
Parent Ed Some College (Control)	1.17 (0.90-1.53)	0.25
Parent Ed College Grad (Control)	1.43 (1.08- 1.88)	**<0.05**
Age (Control)	0.92 (0.89-0.96)	**<0.05**
Sex Ed (+) (Mediator)	1.68 (1.07-2.64)	**<0.05**
Parent Conversations (+) (Mediator)	1.59 (1.28-1.97)	**<0.05**
Service Attendance: 1-11/year (Mediator)	1.02 (0.93-1.11)	0.744
Service Attendance: 1-3/month (Mediator)	0.98 (0.87-1.10)	0.69
Service Attendance: Weekly (Mediator)	1.14 (0.88-1.48)	0.314

SUMMARY

- Sex ed and parent conversations positively associated with MMBC use at 1st intercourse for both males & females

- Religious service attendance not significant for males or females

- Catholic affiliation is positively associated with MMBC use at first intercourse for males

- This association appears to be mediated by parent-child communication

LIMITATIONS

- NSFG Variables
  - Religion
  - Sex education
- Recall bias for older participants

DISCUSSION

- Study confirmed the relationship of sex education and parent-child conversations to birth control use

- Parental messages about sexual health differ for male and female teens (Diiorio, Pluhar, Belcher, 2003)

- Evangelical religious gender role expectations for romantic relationships (Freitas, 2008)

DISCUSSION

- Next steps for research?
- What are the public health implications?

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INDEPENDENT & DEPENDENT VARIABLES

- Independent: Religion raised

- Dependent: Use of a modern method of birth control at first intercourse

  "Looking at Card 45b, that first time, what methods did you and she use to prevent pregnancy or sexually transmitted disease?"

MEDIATING VARIABLES: SEX EDUCATION

"Now I'm interested in knowing about formal sex education you may have had. (Before you were 18, did / Have) you ever (have / had) any formal instruction at school, church, a community center or some other place about…

– *how to say no to sex?*
– *methods of birth control?*
– *sexually transmitted diseases?*
– *how to prevent HIV/AIDS?"*

MEDIATING VARIABLES: PARENT-CHILD COMMUNICATION

" *(Before you were 18 years old, which / Which), if any, of the topics shown on Card 23 (did you ever talk /have you ever talked) with a parent or guardian about?*"

- How to say no to sex

- Methods of birth control

- Where to get birth control

- Sexually transmitted diseases

- How to prevent HIV/AIDS

- How to use a condom

MEDIATING VARIABLES: RELIGIOUS SERVICE ATTENDANCE AT AGE 14

When you were 14, about how often did you usually attend religious services?

More than once a week

Once a week

2-3 times a month

Once a month (about 12 times a year)

3-11 times a year

Once or twice a year

Never