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DUAL PROTECTION DILEMMA

KIYOMI TSUYUKI

University of California – Los Angeles

REGINA BARBOSA

University of Campinas – Campinas, Brazil

JESSICA GIPSON

University of California – Los Angeles

ABSTRACT

The global syndemic of HIV and unintended pregnancy has prompted research on dual protection, the simultaneous protection against HIV and unintended pregnancy. Condoms remain the mainstay of dual protection, but studies find that as partners transition into a more committed romantic relationship, condoms are replaced with non-barrier contraception. Researchers agree that dual protection measures must expand to include condom use consistency and a wider range of contraceptive methods. We analyze data from the 2006 Pesquisa Nacional Demografica e da Saude da Crianca e da Mulher, a nationally representative household survey of women of reproductive age in Brazil. Using descriptive techniques and multinomial logistic regression we: (1) examine how dual protection varies by relationship type; (2) estimate how sociodemographic characteristics and relationship type affects dual protection; and (3) examine how patterns of dual protection differ for women who are sterilized and for women who use dual methods.

BACKGROUND AND SIGNIFICANCE

The global syndemic of HIV and unintended pregnancy has prompted a relatively new body of research focused on dual protection, or the simultaneous protection against HIV and unintended pregnancy. Studies thus far identify dual protection as a useful prevention strategy among casual sexual partners, but women with stable partners (e.g. married) are the hardest hit by the syndemic. Studies find that as partners transition into a more committed romantic relationship, condoms are replaced with non-barrier contraception (Ku et al 1994). This poses an apparent and immediate need to develop viable dual protection strategies for stable couples.

Condoms remain the mainstay of dual protection and many researchers agree that definitions must expand to include a greater range of methods (Berer 1997; Berer 2006). A major strength of dual protection as a prevention strategy that can be tailored to specific contexts based on the needs of the partners. However, current measures of dual protection rarely capture condom use consistency, a wide range of contraceptive methods (ex. irreversible methods, long-acting hormonal methods), and traditional strategies (ex. withdrawal, calendar method). Expanding on current measures would frame dual protection as a risk reduction strategy for stable partner.

There are two important flaws in current dual protection studies. The first is a flaw in the measurement/definition of dual protection. Current definitions of dual protection have been tailored for couples in a new or casual relationship by emphasizing the use of a barrier method to the exclusion of contraceptive methods. This is problematic because some couples may approach dual protection through dual method use or through sporadic barrier method use. Although some studies have begun to measure dual protection through dual method use, contraceptive measures have been limited to the most commonly used modern methods. Overall, the sporadic barrier method use has also been problematized, even though it may reflect an alternative use of dual protection that emphasizes a negotiated safety and intimacy for couples in a committed relationship.

The second flaw in current dual protection studies is the inability to disentangle the competing risks of HIV and unintended pregnancy. Yes, women and their partners who use condoms consistently are protected against both HIV and unintended pregnancy, if condoms are used correctly, but their motivation behind consistent condom use may be related to only STI protection or prevention of unintended pregnancy. A more precise approach to this dual protection dilemma would be to study dual protection behavior in samples of the population that are sterilized, are pregnant, or are using dual methods. Doing so would allow us to better understand how partners conceptualize and use dual protection in sexual relationships, which will help health care providers and public health program planners to better frame and tailor dual protection messages to sexual partners in a wider range of relationship types.

This study has three aims: (1) to examine how dual protection varies by relationship type; (2) to estimate how socio demographic characteristics and relationship type affects dual protection behavior; (3) to examine how patterns of dual protection differ for women who are sterilized and for women who use dual methods compared to other sub-groups of women.

DATA AND METHODS

The data presented are from the 2006 Pesquisa Nacional Demografica e da Saúde da Criança e da Mulher (PNDS), a nationally representative household survey of Brazilian women of reproductive age (15-49 years old) in urban and rural areas of all five macro-regions in Brazil. The PNDS survey utilized a multi-stage stratified sampling design. Women were selected using a two-stage probabilistic sampling frame of census track (PSU) and household (SSU) and had a response rate of 89%. Further information on the research methods and sample design is available elsewhere (MOS 2009). A total of 15,575 women participated in the survey, but this analysis is restricted to the group of 12,097 women who self-reported having ever had sexual intercourse and those reporting

being sexually active in the past 12 months. Of these women, 11,484 had complete information on all variables used in the analyses.

Interview

Participants were asked to complete a comprehensive interviewer-administered questionnaire. The questionnaire gathered information about individual and household characteristics, reproductive health, and maternal and child health including education, household infrastructure, individual characteristics, history of all live births, history of pregnancy (and losses), contraception, cohabiting and sexual activity, family planning, and characteristics of spouse and work. The analysis in this article considered variables associated with decisions around condom use, contraceptive use, and relationship type.

Theoretical Framework

This study uses the relationship perspective which aims to situate decisions around dual protection, condom use, and contraceptive use within the relationship context. In order to do this we consider how relationship type affects couples' decisions to use or not use condoms and/or contraceptive methods as a way to attain safer sex and negotiated safety. Central to the concept of safe sex is the ability for sexual partners to successfully coordinate their behaviors according to their sexual desires and their needs to contracept or protect against STIs (Karney et al 2010). A couples ability to effectively coordinate safer sex is dependent on the level of trust they have in each other together with their abilities to communicate and negotiate (Karney et al 2010). Whereas condom use is recommended (and easily attainable) for casual or new partners, researchers have found that condom use within long-term relationships is uncommon (Ku et al 1994). We hypothesize that women in more committed relationships (e.g. in union or married) will use condoms less consistently than women not currently in a relationship.

Measures

The outcome condom use variables for this study are *consistent condom use* over the past 12 months and *current contraceptive method*. *Consistent condom use* was measured with the question, ‘in the last 12 months, you used a male condom during sexual relations: 1) always, every time, 2) sometimes, 3) never’. *Current contraceptive use* is measured with two questions. The first question asked, ‘do you, your husband, or partner currently use any method to avoid becoming pregnant?’ Participants who respond affirmatively to this question were asked the second open response question, ‘what method do you currently use?’ Responses were categorized into the following methods: 0) no method, 1) sterilized (male vasectomy or female tubal ligation), 2) pill, 3) long-acting hormone (hormone injectables, hormonal implants) and 4) Other methods include diaphragm, IUD, coitus interruptus, calendar, abstinence, emergency contraception, and other traditional methods.

Relationship type is measured by several questions. The first question asks about marital status, ‘are you currently married?’ Responses were categorized into: 1) married, 2) in union, 3) not in union. Participants who responded negatively to being in a relationship were asked the second question, ‘were you ever married or in a union with someone?’ Responses were categorized into: 1) previously married, 2) previously in a union, 3) not previously in a union. For this analysis, relationship type was categorized into: 1) Single (never have been in a committed relationship), 2) previously married/in union, 3) in union, and 4) married.

Statistical Analysis

We used descriptive statistics, Pearson’s Chi-square statistic, and multinomial logistic regression to describe the condom use, contraceptive use, relationship type, and individual characteristics of our sample.

PRELIMINARY RESULTS

Table 1 describes the outcomes, relationship status, and sociodemographic characteristics of our sample of women of reproductive age in Brazil in 2006. Most women in our sample never used

condoms. For current contraception, women mostly were either sterilized or used the pill or no method. Only a small percentage used a long-acting hormonal method or used an “other”, traditional method. Most women were either married or in union. In terms of sociodemographic characteristics, women in our sample averaged 32 years old, eight years of education, were either of Black or White race, had an average monthly household income of 1,208 Reis (US\$600/month in 2006), and lived in an urban area, averaged 2 children.

Table 2 describes the association between relationship type, consistent condom use, and current contraceptive method in our sample. In general, consistent condom use was most common in single women, followed in order by women who were separated, in union, and married with only a small difference between women in union and married women. Single women using no method of contraception used consistent condoms the most, followed in order by women who were separated, married, and in union. Sterilized women reported mostly reported no condom use, with the exception of women who were separated. Single and separated women on the pill or using a long-acting hormonal method reported an even distribution of either never, sometimes or always using condoms compared to women in union or married on the pill or using a long-acting hormonal method either never or sometimes used condoms. Consistent condom use was low among women who used an “other”, traditional method despite relationship type.

Table 3 uses multinomial logistic regression to examine the associations between relationship type, sociodemographic characteristics, and consistent condom use. We begin, in Model 1, by estimating the effect of relationship type on consistent condom use. Married women have a relative risk ratio 20.24 times, and women in union 16.13 times, that of single women of reporting never compared to always using condoms. In contrast, women in union have a relative risk ratio 3.21 times, and married women 2.50 times, that of single women of reporting using condoms sometimes. In model 2, we demonstrate that the association between relationship type and consistent condom

use is greatly explained by sociodemographic characteristics, although there remains a significant difference between women in union and married women compared to single women when considering never or sometimes using condoms.

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TABLE 1. *Unweighted sample characteristics of sexually active women of reproductive age (15-49 years) in Brazil, 2006 (N=11,484)*

Consistent condom use	
Never.....	58
Sometimes.....	24
Always.....	19
Current contraception	
No method.....	28
Sterilized.....	35
Pill.....	28
Long-acting hormone.....	6
Other (coitus/calendar/abstinence/EC).....	4
Relationship status (rel)	
Single, never in relationship.....	13
Separated.....	10
In union.....	33
Married.....	44
Age [mean (std)].....	32.2 (9.14)
15-19.....	9
20-24.....	16
25-29.....	17
30-39.....	33
40-49.....	26
Education (years) [mean (std)].....	8 (3.5)
0-5 years.....	33
6-8 years.....	23
9-11 years.....	11
12 or more years.....	33
Race	
White.....	40
Black.....	55
Other.....	5
Household income (monthly) [mean (std)]....	1,208 (1,853.1)
0-350.....	24
351-700.....	22
701-1300.....	19
1301-50000.....	22
Missing.....	13
Region	
North.....	17
Northeast.....	18
Southeast.....	21
South.....	23
Mid-West.....	21
Rural	
No.....	71
Yes.....	29
Number of children [mean (std)].....	2 (1.7)
0.....	19
1.....	22
2.....	27
3 or more.....	32

TABLE 2. Unweighted cross-tabulation of consistent condom use on current method of contraception stratified by relationship type of sexually active women of reproductive age (15-49 years) in Brazil, 2006

CONSISTENT CONDOM USE	RELATIONSHIP TYPE											
	Single (n=1,513)			Separated (n=1,099)			In Union (n=3,803)			Married (n=5,069)		
	Never (n=250)	Sometimes (n=507)	Always (n=756)	Never (n=351)	Sometimes (n=332)	Always (n=416)	Never (n=2,390)	Sometimes (n=965)	Always (n=448)	Never (n=3,621)	Sometimes (n=907)	Always (n=541)
TOTAL	17	34	50	32	30	38	63	25	12	71	18	11
Current Contraception												
No method.....	8	26	66	23	29	47	37	27	36	41	19	40
Sterilized.....	71	10	19	42	25	33	82	15	3	88	10	2
Pill.....	24	42	33	29	39	32	64	32	4	68	29	4
Long-acting hormone.....	26	43	31	35	31	35	60	32	8	68	25	6
Other (coitus, calendar, etc.)....	22	59	20	30	50	20	56	38	5	61	33	6
<i>Pearsons X²</i>		227.64			50.42			898.40			1500.00	
<i>P-value</i>		***			***			***			***	

Pearsons Chi-square, PNDS, 2006

TABLE 3. *Unweighted multinomial logistic regression of consistent condom use on relationship type and socio-demographic variables of sexually active women of reproductive age (15-49 years) in Brazil, 2006*

RRR (Confidence Interval)	Consistent Condom Use					
	Model 1: Relationship Type			Model 2: Relationship Type + Socio-		
	Never	Sometimes	Always	Never	Sometimes	Always
Relationship type			Reference Outcome			Reference Outcome
Single.....	ref.	ref.		ref.	ref.	
Separated.....	2.55*** (2.09, 3.12)	1.19 (0.99, 1.43)		1.05 (0.84, 1.31)	1.23* (0.99, 1.51)	
In union.....	16.13*** (13.54, 19.22)	3.21*** (2.14, 2.92)		7.60*** (6.28, 9.21)	3.17*** (2.64, 3.77)	
Married.....	20.24*** (17.09, 23.97)	2.50*** (2.74, 3.76)		8.35*** (6.90, 10.11)	2.63*** (2.21, 3.18)	
Age				1.04*** (1.03, 1.05)	0.98*** (0.98, 0.99)	
Education (years)				0.93*** (0.913, 0.95)	0.99 (0.97, 1.01)	
Race						
White.....				ref.	ref.	
Black.....				1.05 (0.93, 1.20)	1.05 (0.92, 1.20)	
Other.....				0.93 (0.72, 1.20)	1.04 (0.80, 1.35)	
Region						
North.....				ref.	ref.	
Northeast.....				1.41*** (1.17, 1.69)	1.34** (1.10, 1.62)	
Southeast.....				1.30** (1.08, 1.56)	1.34** (1.11, 1.62)	
South.....				1.32** (1.10, 1.59)	1.34** (1.10, 1.63)	
Mid-West.....				1.40*** (1.17, 1.67)	1.33** (1.10, 1.61)	
Rural						
No.....				ref.	ref.	
Yes.....				1.19** (1.04, 1.36)	0.95 (0.82, 1.09)	
Number of children.....				1.19*** (1.13, 1.25)	1.07* (1.01, 1.13)	

Multinomial Logistic Regression, PNDS, 2006