Economic Dependence and Unprotected Sex: The Role of Sexual Assertiveness among Young Urban Mothers

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ABSTRACT *In the USA, sexual intercourse is the leading route of human immunodeficiency virus transmission among women, primarily through their main partner. Because male condom use is not directly under a woman's control, gender inequalities may help shape this sexual risk behavior. To examine this association, data came from follow-up interviews of young, primarily minority, pregnant women enrolled in a prospective, randomized controlled trial. Specifically, we aimed to determine the relationship between economic dependence on a male partner and condom use, and to establish whether this relationship was mediated by sexual assertiveness. Overall, 28% of women reported being economically dependent on a male partner. Young women dependent on a male partner were 1.6 times more likely to report not using a condom at last sex than women not dependent on their partner (95% confidence interval=1.11–2.32; $p=0.01$). Sexual assertiveness mediated the relationship between economic dependence and condom use (Sobel=2.05, $p=0.04$). Coupled with past research, this study supports the premise that sexual behaviors may be rooted in a complex web of social determinants. Addressing gender inequalities in contextual factors may promote healthier decisions within sexual relationships.*

KEYWORDS *Sexual risk, Gender, Economic dependence, Social determinants*

BACKGROUND

In the USA, human immunodeficiency virus (HIV) risk is defined by social inequalities in gender and race.¹ Women now account for one fourth of all new infections, resulting in almost 10,000 new cases annually. The majority of these new infections have been occurring among women ages 15–39, indicating higher risk in this population.² Racial and ethnic disparities in HIV risk also exist among women. Non-Hispanic black women account for 66% of cases diagnosed among women and are diagnosed with acquired immunodeficiency syndrome (AIDS) at a rate 23 times that of white women and four times that of Hispanic women.³ HIV is the leading cause of death among black women ages 25–34.⁴

Sexual intercourse remains the leading route of HIV transmission among women in the USA, accounting for more than 80% of new diagnoses.³ Many women become infected through their main partner due to low rates of consistent

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condom use in primary relationships.^{5,6} Because male condom use is not directly under a woman's control, gender inequalities may be particularly important in shaping this sexual risk behavior.

The theory of gender and power provides a framework that may help explain condom use within romantic relationships. It asserts that power dynamics between men and women can be explained by three major structures: sexual division of power (i.e., male partner dominance within relationships), sexual division of labor (i.e., economic inequality), and structure of cathexis (i.e., gender norms). These structures are maintained through societal and institutional social mechanisms and are manifest in relationship control, women's economic potential, and expectations of women's role in society.^{7,8}

The sexual division of power is particularly relevant for understanding risk among low-resource women in the context of interpersonal relationships. Several studies have identified this power imbalance and have described its impact on sexual risk behavior. For example, in a study of urban Black men ages 18–24, the overwhelming majority believed that condom use was the man's decision. Only a small percentage conceded that their female partner may play a “small role” in choosing to use a condom.⁹ Another study of Black teenage women reported that 26% felt little control over condom use. Sixty-six percent felt that a male sex partner would be hurt, insulted, angry, or suspicious if questioned about his HIV risk factors.¹⁰ Additionally, studies report that demanding condom use would show a lack of trust in the relationship.^{10–12} Furthermore, in one study, Black teenage women sometimes feared rejection or violence when considering asking a partner to wear a condom.¹⁰ Therefore, urging women to demand condom use and encouraging monogamous relationships may not be an effective prevention strategy for women that do not perceive control in sexual decision-making.

Economic inequalities derived from the sexual division of labor may further exacerbate the power imbalance in romantic relationships. Women who are economically dependent on their partners may yield less power in romantic relationships and therefore less control over sexual decision-making. Empirical studies have linked economic inequality and poverty with increased HIV risk.^{1,13,14} For example, populations with lower incomes have been found to use condoms less and have higher rates of HIV/AIDS than populations with higher incomes.^{1,14} In a recent qualitative study with African American women, lack of economic opportunities and economic dependency were cited as compelling reasons for remaining in risky sexual relationships.¹³ Reduced economic autonomy may lead to the inability to maintain monogamous relationships or assert their sexuality. Additional literature suggests that one of the components of relationship power may be an imbalance of valued resources (e.g., economic and emotional) between partners.^{7,15,16}

While we did not propose to test the theory of gender and power, we aimed to use this broader theory to better understand a specific component of sexual risk. In this paper, our primary objective was to examine whether economic dependence on a male partner was associated with condom use in early motherhood among young, primarily minority women who had previously been receiving prenatal care at two publicly funded clinics in two cities in the USA. Additionally, in order to understand one possible mechanism through which economic dependence could be related to condom use, we examined whether this relationship was mediated by sexual assertiveness with a partner.

METHODS

Participants and Procedures

Data for this study come from the follow-up interviews of young pregnant women enrolled in a prospective, three-arm randomized, controlled trial aimed at promoting general and reproductive health through group prenatal care, which followed participants from early pregnancy through 1-year postpartum in New Haven, CT, USA, and Atlanta, GA, USA. This study has been described previously.^{17,18} Briefly, to be included, women had to be less than 24 weeks gestation, 14–25 years old, and English or Spanish speaking. All patients had public (e.g., Medicaid) or hospital assistance for complete prenatal care insurance coverage.

Interviews were conducted using audio computer-assisted self-interviews (A-CASI) at baseline (during their second trimester) and follow-up interviews in their third trimester, 6-months postpartum and 12-months postpartum. A-CASI allow participants to hear the questions through earphones, read questions on a small computer screen, and respond to questions directly through the device. These devices aid in participation of individuals with low reading ability and improve reliability and validity of responses for sensitive material.¹⁹ Participants were paid \$25 for each interview. All patients provided written informed consent, and all procedures were approved by the Yale University and Emory University Human Investigation Committees and by Institutional Review Boards at the study centers.

For this analysis, data from 12-months postpartum interviews were used. As a result, we were able to focus on a vulnerable population given the increased economic burden of having a child, especially among these young, low-income women. These interviews occurred at an average of 53 weeks postpartum ($SD=5.5$). Of the 1,538 eligible adolescents and young women, 1,047 enrolled in the study (68% participation rate), and 840 completed the 1-year postpartum assessments (80.2% retention rate). Details of the flow of participants have been published elsewhere.¹⁷ In the parent study, compared to those who declined enrollment ($n=491$), participants ($n=1,047$) were more likely to be African American and older.¹⁷

Because this analysis examined the association between economic dependence on a partner and condom use, young women who did not have a sexual partner in the past 6 months ($n=67$) were excluded. Additionally, among the 773 who had a partner in the past 6 months, 141 did not have sex with their current or most recent partner in the last 30 days. These women were excluded because their risk in terms of relationship dynamics could not be determined. As a result, the final dataset included 632 young women who had sex with their current or most recent partner in the last 30 days. Compared to participants who were not included in this analysis ($n=415$), the final sample of 632 young women did not differ significantly according to baseline age, race, education, alcohol use, marijuana use, or condom use at last sex. However, at baseline, those included in the final sample were marginally more likely than those not included in the final sample to be economically dependent on a male partner (24.5% vs. 19.5%, $p=0.06$).

Measures

Detailed data were collected on demographic characteristics, sexual behaviors, and relationship characteristics on up to three partners for each participant. Data on only one partner was used in an attempt to consistently refer to the same partner for the primary exposure, the outcome, and the other relationship variables. From this point forward, this partner will be referred to as the “index partner.”

Outcome Measure Condom use was assessed by asking the participants if they used a condom the last time they had sex with their index partner (yes/no).

Primary Exposure Economic dependence was measured by asking participants what is their current main source of financial support. For this analysis, we dichotomized responses into “partner” (i.e., husband or boyfriend) and “non-partner” (i.e., own job, parent/guardian, other relative, and public assistance).

Additional Covariates To identify predictors of economic dependence and condom use, a series of demographic, risk, and relationship variables were evaluated. These variables were hypothesized to relate to both economic dependence and condom use.

The following demographic and risk covariates were assessed: *race/ethnicity* (African American, Hispanic, or White/Other), *age*, *educational status* (still in school, less than high school, high school/GED, or more than high school), *number of children in the home* (0, 1, and 2+ children), and *alcohol and drug use*. Alcohol and drug use were measured by asking participants whether they had used alcohol and/or marijuana in the past 6 months. Hard drug use was not considered because less than 1% reported using any hard drugs in the past 6 months.

Additionally, a series of relationship variables were included that assessed the status of the participant's relationship with the index partner. First, *relationship duration* with index partner was measured and then categorized into less than 6, 6–12, and 12 months or greater. Second, *relationship status* was assessed, and responses were then dichotomized into those who were in a very committed relationship and those whose relationship was not very committed (i.e., somewhat committed, a little committed, or totally non-committed). Third, the *age difference* between the participant and the index partner was calculated.

Finally, to examine possible mediation, *sexual assertiveness* was measured by asking participants whether they had *demand*ed or *ask*ed that a partner use a condom in the past 6 months. Participants who answered “yes” to either question were categorized as having high sexual assertiveness; those who answered “no” to both questions were categorized as having low sexual assertiveness.²⁰

While condom use and sexual assertiveness may seem to be irrelevant constructs for those in a very committed relationship, self-reporting that you are in a very committed relationship does not preclude sexual risk and adverse outcomes from having unprotected sexual intercourse. Previous studies show that postpartum women have high risk for HIV and sexually transmitted diseases (STDs). In a systematic review, 14–39% tested STD positive 6–10 months postpartum, and adolescent mothers were two times more likely to have an STD compared to nulliparous peers.²¹ Additionally, there is considerable misperceptions of personal and partner risk.²² In fact, one study showed that over 60% of women with an STD felt that they were in a monogamous committed relationship.²³ As a result, we believe that these measures are still meaningful for those who consider themselves in very committed relationships.

Statistical Analysis

For categorical variables, proportions were calculated, and differences in proportions across economic dependence groups were tested using Chi-square tests. For continuous variables, means and standard deviations were calculated, and differences in means across economic dependence groups were tested using *t* tests. *p* values are reported.

Multivariate models were conducted using logistic regression and were developed using forward stepwise regression with a final inclusion criteria of $p < 0.10$. In all

models, study intervention condition and study site were included. Finally, the potential role of sexual assertiveness as a mediator of the relationship between economic dependence and condom use was assessed using Baron and Kenny's criteria: (1) sexual assertiveness is associated with economic dependence, (2) sexual assertiveness is associated with condom use after controlling for economic dependence, and (3) sexual assertiveness significantly changes the association between economic dependence and condom use in the final multivariate model.²⁴ This significance was tested using the Sobel test.²⁵ Odds ratios and 95% confidence intervals (CI) are reported. All analyses were conducted using SAS 9.1.

RESULTS

This analysis was limited to those women who had a partner in the last 6 months and who had sex with their current or most recent partner in the last 30 days ($n=632$). Of these, 78% of participants were African American, 14% were Hispanic/Latina, and 8% were White/Other. The mean age in this group was 21.9 (SD=2.6). At baseline, 37% of participants were still in school, 26% never completed high school, 29% had a high school diploma or GED, and 8% had more than a high school education.

Twenty-eight percent of women reported being economically dependent on a male partner. In bivariate analysis, those dependent on a partner were more likely than those not dependent on a male partner to be Hispanic/Latina and White/Other, to have abstained from alcohol in the past 6 months, to be in a longer relationship, to be in a very committed relationship, and to have low sexual assertiveness ($p<0.05$; Table 1).

In unadjusted analysis, young women dependent on a male partner were 1.6 times more likely to report not using a condom the last time they had sex with that partner than women not dependent on their partner (95% CI=1.11–2.30; Table 2, Model I). Specifically, of those who were economically dependent on their partner, 67.0% did not use a condom compared to 55.8% who were not economically dependent on their partner ($p=0.010$; data not shown).

Forward stepwise regression including potential confounders resulted in a final multivariate model that retained economic dependence and age in years. After adjusting for age, results remained virtually unchanged (AOR=1.61; 95% CI=1.11–2.32; $p=0.01$; Table 2, Model II).

Additionally, we examined whether sexual assertiveness mediated the relationship between economic dependence and condom use. First, it was associated with economic dependence in adjusted analyses ($\chi^2=4.39$, $p=0.036$). Next, sexual assertiveness was independently associated with not using a condom at last sex (AOR=11.24, 95% CI=6.85–18.45; Table 2, Model III). Additionally, it qualitatively impacted the relationship between economic dependence and condom use (AOR=1.47, 95% CI=0.98–2.20; Table 2, Model III). Finally, this indirect effect was statistically significant (Sobel=2.05, $p=0.04$). These results suggest that sexual assertiveness partially mediated the relationship between economic dependence and condom use—that is, economic dependence leads to lower sexual assertiveness which in turn leads to lower condom use.

DISCUSSION

The results suggest that in the context of early motherhood, young women economically dependent on a partner are more likely to not use a condom.

TABLE 1 Demographic, risk, and relationship characteristics, overall and by economic dependence on a male partner

	Total, N=632	Partner dependence, N=179 (28.3%)	Partner non-dependence, N=453 (71.7%)	p value ^a
Race/ethnicity				<0.0001
African American	494 (78.2%)	120 (67.0%)	374 (82.6%)	
Hispanic/Latina	90 (14.2%)	40 (22.4%)	50 (11.0%)	
White/Other	48 (7.6%)	19 (10.6%)	29 (6.4%)	
Age, mean years (SD)	21.9±2.6	21.9±2.6	21.9±2.6	0.91
Education level at baseline				0.72
Still in school	232 (36.7%)	61 (34.1%)	171 (37.8%)	
Less than HS	166 (26.3%)	52 (29.1%)	114 (25.2%)	
HS/GED	181 (28.6%)	52 (29.1%)	129 (28.5%)	
More than HS	53 (8.4%)	14 (7.8%)	39 (8.6%)	
Number of children (excluding newborn) in home				0.99
None	389 (61.6%)	110 (61.5%)	279 (61.6%)	
One	170 (26.9%)	48 (26.8%)	122 (26.9%)	
Two or more	73 (11.5%)	21 (11.7%)	52 (11.5%)	
Any alcohol use in past 6 months				0.004
Yes	190 (30.1%)	39 (21.8%)	151 (33.3%)	
No	442 (69.9%)	140 (78.2%)	302 (67.7%)	
Any marijuana use in past 6 months				0.28
Yes	74 (11.7%)	17 (9.5%)	57 (12.6%)	
No	558 (88.3%)	162 (90.5%)	396 (87.4%)	
Relationship duration ^b				<0.0001
Less than 6 months	46 (7.3%)	9 (5.0%)	37 (8.2%)	
6–12 months	44 (7.0%)	13 (7.3%)	31 (6.8%)	
12 months or greater	438 (69.3%)	147 (82.1%)	291 (64.2%)	
Missing	104 (16.5%)	10 (5.6%)	94 (20.8%)	
Relationship status ^b				<0.0001
Very committed	456 (72.2%)	155 (86.6%)	301 (66.5%)	
Not very committed	176 (27.8%)	24 (13.4%)	152 (33.5%)	
Participant/partner age difference in years ^b	2.4±5.3	2.4±3.8	2.4±5.7	0.66
Sexual assertiveness ^c				0.04
High	423 (66.9%)	109 (60.9%)	314 (69.3%)	
Low	209 (33.1%)	70 (39.1%)	139 (30.7%)	

Economic dependence is defined by current main source of financial support: partner=husband or boyfriend, non-partner=own job, parent/guardian, other relative, or public assistance

^ap values for differences were calculated using an overall χ^2 test for independence for proportions. For continuous measures, a Student's *t* test was performed

^bRelationship refers to current or most recent partner

^cHigh=demanded or asked that a partner use a condom in the last 6 months; low=did not demand or ask that a partner use a condom in the last 6 months

TABLE 2 Odds ratio (95% confidence interval) for not using a condom at last sexual intercourse

	Model I	Model II		Model III	
	OR (95% CI)	AOR (95% CI)	<i>p</i> value	AOR (95% CI)	<i>p</i> value
Economic dependence					
Partner	1.0	1.0	—	1.0	—
non-dependence					
Partner	1.60 (1.11–2.30)	1.61 (1.11–2.32)	0.011	1.47 (0.98–2.20)	0.06
Age in years ^a		1.09 (1.02–1.16)	0.009	1.06 (0.99–1.14)	0.10
Sexual assertiveness ^b					
High				1.0	—
Low				11.24 (6.85–18.45)	<0.0001

All models adjust for intervention group and site

AOR adjusted odds ratio

^aThe odds ratio associated with a unit change in age in years

^bHigh=demanded or asked that a partner use a condom in the last 6 months; low=did not demand or ask that a partner use a condom in the last 6 months

Additionally, this relationship appears to be mediated by sexual assertiveness. Therefore, economic dependence on a male partner is associated with reduced likelihood that a young woman will ask for or demand condom use, which consequently is associated with a lower likelihood of using condoms. While prior studies have not been conducted to examine the effect of economic dependence on sexual risk in the USA, these findings are supported by a limited body of research examining the role of gender and power in relationships. While we did not aim to test this theory, it is in this broader context that we can begin to understand the importance of economic dependence on sexual risk behavior. Pulerwitz et al. demonstrated that women with less power use condoms less consistently than those women with greater power in relationships.⁷ Additionally, Soler et al. found that women who did not participate in financial decisions were nearly two times less likely to use a condom consistently.²⁶

Over a century of research has been conducted on social determinants of health, highlighting the importance of social context in shaping health and health behaviors.^{27–29} Specifically, the decision to use a condom, while often understood as an individual choice, may be strongly impacted by many external factors. As a result, attempts to improve condom use by intervening solely at the individual or interpersonal levels may have limited effectiveness. In fact, as this study highlights, improving condom use may require a multilevel approach that accounts for social factors, such as economic dependence on a male partner.¹¹

This study is an important contribution to the literature as it addresses a novel research question for a widespread public health problem in a highly underserved and vulnerable population—young, low-income women in early motherhood. However, it is important to note a few limitations. First, this study relied on self-report, introducing the possibility of recall bias. Second, the data analyzed were cross-sectional; therefore, the temporality of associations cannot be assumed. Third, as the sample consisted of young mothers 1-year postpartum, findings may not generalize to the general population of young women. Young parents may be more vulnerable to influences of economic dependence because of the desire to provide for their child. Similarly, the final sample may not be representative of those eligible for

the parent study or of those who participated in baseline data collection. However, as previously described, no significant differences were seen between the final sample and baseline-only participants in terms of baseline sociodemographic characteristics and baseline economic dependence and condom use. Additionally, because this was a secondary data analysis, only a single variable was available to measure the construct of economic dependence. This may have led to non-differential misclassification, thus potentially underestimating the relationship. However, this study is able to show the utility of a brief measure of economic dependence on sexual risk of young women, having relevance for clinicians, public health practitioners, and researchers because they can use this as a quick assessment of economic dependence and potentially uneven economic relationships between men and women. Similarly, while used in other studies,²⁰ the variables used to measure sexual assertiveness may not accurately reflect the construct.

Coupled with past research, this study supports the premise that sexual behaviors may be rooted in a complex web of social structures.^{30–32} Addressing gender inequalities in contextual factors, such as economic attainment and social norms, by developing structural interventions or more informed individual and interpersonal interventions may promote healthier decisions within sexual relationships.

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