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Partnership Dynamics and HIV-Related Sexual Behaviors Among Adolescent Mothers in South Africa: A Longitudinal Analysis of HIV Prevention Trials Network 068 Data

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Abstract

Background: In South Africa, adolescent mothers have a three times higher risk of HIV acquisition than non-adolescent mothers. Yet, limited evidence exists regarding how early childbearing may affect HIV risk. A better understanding of adolescent mothers' partnership dynamics and sexual behaviors is critical to tailoring interventions to prevent new infections.

Methods: Data are from HIV Prevention Trials Network 068, a longitudinal study of adolescent girls and young women (AGYW) aged 13–20 in South Africa who were followed annually for up to 6 years. Log-binomial regression models were used to assess whether adolescent motherhood was associated with partnership dynamics (intimate partner violence (IPV), gender inequitable norms, low relationship power, no HIV prevention communication) and if the association between partnership dynamics and sexual behaviors (unprotected sex and transactional sex) varied by adolescent motherhood. Generalized estimating equations, with an exchangeable correlation structure, were used to account for non-independence.

Results: Adolescent mothers were more likely than non-adolescent mothers to be in partnerships characterized by IPV, low relationship power, gender inequitable norms, and no HIV prevention

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communication. A higher proportion were also more likely to experience these dynamics, as well as engage in transactional sex, after giving birth. Poor partnership dynamics put AGYW at a higher risk for unprotected sex and transactional sex, regardless of adolescent motherhood status.

Conclusions: Engaging adolescent mothers in interventions post birth and developing interventions that address power imbalances in AGYW's sexual partnerships have the potential to reduce engagement in HIV-related sexual behaviors and HIV-risk in the long term.

Keywords

adolescent motherhood; partnership dynamics; sexual behaviors; HIV

INTRODUCTION

In sub-Saharan Africa (SSA), adolescent girls and young women (AGYW), age 15–24, continue to bear a disproportionate burden of the HIV epidemic.[1] AGYW contribute to nearly 30% of all new HIV infections in the region. In South Africa, this percentage translates to approximately 55,000 new infections among AGYW per year, which is almost four-times the number contributed by their male peers.[2,3] Despite this high incidence, risk of HIV infection is not equally distributed among all AGYW. South African adolescent mothers have a three times higher risk of HIV acquisition compared to their non-parenting counterparts and are also more likely to report unprotected sex and transactional sex, both known predictors of HIV.[4] A better understanding of HIV-related sexual behavior drivers among adolescent mothers is critical to tailoring interventions to more effectively prevent new infections for this population.

Partnership dynamics (i.e., intimate partner violence (IPV), gender equitable norms, relationship power, HIV communication) are well established drivers of HIV-related sexual behaviors among AGYW in South Africa. Conceptually, the Theory of Gender and Power suggests that these associations are reflective of economic, physical, and social imbalances in society which allow men to have more power over sexual decision-making.[5,6] Dyadic Power Theory additionally suggests that partners with higher or lower relational power will be less likely to suggest safer sexual behaviors, while partners who share equal power with others will be more likely.[6,7] Empirically, researchers have found a number of mechanisms for the associations among partnership dynamics and HIV-related sexual behaviors. First, AGYW who experience violence in their relationships may be afraid to ask their partners to use condoms for fear of a violent reaction.[8] Second, threats by male partners can discourage condom use, especially in the context of inequitable dynamics that stem from age differences or financial dependency.[8–10] Third, partnerships motivated by material exchange increase AGYW's vulnerability to violence and sexual exploitation.[11] Fourth, prevalent gender-based norms in South Africa discourage AGYW from being candid about their sexual interests and taking charge of their sexuality.[12] Fifth, power inequities and norms around sexual communication may inhibit AGYW from discussing HIV prevention with their partners.[13]

Despite adolescent mother's increased risk for HIV, there is limited evidence on partnership dynamics before and after the onset of motherhood and whether partnership dynamics

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influence HIV-related sexual behaviors amongst this population. One study found that adolescent mothers may be in relationships with higher IPV and lower relationship power than young adult mothers and older mothers.[14] In qualitative work, adolescent mothers often described distant relationships with their partners post pregnancy but also needing to stay connected to partners to ensure financial support for their child.[15–17] Researchers have hypothesized that partnership dynamics, as well as economic strain, limit adolescent mothers' ability to negotiate and engage in protected sex, thus increasing their vulnerability to HIV.[17–19] Few quantitative studies to date have examined differences in partnership dynamics for adolescent mothers as compared to non-adolescent mothers, particularly in settings with a generalized HIV epidemic. Using longitudinal data to examine these differences is essential for understanding when to engage AGYW as they navigate partnerships and pregnancy during the transition to adulthood. Furthermore, understanding patterns of partnership dynamics among adolescent mothers, and how they influence sexual behaviors, provides necessary information to develop much needed HIV prevention interventions for this population.

To this end, the current analysis utilizes data from a longitudinal study of AGYW in rural South Africa to explore three specific research aims. First, we examine the longitudinal association between adolescent motherhood (child before age 19) and partnership dynamics (IPV, relationship power, gender equitable norms, and HIV communication). Second, we examine whether partnership dynamics are more prevalent before or after birth among adolescent mothers. Third, we examine the associations among partnership dynamics and HIV-related sexual behaviors (unprotected sex and transactional sex) and whether they are modified by adolescent motherhood.

METHODS

HPTN 068 Overview

Data are from the HIV Prevention Trials Network 068 study (HPTN 068), a phase III randomized controlled trial which aimed to measure the effect of providing cash transfers, conditional on school attendance, on risk of HIV acquisition among AGYW. The study enrolled 2,533 adolescent girls and young women aged 13 to 20 years who were attending high school grades 8 to 11 in the Agincourt Health and Socio-Demographic Surveillance System (HDSS) site in Bushbuckridge sub-district in Mpumalanga province, South Africa. Individuals who were pregnant or married at the time of recruitment, unable to read, intending to leave the study area before study completion, or without a parent or guardian in the house, were ineligible to participate in the study. Young women were identified from the HDSS and visited at their homes to assess their eligibility to participate. Enrollment was limited to one young woman from each household and mean age at enrollment was age 15.

HPTN 068 enrollment visits began in 2011, and follow-up visits occurred for every subsequent year that the participant was in high school (up to grade 12). Follow-up visits for the original RCT concluded in 2015. At each visit, a survey was administered to the participant via an audio computer-assisted self-interview, and biomarkers were collected. Following the end of the conditional cash transfer intervention, a post-intervention study visit occurred which also included an audio computer-assisted self-interview study

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questionnaire and biomarker testing. Additional details on recruitment, data collection, and laboratory procedures are available in the parent publication of the trial.[20] Of the 2,533 AGYW included in the original HPTN 068 cohort, we excluded 88 AGYW without at least one follow-up visit after enrollment and an additional 72 AGYW who were HIV positive at baseline, resulting in a final analytical sample of 2,373 AGYW who were followed for up to five years.

Institutional Review Board approval for this study was obtained from the University of North Carolina at Chapel Hill and the University of the Witwatersrand Human Research Ethics Committee. Each AGYW and their parent or guardian provided written informed consent at the home visit. Written assent was obtained for young women younger than 18 years. Consent and assent forms were available in English and Shangaan.

Measures

Adolescent motherhood was based on the participant's current age and their response to the following item: "How many living children do you have, that you have given birth to?". A binary variable was created where those who were younger than 19 and reported a living child were coded as 1 and those who those who were older than 19 and reported a living child or did not report any living children were coded as 0 (reference group). Once a participant reported a living child before the age of 19, they were considered exposed to adolescent motherhood for all follow-up visits. The first report of current age was at baseline where the participant age range was 13–21. If participants were 19–21 at baseline, age at last pregnancy was used to classify them adolescent mothers or not adolescent mothers.

Our two outcome variables included: unprotected sex and transactional sex. Unprotected sex in the previous three months was operationalized as a binary variable and defined as having reported any instance of condom-less sex in the previous three months for each study visit. Transactional sex in the previous three months was operationalized as a binary variable and defined as reporting feeling like you had to have sex because you were given money or gifts in by any named partner in the previous three months.

Our four exposures included perceived low relationship power, intimate partner violence, low gender-equitable beliefs, and no HIV prevention communication. Intimate partner violence (IPV) was measured using the previously validated 6-item WHO scale.[21]A binary variable was created to represent any or no experiences of physical IPV in the past 12 months. Gender-equitable beliefs were measured using the Gender Equitable Men's scale (GEMS), an instrument previously validated amongst this study population.[22] The original 24-item GEMS instrument was restricted to 13 items based on a previous psychometric analysis indicating improvement in the properties of the scale for females when the remaining 11 items were removed.[23] A binary variable was created where low support (scores in the bottom two terciles) for equitable gender norms was coded as 1 and high support (scores in the top tercile) for equitable gender norms was coded as 0, per scale recommendations. Power in sexual relationships was measured using the 12-item sexual relationship power scale (SRPS), adapted for South Africa.[24] A binary variable was created where low power was coded as 1 and defined as below the third tercile and high power was coded as 0 and defined as above the third tercile.[25] HIV-related communication was

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measured by the item “Have you ever talked with this partner about preventing HIV?”. A binary variable was created to represent no HIV prevention discussion with any named partners versus HIV prevention discussion with all named partners or some named partners.

Our covariates included the following baseline measures: age of young woman and HPTN 068 study intervention arm assignment. Time-varying controls include schooling (current grade in school), orphan status, ever had sex, socioeconomic status (measured as quartiles of per-capita household consumption), and depression. These variables were selected a priori and have been shown to be associated with incident HIV infection and HIV-related sexual behaviors among AGYW in Southern Africa.[26] The construction of various covariates has been described in prior publications.[20]

Data Analysis

First, we described participant characteristics at visit one and visit five and then compared participant characteristics across adolescent motherhood categories using Chi-square tests. Second, we used separate log-binomial regression models to estimate unadjusted and adjusted risk ratios (aRRs) for the association between adolescent motherhood and each partnership dynamic variable. The adolescent motherhood exposure was lagged by one time point; the exposure was from the previous time point and the outcomes were partnership dynamics measured at the current time point. Third, we used McNemar’s tests to compare the occurrence of partnership dynamics before and after birth among participants who became adolescent mothers after study enrollment Fourth, we used separate log-binomial regression models to estimate unadjusted and adjusted risk ratios for the association between each partnership dynamic and each sexual behavior. Partnership dynamic exposures were lagged by one time point; the exposure was from the previous time point and the outcome was the sexual behavior in the past three months measured at the current time point. We then examined evidence for modification of the relationship between partnership dynamics and sexual behaviors by adolescent motherhood by estimating stratified adjusted risk ratios for adolescent mothers, and non-adolescent mothers. For all models, generalized estimating equations (GEE) was used to account for the non-independent repeated measures from the same participant using an exchangeable correlation structure. Adjusted models controlled for age, orphan status, HPTN 068 study intervention arm assignment, study visit (i.e., time), current grade in school or graduation, reporting ever having sex, depression, and socioeconomic status. All analyses were conducted using StataSE, version 14.2 (College Station, TX).

RESULTS

Participant Characteristics

Of the 2,373 AGYW who were HIV-negative at baseline, 5% (N = 123) were adolescent mothers and at the final study visit, 15% (N = 288) were adolescent mothers. Adolescent mothers at baseline were older (median age 17 vs. 15, $p < 0.01$) and more likely to report orphanhood (37% vs 26, $p < 0.01$) and food insecurity (40% vs 33%, $p < 0.01$). Adolescent mothers at baseline also had higher sexual risk than non-adolescent mothers; they were more likely to have to report unprotected sex (36% vs 6%, $p < 0.01$) and transactional sex (13%

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vs 6%, $p < 0.01$) in the past three months. In terms of partner characteristics, adolescent mothers at baseline were more likely to have more than one partner in their lifetime (46% vs 9%, $p < 0.01$) and classify their named partners as casual sex partners (44% vs. 9%, $p < 0.01$) (Table 1).

Adolescent Motherhood and Partnership Dynamics

Table 2 reports the adjusted risk ratios for the relationship between adolescent motherhood and partnership dynamics. Adolescent mothers, as compared to non-adolescent mothers, were more likely to experience physical IPV in the past year (aRR: 1.25, 95% CI: 1.06, 1.62), low gender equitable norms (aRR: 1.11, 95% CI: 1.05, 1.17), low relationship power (aRR: 1.16, 95% CI: 1.04, 1.41), and not discuss HIV prevention with any of their named partners (aRR: 1.59, 95% CI: 1.33, 1.90).

Table 3 reports the proportion of adolescent mothers who reported any of the four partnership dynamics before or after birth of their child (N=222). A higher proportion experienced physical IPV after birth as compared to before birth (44% vs 20%, $p < 0.01$). Similarly, a higher proportion of adolescent mothers experienced low gender equitable norms (73% vs 66%, $p < 0.01$), any HIV prevention communication (90% vs. 46%, $p < 0.01$) and low relationship power (62% vs 40%, $p < 0.01$) after birth as compared to before birth.

Partnership Dynamics and Unprotected Sex

Among all participants, experiencing physical IPV (aRR: 1.42, 95% CI: 1.22, 167), low relationship power (aRR: 1.24, 95% CI: 1.06, 1.45), and not discussing HIV prevention with any of their named partners (aRR: 1.24, 95% CI: 1.01, 1.53) increased participant's risk for unprotected sex in the past three months. Low gender equitable norms did not increase participant's risk for unprotected sex (aRR: 1.01, 95% CI: 0.89, 1.14). In addition, adolescent motherhood did not significantly modify the relationship between any of the four partnership dynamics and unprotected sex (Figure 1). However, among adolescent mothers in our sample (N=357), 53% reported an instance of unprotected sex after the birth of their child (Table 3).

Partnership Dynamics and Transactional Sex

Among all participants, experiencing physical IPV (aRR: 1.42, 95% CI 1.23, 1.64), low equitable gender norms (aRR: 1.22, 95% CI: 1.06, 1.41), low relationship power (aRR: 1.36, 95% CI: 1.17, 1.57), and no HIV prevention discussion with partners (aRR: 2.15, 95% CI: 1.64, 2.84) increased participant's risk for transactional sex in the past three months. However, adolescent motherhood did not modify the relationship between any of the four partnership dynamics and transactional sex (Figure 1). Among adolescent mothers in our sample (N=357), a higher proportion reported transactional sex after birth than before birth (46% vs 8%, $p < 0.01$) (Table 3).

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DISCUSSION

The present study aimed to examine the association between adolescent motherhood, partnership dynamics, and HIV-related sexual behaviors in rural South Africa. Adolescent mothers were more likely to be in relationships characterized by physical IPV, low gender equitable norms, low relationship power, and no communication about HIV prevention. A higher proportion of adolescent mothers experienced these partnership dynamics after the birth of their child compared to before birth. Experiencing physical IPV, low relationship power, and no communication about HIV prevention put all participants at a higher risk for unprotected sex and transactional sex, regardless of adolescent motherhood status. The only exception being that we found no association between low gender equitable norms and unprotected sex. Taken together, our findings suggest that having a child during adolescence increases a young women's vulnerability to poor partnership dynamics which are in turn associated with HIV-related sexual behaviors. These findings align with existing empirical research linking AGYW partnership dynamics and HIV-related sexual behaviors but are the first to longitudinally examine these relationships among adolescent mothers and non-adolescent mothers.[4,14,18,27,28]

Our findings related to the timing of partnership dynamics and adolescent motherhood differ from related existing literature among adult mothers in sub-Saharan Africa. For example, studies have found that adult mothers were likely to experience IPV and low relationship power both during pregnancy and the postpartum period.[29–31] Among adolescent mothers in our sample, a higher proportion experienced IPV and low relationship power after the birth of their child, as compared to before birth. Although these estimates were unadjusted, they highlight the vulnerability of adolescent mothers and suggest that engaging pregnant and parenting adolescents in interventions that provide skills to counter existing gender and power imbalances in their intimate partnerships could be beneficial for HIV prevention during the postpartum period. Couple based interventions such couple-based counseling during HIV testing, pre-natal visits, and postnatal visits have been shown to increase social support, communication, efficacy, and trust among couples in SSA and could be a promising approach to improving partnership dynamics.[32–38] However, marriage rates are low amongst this population (less than 1% of AGYW in South Africa are married) so additional research on how to engage partners in non-formal relationships for couple-based interventions is needed.[39–41]

Though adolescent mothers were more likely to be in relationships characterized by poor partnership dynamics, there wasn't a significant difference in the associations among partnership dynamics and HIV-related sexual behaviors between adolescent mothers and non-adolescent mothers. These results suggest that addressing poor partnership dynamics among all AGYW would be beneficial but given the high prevalence among adolescent mothers, intervening amongst population might have a significant impact. It is also possible that we did not detect a significant difference due to the small sample of adolescent mothers included in our analysis (N=357). Another potential reason for this result is the way some of our partnership dynamics and HIV-related sexual behaviors were measured. For scales measuring IPV and relationship power, participants were asked to answer items with reference to their "current partner or partner in the past". For the scale measuring gender

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equitable norms, participants were asked to answer items with reference to “relationships between men and women”. Our HIV prevention communication exposure and HIV-related sexual behavior outcomes were a result of participants being asked to answer items with reference to their last three sexual partners. While median number of partners was 1 (IQR 1–2) across all study visits but the final visit (median 2, IQR 1–3), it is possible that there was a disconnect between the reference partner for partnership dynamics and the reference partner for HIV-related sexual behaviors.

The associations among partnership dynamics and transactional sex highlight the interplay between structural vulnerability and HIV risk for AGYW; particularly adolescent mothers who were more likely to experience transactional sex after birth than before birth of their child. HIV risk associated with transactional sex does not necessarily arise from the payment received in exchange for sex but rather from the partnership dynamics that increase unprotected sex with transactional sex partners.[42] Partnership dynamics are a product of pervasive social norms and potentially reinforced by the economic situation of adolescent mothers in our study context. In rural South Africa, and as reflected in our study population demographics, adolescent mothers face high levels of orphanhood, poverty, limited employment opportunities, and increasing rates of school dropout after pregnancy.[43,44] South African law mandates that pregnant students be allowed to complete school after childbirth but inconsistent support from school staff, stigma from peers, limited family resources, and lack of childcare often prevent pregnant students from returning.[43,45–47] These factors diminish adolescent mother’s capacity for sustainable, independent livelihoods and increase their economic dependence on male partners. This dependence might translate to engaging in transactional sex and enduring violence, insufficient access to HIV prevention resources, and reduced ability to negotiate conditions of sexual activity.[17,48,49] Taken together, HIV prevention interventions for this population must include both economic strengthening and gender transformative components if they want to help adolescent mothers tackle relationship imbalances that increase their risk for HIV.

In our analysis, we defined adolescent motherhood as having a child before the age of 19. This aligns with long existing definitions of adolescence (age 10–19) used by global health organizations for policy and programing for young populations. Though the associations for partnership dynamics and HIV-related sexual behaviors were slightly stronger for adolescent mothers compared to non-adolescent mothers, almost all the associations were significant among all participants, who were aged 13–24. These results suggest that females are not just vulnerable to these partnerships dynamics and HIV-related sexual behaviors during adolescence but also as they transition into young adulthood. There have been recent calls by global health researchers to expand the definition of adolescence from age 10–19 to age 10–24 and to then disaggregate the definition into three age phases —young (10–14 years), middle (15–19 years), and late (20–24 years) adolescence.[50] Similar to our results, this expanded definition acknowledges a continuum of risk that starts in early life. While low sexual activity and power limited our ability to categorize adolescent motherhood into young, middle, and late, results from Christofides et al. show that early adolescent pregnancies (< age 15) increase the incidence of HIV among South African women.[4] Future research that examines the impact of partnerships dynamics on HIV-related sexual behaviors

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during early adolescent motherhood would be particularly useful in the development of targeted HIV-prevention interventions for this vulnerable population.

Despite the strengths of using longitudinal data and our large sample size of AGYW, there are also a number of limitations that warrant discussion. First, adolescents who were not currently enrolled in school were not eligible to participate in the original trial. As such, our sample likely excludes adolescents, and adolescent mothers, highly vulnerable to future HIV infection, which may underestimate effect estimates. Second, information on having living children was self-reported and may be underreported. However, defining adolescent motherhood based on reporting of live births rather than reporting on pregnancy diminishes the likelihood of misclassifying adolescent girls as mothers who terminated or miscarried. Third, we were unable to distinguish the timing of motherhood and specific partnership dynamics that occurred close together. While our analytic framework ensures temporality for most events by defining our exposure in the time period before outcome ascertainment, we did not adjust our results related to the timing of partnership dynamics before and after birth. Finally, there may also have been a Hawthorne effect of the trial where young women were less likely to drop out of school due to trial participation.

CONCLUSION

Our study provides novel evidence that adolescent mothers are more likely to be in partnerships characterized by low relationship power, physical IPV, low gender equitable norms, and limited communication about HIV prevention. Adolescent mothers were more likely to experience these partnership dynamics after the birth of their child rather than before birth. Poor partnership dynamics put AGYW at a higher risk for unprotected sex and transactional sex, regardless of adolescent motherhood status. Engaging adolescent mothers in interventions post birth and developing interventions that address power imbalances in sexual partnerships and economic vulnerability have the potential to reduce engagement in HIV-related sexual behaviors and HIV-risk in the long term.

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IMPLICATIONS AND CONTRIBUTION

This study demonstrates that poor partnership dynamics put adolescent girls and young women at a higher risk for unprotected sex and transactional sex, regardless of adolescent motherhood status. However, adolescent mothers are more likely than non-adolescent mothers to experience poor partnership dynamics, particularly after the birth of their children.

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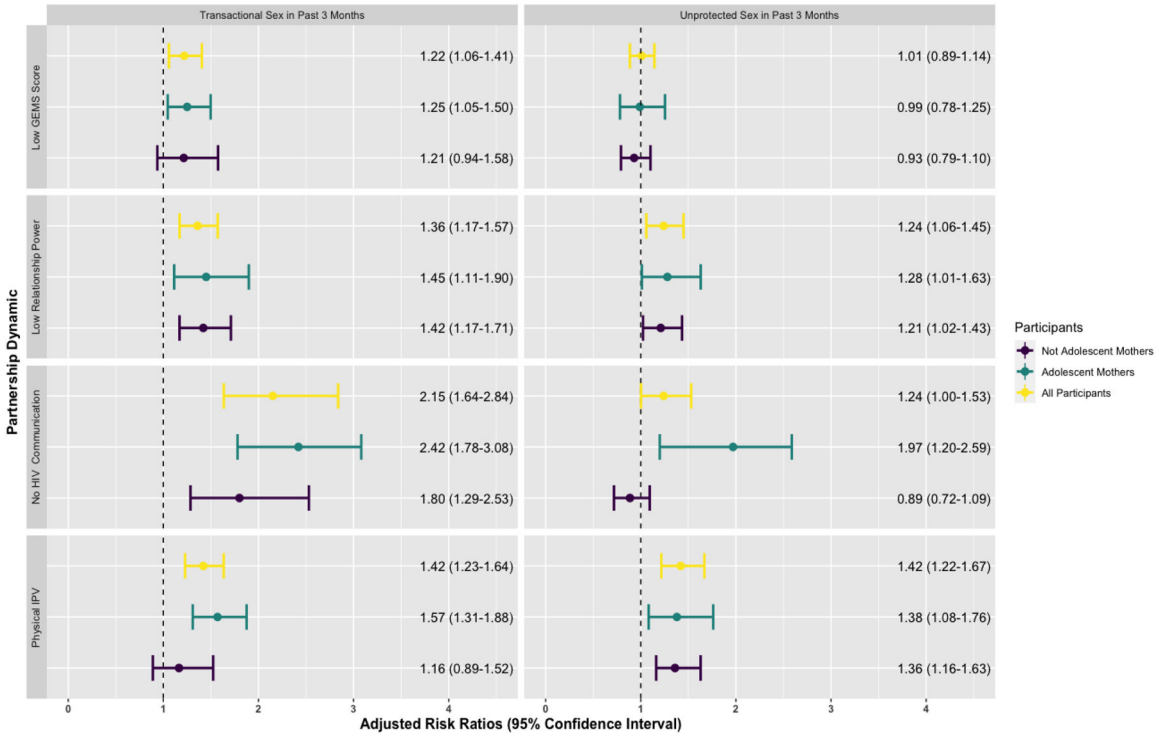


Figure 1.
Partnership Dynamics and Sexual Behaviors by Adolescent Motherhood

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Table 1.

Participant Characteristics at Baseline by Motherhood *

	All Participants at Baseline (N = 2373)		Adolescent Mothers at Baseline (N = 123)		Not Adolescent Mothers at Baseline (N = 2213)		Difference Between Groups at Baseline	All Participants at Final Visit (N = 1964)	
	N	%/IQR	N	%/IQR	N	%/IQR	P-Value	N	%/IQR
Demographics									
Median Age	15	14, 17	17	16, 18	15	14, 16	< 0.001	20	19, 21
In Secondary School	2,373	100%	123	100%	2213	100%	1.000	530	27%
Any Orphanhood	621	26%	46	37%	567	26%	< 0.001	669	34%
Median Household Monthly Expenditure (Rand)	289	185, 480	239	161, 346	291	186, 486	0.175	419	276, 643
CCT Intervention Arm	1,203	51%	64	52%	1,139	51%	0.903	985	50%
Food Insecurity in Past Year	799	34%	49	40%	741	33%	< 0.001	704	36%
Motherhood (Any Age)	159	7%	123	100%	36	2%	< 0.001	379	19%
Adolescent Mother (< 19)	123	5%	123	100%	0	0%	< 0.001	288	15%
Sexual Behaviors									
Ever Had Sex	631	27%	123	100%	482	22%	< 0.001	1,293	66%
Unprotected Sex in Past 3 Months	184	8%	44	36%	132	6%	< 0.001	404	21%
Transactional Sex in Past 3 Months	82	3%	16	13%	135	6%	< 0.001	328	17%
Number of Sexual Partners and Relationship Type **									
More than 1 Partner in Lifetime	255	11%	57	46%	198	9%	< 0.001	641	33%
Main Partner/Boyfriend	419	18%	80	65%	339	15%	< 0.001	972	49%
Casual Sex Partner	244	10%	54	44%	190	9%	< 0.001	351	18%
Sex Work Client	14	1%	1	1%	13	1%	0.752	13	1%
Other	23	1%	6	5%	17	1%	< 0.001	36	2%
Living with Partner	76	3%	19	15%	57	3%	0.176	161	8%
Partnership Dynamics									
Any Physical IPV in Past Year	245	10%	41	33%	198	9%	< 0.001	173	9%
Low Gender Equitable Norms	582	25%	51	41%	521	24%	< 0.001	258	13%
Low Relationship Power	372	16%	79	64%	279	13%	< 0.001	518	26%
No HIV Prevention Communication	235	10%	53	43%	182	8%	< 0.001	113	6%

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* Totals do not sum to 100% due to missing data

** Participants were asked to name relationship types for last three sexual partners

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Table 2.

Association between Adolescent Motherhood and Partnership Dynamics

	Unadjusted		Adjusted*	
	RR	**95 % CI**	**RR**	**95 % CI**
Low Relationship Power	1.40*	(1.08, 1.33)	1.16*	(1.04, 1.41)
Any Physical IPV in Past Year	1.29*	(1.11, 1.50)	1.25*	(1.06, 1.62)
Low Gender Equitable Norms	1.04	(0.98, 1.10)	1.11*	(1.05, 1.17)
No HIV Prevention Communication	1.66*	(1.42, 1.95)	1.59*	(1.33, 1.90)

*Adjusted for age, study arm assignment, education, assets, orphanhood, and ever having sex

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Table 3.

Partnership Dynamics and Sexual Behaviors Before and After Birth Among Adolescent Mothers (N = 222)*

	Before Birth		After Birth		McNemars Test
	N	%	N	%	P-Value
Partnership Dynamics					
Low Relationship Power	89	40%	137	62%	< 0.001
Any Physical IPV in Past Year	44	20%	97	44%	< 0.001
Low Gender Equitable Norms	147	66%	162	73%	< 0.001
Any HIV Prevention Communication with Partners	103	46%	199	90%	< 0.001
HIV Related Sexual Behaviors					
Unprotected Sex	222	100%	111	50%	< 0.001
Transactional Sex	29	13%	102	46%	< 0.001

* This sample is limited to AGYW who became mothers before age 19 during the study