Associations of couple communication with family planning use among married adolescent girls and young women in Niger

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Background: Research shows early marriage is associated with gender-based violence and reduced contraceptive method use and that spousal communication plays an important role in these relationships. About 25% of young girls in Niger are married before age 15 years and 75% are married before age 18 years while contraceptive use remains low. We assessed associations between spousal communication about contraception and ever use of modern contraception, overt modern contraceptive use (with husband's knowledge), and covert modern contraceptive use (without husband's knowledge) among married adolescent girls and young women in and their husbands Niger.

Methods: This analysis uses cross-sectional data from the *Reaching Married Adolescents Study*. Baseline data were collected from April-June 2016 from married adolescent girls and young women (ages 13-19 years) in the Dosso region of Niger (N=1,072 dyads). Unadjusted and adjusted logistic regression models were created to assess associations of spousal communication about contraception with ever use of modern contraceptives and the subcategories of overt modern contraceptive use ever, and covert modern contraceptive use ever. Final models included covariates significant at the $p<0.05$ level.

Results: Approximately 25% of married adolescent girls and young women reported spousal communication about contraception. In unadjusted models, spousal communication was significantly associated any use of modern contraception (OR: 11.21, 95% CI: 7.30, 17.23) and overt modern contraceptive use (OR: 21.94, 95% CI: 12.33, 39.03). Final adjusted models showed that spousal communication about contraception remained significantly associated with modern contraceptive use (AOR: 7.64, 95% CI: 4.86,12.00) and overt modern contraceptive use (AOR: 13.75, 95% CI7.63, 24.78).

Conclusion: Among married adolescent girls and young women in Niger, communication with their husbands about contraception was significantly associated with modern contraceptive use, but not contraceptive use without husbands' knowledge. There is a lack of understanding of the decision to use contraceptives covertly and since the simple presence or absence of communication does not seem to be associated, future research should focus on further characterizing content and context of couple communication particularly with respect to disagreement over fertility. Findings of this study help to better inform efforts to engage men regarding fertility and reproductive health decisions.

1. Background

Studies have shown that child marriage can lead to negative sexual and reproductive health (SRH) outcomes for girls including: early childbearing, poor maternal and child health outcomes, unintended pregnancy and inadequately spaced pregnancies.[1-3] In Niger, one-fourth of girls are married by age 15 years and three-fourths by age 18 years.[4] Research demonstrates that girls who are married early report adverse relationship experiences such as controlling behaviors from a male partner.[5] Additionally, early marriage has been linked to forms of gender-based violence such as intimate partner violence (IPV)[2, 6] and possibly reproductive coercion (RC - a male partner's behavior interfering with contraception including exerting pregnancy pressure or engaging in contraceptive sabotage).[7] These experiences of violence result in a number of long-term consequences for girls' physical health, mental health, termination of education, and earning potential.[8, 9]

In societies such as Niger, where traditional gender norms prevail, male dominance over decision-making remains prevalent, preventing girls from negotiating for their SRH. Research in sub-Saharan Africa, has demonstrated that despite these barriers, some women attempt to take control of their fertility by using contraceptive methods without their husband's knowledge[10-15], indicating the importance of differentiating overt contraceptive users (use of contraception with husband's knowledge) from covert contraceptive users (use of contraception without husband's knowledge). In Niger, the confluence of traditional gender norms, young age at marriage, low autonomy for young married girls, and continuing high desired family size may all contribute to low contraceptive use, perpetuating elevated

adolescent fertility rates[16-18] and putting married girls at uniquely high risk of adverse health outcomes and relationship experiences.

Current research on women's SRH in sub-Saharan Africa highlights a historical lack of male engagement in family planning (FP) and advocates for its importance in improving women's health and empowerment.[19-21] Interventions in this region as well as in other low- and middle- income countries have focused on promotion of couple communication as an important modality of male engagement.[22-24] A limited number of studies have demonstrated that support from and communication with partners regarding contraception is associated with contraceptive use. However, many of these studies were conducted in South or Southeast Asia[25-32] with a smaller number conducted in sub-Saharan Africa[33-36], and even fewer in West Africa[37]. What is more, only a few of these studies use representative samples that included married adolescent girls and young women (AGYW) under age 18 years [26, 29, 34, 35] with little accounting for women's experiences of violence. This highlights a significant gap in the literature examining links between couple contraceptive use communication, adverse relationship experiences such as IPV, and contraceptive use among a highly vulnerable population in a region where poor health outcomes, linked to a lack of contraceptive use, remain prevalent.

In fact, very little work has explored the antecedences of contraceptive use in the Nigerien context, particularly with respect to relationship-level characteristics such as decision-making power and couple communication. Due to the specific vulnerabilities experienced by married girls in this context and the increasing popularity of male engagement programs, it is particularly important to understand and assess the relationships between specific relationship

dynamics and contraceptive use so as to best promote behavior change. As such, this study aims to assess associations between spousal communication regarding contraception and actual contraceptive use among married (AGYW) and their husbands in Niger. We also seek to assess moderating effects of male partner violence, including IPV and RC.

2. Materials and Methods

2.1 Data Source

The current cross-sectional analyses utilized baseline data from the *Reaching Married Adolescents (RMA) Study*, a cluster randomized control trial to determine the efficacy of an intervention to increase modern contraceptive method use among married AGYW in Niger. Data were collected at baseline (pre-intervention implementation) from April-June 2016. Data were collected from married AGYW ages 13-19 years (N=1,072) from 48 villages (12 intervention villages and 4 control villages in each of 3 districts) in the Dosso region. Villages were randomly selected for inclusion based on several criteria including: 1) having at least 1000 permanent inhabitants, 2) primarily Hausa or Zarma-speaking, 3) located in Dosso, Doutchi, or Loga districts (of the Dosso region), and 4) no other NGO intervening specifically around FP or female empowerment with married AGYW or their husbands. Participants were chosen via random selection (using a random number generator and selecting the first 25 households) from a list of all married AGYW provided by village chiefs. Girls and young women were considered eligible if they were: 1) aged 13-19 years old, 2) married, 3) fluent in Hausa or Zarma, 4) residing in the village where recruitment was taking place with no plans to move away in next 18 months or plans to travel for more than 6 months during that period, and 5)

not currently sterilized. This study was approved by the Institutional Review Board of the University of California San Diego as well as the Institutional Review Board of the Nigerien Ministry of Health.

Self-report data were collected by trained, female research assistants using surveys created in English then translated to written French and verbally translated to Hausa or Zarma used pre-programmed tablets. Research Assistants visited selected households to conduct a Household Recruitment Survey to confirm eligibility. If a household was found not to have any eligible participants, another replacement household was randomly chosen until sample size was reached. Research Assistants introduced the study to eligible participants and, in keeping with local customs, obtained assurance from husbands (or male heads of household) for adolescent wives' participation. Explicit verbal consent was also obtained individually from each adolescent wife. Surveys were conducted in a private location identified by each participant and took approximately 45-60 minutes to complete. Encrypted and de-identified data were uploaded to a server via secure internet connection weekly.

Within the context of the survey, married AGYWs were asked who had the most influence over whether they should use a contraceptive method to space or delay pregnancies. Response options included husband, mother-in-law, the wife herself, husband's brother, father-in-law, and co-wife. Over 95% reported that their husbands were their top decision-makers (N=1,020); the remaining 52 participants (4.85%) were excluded from the current analyses to allow testing of hypotheses related to communication with husbands, as questions related to contraception communication were only asked with respect to participants' top decision-makers.

2.2 Variables

The main predictor of interest in this analysis was spousal communication about contraceptive use, while the outcomes were ever use of modern contraceptive methods, and the subcategories of overt modern contraceptive use and covert modern contraceptive use. For all predictors and outcomes "don't know" and decline to answer responses were coded as missing and only those with complete data were included in construction of these variables. To measure spousal contraceptive use communication, participants were asked whether they had ever had a conversation with their husbands about using a contraceptive method to space or delay pregnancy.

To assess modern modern contraceptive use, participants were asked if they had ever done something or used any method to space or delay pregnancy with their husbands. If they responded "yes," they were asked if they were *currently* doing something or using any method to space or delay pregnancy as well as if they had *in the past* done something or used any method to space or delay pregnancy. If they responded "yes" to either of these questions, they were then asked what contraceptive methods they had used. They were considered to have ever used a modern contraceptive method if they reported using any of the following methods: IUD, injectables, implants, pills, male condoms, female condoms, emergency contraception, lactation amenorrhea method. Additionally, participants were asked if their husbands knew that they had ever done something or used a contraceptive method to space or delay pregnancy. We defined *covert* modern contraceptive users as those who reported ever using a modern contraceptive method that their husbands did not know about. Thus, *overt* modern

contraceptive users were those who reported ever using a modern contraceptive method and that their husbands knew about this use.

Two potential moderating variables, physical IPV (physical violence from a male partner) and RC (male partners' interference in contraceptive use), were included in this analysis. Items to assess experiences of physical IPV were adapted from the Demographic and Health Survey (DHS) domestic violence module.[38] Participants were considered as having experienced physical IPV if they reported that their husbands had ever pushed them, slapped them, twisted their arms or pulled their hair, hit them with their fists or something that could hurt them, kicked/dragged/beaten them up, or tried to choke/burn them. For RC, participants were asked if in the last 12 months anyone including their husbands, in-laws, or co-wives pressured them, made them feel badly, or treated them badly for not having a child. They were also asked if their husbands had ever tried to force or pressure them to become pregnant, taken their contraception away from them, kept them from going to the clinic to access contraceptive methods, said they would leave if they did not get pregnant, or hurt them physically because they did not get pregnant. Participants were considered as having experienced RC if they responded with "husband" to the first question and if they said "yes" to any of the other RC items.

Covariates considered for inclusion in this analysis included participant age, age difference between participant and husband, her age at marriage, her education level, husband's education level, number of living children (parity), the number of additional wives married by husband, food insecurity (a measure of wealth), whether husband had migrated for three months or more during the past year, and district. Demographic information about the

couple was collected during the Household Recruitment Survey, during which heads of household were asked how old the adolescent wife and her husband were at their last birthday, her age at marriage, attendance at both government and Quranic schools, the number of other wives married to this husband, and the wife's number of living children. Wife's age was categorized as 13-15, 16-17, and 18 years and over. Age difference with husband was categorized as 4 years or less, 5-6 years, 7-9 years, 10 years or more. Adolescent wife's age at marriage was categorized as: 10-13, 14-15, and 16 years and over. In the main survey, participants were asked whether in the month prior to the interview they or any member of their family had gone without eating the whole day because there was not enough food. This was included as a measure of economic security and was dichotomized based on yes/no responses.

2.3 Data Analysis

All analyses were conducted using *SAS Studio*® (SAS Institute Inc., 2018).[39] Descriptive statistics were used to summarize demographic variables and chi-squared tests were used to assess differences in demographic variables by outcome variables. Three unadjusted logistic regression models were fit to examine associations of spousal contraceptive use communication and contraceptive use with the three contraceptive use outcomes to determine unadjusted odds ratios (ORs) and 95% confidence intervals (95% CIs). In models predicting covert use, the reference category included never users and overt users while for models predicting overt use, the reference category included never users and covert users. Multivariable logistic regression models, including spousal contraceptive use communication

and contraceptive use as well as covariates found to be significant at the $p<0.2$ level in bivariate analyses, were then run separately for each outcome to determine adjusted odds ratios (AORs) and 95% CIs. Next, reduced multivariable logistic models, including spousal contraceptive use communication and contraceptive use as well as covariates found to be significant at the $p<0.05$ level in the previous multivariable logistic regression models, were examined for each outcome. A moderation analysis was conducted to determine if the relationship of communication and contraceptive use outcomes varied depending on adolescent wives' experiences of IPV/RC. Interactions of IPV-communication and RC-communication were tested in models, including main effects for IPV/RC, spousal contraceptive use communication, and significant covariates, against all three FP outcomes.

3. Results

3.1 Characteristics of the Sample

Of a total of 1,020 adolescent wives in our study, 123 (12.06%) reported ever having used modern contraception [Table 1]. Of those that had used modern contraception, 94 (9.22%) reported that their husbands knew about this use (i.e., overt use) and 29 (2.84%) reported that their husbands did not know about this use (i.e., covert use). Slightly more than one-quarter (n=262, 25.89%) of adolescent wives reported ever having communicated with their husbands about contraceptive use. Many adolescent wives had no formal education, with 490 number (48.04%) reporting no schooling and 352 number (34.51%) having attended government school. Regarding husband education, 308 number (30.20%) received no schooling and 469 number (45.98%) attended government school. Participants were between the ages of

13-19 years with over half of the sample being 18-19 years old (N=547, 53.63%). The median age at marriage was 14 and 407 participants (39.90%) were married between the ages of 14-15.

3.2 Spousal Contraceptive Use Communication and Contraceptive Use

Among the 123 (12.06%) that had ever used modern contraception, 89 (72.36%) reported spousal contraceptive use communication [Table 2]. Considered as covert or overt modern contraceptive users, 10 (34.48%) and 79 (84.04%), respectively, reported such communication. In unadjusted models, contraceptive use communication was significantly positively associated with ever use of modern contraception (OR: 11.21; 95% CI: 7.30, 17.23). Those who communicated about contraceptive use had 21.94 (95% CI: 12.33, 39.03) times the odds of overt modern contraceptive use compared to those who did not communicate. The association between spousal contraceptive use communication and covert modern contraceptive use was not statistically significant (OR: 1.56; 95% CI: 0.72, 3.41). In final multivariable models, adjusting for covariates significant at the $p<0.05$ level, communication about contraceptive use remained significantly positively associated with ever use of modern contraception (AOR: 7.64, 95% CI: 4.86, 12.00) and overt modern contraceptive use (AOR: 13.75, 95% CI: 7.63, 24.78) but not covert modern contraceptive use (AOR: 1.36, 95% CI: 0.62, 2.99). Neither the interaction of IPV and contraceptive use communication nor the interaction of RC and contraceptive use communication was found to be significantly associated with ever use of modern contraception, overt modern contraceptive use, or covert modern contraceptive use after adjusting for covariates.

4. Discussion

The aim of this analysis was to examine associations of spousal contraceptive use communication with actual modern contraceptive use (total, overt, covert) and to assess moderating effects of IPV and RC. In our sample, of the small proportion of that reported ever having used a modern contraceptive method to space or delay pregnancy, a majority were overt contraceptive users (use with husband's knowledge) as compared to covert contraceptive users (use without husband's knowledge). An important finding is that only about one quarter of married AGYW reported spousal contraceptive use communication, a prevalence much lower than that found in recent studies examining these associations in sub-Saharan Africa.[33, 34, 36, 37] Results showed that spousal communication was significantly associated with ever use of modern contraception as well as overt modern contraceptive use. Findings also showed that contraceptive use did not relate to covert modern contraceptive use as it did with overt use. It is possible that this can be attributed to other factors affecting couples' interactions regarding contraceptive use rather than just the presence or absence of communication. For example, a husband may have explicitly stated opposition to contraception or there were other elements of conflict in the relationship, so women felt it in their best interest to use contraception covertly. Perhaps in relationships with strong disagreement there is an element of fear or friction that limits the potential to have discussions around contraceptive use and SRH. Additionally, IPV and RC were not found to moderate this relationship, providing further evidence that future work should focus on other contextual factors in married couples' social environments to help explain the associations uncovered in this analysis.

The current findings regarding spousal contraceptive use communication among married AGYW, a population particularly vulnerable to early childbirth and maternal mortality, contribute to the small but growing literature on spousal communication and reproductive health in sub-Saharan Africa and other low and middle-income country contexts. A small body of work has demonstrated the link between communication about contraception and fertility and actual contraceptive use in low resource settings[27-30, 32, 34, 35], but these studies have limited focus on married AGYW in rural West Africa. With the increasing popularity of male engagement interventions currently in SRH research, our findings provide additional information regarding the relationship dynamics of married girls and their husbands. By contributing to the knowledge base, we hope not only to support the continued need for engaging couples in open communication but also to offer insight into how to use couple communication to effectively promote women's decision-making power, ultimately boosting contraceptive use.

The strengths of our study lie in its inclusion of data from married AGYW in Niger, an underserved and highly vulnerable population about whom little is known. Limitations include the cross-sectional nature of these data (due to which we cannot establish causality), and our reliance on self-report measures of sensitive information which produce risks of social desirability bias. Additionally, because Niger is a Francophone country and Hausa and Zarma are the local languages (both oral not written languages) it is possible that the questions may have lost or changed meaning in the three-step translation process (English to French to Hausa/Zarma). While our findings are important for knowledge of spousal communication in this context, we only measured presence or absence of communication regarding

contraception- but not the contexts, motivations for, or responses to this communication. In the future, specific attention should be paid to understanding the reasons for and results of spousal communication, particularly the content and context of conflict communication within married couples.

5. Conclusion

In our study spousal communication - about number of children, spacing of births, or contraceptive use – was significantly associated with ever having used a modern contraceptive method to space or delay pregnancy as well as overt modern contraceptive use but not covert modern contraceptive use among a sample of married girls and their husbands in three districts of the Dosso region of Niger. Future research on couple communication should focus on characterizing the content and context of these communications and the resulting contraceptive use decisions. Findings from this work are critical to informing efforts to engage men partnered with AGYW regarding fertility and reproductive health decisions.

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Table 1. Demographic Characteristics of Married Adolescent Girls and Young Women from Dosso, Doutchi, and Loga, Niger who Listed Husbands as Top Decision-Makers by Outcomes

			Outcomes						Predictor	
		Total	Ever Use of Modern Contraception		Covert Modern Contraceptive Use		Overt Modern Contraceptive Use		Communication	
Variables	Level	N(%)	Yes N(%)	p-value	Yes N(%)	p-value	Yes N(%)	p-value	Yes N(%)	p-value
	Total N(%)									
Covariates			123(12.06)		29(2.84)		94(9.22)		262(25.69)	
Wife's Age										
	14 and under	48(4.71)	2(1.63)		1(3.45)		1(1.06)		7(2.67)	
	15-17	425(41.67)	30(24.39)		3(10.34)		27(28.72)		92(35.11)	
	18 and over	547(53.63)	91(73.98)	<0.001	25(86.21)	0.002	66(70.21)	0.002	163(62.21)	0.004
Husband's Age										
	15-21	209(20.49)	13(10.57)		3(10.34)		10(10.64)		34(12.98)	
	22-24	260(25.49)	26(21.14)		6(20.69)		20(21.28)		56(21.37)	
	25-27	245(24.02)	31(25.20)		8(27.59)		23(24.47)		65(24.81)	
	28 and above	275(26.96)	50(40.65)	<0.001	11(37.93)	0.35	39(41.49)	0.003	95(36.26)	<0.001
Age Difference										
	4 years or less	197(19.31)	18(14.63)		6(20.69)		12(12.77)		37(14.12)	
	5-6 years	243(23.82)	23(18.70)		4(13.79)		19(20.21)		55(20.99)	
	7-9 years	250(24.51)	30(24.39)		7(24.14)		23(24.47)		61(23.28)	
	10 years or more	299(29.31)	49(39.84)	0.033	11(37.93)	0.54	38(40.43)	0.059	97(37.02)	0.003

Wife's Age at Marriage									
	13 and under	373(36.57)	60(48.78)		10(34.48)		50(53.19)	128(48.85)	
	14-15	407(39.90)	42(34.15)		9(31.03)		33(35.11)	96(36.64)	
	16-17	203(19.90)	20(16.26)		9(31.03)		11(11.70)	33(12.60)	
	18-19	34(3.33)	0(0.00)	0.005	0(0.00)	0.31	0(0.00)	0.001	3(1.15)	<0.001
Wife's Education									
	Government School	352(34.51)	41(33.33)		6(20.69)		35(37.23)	102(38.93)	
	Quranic School	169(16.57)	27(21.95)		5(17.24)		22(23.40)	58(22.14)	
	No School	490(48.04)	52(42.28)	0.15	17(58.62)	0.32	35(37.23)	0.043	98(37.40)	<0.001
Husband's Education									
	Government School	469(45.98)	56(45.53)		14(48.28)		42(44.68)	130(49.62)	
	Quranic School	207(20.29)	38(30.89)		7(24.14)		31(32.98)	66(25.19)	
	No School	308(30.20)	26(21.14)	0.004	7(24.14)	0.74	19(20.21)	0.004	53(20.23)	<0.001
Parity									
	No Children	402(39.41)	5(4.07)		4(13.79)		1(1.06)	42(16.03)	
	1Child	340(33.33)	46(37.40)		13(44.83)		33(35.11)	100(38.17)	
	2 Children or More	278(27.25)	72(58.54)	<0.001	12(41.38)	0.016	60(63.83)	<0.001	120(45.80)	<0.001
Number of Wives									

	Monogamous	858(84.12)	105(85.37)		24(82.76)		81(86.17)		215(82.06)	
	Polygamous	131(12.84)	15(12.20)	0.8	4(13.79)	0.87	11(11.70)	0.7	35(13.36)	0.73
Food Insecurity										
	No	789(77.35)	89(72.36)		21(72.41)		68(72.34)		212(80.92)	
	Yes	228(22.35)	34(27.64)	0.16	8(27.59)	0.52	26(27.66)	0.23	50(19.08)	0.11
Has husband spend >3 months away										
	No	300(29.41)	35(28.46)		8(27.59)		27(28.72)		82(31.30)	
	Yes	684(67.06)	85(69.11)	0.79	20(68.97)	0.84	65(69.15)	0.84	167(63.74)	0.32

***Spousal Communication – married adolescent participants reported ever having communicated with their husbands about number of children, spacing of births, family planning use

^Overt FP use: participant reported that they had ever used a method of family planning with their husband's knowledge

⊥Covert FP use: participant reported that they had ever used a method of family planning without their husband's knowledge

‡Parity – number of living children

Food Insecurity – measure of wealth that asks whether in the past month the participant or any member of their family went without eat the whole day because there was not enough food

Table 2. Unadjusted and Adjusted Associations of Communication with Lifetime Modern Contraceptive Use Among Adolescent Girls and Young Women from Dosso, Doutchi, and Loga, Niger (Who Listed Husbands as Top Decision-Makers)

	Ever Use of Modern Contraceptive Methods			Covert Modern Contraceptive Use			Overt Modern Contraceptive use		
		Crude	Final Adjusted		Crude	Final Adjusted		Crude	Final Adjusted
	n (%)	OR (95% CI) p-value	AOR (95% CI) p-value	n %	OR (95% CI) p-value	AOR (95% CI) p-value	n %	OR (95% CI) p-value	AOR (95% CI) p-value
Spousal Communication									
No Communication	34 (27.64)	ref	ref	19 (64.52)	ref	ref	15 (15.96)	ref	ref
Yes Communication	89 (72.36)	**11.21 (7.30, 17.23) <0.001**	**7.64 (4.86, 12.00) <0.001**	10 (34.48)	1.56 (0.72, 3.41) 0.26	1.36 (0.62, 2.99) 0.45	79 (84.04)	**21.94 (12.33, 39.03) <0.001**	**13.75 (7.63, 24.78) <0.001**

NS – not significant
†Covariates: parity, food insecurity
††Covariates: wife's age
†††Covariates: parity
ΔSpousal Communication – married adolescent participants reported ever having communicated with their husbands about number of children, spacing of births, family planning use
^Overt contraceptive use: participant reported that they had ever used a method of family planning with their husband's knowledge
⊥Covert contraceptive use: participant reported that they had ever used a method of family planning without their husband's knowledge
‡Parity – number of living children

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