

Reproductive Autonomy and Modern Contraceptive Use at Last Sex Among Young Women in Ghana

CONTEXT: Variability in the conceptualization and measurement of women's empowerment has resulted in inconsistent findings regarding the relationships between empowerment and sexual and reproductive health outcomes. Reproductive autonomy—a specific measure of empowerment—and its role in modern contraceptive use have rarely been assessed in Sub-Saharan contexts.

METHODS: Survey data were collected from a sample of 325 urban Ghanaian women aged 15–24 recruited from health facilities and schools in Kumasi and Accra in March 2015. Bivariate and multivariable logistic regression analyses were used to examine associations between two adapted reproductive autonomy subscales—decision making and communication—and women's use of modern contraceptives at last sex, controlling for demographic, reproductive and social context (i.e., approval of and stigma toward adolescent sexual and reproductive health) covariates.

RESULTS: In multivariable analyses, reproductive autonomy decision making—but not reproductive autonomy communication—was positively associated with women's modern contraceptive use at last sex (odds ratio, 1.1); age, having been employed in the last seven days and living in Kumasi were also positively associated with modern contraceptive use (1.1–9.8), whereas ever having had a previous pregnancy was negatively associated with the outcome (0.3). Reproductive autonomy decision making remained positively associated with contraceptive use in a subsequent model that included social approval of adolescent sexual and reproductive health (1.1), but not in models that included stigma toward adolescent sexual and reproductive health.

CONCLUSIONS: The reproductive autonomy construct, and the decision-making subscale in particular, demonstrated relevance for family planning outcomes among young women in Ghana and may have utility in global settings. Future research should explore reproductive autonomy communication and the potential confounding effects of social context.

International Perspectives on Sexual and Reproductive Health, 2019, 45:1–12 doi: <https://doi.org/10.1363/45e7419>
First published: August 16, 2019

By Dana Loll, Paul J. Fleming, Abubakar Manu, Emmanuel Morhe, Rob Stephenson, Elizabeth J. King and Kelli Stidham Hall

Dana Loll is a doctoral candidate, and Paul J. Fleming and Elizabeth J. King are assistant professors—all with the University of Michigan School of Public Health, Ann Arbor, MI, USA. Abubakar Manu is lecturer, Department of Population, Family and Reproductive Health, University of Ghana School of Public Health, Accra. Emmanuel Morhe is associate professor and head, Department of Obstetrics and Gynecology, University of Health and Allied Sciences, Ho, Ghana. Rob Stephenson is professor and chair, Department of Systems, Populations and Leadership, University of Michigan School of Nursing. Kelli Stidham Hall is assistant professor, Department of Behavioral Sciences and Health Education, Rollins School of Public Health, Emory University, Atlanta, GA, USA.

Unintended pregnancy, commonly defined as a pregnancy that is mistimed or unwanted, occurs disproportionately among socially disadvantaged women and is often related to a woman's lack of autonomy or power within a relationship.^{1–4} In Ghana, the setting for this study, 37% of all births are classified as unintended.⁴ This level of unintended pregnancy may be related to low contraceptive use among sexually active Ghanaian women and their partners; despite near universal (>99%) knowledge of at least one modern contraceptive method, only 22% of married women aged 15–49 and 32% of sexually active unmarried women aged 15–49 report currently using a modern method of contraception.⁵

Prior research has demonstrated that relationship quality, gender norms and power dynamics are important correlates of contraceptive use. Cox and colleagues found that, in Ghana, men who indicated higher levels of relationship trust and improved communication had an increased likelihood of reporting contraceptive use;⁶ women who indicated higher levels of relationship satisfaction reported greater reliance on contraceptive methods that typically

cannot be used without both partners' awareness (e.g., condoms, periodic abstinence, spermicides and withdrawal). Other research—mostly in Sub-Saharan African countries—has assessed the dyadic differences in contraceptive use reporting between husbands and wives, and has found that husbands typically report higher levels of contraceptive use than their wives and monogamous couples report higher levels of concurrence than polygamous couples.^{7,8} Among the couples examined, the variable most highly associated with concurrence in reporting was the couples' communication regarding family planning.^{7–9} These findings suggest that monogamous couples may discuss their family goals and contraceptive needs more openly, facilitating contraceptive access by reducing partner-related barriers to care. The studies themselves demonstrate how partnership dynamics and communication relate to the likelihood of contraceptive use in Sub-Saharan settings and in Ghana, in particular.

Beyond relationship quality and communication, scholars have investigated levels of power and equity within partnerships, and the roles of these factors in

determining contraceptive use. For example, Stephenson and colleagues demonstrated that among men and women in Kenya and Ethiopia, increased levels of gender-equitable attitudes were positively associated with reported contraceptive use.¹⁰ Researchers have also shown that modern contraceptive use among women is negatively associated with their experiencing intimate partner violence.^{11,12} These studies demonstrate the particular influence of power, equity and violence in determining a woman's ability to practice contraception. Although all of these relationship characteristics suggest the potential role of power imbalances in determining contraceptive use, it is important to explicitly study power and autonomy as they relate to contraceptive use. Doing so will build evidence for the role of autonomy as a possible influence on contraceptive use and as a possible intervention point.

The importance of relationship quality, communication and power dynamics in regard to contraceptive use has been demonstrated among married adult women;⁶ however, less is known about relationship dynamics among unmarried Ghanaian youth, the focus of this study. Qualitative research has described the nature of these relationships through attributes, including negative attitudes toward sexual partners, low knowledge of safe sex, low levels of communication between partners, adherence to sex and relationship gender norms, and unequal power dynamics.^{13,14} Young Northern Ghanaian men aged 14–20 indicate that they generally communicate with their male peers about sex and rarely discuss sex with intimate partners.¹³ Young Northern Ghanaian women aged 16–21, on the other hand, describe financial dependence on their male partner and the gender norm of condom use being the man's responsibility as challenges in negotiating condom use with their partner.¹⁴ Taken together, these results indicate that relationships among youth in Ghana may include low knowledge of sexual health, low levels of communication, gendered and inequitable power dynamics, and distrust.^{13,14} On the basis of findings from older married women,⁶ these relationship-quality attributes may be associated with low contraceptive use and decision-making power among young women in Ghana, although this has yet to be explored.

As a step toward a more specific analysis, researchers have investigated the relationship between a woman's level of empowerment and her likelihood of practicing contraception; however, empowerment is a multifaceted concept, and studies have varied operationalization of the construct. In work done across several African countries, for example, empowerment was operationalized using the Demographic and Health Survey measures of household economic decision making.¹⁵ In addition, mobility or freedom of movement, attitudes toward women's status, educational attainment and employment have been used as proxy indicators for women's empowerment.^{16–19} Findings from these studies generally indicate that empowerment

is associated with positive sexual and reproductive health outcomes, including lower fertility, longer birthspacing and reduced unintended pregnancy—all of which are often achieved through increased contraceptive use.¹⁹ Thus, it is important to consider more explicit indicators of women's reproductive empowerment.

To promote specificity and enhance comparison across studies, we investigate how reproductive empowerment can be ascertained using the construct of reproductive autonomy, defined as “having the power to decide about and control matters associated with contraceptive use, pregnancy and childbearing.”²⁰ Women with reproductive autonomy can “control whether and when to become pregnant, whether and when to practice contraception (and which method to use), and whether and when to continue a pregnancy.”²¹

Upadhyay et al., using a scale reflecting reproductive autonomy decision making and communication within an existing relationship, showed that reproductive autonomy communication was negatively associated with non-use of a modern contraceptive at recent sex among a cohort of U.S. women.²⁰ The construct of reproductive autonomy is underexplored in Sub-Saharan countries, however, where rates of unintended pregnancy are higher and consequences more severe.^{1,20,22} In their review of measures of empowerment in family planning evaluations, Mandal and colleagues recommend that researchers and program implementers review, adapt and test existing reproductive empowerment measures—including the Reproductive Autonomy Scale developed by Upadhyay et al.—in developing-country contexts.²³ To our knowledge, no study has applied the Reproductive Autonomy Scale or investigated its association with modern contraceptive use in Sub-Saharan Africa. Furthermore, social networks and social stigma regarding adolescent sexual and reproductive health—conveyed through parental influence, community norms and inequitable partnership dynamics—have been shown to be associated with the sexual and reproductive health of young women in Ghana and other Sub-Saharan countries;^{24–29} however, the association between reproductive autonomy and contraceptive use in this context of strong social influence on adolescent sexual and reproductive health has not been investigated.

To address these gaps, we sought to examine whether reproductive autonomy within a partnership—as measured by a modified version of the validated scale developed by Upadhyay et al.—is associated with modern contraceptive use at last sex among young women in Ghana. We hypothesized that higher levels of reproductive autonomy would be associated with a greater likelihood of modern contraceptive use at last sex. In addition, we examined the associations between social context variables—specifically social approval and social stigma—and contraceptive use to explore their influence on the relationship between reproductive autonomy and modern contraceptive use at last sex.

METHODS

Data

For this analysis, we used data from a larger study of adolescent sexual and reproductive health stigma among women aged 15–24, which was conducted in Ghana in March 2015. The original reproductive autonomy–related research questions and the survey items to answer them were embedded within this parent study prospectively during the design phase.³⁰ The research team employed cluster sampling to recruit 15–24-year-old women from sites in Accra and Kumasi purposively selected to ensure the heterogeneity of participant experiences. The sites were four public, coeducational and female-only senior high schools within the Ghana Education Service; two universities (the University of Ghana and Kwame Nkrumah University of Science and Technology); and five Ghana Health Service facilities offering antenatal, postnatal, family planning and child welfare services (health facilities with high client caseloads were selected to ensure an ample sample). This frame helped to ensure that the sample represented young women with a diverse range of sexual and reproductive health experiences, including those who reported being currently pregnant, having ever been pregnant, having given birth, having practiced family planning and having accessed abortion services. Overall, 1,080 women aged 15–24 were recruited from these facilities. Research assistants obtained written informed consent and then enrolled eligible participants in the study.

A total of 1,064 women completed the survey. Trained interviewers used tablets to administer the questionnaire through a Qualtrics mobile application—a secure, Web-based data-collection and data-management system. Interviews took place in a private location of the respondent's choice, such as a private room in the facility or the participant's home; time to completion depended on reproductive experiences and histories, with a range of 30–90 minutes. All participants received cell phone calling credit worth five Ghanaian cedis (in 2015, approximately US\$1.30) in exchange for their time. The study was approved by institutional review boards at the University of Michigan, the Ghana Health Service, the University of Ghana and Kwame Nkrumah University of Science and Technology.

Measures

•*Dependent variable.* Respondents who reported having ever used a modern contraceptive method (i.e., the pill, IUD, injectable, implant, condoms, emergency contraception and sterilization) were asked whether they had used any of those methods at last sex; responses were coded as “yes” or “no/don't know.” For this analysis, we created a dichotomous variable indicating whether a woman responded “yes” to having used any modern method at last sex.

•*Independent variables.* Our main independent variables were two reproductive autonomy measures representing abbreviated subscales from Upadhyay et al.'s Reproductive Autonomy Scale.²⁰ Specifically, we adapted items from

two of the three subscales: the reproductive autonomy decision-making subscale and the reproductive autonomy communication subscale (Appendix Table 1). Because reproductive coercion is related to intimate partner violence, we excluded the freedom from coercion subscale and focused our research on the other two subscales, which were applicable to all relationship types. For our decision-making measure, we excluded one of the four original items that asked women who has the most say about which method they would use to prevent pregnancy. For our communication measure, we excluded two of the original five items: one that asked women if it is easy to talk with their partner about sex and another that asked women if they could talk to their partner if they were worried about being pregnant or not pregnant. Items were selected on the basis of their applicability to multiple domains of sexual and reproductive health, including fertility preferences, sexual activity, modern contraceptive use and pregnancy resolution in our specific Ghanaian context. In addition, for our decision-making measure, we modified the wording of the original items; the initial scale asked respondents to indicate who made decisions, but we reoriented items from the perspective of respondents and asked them to indicate their level of agreement with each statement. We also modified the response options, offering four options, rather than the original scale's three. Response options and wording for communication items were consistent with the original scale.

The three items used in our reproductive autonomy decision-making subscale were “You, not your partner, has the most say about whether you would use a method to prevent pregnancy,” “You, not your partner, has the most say about when you have a baby in your life” and “If you became pregnant but it was unplanned, you, not your partner, would have the most say about whether you would raise the child, seek adoptive parents, or have an abortion.” Response options were scored on a four-point scale ranging from “strongly disagree” to “strongly agree.” Responses were summed to form a continuously treated scale with a range of 3–12. The Cronbach's alpha for our reproductive autonomy decision-making subscale was 0.62, demonstrating acceptable reliability.

Our reproductive autonomy communication subscale was based on the following three items: “My partner would support me if I wanted to use a method to prevent pregnancy,” “If I didn't want to have sex, I could tell my partner” and “If I really did not want to become pregnant, I could get my partner to agree with me.” Although the first and the last items imply communication rather than refer directly to communication that could occur, these items were maintained because they demonstrated a woman's ability to achieve her preferred outcome when communicating with her partner. Response options and scoring were the same as for the decision-making measure. The Cronbach's alpha for the reproductive autonomy communication subscale was 0.64, demonstrating acceptable reliability.

• *Covariates.* One key covariate was women's perception of social approval for sexual and reproductive health. For this measure, participants were asked how supportive nine specific social groups in their community are about teenagers' sexual and reproductive health issues and needs; the social groups were the overall community, men, women, schools, health care facilities or workers, religious centers or leaders, parents, other family members and friends. Young women reported whether each of the groups was extremely supportive, somewhat supportive, somewhat unsupportive or extremely unsupportive. Groups identified as being extremely or somewhat supportive were scored 1, and others were scored 0. Items were summed to create an index that ranged from 0 to 9, with higher scores reflecting greater community support for adolescent sexual and reproductive health. The Cronbach's alpha for this index was 0.71, demonstrating acceptable reliability.

We also included the Adolescent SRH Stigma Scale, which was developed by Hall et al. to measure stigma toward adolescent sexual and reproductive behaviors and outcomes.³⁰ Items in the scale were informed by qualitative interviews with young Ghanaian women that demonstrated three major domains of stigma in this context. Enacted stigma represents the extent to which women experience gossip, marginalization and mistreatment related to their sexual and reproductive health experiences; this domain includes items such as "Becoming pregnant and having a baby as a teen would cause others to tease, insult, swear, or gossip about me." Internalized stigma represents the disgrace and shame that young women feel as a result of their experiences and enacted stigma; this domain includes items such as "Teens who use modern family planning are viewed as bad girls." Finally, stigmatizing lay attitudes reflect community-held attitudes that young women who engage in sex, become pregnant or have a child or an abortion are immoral or "bad girls"; this domain includes items such as "Modern family planning is not acceptable for unmarried women." Hall et al. conducted confirmatory factor analysis using a backward elimination approach to develop the final 20-item scale; scores reflect the degree to which respondents agree with stigmatizing statements, with higher scores indicating higher levels of stigma. The Cronbach's alpha for this final scale was 0.74, demonstrating acceptable reliability.³⁰

Existing research has demonstrated numerous sociodemographic characteristics associated with the use of modern contraceptives, including age, employment status, educational attainment and religious affiliation.^{19,31–40} Given their demonstrated relevance to the outcome of interest, we include measures of these and other characteristics with theoretical relevance as control variables. Age was measured as a continuous variable ranging from 15 to 24. Ethnic group was a categorical variable that included Akan, Ga or Dangme, Ewe and other ethnic groups. Employment was a binary measure of whether respondents had been employed in the past seven days. Educational attainment was a categorical variable with the following categories: no

formal education, some or completed primary education, some or completed middle school, some or completed secondary school, and any higher education (i.e., university). Relationship status was a categorical variable with the categories married or engaged, cohabiting with a partner (but not married or engaged), in a serious relationship (but not cohabiting) and dating casually or having sex. Religious affiliation was a categorical variable including Pentecostal or Charismatic Christian; Catholic; Anglican, Methodist or Presbyterian; other Christian; Muslim; or none. Religious attendance was a categorical variable that indicated how frequently respondents typically attend church or mosque (at least once a week, at least once per month or less than monthly). City was a binary measure indicating whether respondents were recruited from Accra or Kumasi. Recruitment site was the clustering variable for the robust standard errors that were used for the analysis.

In addition, we included binary variables of ever having been pregnant and ever having had an abortion. To maintain adequate sample size and prevent regression models from purging responses from never-pregnant women, for the abortion variable, those who had never been pregnant and those who had been pregnant but had not had an abortion were coded as 0 and served as the reference group; respondents who had ever been pregnant and had had an abortion were coded as 1.

Statistical Analysis

Because our analysis explored the associations between reproductive autonomy within a partnership and self-reported modern contraceptive use, we excluded 402 participants who reported not currently being in a relationship, 331 who had never had sex, 81 who mentioned being pregnant or pregnancy intention as a reason for not using a modern contraceptive at last sex and 59 who were missing data on key variables of interest. The analytic sample totaled 325 individuals.

We used descriptive statistics to examine young women's sociodemographic and reproductive background characteristics, social context variables, reproductive autonomy levels and contraceptive use. We then employed bivariate analyses to examine associations between each reproductive autonomy subscale and contraceptive use at last sex, and between covariates and contraceptive use at last sex.

We further examined the associations between the reproductive autonomy subscales and contraceptive use using multivariable logistic regression models that controlled for sociodemographic, reproductive and social context covariates; missing data on social approval and stigma variables reduced the sample size for this analysis to 301. Variables that demonstrated bivariate associations with *p* values greater than or equal to .10 were included in the multivariable models. Using a stepwise model-building approach with forward selection, we progressively added each included variable. At each step of the analysis, we assessed model fit using the Akaike information criterion values. We first tested these statistical models to analyze

the decision-making subscale and the communication subscale separately, because we conceptualized the two types of reproductive autonomy as unique and were interested in their potentially independent relationships with contraceptive use. Given the consistency in results, the final models presented reflect both subscales in a single model. Finally, we tested the social approval and stigma variables separately, and then combined them in a single model, given the consistency of results. We controlled for recruitment site-level correlations with inclusion of robust standard errors.

All analyses were conducted in Stata 14. Results are presented as adjusted odds ratios with 95% confidence intervals and p values ($p < .05$ was considered significant).

RESULTS

Descriptive Statistics

The mean age of the sample was 21 (Table 1). The largest proportion (36%) of young women had some or completed middle school education; only 6% had no education. The majority of respondents were some form of Christian (91%) and attended religious services on a weekly basis (78%). Only 37% of women reported that they had been employed in the past week. Approximately 37% of women reported that they were in a serious relationship but not cohabiting, and 19–25% reported being in each of the other relationship types. Most women were of Akan ethnicity (55%) and were recruited from Accra (55%).

In terms of reproductive history, 63% of women had ever been pregnant, and 17% had ever had an abortion. The mean score on the reproductive autonomy decision-making subscale indicated high autonomy (8.0), and the mean score on the reproductive autonomy communication subscale demonstrated even higher communication autonomy (9.8). Perceived social approval for adolescent sexual and reproductive health was rather high, with a mean score of 5.9. Stigma toward adolescent sexual and reproductive health was moderate, with a mean score of 12.4. Some 52% of respondents reported using a modern contraceptive at last sex.

Bivariate Analyses

In unadjusted analyses, young women's reproductive autonomy—as measured by the decision-making and the communication subscales—did not differ by whether they had used a modern contraceptive at last sex (Table 2). Similarly, no differences in social approval or stigma were found between contraceptive users and nonusers. Several covariates, however, were associated with modern contraceptive use at last sex; these included age, educational attainment, relationship status, ethnic group, city and prior pregnancy.

Multivariable Analyses

Multivariable logistic regression models controlled for age, educational attainment, employment in the past week, relationship status, city and prior pregnancy. In the first

TABLE 1. Selected characteristics of sexually active young women in a relationship who have ever used a modern contraceptive method, Ghana, 2015

Characteristic	%/mean (N=325)
DEMOGRAPHIC	
Mean age (range, 15–24)	21.1 (2.3)
Educational attainment	
No formal	5.9
Primary	15.1
Middle	36.0
Secondary	35.4
Higher	7.7
Religion	
Pentecostal/Charismatic Christian	45.2
Catholic	11.1
Anglican/Methodist/Presbyterian	22.8
Other Christian	11.4
Muslim	8.3
None	1.2
Religious attendance	
≥once a week	77.9
≥once a month	19.1
<monthly	3.1
Employment in the past seven days	
No	63.4
Yes	36.6
Relationship status	
Married/engaged	24.6
Cohabiting with partner, but not married/engaged	19.7
Serious relationship, but not cohabiting	36.6
Dating casually/having sex	19.1
Ethnic group	
Akan	54.5
Ga/Dangme	14.2
Ewe	11.7
Other	19.7
City	
Accra	54.8
Kumasi	45.2
REPRODUCTIVE HISTORY	
Ever pregnant	
No	36.9
Yes	63.1
Ever had an abortion	
No	83.4
Yes	16.6
REPRODUCTIVE AUTONOMY/SOCIAL CONTEXT	
Mean RA decision-making score (range, 3–12)	8.0 (2.0)
Mean RA communication score (range, 3–12)	9.8 (1.7)
Mean social approval for adolescent SRH score (range, 0–9)	5.9 (2.1)
Mean stigma toward adolescent SRH score (range, 1–20)	12.4 (3.7)
OUTCOME	
Modern contraceptive use at last sex	
Yes	52.3
No	47.7

Notes: Unless otherwise noted, all values are percentages; percentages may not add up to 100.0 because of rounding. Figures in parentheses are standard deviations. Educational attainment categories indicate whether respondents completed some or all education at each level. RA=reproductive autonomy. SRH=sexual and reproductive health.

TABLE 2. Selected characteristics of sexually active young women in a relationship who have ever used a modern contraceptive method, by modern method use at last sex

Characteristic	%/mean	
	No method use (N=170)	Method use (N=155)
Mean RA decision-making score (range, 3–12)	7.98	8.03
Mean RA communication score (range, 3–12)	9.58	9.94
Mean social approval for adolescent SRH score (range, 0–9)	5.90	5.99
Mean stigma toward adolescent SRH score (range, 1–20)	12.68	12.03
Mean age*	20.81	21.36
Educational attainment**		
No formal	57.9	42.1
Primary	71.4	28.6
Middle	54.7	45.3
Secondary	47.0	53.0
Higher	24.0	76.0
Religion		
Pentecostal/Charismatic Christian	57.1	42.9
Catholic	44.4	55.6
Anglican/Methodist/Presbyterian	43.2	56.8
Other Christian	48.7	51.4
Muslim	66.7	33.3
None	50.0	50.0
Religious attendance		
≥once a week	49.4	50.6
≥once a month	61.3	38.7
<monthly	70.0	30.0
Employment in the past seven days		
No	56.3	43.7
Yes	45.4	54.6
Relationship status*		
Married/engaged	51.3	48.8
Cohabiting with partner, but not married/engaged	67.2	32.8
Serious relationship, but not cohabiting	51.3	48.7
Dating casually/having sex	40.3	59.7
Ethnic group*		
Akan	45.8	54.2
Ga/Dangme	69.6	30.4
Ewe	52.6	47.4
Other	57.8	42.2
City***		
Accra	71.4	28.7
Kumasi	29.3	70.8
Ever pregnant***		
No	38.3	61.7
Yes	60.5	39.5
Ever had an abortion		
No	51.3	48.7
Yes	57.4	42.6

*p<.05. **p<.01. ***p<.001. Notes: Unless otherwise noted, all values are percentages; percentages may not add up to 100.0 because of rounding. Bivariate analyses were conducted using t tests for continuous variables and chi-square tests for categorical or dichotomous variables. Educational attainment categories indicate whether respondents completed some or all education at each level. RA=reproductive autonomy. SRH=sexual and reproductive health.

model, the reproductive autonomy decision-making subscale was independently associated with use of a modern contraceptive at last sex (odds ratio, 1.1; Table 3); thus, for each point increase in the reproductive autonomy decision-making subscale, a respondent's odds of contraceptive use at last sex increase by 12%. In the second model, the reproductive autonomy communication subscale was not associated with modern contraceptive use.

In the third model, which included both reproductive autonomy subscales, the association between the reproductive autonomy decision-making subscale and contraceptive use remained significant (1.1). Covariates positively associated with modern contraceptive use at last sex in the combined model were age, employment in the past week and Kumasi residency (1.1–9.8); in addition, young women who were dating casually were more likely than those who were married to have used a modern method at last sex (2.3), although the finding was only marginally significant. Prior pregnancy was negatively associated with the outcome (0.3).

The final set of adjusted models added social context variables to the analysis (Table 4). In the model with both reproductive autonomy subscales and the social approval measure (model 4), the reproductive autonomy decision-making subscale remained positively associated with use of a modern contraceptive at last sex (odds ratio, 1.1); however, in the models that included the social stigma measure, either without or with the social approval measure (models 5 and 6, respectively), decision making lost significance, although the direction of the relationships and effect sizes were generally maintained. Of the covariates, age, dating casually and Kumasi residency remained positively associated with the outcome in all social context models (1.1–10.8). Being employed remained positively associated with modern contraceptive use in the model that included social approval (2.3), but not in either model that included stigma; prior pregnancy was negatively associated with the outcome in the models that included the social context variables independently, but not in the final model that included both.

DISCUSSION

This study applied validated items from a formal reproductive autonomy scale developed in the United States to the Ghanaian context. To our knowledge, ours was the first study to apply and measure Upadhyay et al.'s Reproductive Autonomy Scale and to investigate its association with modern contraceptive use in a Sub-Saharan context. By using a precise measure of reproductive autonomy and demonstrating its relevance for family planning outcomes among these young women in Ghana, our research provides evidence of the utility of the reproductive autonomy construct in global settings. Our findings, however, suggest that the relationship between social context and reproductive autonomy needs to be further explored. Researchers may consider using factor analysis to incorporate measures of social context into the reproductive autonomy subscales in future work.

Results from initial models suggest that young urban Ghanaian women's reproductive autonomy decision making may be associated with modern contraceptive use at last sex—with young women who reported having more choice regarding use of a contraceptive method having elevated odds of modern method use. However, when models accounted for both social approval and social

TABLE 3. Odds ratios (and 95% confidence intervals) from multivariable logistic regression analyses assessing young women's likelihood of modern contraceptive use at last sex, by reproductive autonomy and other selected characteristics, according to model

Characteristic	Model 1	Model 2	Model 3
RA decision making	1.12 (1.02–1.24)*	na	1.12 (1.01–1.24)*
RA communication	na	1.04 (0.91–1.19)	1.03 (0.88–1.19)
Age	1.12 (1.04–1.21)**	1.09 (1.00–1.18)*	1.12 (1.03–1.21)**
Educational attainment			
No formal (ref)	1.00	1.00	1.00
Primary	0.83 (0.39–1.77)	0.79 (0.43–1.48)	0.82 (0.42–1.60)
Middle	0.75 (0.36–1.57)	0.76 (0.34–1.66)	0.74 (0.35–1.58)
Secondary	1.01 (0.55–1.87)	1.00 (0.55–1.84)	1.00 (0.55–1.80)
Higher	1.20 (0.28–5.21)	1.19 (0.25–5.61)	1.19 (0.27–5.25)
Employment in the past seven days			
No (ref)	1.00	1.00	1.00
Yes	2.08 (1.06–4.10)*	2.14 (1.07–4.27)*	1.09 (1.06–4.12)*
Relationship status			
Married/engaged (ref)	1.00	1.00	1.00
Cohabiting with partner, but not married/engaged	0.65 (0.38–1.11)	0.62 (0.36–1.08)	0.65 (0.38–1.11)
Serious relationship, but not cohabiting	1.70 (0.63–4.62)	1.63 (0.63–4.21)	1.70 (0.63–4.58)
Dating casually/having sex	2.32 (0.99–5.45)	2.21 (0.97–5.04)	2.34 (0.98–5.59)†
City			
Accra (ref)	1.00	1.00	1.00
Kumasi	9.98 (3.90–25.51)***	8.64 (3.75–19.93)***	9.81 (3.77–25.48)***
Ever pregnant			
No (ref)	1.00	1.00	1.00
Yes	0.29 (0.10–0.81)*	0.28 (0.10–0.81)*	0.29 (0.10–0.82)*

*p<.05. **p<.01. ***p<.001. †p<.10. Notes: RA=reproductive autonomy. na=not applicable. ref=reference group.

TABLE 4. Odds ratios (and 95% confidence intervals) from multivariable logistic regression analyses assessing young women's likelihood of modern contraceptive use at last sex, by reproductive autonomy, social context variables and other selected characteristics, according to model

Characteristic	Model 4	Model 5	Model 6
RA decision making	1.13 (1.01–1.26)*	1.11 (0.98–1.26)	1.11 (0.99–1.24)
RA communication	1.00 (0.84–1.18)	1.01 (0.87–1.18)	1.00 (0.87–1.15)
Social approval for adolescent SRH	0.96 (0.87–1.06)	na	0.96 (0.88–1.05)
Social stigma toward adolescent SRH	na	1.01 (0.94–1.09)	1.02 (0.94–1.10)
Age	1.12 (1.04–1.21)**	1.12 (1.03–1.23)**	1.13 (1.04–1.22)**
Educational attainment			
No formal (ref)	1.00	1.00	1.00
Primary	0.85 (0.43–1.70)	0.86 (0.43–1.71)	0.87 (0.42–1.83)
Middle	0.86 (0.39–1.92)	0.74 (0.35–1.55)	0.77 (0.34–1.73)
Secondary	1.13 (0.54–2.35)	1.06 (0.59–1.93)	1.17 (0.56–2.45)
Higher	1.20 (0.26–5.63)	1.38 (0.40–4.71)	1.35 (0.39–4.71)
Employment in the past seven days			
No (ref)	1.00	1.00	1.00
Yes	2.25 (1.06–4.76)*	2.03 (0.97–4.27)	2.06 (0.92–4.57)
Relationship status			
Married/engaged (ref)	1.00	1.00	1.00
Cohabiting with partner, but not married/engaged	0.70 (0.43–1.15)	0.78 (0.46–1.30)	0.86 (0.51–1.45)
Serious relationship, but not cohabiting	1.82 (0.68–4.88)	1.77 (0.61–5.09)	1.89 (0.68–5.25)
Dating casually/having sex	2.53 (1.14–5.62)*	2.77 (1.21–6.38)*	2.82 (1.28–6.18)*
City			
Accra (ref)	1.00	1.00	1.00
Kumasi	10.81 (3.98–29.36)***	10.46 (4.13–26.48)***	10.65 (4.19–27.07)***
Ever pregnant			
No (ref)	1.00	1.00	1.00
Yes	0.32 (0.12–0.91)*	0.32 (0.11–0.94)*	0.35 (0.12–1.02)

*p<.05. **p<.01. ***p<.001. Notes: RA=reproductive autonomy. SRH=sexual and reproductive health. na=not applicable. ref=reference group. The sample for this analysis was reduced (N=301) because of missing values on social approval and stigma.

stigma toward adolescent sexual and reproductive health, the significance of the association between the reproductive autonomy decision-making subscale and modern contraceptive use at last sex was attenuated. This finding suggests that in this Ghanaian population, social context may affect associations between reproductive autonomy decision making and modern contraceptive use at last sex. The potential confounding effects of social norms regarding sexual and reproductive health on relationships between reproductive autonomy decision making and family planning outcomes requires further investigation.

The reproductive autonomy decision-making items we adapted from Upadhyay et al.'s scale were designed to measure who makes sexual and reproductive health decisions, but this subscale does not indicate whether the partner was actually informed and involved in the decision-making process. It is unclear whether the young women with high autonomy in our study made decisions with or without the involvement of their partners. Results from the 2014 Ghana Demographic and Health Survey indicate that for the majority of married women, decisions about family planning are made with their husbands;⁵ however, to what extent this finding holds true among women engaged in more casual sexual relationships is not evident. In Ghana, women's responses to vignettes demonstrating hypothetical situations in which women might consider using contraceptives showed that, when men were not supportive, many Ghanaian women supported covert use.⁴¹ In previous research on married urban Zambian women and their partners, Biddlecom and Fapohunda found that covert use is more common in settings with low contraceptive prevalence and that it is associated with challenges in partner communication and male disapproval of contraception.⁴² Our study did not assess whether young Ghanaian women were using contraceptives covertly and, because of limitations in the sample sizes of women using different types of contraceptives, we did not statistically examine use of specific method types in this analysis. Additional research is needed to investigate the nature of contraceptive decisions among women with high and low levels of reproductive autonomy decision making to determine the level of partner engagement in these decisions and women's use of different methods, including such female-controlled and concealable methods as the injectable and IUD.

Our findings linking reproductive autonomy to reproductive health outcomes among young Ghanaian women are generally consistent with findings from the United States, among the sample with which the scale was developed.²⁰ Although the relationship did not reach statistical significance in adjusted models, the effect size and direction of the relationship between reproductive autonomy decision making and unprotected sex in the U.S. sample were similar to those in our study of young women in Ghana. Together, these results suggest that the construct of decision-making autonomy may operate similarly in regard to family

planning behaviors in quite different geographical settings and social contexts. In contrast to our null findings for communication autonomy, though, the U.S. study found that communication autonomy was associated with a 32% reduction in the odds of unprotected sex. Reasons for our null findings and these differences across studies are not fully clear. It may be that our construct of reproductive autonomy communication, which approximates partner communication related to reproductive health issues, may be less salient among this sample of young Ghanaian women. Instead of navigating decisions within a partnership, young Ghanaian women who have high levels of reproductive autonomy decision making may simply choose a method without partner input.

Another potential explanation for the null findings could be related to the sociocultural and community influences on sexual and reproductive health in Ghana. In other analyses of these data not yet published, we found that social approval for sexual and reproductive health is associated with reproductive autonomy communication among this sample.⁴³ Here, though, the inclusion of social approval in models was not associated with reproductive autonomy estimates or contraceptive use.

Inclusion of stigma in the models does appear to have been associated with changes in the relationship between reproductive autonomy decision making (but not reproductive autonomy communication) and modern contraceptive use at last sex, although the small, yet statistically significant, changes in point estimates were perhaps not clinically or practically relevant. Stigma itself was not associated with modern contraceptive use in this subsample analysis, although it was negatively associated with having ever used modern contraceptives in the larger parent study.³⁰ Inconsistent results for the two social context variables create opportunities for additional inquiry into the specific types of social influence that may be important for understanding reproductive autonomy and contraceptive use in this context. Subsequent investigation may help to clarify the ways in which these results differ from those in the U.S. context. Future studies incorporating qualitative methods may help to better describe the experiences of young Sub-Saharan African women as they negotiate contraceptive use and the role of communication and other specific types of autonomy on shaping family planning outcomes, including the use of couple-based or coital-dependent contraceptive methods that may require communication and negotiation.

Limitations

This study has several important limitations. The adapted and abbreviated reproductive autonomy subscales used here may not have been as valid, reliable or robust as they could have been in comprehensively describing the latent constructs. In addition, given the sensitivity of the survey content and the self-reported nature of these data, social desirability reporting bias cannot be ruled out. The

sampling approach, which involved a cross-sectional purposive sample of urban young women in Ghana, limits the inferences that can be made about these data; for example, the nonrepresentative nature of these data limits our ability to generalize findings to a larger Ghanaian context or other regional contexts.

Although women with higher levels of reproductive autonomy may be more likely to subsequently use modern contraceptives, it is also possible that the act of using modern contraceptives itself increases the reproductive autonomy of the young women. The study design does not allow for us to explore the nature of this relationship and the pathways through which reproductive autonomy and contraceptive use interact. Prospective studies are needed to better estimate temporal associations between reproductive autonomy and contraceptive use, given that bidirectional relationships between family planning decision making and behaviors and levels of reproductive autonomy are likely possible. Similarly, women not in a relationship were not asked the reproductive autonomy items, because these items reflect dynamics within a relationship context. However, it is possible that women's level of reproductive autonomy may affect the likelihood of being in a relationship and the nature of relationship dissolution. This notion should also be explored in prospective studies. Because we modified the reproductive autonomy subscales used in this study, the difference in their scoring prevents us from comparing mean scores to those of the U.S. context, limiting our study's utility in making cross-national comparisons related to level of autonomy. Finally, these data lack the partner perspective, which has been shown to be an important component of understanding modern contraceptive use.⁹ Studies that include partner-level data and partner perspectives on reproductive decision making would result in a more robust understanding of reproductive autonomy in this setting, especially concerning intimate partner violence—an experience that has been demonstrated to be associated with both reproductive autonomy and modern contraceptive use in U.S. research.^{20,44,45}

Conclusions

Findings from this study have several implications for public health research, programs and practice. Additional studies that use more-comprehensive measures of reproductive autonomy and repeated measures designs among randomly selected representative populations to prospectively assess the influence of changes in reproductive autonomy on contraceptive use patterns can offer additional insights into the temporal and dynamic relationships between the measures. Furthermore, although the social context variables were not associated with contraceptive use, their presence in the models changed the relationship between reproductive autonomy decision making and modern contraceptive use at last sex. This finding demonstrates the potentially important

role of social context and the need to better understand how social context may affect relationships between reproductive autonomy and modern contraceptive use. Additional work should be done to develop and include a community-level reproductive autonomy subscale for contexts in which partnership decision making may be an important but inadequate determinant in autonomous reproductive decision making. This study highlighted consistent strong associations between employment and contraceptive use at last sex, even when controlling for reproductive autonomy decision making and communication. However, educational attainment, often used as a proxy measure for women's empowerment, was not associated in the multivariable models. Additional research should assess the reasons for this difference in associations and the ways that these conventional measures of empowerment interact with reproductive autonomy.

Given that reproductive autonomy is likely a modifiable factor, programmatic implications for our findings could include designing and implementing interventions to encourage more-equitable gender relations in Ghana. Such programs have been shown to effectively improve sexual and reproductive outcomes among men and women by addressing gender norms and decision making within partnerships and by providing negotiation skills for making pregnancy-, contraception- and abortion-related decisions.⁴⁶ Rebalancing power dynamics between partners could increase young Ghanaian women's levels of reproductive autonomy and, subsequently, their health and well-being.

Overall, this study demonstrates that reproductive autonomy—a valuable outcome in and of itself, because of the established value of reproductive rights—is also important for young urban Ghanaian women's sexual and reproductive health outcomes. Although this research revealed associations between reproductive autonomy and modern contraceptive use at last sex, results indicate that reproductive autonomy's association with contraceptive use among young Ghanaian women is not well understood. Additional work should investigate relationships between reproductive autonomy and other sexual and reproductive health outcomes, including pregnancy resolution decision making, condom use and timing of children. Interventions based on such work and that promote reproductive autonomy may be able to increase modern contraceptive use and, in turn, reduce rates of unintended pregnancy and associated negative outcomes.

REFERENCES

1. Singh S, Sedgh G and Hussain R, Unintended pregnancy: worldwide levels, trends, and outcomes, *Studies in Family Planning*, 2010, 41(4):241–250, doi:10.1111/j.1728-4465.2010.00250.x.
2. Klima CS, Unintended pregnancy: consequences and solutions for a worldwide problem, *Journal of Midwifery & Women's Health*, 1998, 43(6):483–491, doi:10.1016/S0091-2182(98)00063-9.
3. Dehlendorf C et al., Disparities in family planning, *American Journal of Obstetrics & Gynecology*, 2010, 202(3):214–220, doi:10.1016/j.ajog.2009.08.022.

4. Eliason S et al., Determinants of unintended pregnancies in rural Ghana, *BMC Pregnancy and Childbirth*, 2014, 14:261, doi:10.1186/1471-2393-14-261.
5. Ghana Statistical Service (GSS), Ghana Health Service (GHS) and ICF International, *Ghana Demographic and Health Survey 2014*, 2015, Rockville, MD, USA: GSS, GHS, and ICF International.
6. Cox CM et al., Understanding couples' relationship quality and contraceptive use in Kumasi, Ghana, *International Perspectives on Sexual and Reproductive Health*, 2013, 39(4):185–194, doi:10.1363/3918513.
7. Becker S and Costenbader E, Husbands' and wives' reports of contraceptive use, *Studies in Family Planning*, 2001, 32(2):111–129, doi:10.1111/j.1728-4465.2001.00111.x.
8. Koffi AK et al., Correlates of and couples' concordance in reports of recent sexual behavior and contraceptive use, *Studies in Family Planning*, 2012, 43(1):33–42, doi:10.1111/j.1728-4465.2012.00300.x.
9. Becker S, Hossain MB and Thomson E, Disagreement in spousal reports of current contraceptive use in Sub-Saharan Africa, *Journal of Biosocial Science*, 2006, 38(6):779–796, doi:10.1017/S0021932005001069.
10. Stephenson R, Bartel D and Rubardt M, Constructs of power and equity and their association with contraceptive use among men and women in rural Ethiopia and Kenya, *Global Public Health*, 2012, 7(6):618–634, doi:10.1080/17441692.2012.672581.
11. Stephenson R et al., Domestic violence, contraceptive use, and unwanted pregnancy in rural India, *Studies in Family Planning*, 2008, 39(3):177–186, doi:10.1111/j.1728-4465.2008.165.x.
12. Silverman JG and Raj A, Intimate partner violence and reproductive coercion: global barriers to women's reproductive control, *PLOS Medicine*, 2014, 11(9):1–4, doi:10.1371/journal.pmed.1001723.
13. Krugu JK et al., Girls cannot be trusted: young men's perspectives on contraceptive decision making and sexual relationships in Bolgatanga, Ghana, *European Journal of Contraception & Reproductive Health Care*, 2018, 23(2):139–146, doi:10.1080/13625187.2018.1458225.
14. van der Geugten J et al., Protected or unprotected sex: the conceptions and attitudes of the youth in Bolgatanga municipality, Ghana, *Sexuality & Culture*, 2017, 21(4):1040–1061, doi:10.1007/s12119-017-9432-z.
15. Do M and Kurimoto N, Women's empowerment and choice of contraceptive methods in selected African countries, *International Perspectives on Sexual and Reproductive Health*, 2012, 38(1):23–33, doi:10.1363/3802312.
16. Mumtaz Z and Salway S, Understanding gendered influences on women's reproductive health in Pakistan: moving beyond the autonomy paradigm, *Social Science & Medicine*, 2009, 68(7):1349–1356, doi:10.1016/j.socscimed.2009.01.025.
17. Lee-Rife SM, Women's empowerment and reproductive experiences over the lifecourse, *Social Science & Medicine*, 2010, 71(3):634–642, doi:10.1016/j.socscimed.2010.04.019.
18. Hindin M and Muntifering C, Women's autonomy and timing of most recent sexual intercourse in Sub-Saharan Africa: a multi-country analysis, *Journal of Sex Research*, 2013, 48(6):511–519, doi:10.1080/00224499.2011.554918.
19. Upadhyay UD et al., Women's empowerment and fertility: a review of the literature, *Social Science & Medicine*, 2014, 115:111–120, doi:10.1016/j.socscimed.2014.06.014.
20. Upadhyay UD et al., Development and validation of a reproductive autonomy scale, *Studies in Family Planning*, 2014, 45(1):19–41, doi:10.1111/j.1728-4465.2014.00374.x.
21. Purdy L, Women's reproductive autonomy: medicalisation and beyond, *Journal of Medical Ethics*, 2006, 32(5):287–291, doi:10.1136/jme.2004.013193.
22. Grimes D et al., Unsafe abortion: the preventable pandemic, *Lancet*, 2006, 368(9550):1908–1919, doi:10.1016/S0140-6736(06)69481-6.
23. Mandal M, Muralidharan A and Pappa S, A review of measures of women's empowerment and related gender constructs in family planning and maternal health program evaluations in low- and middle-income countries, *BMC Pregnancy and Childbirth*, 2017, 17(Suppl. 2):119–127, doi:10.1186/s12884-017-1500-8.
24. Biddlecom A, Awusabo-Asare K and Bankole A, Role of parents in adolescent sexual activity and contraceptive use in four African countries, *International Perspectives on Sexual and Reproductive Health*, 2009, 35(2):72–81, doi:10.1363/3507209.
25. Agyei WK et al., Sexual behaviour and contraception among unmarried adolescents and young adults in Greater Accra and Eastern Regions of Ghana, *Journal of Biosocial Science*, 2000, 32(4):495–512, doi:10.1017/S0021932000004958.
26. Clements S and Madise N, Who is being served least by family planning providers? A study of modern contraceptive use in Ghana, Tanzania and Zimbabwe, *African Journal of Reproductive Health*, 2004, 8(2):124–136, doi:10.2307/3583186.
27. Schwandt H et al., Pathways to unsafe abortion in Ghana: the role of male partners, women and health care providers, *Contraception*, 2013, 88(4):509–517, doi:10.1016/j.contraception.2013.03.010.
28. Crissman HP, Adanu RM and Harlow SD, Women's sexual empowerment and contraceptive use in Ghana, *Studies in Family Planning*, 2012, 43(3):201–212, doi:10.1111/j.1728-4465.2012.00318.x.
29. Stanback J and Twum-Baah KA, Why do family planning providers restrict access to services? An examination in Ghana, *International Family Planning Perspectives*, 2001, 27(1):37–41, doi:10.2307/2673804.
30. Hall KS et al., Development and validation of a scale to measure adolescent sexual and reproductive health stigma: results from young women in Ghana, *Journal of Sex Research*, 2018, 55(1):60–72, doi:10.1080/00224499.2017.1292493.
31. Hindin MJ and Fatusi AO, Adolescent sexual and reproductive health in developing countries: an overview of trends and interventions, *International Perspectives on Sexual and Reproductive Health*, 2009, 35(2):58–62, doi:10.1363/ipsrh.35.058.09.
32. Shapiro D and Tambahse BO, The impact of women's employment on contraceptive education use and abortion in Kinshasa, Zaire, *Studies in Family Planning*, 1994, 25(2):96–110, doi:10.2307/2138087.
33. Blanc AK and Way AA, Sexual behavior and contraceptive knowledge and use among adolescents in developing countries, *Studies in Family Planning*, 1998, 29(2):106–116, doi:10.2307/172153.
34. Wood K and Jewkes RK, Blood blockages and scolding nurses: barriers to adolescent contraceptive use in South Africa, *Reproductive Health Matters*, 2011, 14(27):109–118, doi:10.1016/S0968-8080(06)27231-8.
35. Hebert L et al., Family planning providers' perspectives on family planning service delivery in Ibadan and Kaduna, Nigeria: A qualitative study, *Journal of Family Planning and Reproductive Health Care*, 2013, 39(1):29–35, doi:10.1136/jfprhc-2011-100244.
36. Gyimah SO, Adjei JK and Takyi BK, Religion, contraception, and method choice of married women in Ghana, *Journal of Religion and Health*, 2012, 51(4):1359–1374, doi:10.1007/s10943-011-9478-4.
37. Addai I and Pokimica J, Ethnicity and economic well-being: the case of Ghana, *Social Indicators Research*, 2010, 99(3):487–510, doi:10.1007/s11205-010-9595-6.
38. Zanin L, Radice R and Marra G, Modelling the impact of women's education on fertility in Malawi, *Journal of Population Economics*, 2015, 28(1):89–111, doi:10.1007/s00148-013-0502-8.
39. Mmari K and Sabherwal S, A review of risk and protective factors for adolescent sexual and reproductive health in developing countries: an update, *Journal of Adolescent Health*, 2013, 53(5):562–572, doi:10.1016/j.jadohealth.2013.07.018.
40. Ainsworth M, Beegle K and Nyamete A, The impact of women's schooling on fertility and contraceptive use: a study of fourteen

Sub-Saharan African countries, *World Bank Economic Review*, 1996, 10(1):85–122, doi:10.1093/wber/10.1.85.

41. Hindin M, McGough LJ and Adanu RM, Misperceptions, misinformation and myths about modern contraceptive use in Ghana, *Journal of Family Planning and Reproductive Health Care*, 2014, 40(1):30–35, doi:10.1136/jfprhc-2012-100464.

42. Biddlecom A and Fapohunda B, Covert contraceptive use: prevalence, motivation, and consequences, *Studies in Family Planning*, 1998, 29(4):360–372, doi:10.2307/172249.

43. Loll D et al., unpublished data, 2019.

44. Miller E et al., Pregnancy coercion, intimate partner violence, and unintended pregnancy, *Contraception*, 2010, 81(4):316–322, doi:10.1016/j.contraception.2009.12.004.

45. Miller E et al., Reproductive coercion: connecting the dots between partner violence and unintended pregnancy, *Contraception*, 2010, 81(6):457–459, doi:10.1016/j.contraception.2010.02.023.

46. Dworkin SL, Fleming PJ and Colvin CJ, The promises and limitations of gender-transformative health programming with men: critical reflections from the field, *Culture, Health & Sexuality*, 2015, 17(Suppl. 2):S128–S143, doi:10.1080/13691058.2015.1035751.

RESUMEN

Contexto: La variabilidad en la conceptualización y medición del empoderamiento de las mujeres ha resultado en hallazgos inconsistentes con respecto a las relaciones entre el empoderamiento y los resultados de salud sexual y reproductiva. La autonomía reproductiva—una medida específica del empoderamiento—y su papel en el uso de anticonceptivos modernos, rara vez han sido evaluados en contextos subsaharianos.

Métodos: Los datos de la encuesta se obtuvieron a partir de una muestra de 325 mujeres urbanas ghanesas de 15 a 24 años de edad, reclutadas en centros de salud y escuelas en Kumasi y Accra en marzo de 2015. Se utilizaron análisis de regresión logística bivariada y multivariada para examinar las asociaciones entre dos subescalas adaptadas de autonomía reproductiva: toma de decisiones y comunicación, así como el uso de anticonceptivos modernos en la última relación sexual por parte de las mujeres, después de controlar covariables demográficas, reproductivas y el contexto social (i.e. aprobación y el estigma relacionado con la salud sexual y reproductiva de las adolescentes).

Resultados: En los análisis multivariados, la toma de decisiones sobre la autonomía reproductiva—pero no la comunicación sobre la autonomía reproductiva—se asoció positivamente con el uso de anticonceptivos modernos por parte de las mujeres en la última relación sexual (razón de probabilidades, 1.1); La edad, haber estado empleada en los últimos siete días y vivir en Kumasi también se asoció positivamente con el uso de anticonceptivos modernos (1.1–9.8), mientras que el hecho de haber tenido un embarazo previo se asoció negativamente con el resultado (0.3). La toma de decisiones sobre autonomía reproductiva se asoció positivamente con el uso de anticonceptivos en un modelo posterior que incluyó la aprobación social de la salud sexual y reproductiva de las adolescentes (1.1), pero no en los modelos que incluyeron el estigma hacia la salud sexual y reproductiva de las adolescentes.

Conclusiones: La construcción teórica de la autonomía reproductiva y la subescala de toma de decisiones en particular, demostraron tener relevancia para los resultados de

planificación familiar entre las mujeres jóvenes en Ghana y pueden tener utilidad en entornos globales. Las investigaciones futuras deben explorar la comunicación sobre autonomía reproductiva y los posibles efectos de confusión del contexto social.

RÉSUMÉ

Contexte: La variabilité de la conceptualisation et de la mesure de l'autonomisation des femmes a produit des conclusions divergentes sur les relations entre l'autonomisation et les résultats de santé sexuelle et reproductive. L'autonomie reproductive—une mesure spécifique de l'autonomisation—et son rôle dans la pratique contraceptive moderne n'ont guère été évalués dans les contextes subsahariens.

Méthodes: Les données de l'étude proviennent d'un échantillon de 325 Ghanéennes urbaines âgées de 15 à 24 ans, recrutées dans des structures sanitaires et écoles de Kumasi et d'Accra en mars 2015. Des analyses de régression logistique bi- et multivariées ont servi à l'examen des associations entre deux sous-échelles adaptées d'autonomie reproductive—la prise de décision et la communication—et la pratique de la contraception moderne des femmes au dernier rapport sexuel, sous contrôle des covariables de contexte démographique, reproductif et social (approbation et stigmatisation à l'égard de la santé sexuelle et reproductive des adolescentes).

Résultats: Dans les analyses multivariées, la prise de décision liée à l'autonomie reproductive—mais pas la communication—s'est révélée associée positivement à la pratique contraceptive moderne des femmes au dernier rapport sexuel (RC, 1,1). L'âge, l'emploi durant les sept jours précédents et la résidence à Kumasi présentent aussi une association positive avec la pratique contraceptive moderne (1,1–9,8), tandis que l'existence d'une grossesse antérieure est en association négative avec ce résultat (0,3). L'association positive de la prise de décision en matière d'autonomie reproductive avec la pratique contraceptive se maintient dans un modèle ultérieur tenant compte de l'approbation sociale de la santé sexuelle et reproductive des adolescentes (1,1), mais pas dans ceux tenant compte de la stigmatisation à son égard.

Conclusions: Le concept d'autonomie reproductive, et la sous-échelle de prise de décision en particulier, se sont avérés pertinents en termes de résultats de la planification familiale parmi les jeunes femmes du Ghana et pourraient se révéler utiles dans les contextes mondiaux. La recherche future devra étudier plus avant la communication, eu égard à l'autonomie reproductive, et les effets de confusion potentiels du contexte social.

Acknowledgments

This work was supported by grants from the Society of Family Planning Research Fund (SFPRF8-1), the Eunice Kennedy Shriver National Institute of Child Health and Human Development (1K01HD080722-01A1, K12HD001438 and T32 HD007339) and the University of Michigan's African Social Research Initiative and Office of the Vice President of Research.

Author contact: dloll@umich.edu

APPENDIX TABLE 1. Comparison of original and modified reproductive autonomy subscales from Upadhyay et al.'s Reproductive Autonomy Scale

Reproductive autonomy subscale	Original item	Original response options	Modified item	Modified response options
Reproductive autonomy decision making	Who has the most say about whether you use a method to prevent pregnancy?		You, not your partner, has the most say about whether you would use a method to prevent pregnancy.	
	Who has the most say about which method you would use to prevent pregnancy?	My partner or someone else	na	Strongly agree
	Who has the most say about when you have a baby in your life?	Me or my partner (or someone else) equally	You, not your partner, has the most say about when you have a baby in your life.	Agree Disagree
	If you became pregnant and it was unplanned, who would have the most say about whether you would raise the child, seek adoptive parents, or have an abortion?	Me	If you became pregnant and it was unplanned, you, not your partner, would have the most say about whether you would raise the child, seek adoptive parents, or have an abortion.	Strongly disagree
Reproductive autonomy communication	My partner would support me if I wanted to use a method to prevent pregnancy.		Same	Same
	It is easy to talk about sex with my partner.	Strongly agree	na	na
	If I didn't want to have sex, I could tell my partner.	Agree	Same	Same
	If I was worried about being pregnant or not being pregnant, I could talk to my partner about it.	Disagree	na	na
	If I really did not want to become pregnant, I could get my partner to agree with me.	Strongly disagree	Same	Same
Reproductive autonomy freedom from coercion	My partner has stopped me from using a method to prevent pregnancy when I wanted to use one.		na	na
	My partner has messed with or made it difficult to use a method to prevent pregnancy when I wanted to use one.	Strongly agree	na	na
	My partner has made me use a method to prevent pregnancy when I did not want to use one.	Disagree	na	na
	If I wanted to use a method to prevent pregnancy, my partner would stop me.	Strongly disagree	na	na
	My partner has pressured me to become pregnant.		na	na

Notes: na=not applicable, and indicates questions from the original subscales that were excluded for this study.