

Asymmetry in contraceptive information at two sites in Burkina Faso



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BACKGROUND: Family planning programs are foundationally important to public health, but like any medical intervention, contraception has drawbacks in addition to its benefits. Knowledge of these drawbacks in addition to benefits is essential for informed choice. Despite a general consensus among family planning researchers and providers that contraceptive counseling should be unbiased, little quantitative research has assessed the extent of bias in contraceptive counseling, and in people's contraceptive knowledge more broadly.

OBJECTIVE: To understand the extent to which women report being told more about the advantages of contraception than the disadvantages—a concept we call “asymmetry” in contraceptive counseling, at two research sites in Burkina Faso.

METHODS: We use data from a cross-sectional population-based survey of 3,929 women residing in the catchment areas of the Ouagadougou (urban) and the Nouna (rural) Health and Demographic Surveillance Systems in Burkina Faso. We use descriptive statistics to explore asymmetry in knowledge of the benefits/advantages and risks/disadvantages of contraceptive use overall, as well as method-specific asymmetry among current method users regarding their counseling experience.

FINDINGS: Results show substantial asymmetry in knowledge of advantages/benefits of contraception compared to disadvantages/risks. 86% of respondents said they could name any advantage of family planning, while half of that proportion (43%) could name any disadvantage. We find a similarly stark asymmetry in method-specific results among contraceptive users, especially for hormonal/biomedical methods. We also find substantial variation between research sites, with urban respondents much less likely to self-report complete family planning knowledge than their rural counterparts.

CONCLUSION: Our results suggest that family planning messaging in Burkina Faso may place an emphasis on the advantages without a commensurate focus on disadvantages. Family planning programs worldwide must ensure that people can make informed choices based on balanced, accurate information about both the benefits and the disadvantages of contraception.

Key words: Burkina Faso, counseling, family planning, global health, informed choice, provider bias, quality of care, reproductive rights

Introduction

High-quality family planning care is a foundation of public health. Recognizing that the mere availability of

contraceptive services was insufficient to help women achieve their reproductive desires, Judith Bruce elaborated her influential framework for family

planning quality of care in 1990.¹ Since that time, there have been spirited debates about what constitutes high-quality family planning care, with scholars and advocates iterating countless frameworks based on notions of human rights and person-centeredness.^{2–5} Much of this debate has centered on the concept of contraceptive counseling, and differing notions of what optimal counseling should consist of within the context of a high-quality family planning program.^{6,7}

Over the years, scholars have proposed a range of approaches for optimal contraceptive counseling, from the Population Council's Balanced Counseling Strategy Plus,⁸ to the World Health Organization's tiered-effectiveness model,⁹ to Dehlendorf et al.'s conception of shared decision-making,¹⁰ among many others. These approaches vary substantially across different domains, but one thing they all have in common is an emphasis on balanced, evidence-based counseling content. In 2015, Newman and Feldman Jacobs

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This work was supported by the David and Lucile Packard Foundation under grant #2016-64774 and the Society of Family Planning Research Fund under grant #11-13. LS's contribution was supported by a Ruth L. Kirschstein National Research Service Award (T32 HD049302) and Population Research Infrastructure grant (P2C HD047873). BB's contribution was supported by a National Research Service Award (T32HD52468) and a Population Infrastructure grant (P2CHD050924). The Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) of the National Institutes of Health (NIH) awarded these grants. The contents of this article are solely the responsibility of the authors and do not necessarily represent the official views of the NIH/NICHD. The funders of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

The authors report no conflict of interest.

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2666-5778/\$36.00

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<http://dx.doi.org/10.1016/j.xagr.2024.100376>

AJOG Global Reports at a Glance

Why was this study conducted?

Despite consensus that contraceptive counseling must be unbiased, qualitative evidence shows provider bias to be an important threat to contraceptive autonomy. We develop the notion of “asymmetry” in contraceptive knowledge to understand the extent to which women report being told more about the advantages of contraception than the disadvantages.

Key findings

Using data from a population-based survey at two sites in Burkina Faso, we find substantial asymmetry in knowledge of benefits of contraception compared to risks. 86% of respondents said they could name any advantage of family planning, while half of that proportion (43%) could name any disadvantage.

What does this add to what is known?

Family planning programs must ensure that people can make informed choices about contraception based on balanced, accurate information. Measuring asymmetry in contraceptive knowledge may be a useful tool for future research on this topic.

emphasized the importance of balanced counseling to human rights, defining informed choice for family planning as “a decision based on complete, accurate and unbiased information about all family planning options, including benefits, side-effects and risks...”¹¹ A 2022 ACOG committee statement also affirmed the importance of contraceptive counseling in which providers work “to minimize the effect of bias on counseling and care provision.”¹² But despite this consensus on the importance of balanced, evidence-based counseling for family planning, there has been scant attention to quantitatively measuring extent of unbalanced information shared during contraceptive counseling.

The issue of “provider bias” has long been a topic of interest for family planning scholars,¹³ and there is a rich and growing body of research documenting the ways that providers’ own personal beliefs about who should/should not be contracepting and under what conditions affect access.^{14–17} The focus of this literature, however, has been more on *whom* providers may be biased against (young, nulliparous, and unmarried women, for example), rather than assessing *what* biased counseling content consists of or the balance and accuracy of information shared. This may be, in part, due to the challenges in assessing accuracy of information

shared during counseling on a retrospective population-based survey. Without directly observing counseling sessions (which comes with its own challenges, including but not limited to the Hawthorne Effect¹⁸), it can be complex to capture the precise information providers share during counseling and confirm whether this information is balanced and evidence based. The result for the reproductive health field is an incomplete understanding of how biased contraceptive counseling may pose a threat to informed contraceptive choice.

This gap has taken on urgency in recent years, as evidence has emerged to suggest that “upward” provider bias (aimed at encouraging patients to use a contraceptive method they do not fully want or understand) may be more common than previously thought.¹⁹ Recent research from Tanzania, for example, found that a postpartum IUD program’s goal to increase method uptake “led providers to emphasize the advantages of the IUD through biased counselling, and to de-emphasize the suitability of other contraceptive methods.”²⁰ An analysis conducted among reproductive-aged women in Burkina Faso found that far more reproductive-aged women were “encouraged” to use family planning because they have “too many”

children than “discouraged” away from using family planning because they do not have “enough” kids.¹⁹ In the Global North, too, there is a growing body of literature highlighting similar threats from provider bias to free and informed contraceptive choice in the United States, Great Britain, Australia.^{21–25} A 2022 study among doctors and nurses in South Carolina, for example, “found that participants” accounts about contraceptive counseling encounters were laden with biased assumptions related to patients’ race/ethnicity, socioeconomic status, and age.”²⁶ As these qualitative studies suggest that the content of contraceptive counseling may be biased in a myriad of ways, there is an urgent need for quantitative data to help shed light on the scope of this problem.

In this paper, we contribute to filling this gap by exploring what we call “asymmetry” in the information provided during contraceptive counseling. We define asymmetry in this context as a meaningful disparity in a person’s knowledge about the advantages of contraception compared to the disadvantages, reflecting possible bias in their source of information. We examine differences in the proportion of contraceptive users who were told about the advantages and the disadvantages of family planning overall and specific methods, using this to understand the extent to which family planning programs may be emphasizing one over the other at the expense of evidence-based and unbiased information. Based on our formative qualitative research in this context, we hypothesize that respondents will report an asymmetry in their contraceptive counseling, with more respondents reporting knowledge of the benefits/advantages of contraception than the drawbacks/disadvantages.

Materials and methods

The data for this analysis come from the Contraceptive Autonomy Study, sequential mixed-methods study carried out at two research sites in Burkina Faso in 2018. The first phase of the study was qualitative, and included focus groups and in-depth interviews in which we asked women about their

experiences with contraceptive decision-making. We then used results from this qualitative phase to develop and refine a novel questionnaire instrument, which we deployed in the second phase of the study: a cross-sectional population-based household survey. Novel items were tested with cognitive interviews and the survey tool was piloted and amended prior to final deployment (see Senderowicz 2023 for additional details)²⁷. Our survey tool included a mix of conventional family planning questions adapted from the Demographic and Health Surveys, and new questions on respondents' experiences with contraceptive choice and access. The analysis presented here is a primary analysis of the survey's emphasis on informed contraceptive choice.

This study was reviewed and approved by the Office of Human Research Administration at the Harvard T.H. Chan School of Public Health, le Comité d'Ethique pour la recherche en santé du Ministère de la santé du Burkina Faso, and le Comité d'Ethique du Centre de Recherche en Santé de Nouna in Nouna, Burkina Faso.

Sampling and data collection

We carried out our cross-sectional survey within the Nouna and Ouagadougou Health and Demographic Surveillance Systems (HDSS). The Ouagadougou HDSS includes five neighborhoods on the northern periphery of the capital city. Two of these neighborhoods are part of the formal city of Ouagadougou, three neighborhoods are considered informal settlements. The Nouna HDSS includes the small administrative town of Nouna as well as 58 of its surrounding villages. These two sites, while not nationally representative, capture a wide range of sociodemographic characteristics and presently contain considerable socioeconomic diversity.

To be eligible to participate, women had to live within the catchment area of the Nouna or Ouagadougou HDSS, be reproductive aged (15–49 years old), and provide informed consent in French, Dioula, or Mooré. Using the 2017 HDSS census as a sampling frame,

we drew random samples of reproductive-aged women and potential replacements in each catchment area. Because of lower overall rates of contraceptive use in rural areas, we oversampled in the Nouna HDSS to generate a sample of contraceptive users that was comparable across the two sites. In Ouagadougou, an error in the sampling process initially included 811 women who were “visitors” rather than “residents” in the HDSS catchment area. Because these women were ineligible for inclusion, we drew a second random sample of 500 women to meet the target sample size for the site. To account for the changes in the sampling approach, we created individual-level sampling weights based on inverse probability weighting, and all analyses presented here use weighted data.

A total of 3,929 women were surveyed between April and July of 2018. Trained data collectors visited women at their homes and administered the survey in-person, recording responses on Android-based tablets. Extensive interviewer training and survey piloting focused on harmonizing translations across the three study languages (see Senderowicz 2023 for additional details).²⁷ We included all women surveyed, regardless of current contraceptive use status, in the final analytic sample.

Analytic approach

First, we described the sociodemographic characteristics of our sample, stratified by site. Next, we examined contraceptive knowledge and self-rated knowledge in the sample by site, comparing those who could name or perceived themselves to have complete information about the advantages of family planning overall to those who could name or perceived themselves to have complete information about the disadvantages of family planning overall. We assessed whether someone could name an advantage and disadvantage of family planning based on the binary answers to the questions: “Can you name a benefit or advantage of family planning?” and “Can you

name a side effect or disadvantage of family planning?” We measured self-rated knowledge of family planning advantages and disadvantages using the following binary survey questions: “Do you feel that you have complete information about the benefits of family planning?” and “Do you feel that you have complete information about the risks of family planning?” We calculated the proportion of participants who could name both an advantage and a disadvantage of family planning overall and the proportion of participants that perceived themselves to have complete information about the benefits and risks of family planning use.

Next, we assessed asymmetry in contraceptive counseling content in a sample limited to just those who report current family planning use. For users of a given method, we examined the proportion who were told about an advantage of their method and the proportion who were told about a disadvantage of their method upon method initiation. We captured this using the following binary survey questions: “Were you told about the benefits or advantages of [current method] at the time you procured it?” and “Were you told about the side effects or disadvantages associated with [current method] at the time you procured it?” We used chi-square tests to calculate *P*-values, with an $\alpha < 0.05$ indicating statistical significance. Participants were then asked to name the advantages and disadvantages they were told about. We calculated the total number of advantages and disadvantages each participant was told about their method and report the mean and standard deviation of number of advantages and disadvantages current method users were told about their method. Importantly, for analyses we did not assess or vet the accuracy of the knowledge that respondents reported. Instead, we focused on the measurement of the extent to which respondents believed they had knowledge of advantages and disadvantages. Descriptive statistics were calculated using Stata 18.²⁸

Results

Sociodemographic characteristics of the analytic sample are shown in Table 1. Of the 3,929 reproductive-aged women included, 2,654 (68%) were from Nouna and 1,275 (32%) were from Ouagadougou. The majority of women in the sample were married (69%) and approximately half had no formal education (46%), with women from Nouna, the rural site, more likely to report no formal education compared to women from Ouagadougou, the urban site (56% vs. 23%). In Nouna, most women (70%) reported traveling by bicycle as their primary mode of transport, whereas in Ouagadougou, most women (69%) reported traveling by motorbike, indicating a higher material standard for wealth in the urban site. Number of children was higher in Nouna compared to Ouagadougou, with 23% of women in Nouna reporting no children and 26% reporting five or more children, compared to 33% and 12%, respectively. In Nouna, 60% of women reported having never used contraception, 11% reported previously but not currently using contraception, and 30% reported currently using contraception.

A large majority of women in the sample (86%) could name an overall benefit or advantage of family planning, with no large differences by research site (Table 2). Conversely, 43% of the sample could name an overall drawback or disadvantage of family planning. In Ouagadougou, 59% of women could name a disadvantage of family planning, while in Nouna, only 35% could name a disadvantage. Overall, 40% of women could name both an advantage and disadvantage of family planning, with a higher proportion of women in Ouagadougou (52%) able to name both compared to Nouna (35%). These results are highlighted in Figure showing a level of disparity of 28 percentage points in Ouagadougou, 50 percentage points in Nouna, and 43 percentage points in the pooled results.

Table 2 also shows women's perceived completeness of family planning knowledge. In Ouagadougou, 11% of women reported feeling that they had complete information on the benefits of

TABLE 1
Sociodemographic characteristics of 3,929 reproductive-aged women in Burkina Faso

	Ouagadougou n=1,275	Nouna n=2,654	Overall n=3,929
Age			
15–24	34%	43%	40%
25–34	33%	31%	32%
35–49	33%	27%	28%
Married			
	66%	70%	69%
Education			
None	23%	56%	46%
Some primary school	25%	24%	25%
At least some secondary school	52%	19%	30%
Missing	4%	0%	1%
Primary mode of transport			
Foot	3%	21%	16%
Bicycle	14%	70%	52%
Motorbike	69%	8%	28%
Car	10%	0%	3%
Other	4%	1%	2%
Number of kids			
0	33%	23%	26%
1–2	25%	26%	25%
3–4	30%	26%	27%
5+	12%	26%	22%
Family planning			
Never used	36%	60%	52%
Previously used	30%	11%	17%
Currently using	33%	30%	31%

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family planning, 3% reported feeling they had complete information on the risks of family planning, and 3% of participants reported they felt they had complete information on both benefits and risks. In Nouna, 56% of women reported feeling that they had complete information on the benefits of family planning, 45% reported feeling that they had complete information on the risks of family planning, and 39% of women reported feeling that they had complete information on both the benefits and the risks.

Next, we restrict our sample to current users of contraception and report

the proportion who were told about advantages and disadvantages of their current method during the contraceptive counseling they received at the time they procured that method (Table 3). For all hormonal and intrauterine methods with 10 or more users (the pill, injectable, implant, and IUD), fewer than 30% of users were told about both advantages and disadvantages of their method during counseling. The proportion of non-hormonal method users (external condom, calendar method, withdrawal) who were told about both advantages and disadvantages during counseling ranged from (35%–43%). A

TABLE 2

Participant knowledge and perceived completeness of knowledge of the overall advantages and disadvantages of family planning

	Ouagadougou <i>n</i> =1,275	Nouna <i>n</i> =2,654	Pooled <i>n</i> =3,929
Knowledge			
Can name an overall benefit or advantage	87%	85%	86%
Can name an overall drawback or disadvantage	59%	35%	43%
Can name both an advantage and disadvantage	52%	35%	40%
Perceived completeness of knowledge			
Feels they have complete information on benefits	11%	56%	40%
Feels they have complete information on risks	3%	45%	30%
Feels they have complete information on benefits and risks	3%	39%	28%

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higher proportion of method users were counseled on advantages compared to disadvantages of their method for the pill (38% vs. 16%, $P<.01$), the injectable (34% vs. 20%, $P<.01$), the implant (50% vs. 25%, $P<.01$), the IUD (80% vs. 28%, $P=.02$), external condoms (45% vs. 35%, $P<.01$), and the calendar method (56% vs. 45%, $P<.01$). For withdrawal, a higher proportion of users were told about disadvantages (56%) compared to advantages (43%, $P<.01$).

Comment**Principle findings**

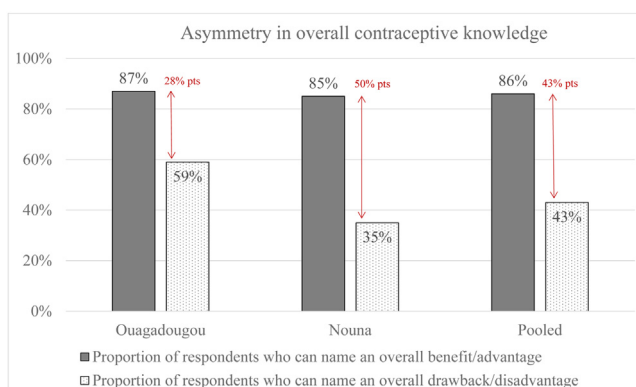
These results show a pattern of asymmetry in the knowledge that women have about the overall advantages and

disadvantages of family planning, with a strong skew in favor of advantages. While 86% of respondents said they could name an advantage of family planning, just half of that proportion (43%) could name a disadvantage. We see a similar skew in women's self-rated knowledge about family planning. Substantially fewer participants reported feeling that they had complete information about the risks/disadvantages of contraception compared to the benefits/advantages. These proportions varied considerably between the urban and the rural research sites. These results, inclusive of both contraceptive users and nonusers alike, are suggestive of a widespread bias in family planning

information—both in interpersonal counseling and broader health communications in this context. This bias appears to be in favor of emphasizing the benefits of contraception without a commensurate emphasis on drawbacks.

Among current users of contraception, we see a similar asymmetry in the content of the contraceptive counseling they received at the time of method adoption. While nearly 40% of users of the oral contraceptive pill report being told about the advantages of that method, less than half of those report being told about a disadvantage, and just 13% of pill users report being told about both an advantage and disadvantage. The IUD stands out among methods with 80% of users reporting being told about an advantage of that method, while less than 30% of users reported a counseled about disadvantages.

FIGURE

Asymmetry in overall contraceptive knowledge

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Results in the context of what is known

Previous research has shown that some providers may seek to hide the potential for side effects from prospective contraceptive users for fear of putting ideas into their heads that could lead to subsequent discontinuation.^{29,30} Other providers may be taking part in family planning initiatives with quantitative uptake targets, and may end up biasing their counseling in an effort to reach those programmatic goals.^{20,31}

TABLE 3

Family planning users' counseling on advantages and disadvantages of their specific method at the time of method adoption^a

Method	<i>n</i> users	Told about advantages	Number of advantages told about <i>mean (sd)</i>	Told about disadvantages	Number of disadvantages told about <i>mean (sd)</i>	<i>P</i> -value ^b	Told about advantages and disadvantages
Hormonal							
Pill	204	38%	2.37 (0.14)	16%	1.69 (0.13)	<.01	13%
Injectable	171	34%	2.88 (0.17)	20%	1.43 (0.11)	<.01	15%
Implant	281	50%	3.11 (0.11)	25%	1.58 (0.08)	<.01	20%
IUD	55	80%	2.93 (0.22)	28%	1.24 (0.11)	.02	28%
Non-hormonal							
External condom	311	45%	2.54 (0.10)	35%	1.29 (0.06)	<.01	35%
Calendar method	224	56%	2.66 (0.12)	45%	1.69 (0.09)	<.01	41%
Withdrawal	21	43%	1.29 (0.18)	56%	1.75 (0.26)	<.01	43%

^a Methods with fewer than 10 users are excluded from this table.; ^b *P*-value compares proportion of method users who were told about advantages of their method and proportion of method users who were told about disadvantages of their method.

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Strengths and limitations

Strengths of this study include a large, probability population-based sample of women encompassing a wide swath of the Burkinabè population across axes of religion, ethnicity, language, urbanicity, age, marital status, education, wealth, and more. There are several important limitations, however. The cross-sectional nature of the survey relies on respondents to spontaneously reach into their contraceptive knowledge, and may not accurately represent their true state of knowledge. Language differences may have affected how questions were understood by speakers of each of the three study languages. In the case of current users, retrospective reporting on what they were told during their contraceptive counseling session is subject to recall bias, especially if their counseling experience preceded our survey by a long time. These data were collected in 2018, prior to the Covid-19 pandemic and so may not be representative of current practices. Perhaps most important of all, our measure of asymmetry is quite a blunt tool, lacking the ability to gauge the accuracy of the knowledge respondents report or other nuances important to assessing the quality of the information they have received. This research uses the broad categories of “advantages” and

“disadvantages” to include a wide variety of contraceptive characteristics, but this does not allow us to disentangle the granular differences between things like minor side-effects and more severe medical risks. Despite these limitations, this study provides one of the first assessments to our knowledge about asymmetry of information in contraceptive knowledge.

Research implications

Future studies should seek to add nuance and depth to the concept of asymmetry in contraceptive knowledge, measuring not only the overall direction of asymmetry as we do here, but the mechanisms that undergird this phenomenon, as well as provider and health systems perspectives on the cause of this phenomenon as well as possible solutions. As such, important next steps for this line of research include interviewing providers about the structural causes of the types of the asymmetry in contraceptive information reported here, as well as about what types of structural solutions might be effective at changing their incentives.

Clinical implications

Contraceptive methods have many positive attributes that should rightfully be emphasized by clinicians and health

systems. These include including pregnancy prevention, menstrual regulation, and the treatment/prevention of a range of conditions from ovarian cysts to acne.³² Contraceptive methods can also have a number of drawbacks, including weight gain, disrupted menstruation, and cardiovascular risks, difficulty of use, and risk of method failure.³² Benefits and disadvantages vary widely by method and by the profile of the user themselves, making it essential for each person to choose their method (or to choose nonuse) based on balanced, accurate information, and unbiased contraceptive information.⁶ Clinicians must ensure that the counseling they provide to patients is evidence-based, neutral, and unbiased.

Conclusions

While access to contraception is an essential reproductive right, this right cannot be ensured in the absence of fully informed choice. Ensuring that people can make informed choices about family planning based on balanced, unbiased information about both the benefits and the risks is essential to quality of care in family planning, as well as to contraceptive autonomy more broadly. By studying asymmetry of contraceptive knowledge, we can begin to understand where and how this

informed choice may be lacking and design programs to ensure that access to high-quality unbiased contraceptive information is enjoyed by all.

Patient consent

Patient consent is not required. ■

CRedit authorship contribution statement

Leigh Senderowicz: Writing – review & editing, Writing – original draft, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Brooke W. Bullington:** Writing – review & editing, Formal analysis. **Nathalie Sawadogo:** Writing – review & editing, Supervision, Methodology, Data curation. **Katherine Tumlinson:** Writing – review & editing, Formal analysis. ■

ACKNOWLEDGMENTS

We are grateful to the many researchers, research assistants, data collectors, and other support staff who made this research possible. We also thank the respondents who gave freely of their time to answer our questions.

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