

Social network-based abortion incidence estimation in Burkina Faso: Examining the impact of the network generating question

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Background

Induced abortion is legal in Burkina Faso only in cases of rape, incest, fetal defects, or when the woman's life or physical health are in danger. The most recent national estimates indicate a one-year incidence rate of 25 induced abortions per 1,000 women of reproductive age for the year 2008 (Sedgh et al. 2011). Subsequent declines in the total fertility rate in Burkina Faso, resulting from increasing demand for and use of modern contraception, are likely to have affected levels and patterns of unintended pregnancy in Burkina Faso and related abortion trends. These demographic shifts have taken place amid a changing abortion landscape, characterized by an expansion of legal grounds for abortion as well as the diffusion of medical abortion drugs outside of the health care system. These social and legal changes make it important to understand how the frequency and correlates of abortion have changed in intervening years. The prior study also offered limited information concerning the safety of abortions in Burkina Faso and no details on the characteristics of women experiencing abortion, yet such data are critical to inform the public health rationale for legal reform during ongoing changes in abortion provision.

In intervening years there have also been developments in abortion incidence estimation, with a number of studies exploring social network-based approaches to more accurately quantifying this difficult to measure behavior. Many of these methods have the added value of providing individual level data, enabling the collection of detailed information on women's characteristics for estimating abortion incidence by background characteristics, and detailed information about the abortion itself for estimating abortion safety overall and by background characteristics. These approaches include the anonymous third-party reporting (ATPR) method, confidante method, best friend method, and network-scale up method (Rossier et al. 2006; Keogh et al. 2020; Sully, Giorgio, and Anjur-Dietrich 2020; Bell, Shankar, et al. 2020; Yeatman and Trinitapoli 2011; Elul 2004). These methods rely on multiple sociological assumptions that must be met in order to produce accurate estimates, which include: 1) respondents fully know about the sensitive behaviors of their close friends/relatives (i.e., information about the sensitive behavior is fully transmitted between those contacts, avoiding transmission bias); 2) the surrogate sample of friends/relatives resembles that of the respondents, and; 3) social desirability pressure is reduced when reporting on the stigmatized behaviors of one's closest friends/relatives as opposed to oneself (Fisher 1993; Shelley et al. 1995; Feehan and Salganik 2016; McPherson, Smith-Lovin, and Cook 2001). While these estimation approaches are similar in many regards, they vary

depending on the network generating question (i.e., how they define the relationship of interest) and the number of people from a woman's social network about which they collect data. The performance of these approaches has been mixed across methods, network generating question, and contexts, with limited understanding of what aspects of the design produce the most valid surrogate sample and associated abortion incidence estimates.

In this study we seek to examine the performance of social network-based reporting for estimating abortion incidence when using a network generating question that specifies mutual sharing of sensitive information (i.e. a "confidante" relationship) versus simply the closest female friend or relative (i.e., a "best friend" relationship). Specifically, we explore differences in the social network-based reporting related assumptions by network generating question, the assumptions being: 1) the transmission of abortion-related information, 2) the representativeness of the surrogate population, and; 3) reduced social desirability bias.

Methods

We used the Performance Monitoring for Action project to implement an abortion module in the Phase 2 data collection in Burkina Faso. Fieldwork occurred from December 2020 through February 2021. The survey design employs an urban/rural stratified two-stage sampling approach with probability proportional to size sampling of enumeration areas (EAs) within each stratum. EAs are administrative units, each of which is comprised of approximately 200 households. The sample in Burkina Faso includes 167 EAs and the weighted data are nationally representative. Before the Phase 1 survey, which was conducted from December 2019 through February 2020, interviewers mapped and listed all households in each sampled EA and Supervisors randomly selected 35 households in each EA and conducted interviews with households and reproductive age women (15-49) that consented to participated. Interviewers surveyed these same households and women in Phase 2, replacing households lost to follow-up by randomly selecting replacement households from the Phase 1 EA listing; this enabled annual cross-sectional estimation of indicators using a nationally representative sample. The Johns Hopkins Bloomberg School of Public Health and the Comité d'Ethique pour la recherche en santé/ Ministère de la Santé et Ministère de l'Enseignement Supérieur, de la Recherche Scientifique et de l'Innovation in Burkina Faso provided ethical approval for the study.

For the Phase 2 female survey we included an abortion module for the measurement of abortion incidence. The abortion module included both direct and indirect questions on abortion, drawing from the experience of the prior PMA abortion work in Nigeria, Cote d'Ivoire, and Rajasthan, India (Ahmad et al. 2020; Bell, Sheehy, et al. 2020; Bell, Omoluabi, et al. 2020; Bell, Shankar, et al. 2020). Prior to any suggestive mention of abortion, interviewers obtained information on the respondent's closest female confidante or closest female friend or relative, depending on the network generating question the respondent was randomly assigned to, with half of the sample receiving each of the network generating questions. A confidante was defined as ones closest female friend or relative whom the respondent shares very personal information with and who shares very personal information with the respondent. The other network generating question simply asked about the respondents closest female friends or relative (i.e., no reference to reciprocal sharing of person information). For both friend definitions, the woman had to be aged 15 to 49 and currently living in Burkina Faso. We conducted analyses to evaluate the performance of each assumption in Burkina Faso overall and by friend generating question.

Assumption 1: transmission of abortion knowledge

To examine whether transmission of abortion information was complete, we first assessed whether respondents all had a close female friend, a pre-requisite to sharing, and if not, whether respondent characteristics differed by whether they had any close female friends. We then evaluated whether the respondents who reported their own abortion reported telling their close friend about the experience. For both analyses we explored differences by network generating question (confidante or closest friend/relative). We used design-based F-tests to assess statistical significance.

Assumption 2: surrogate sample representativeness

The respondent sample, when weighted, is representative of all reproductive age women in the country. Using the respondents as a reference group, we compared overall friend characteristics and friend characteristics separately by whether the respondent received the confidante or closest friend/relative network generating question. We used design-based F-tests to assess whether differences were statistically significant.

Assumption 3: reduced social desirability pressure when reporting on confidante as opposed to self

To determine whether social desirability bias was reduced when asking respondents about their friends' experience with abortion as opposed to their own, we calculated separate 1-year incidence rates of abortion for respondents and friends overall and by network generating question. Next, we tested whether friend rates were statistically significantly different from the respondent rate. Given evidence of transmission bias (assumption 1) we sought to adjust the friend estimates by multiplying the friend rates by the inverse of the probability of a respondent telling their friend about their abortion experience. We also adjusted for observed differences in friend characteristics by applying post-stratification weights so they more closely resembled the respondent characteristics.

We conducted all analyses in Stata version 15.1 and applied survey design weights to account for the complex sampling design and calculated robust standard errors to account for clustering.

Results

Table 1 presents the respondent characteristics overall and by number of reported friends for the entire sample and by network generating question. Results reveal randomization was effective, with similar respondent characteristics overall and by network generating question. However, when examining respondent characteristics by whether they reported having any friends, we observe systematic and consistent differences regardless of the network generating question received. Overall 80% of respondents reported having at least one close female friend/relative. Respondents who reported having 0 friends tended to be older, have never attended school, be married or widowed/divorced, and be wealthier compared to respondents with one or more friends. They were also less likely to be currently using contraception and have a higher abortion incidence. However, we have not yet evaluated these differences for statistical significance yet.

In Table 2 we present the characteristics of the friends overall and by network generating questions. Compared to respondents, friends overall were similarly aged but had slightly more

education, were slightly less likely to be married and more likely to live in urban areas and had lower parity. They were less likely to have ever used contraception but have similarly levels of current contraceptive use. However, when examining contraceptive method used, friends were more likely to be using long-acting reversible contraceptives (LARCs) or short-acting hormonal methods and less likely to be using coital dependent modern methods and traditional or other methods. Additionally, friends had a much higher rate of abortion than respondents. When looking separately by friend generating question we see that confidantes were slightly older, were less likely to be married, had a similar likelihood of living in an urban area, and had slightly lower parity compared to the closest friends/relatives. The closest friends/relative were also more likely to have ever used contraception or to be currently using it compared to confidantes, and more likely to be using LARCs.

Next we examine respondents' sharing patterns of their own reported abortions to friends overall and by network generating question received. Overall 61.8% of respondents shared their abortion experience with their friend/relative. Older respondents (40+) were the most likely to have shared their abortion experience with a friend, as were women with less than higher education, women who had ever been married, the poorest and middle wealth groups, and women residing in rural areas. When looking by network generating question, we see that 49.6% of those who received the confidante network generating question shared their abortion experience compared to 72.0% of those who received the closest female friend/relative question, with fairly consistently higher levels of sharing across sub-groups among those who received the closest female friend/relative question. However, the number of respondent reported abortions among those who reported having a friend was small (83), thus no differences rise to the level of statistical significance.

Lastly, we present the rates of reported abortion attempts and completed abortions for respondents, friends combined, and by friend definition (Table 4). The respondent one-year incidence of abortion was 3.6 (95% CI 1.9-5.4) abortions per 1,000 women of reproductive age while the unadjusted overall friend rate was 13.6 (95% CI 8.2-19.0), which was statistically significantly different from the respondent rate. However, when adjusted for violations of transmission bias (assumption 1) and non-representativeness of this surrogate sample, the overall friend rate was 22.6 abortions (95% CI 13.7-31.4). Examining the adjusted completed abortion rates by network generating question we observe a higher rate for confidantes at 26.6 (95% CI 16.2-36.9) abortions per 1,000 women per year compared to 18.6 (95% CI 6.7-30.6) among close friend/relatives.

Forthcoming analyses will evaluate whether observed differences in respondent and friend characteristics, respondent abortion sharing, and abortion rates are statistically significantly different depending on the network generating question used. These results will provide a more comprehensive determination of the impact of using different network generating questions.

Discussion

Discussion, including a description of study strengths and limitations, is forthcoming pending completion of analyses. Findings and conclusions will inform social network-based data collection efforts for estimation of abortion incidence and other sensitive behaviors.

Table 1. Characteristics of female respondents age 15 to 49 overall and by number of female confidantes in Burkina Faso

	Friend generating question																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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Age																				15-19	20.6	1412	17.5	250	21.4	1149	20.9	713	17.4	133	21.7	574	20.4	698	17.6	117	21.0	575	20-29	33.5	2383	31.0	414	34.1	1955	34.3	1190	34.0	222	34.3	963	32.5	1189	27.8	192	34.0	992	30-39	27.9	1828	29.5	386	27.7	1433	27.3	896	27.2	186	27.4	708	28.6	930	31.8	200	28.0	725	40+	17.9	1085	22.1	276	16.8	800	17.5	536	21.4	149	16.6	385	18.4	549	22.8	127	17.0	415	Education																				Never	57.5	2795	62.8	623	56.0	2147	56.9	1376	63.6	333	55.0	1033	58.0	1417	62.0	290	56.9	1114	Primary	18.2	1353	19.1	308	18.1	1038	18.4	672	19.0	167	18.4	504	18.0	679	19.1	141	17.8	534	Secondary	22.5	2258	16.6	347	24.0	1900	22.7	1133	16.1	170	24.5	959	22.3	1123	17.1	177	23.6	941	Higher	1.8	301	1.5	46	1.9	253	2.0	154	1.3	20	2.1	134	1.7	146	1.7	26	1.7	119	Marital status																				Currently married/cohabiting	75.4	4493	78.1	938	74.7	3523	75.3	2233	79.2	493	74.2	1729	75.4	2254	77.1	445	75.2	1794	Divorced or separated/widowed	3.3	337	4.9	84	2.9	252	3.2	170	4.3	46	3.0	124	3.4	167	5.5	38	2.8	128	Never married	21.3	1879	17.0	304	22.4	1563	21.5	932	16.5	151	22.8	777	21.3	946	17.5	153	22.0	786	Religion of household																				Muslim	58.9	2834	57.8	536	58.9	2276	56.9	1393	57.0	285	56.7	1102	60.8	1437	58.6	251	60.9	1174	Catholic	25.7	1222	21.7	190	26.7	1027	26.3	603	24.6	98	26.8	504	25.0	617	18.6	92	26.6	523	Protestant	7.3	313	8.7	61	7.0	251	7.7	166	9.1	30	7.4	135	6.8	147	8.3	31	6.6	116	Traditional or other	8.2	232	11.8	63	7.4	169	9.0	125	9.3	28	9.0	97	7.4	107	14.5	35	5.9	72	Wealth tertile																				Poorest	34.2	1182	30.4	220	34.9	946	34.0	590	31.1	109	34.6	477	34.3	589	29.6	111	35.1	469	Middle wealth	31.8	1318	30.8	256	31.9	1049	31.7	652	33.5	146	31.1	501	31.9	665	28.1	110	32.7	548	Wealthiest	34.0	3885	38.8	824	33.2	3045	34.3	1938	35.4	423	34.2	1509	33.8	1944	42.3	401	32.2	1536	Residence																				Rural	77.8	2614	76.5	523	77.9	2062	77.6	1298	75.2	265	78.2	1024	77.9	1312	77.8	258	77.7	1038	Urban	22.2	3771	23.5	777	22.1	2978	22.4	1882	24.8	413	21.8	1463	22.1	1886	22.2	364	22.3	1515	Parity																				0	23.2	1965	19.7	323	24.2	1632	23.5	989	19.4	168	24.7	818	23.0	975	20.0	155	23.6	814	1-2	24.7	1863	24.9	358	24.7	1494	25.0	924	27.4	181	24.3	740	24.4	937	22.2	177	25.1	754	3-4	21.8	1474	24.0	330	21.2	1133	20.9	725	22.2	184	20.4	534	22.7	747	25.8	146	22.1	599	5+	30.3	1404	31.5	314	29.9	1079	30.6	696	31.0	157	30.7	538	29.9	706	32.0	157	29.1	541	Currently using contraception																				No	67.7	4192	71.0	901	66.7	3256	67.6	2082	70.9	476	66.7	1594	67.8	2107	71.1	425	66.8	1662	Yes	32.3	2517	29.0	425	33.3	2082	32.4	1253	29.1	214	33.3	1036	32.2	1260	28.9	211	33.2	1046	Method mix (among current users)																				Sterilization	0.2	7	0.2	2	0.2	5	0.1	4	0.2	1	0.1	3	0.3	3	0.2	1	0.3	2	LARC	43.2	942	44.7	172	42.8	766	42.9	470	43.8	88	42.7	381	43.4	470	45.7	84	42.9	385	Short-acting hormonal	31.8	772	34.7	152	31.3	616	32.9	389	39.2	77	31.4	310	30.8	382	30.1	75	31.1	306	Coital dependent modern	14.6	510	8.9	51	15.9	459	14.2	250	7.7	25	15.6	225	15.0	260	10.1	26	16.1	234	Traditional/other	10.2	280	11.4	48	9.9	230	9.9	138	9.1	23	10.1	115	10.5	141	13.9	25	9.6	115	Unadjusted abortion incidence	3.9	6667	4.9	1317	3.7	5305	3.1	16	2.2	1	3.3	15.00	4.6	26.00	7.7	8.00	4.0	18.00	Total	100.0	6709	100.0	1326	100.0	5338	100.0	3335	100.0	690	100.0	2630	100.0	3367	100.0	636	100.0	2708
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Never	57.5	2795	62.8	623	56.0	2147	56.9	1376	63.6	333	55.0	1033	58.0	1417	62.0	290	56.9	1114																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Secondary	22.5	2258	16.6	347	24.0	1900	22.7	1133	16.1	170	24.5	959	22.3	1123	17.1	177	23.6	941																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Higher	1.8	301	1.5	46	1.9	253	2.0	154	1.3	20	2.1	134	1.7	146	1.7	26	1.7	119																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Marital status																				Currently married/cohabiting	75.4	4493	78.1	938	74.7	3523	75.3	2233	79.2	493	74.2	1729	75.4	2254	77.1	445	75.2	1794	Divorced or separated/widowed	3.3	337	4.9	84	2.9	252	3.2	170	4.3	46	3.0	124	3.4	167	5.5	38	2.8	128	Never married	21.3	1879	17.0	304	22.4	1563	21.5	932	16.5	151	22.8	777	21.3	946	17.5	153	22.0	786	Religion of household																				Muslim	58.9	2834	57.8	536	58.9	2276	56.9	1393	57.0	285	56.7	1102	60.8	1437	58.6	251	60.9	1174	Catholic	25.7	1222	21.7	190	26.7	1027	26.3	603	24.6	98	26.8	504	25.0	617	18.6	92	26.6	523	Protestant	7.3	313	8.7	61	7.0	251	7.7	166	9.1	30	7.4	135	6.8	147	8.3	31	6.6	116	Traditional or other	8.2	232	11.8	63	7.4	169	9.0	125	9.3	28	9.0	97	7.4	107	14.5	35	5.9	72	Wealth tertile																				Poorest	34.2	1182	30.4	220	34.9	946	34.0	590	31.1	109	34.6	477	34.3	589	29.6	111	35.1	469	Middle wealth	31.8	1318	30.8	256	31.9	1049	31.7	652	33.5	146	31.1	501	31.9	665	28.1	110	32.7	548	Wealthiest	34.0	3885	38.8	824	33.2	3045	34.3	1938	35.4	423	34.2	1509	33.8	1944	42.3	401	32.2	1536	Residence																				Rural	77.8	2614	76.5	523	77.9	2062	77.6	1298	75.2	265	78.2	1024	77.9	1312	77.8	258	77.7	1038	Urban	22.2	3771	23.5	777	22.1	2978	22.4	1882	24.8	413	21.8	1463	22.1	1886	22.2	364	22.3	1515	Parity																				0	23.2	1965	19.7	323	24.2	1632	23.5	989	19.4	168	24.7	818	23.0	975	20.0	155	23.6	814	1-2	24.7	1863	24.9	358	24.7	1494	25.0	924	27.4	181	24.3	740	24.4	937	22.2	177	25.1	754	3-4	21.8	1474	24.0	330	21.2	1133	20.9	725	22.2	184	20.4	534	22.7	747	25.8	146	22.1	599	5+	30.3	1404	31.5	314	29.9	1079	30.6	696	31.0	157	30.7	538	29.9	706	32.0	157	29.1	541	Currently using contraception																				No	67.7	4192	71.0	901	66.7	3256	67.6	2082	70.9	476	66.7	1594	67.8	2107	71.1	425	66.8	1662	Yes	32.3	2517	29.0	425	33.3	2082	32.4	1253	29.1	214	33.3	1036	32.2	1260	28.9	211	33.2	1046	Method mix (among current users)																				Sterilization	0.2	7	0.2	2	0.2	5	0.1	4	0.2	1	0.1	3	0.3	3	0.2	1	0.3	2	LARC	43.2	942	44.7	172	42.8	766	42.9	470	43.8	88	42.7	381	43.4	470	45.7	84	42.9	385	Short-acting hormonal	31.8	772	34.7	152	31.3	616	32.9	389	39.2	77	31.4	310	30.8	382	30.1	75	31.1	306	Coital dependent modern	14.6	510	8.9	51	15.9	459	14.2	250	7.7	25	15.6	225	15.0	260	10.1	26	16.1	234	Traditional/other	10.2	280	11.4	48	9.9	230	9.9	138	9.1	23	10.1	115	10.5	141	13.9	25	9.6	115	Unadjusted abortion incidence	3.9	6667	4.9	1317	3.7	5305	3.1	16	2.2	1	3.3	15.00	4.6	26.00	7.7	8.00	4.0	18.00	Total	100.0	6709	100.0	1326	100.0	5338	100.0	3335	100.0	690	100.0	2630	100.0	3367	100.0	636	100.0	2708																																																																																																																																																																																																
Currently married/cohabiting	75.4	4493	78.1	938	74.7	3523	75.3	2233	79.2	493	74.2	1729	75.4	2254	77.1	445	75.2	1794																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Divorced or separated/widowed	3.3	337	4.9	84	2.9	252	3.2	170	4.3	46	3.0	124	3.4	167	5.5	38	2.8	128																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Never married	21.3	1879	17.0	304	22.4	1563	21.5	932	16.5	151	22.8	777	21.3	946	17.5	153	22.0	786																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Religion of household																				Muslim	58.9	2834	57.8	536	58.9	2276	56.9	1393	57.0	285	56.7	1102	60.8	1437	58.6	251	60.9	1174	Catholic	25.7	1222	21.7	190	26.7	1027	26.3	603	24.6	98	26.8	504	25.0	617	18.6	92	26.6	523	Protestant	7.3	313	8.7	61	7.0	251	7.7	166	9.1	30	7.4	135	6.8	147	8.3	31	6.6	116	Traditional or other	8.2	232	11.8	63	7.4	169	9.0	125	9.3	28	9.0	97	7.4	107	14.5	35	5.9	72	Wealth tertile																				Poorest	34.2	1182	30.4	220	34.9	946	34.0	590	31.1	109	34.6	477	34.3	589	29.6	111	35.1	469	Middle wealth	31.8	1318	30.8	256	31.9	1049	31.7	652	33.5	146	31.1	501	31.9	665	28.1	110	32.7	548	Wealthiest	34.0	3885	38.8	824	33.2	3045	34.3	1938	35.4	423	34.2	1509	33.8	1944	42.3	401	32.2	1536	Residence																				Rural	77.8	2614	76.5	523	77.9	2062	77.6	1298	75.2	265	78.2	1024	77.9	1312	77.8	258	77.7	1038	Urban	22.2	3771	23.5	777	22.1	2978	22.4	1882	24.8	413	21.8	1463	22.1	1886	22.2	364	22.3	1515	Parity																				0	23.2	1965	19.7	323	24.2	1632	23.5	989	19.4	168	24.7	818	23.0	975	20.0	155	23.6	814	1-2	24.7	1863	24.9	358	24.7	1494	25.0	924	27.4	181	24.3	740	24.4	937	22.2	177	25.1	754	3-4	21.8	1474	24.0	330	21.2	1133	20.9	725	22.2	184	20.4	534	22.7	747	25.8	146	22.1	599	5+	30.3	1404	31.5	314	29.9	1079	30.6	696	31.0	157	30.7	538	29.9	706	32.0	157	29.1	541	Currently using contraception																				No	67.7	4192	71.0	901	66.7	3256	67.6	2082	70.9	476	66.7	1594	67.8	2107	71.1	425	66.8	1662	Yes	32.3	2517	29.0	425	33.3	2082	32.4	1253	29.1	214	33.3	1036	32.2	1260	28.9	211	33.2	1046	Method mix (among current users)																				Sterilization	0.2	7	0.2	2	0.2	5	0.1	4	0.2	1	0.1	3	0.3	3	0.2	1	0.3	2	LARC	43.2	942	44.7	172	42.8	766	42.9	470	43.8	88	42.7	381	43.4	470	45.7	84	42.9	385	Short-acting hormonal	31.8	772	34.7	152	31.3	616	32.9	389	39.2	77	31.4	310	30.8	382	30.1	75	31.1	306	Coital dependent modern	14.6	510	8.9	51	15.9	459	14.2	250	7.7	25	15.6	225	15.0	260	10.1	26	16.1	234	Traditional/other	10.2	280	11.4	48	9.9	230	9.9	138	9.1	23	10.1	115	10.5	141	13.9	25	9.6	115	Unadjusted abortion incidence	3.9	6667	4.9	1317	3.7	5305	3.1	16	2.2	1	3.3	15.00	4.6	26.00	7.7	8.00	4.0	18.00	Total	100.0	6709	100.0	1326	100.0	5338	100.0	3335	100.0	690	100.0	2630	100.0	3367	100.0	636	100.0	2708																																																																																																																																																																																																																																																																													
Muslim	58.9	2834	57.8	536	58.9	2276	56.9	1393	57.0	285	56.7	1102	60.8	1437	58.6	251	60.9	1174																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Catholic	25.7	1222	21.7	190	26.7	1027	26.3	603	24.6	98	26.8	504	25.0	617	18.6	92	26.6	523																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Protestant	7.3	313	8.7	61	7.0	251	7.7	166	9.1	30	7.4	135	6.8	147	8.3	31	6.6	116																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Traditional or other	8.2	232	11.8	63	7.4	169	9.0	125	9.3	28	9.0	97	7.4	107	14.5	35	5.9	72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Wealth tertile																				Poorest	34.2	1182	30.4	220	34.9	946	34.0	590	31.1	109	34.6	477	34.3	589	29.6	111	35.1	469	Middle wealth	31.8	1318	30.8	256	31.9	1049	31.7	652	33.5	146	31.1	501	31.9	665	28.1	110	32.7	548	Wealthiest	34.0	3885	38.8	824	33.2	3045	34.3	1938	35.4	423	34.2	1509	33.8	1944	42.3	401	32.2	1536	Residence																				Rural	77.8	2614	76.5	523	77.9	2062	77.6	1298	75.2	265	78.2	1024	77.9	1312	77.8	258	77.7	1038	Urban	22.2	3771	23.5	777	22.1	2978	22.4	1882	24.8	413	21.8	1463	22.1	1886	22.2	364	22.3	1515	Parity																				0	23.2	1965	19.7	323	24.2	1632	23.5	989	19.4	168	24.7	818	23.0	975	20.0	155	23.6	814	1-2	24.7	1863	24.9	358	24.7	1494	25.0	924	27.4	181	24.3	740	24.4	937	22.2	177	25.1	754	3-4	21.8	1474	24.0	330	21.2	1133	20.9	725	22.2	184	20.4	534	22.7	747	25.8	146	22.1	599	5+	30.3	1404	31.5	314	29.9	1079	30.6	696	31.0	157	30.7	538	29.9	706	32.0	157	29.1	541	Currently using contraception																				No	67.7	4192	71.0	901	66.7	3256	67.6	2082	70.9	476	66.7	1594	67.8	2107	71.1	425	66.8	1662	Yes	32.3	2517	29.0	425	33.3	2082	32.4	1253	29.1	214	33.3	1036	32.2	1260	28.9	211	33.2	1046	Method mix (among current users)																				Sterilization	0.2	7	0.2	2	0.2	5	0.1	4	0.2	1	0.1	3	0.3	3	0.2	1	0.3	2	LARC	43.2	942	44.7	172	42.8	766	42.9	470	43.8	88	42.7	381	43.4	470	45.7	84	42.9	385	Short-acting hormonal	31.8	772	34.7	152	31.3	616	32.9	389	39.2	77	31.4	310	30.8	382	30.1	75	31.1	306	Coital dependent modern	14.6	510	8.9	51	15.9	459	14.2	250	7.7	25	15.6	225	15.0	260	10.1	26	16.1	234	Traditional/other	10.2	280	11.4	48	9.9	230	9.9	138	9.1	23	10.1	115	10.5	141	13.9	25	9.6	115	Unadjusted abortion incidence	3.9	6667	4.9	1317	3.7	5305	3.1	16	2.2	1	3.3	15.00	4.6	26.00	7.7	8.00	4.0	18.00	Total	100.0	6709	100.0	1326	100.0	5338	100.0	3335	100.0	690	100.0	2630	100.0	3367	100.0	636	100.0	2708																																																																																																																																																																																																																																																																																																																																																																													
Poorest	34.2	1182	30.4	220	34.9	946	34.0	590	31.1	109	34.6	477	34.3	589	29.6	111	35.1	469																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Middle wealth	31.8	1318	30.8	256	31.9	1049	31.7	652	33.5	146	31.1	501	31.9	665	28.1	110	32.7	548																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Wealthiest	34.0	3885	38.8	824	33.2	3045	34.3	1938	35.4	423	34.2	1509	33.8	1944	42.3	401	32.2	1536																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Residence																				Rural	77.8	2614	76.5	523	77.9	2062	77.6	1298	75.2	265	78.2	1024	77.9	1312	77.8	258	77.7	1038	Urban	22.2	3771	23.5	777	22.1	2978	22.4	1882	24.8	413	21.8	1463	22.1	1886	22.2	364	22.3	1515	Parity																				0	23.2	1965	19.7	323	24.2	1632	23.5	989	19.4	168	24.7	818	23.0	975	20.0	155	23.6	814	1-2	24.7	1863	24.9	358	24.7	1494	25.0	924	27.4	181	24.3	740	24.4	937	22.2	177	25.1	754	3-4	21.8	1474	24.0	330	21.2	1133	20.9	725	22.2	184	20.4	534	22.7	747	25.8	146	22.1	599	5+	30.3	1404	31.5	314	29.9	1079	30.6	696	31.0	157	30.7	538	29.9	706	32.0	157	29.1	541	Currently using contraception																				No	67.7	4192	71.0	901	66.7	3256	67.6	2082	70.9	476	66.7	1594	67.8	2107	71.1	425	66.8	1662	Yes	32.3	2517	29.0	425	33.3	2082	32.4	1253	29.1	214	33.3	1036	32.2	1260	28.9	211	33.2	1046	Method mix (among current users)																				Sterilization	0.2	7	0.2	2	0.2	5	0.1	4	0.2	1	0.1	3	0.3	3	0.2	1	0.3	2	LARC	43.2	942	44.7	172	42.8	766	42.9	470	43.8	88	42.7	381	43.4	470	45.7	84	42.9	385	Short-acting hormonal	31.8	772	34.7	152	31.3	616	32.9	389	39.2	77	31.4	310	30.8	382	30.1	75	31.1	306	Coital dependent modern	14.6	510	8.9	51	15.9	459	14.2	250	7.7	25	15.6	225	15.0	260	10.1	26	16.1	234	Traditional/other	10.2	280	11.4	48	9.9	230	9.9	138	9.1	23	10.1	115	10.5	141	13.9	25	9.6	115	Unadjusted abortion incidence	3.9	6667	4.9	1317	3.7	5305	3.1	16	2.2	1	3.3	15.00	4.6	26.00	7.7	8.00	4.0	18.00	Total	100.0	6709	100.0	1326	100.0	5338	100.0	3335	100.0	690	100.0	2630	100.0	3367	100.0	636	100.0	2708																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Rural	77.8	2614	76.5	523	77.9	2062	77.6	1298	75.2	265	78.2	1024	77.9	1312	77.8	258	77.7	1038																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Urban	22.2	3771	23.5	777	22.1	2978	22.4	1882	24.8	413	21.8	1463	22.1	1886	22.2	364	22.3	1515																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Parity																				0	23.2	1965	19.7	323	24.2	1632	23.5	989	19.4	168	24.7	818	23.0	975	20.0	155	23.6	814	1-2	24.7	1863	24.9	358	24.7	1494	25.0	924	27.4	181	24.3	740	24.4	937	22.2	177	25.1	754	3-4	21.8	1474	24.0	330	21.2	1133	20.9	725	22.2	184	20.4	534	22.7	747	25.8	146	22.1	599	5+	30.3	1404	31.5	314	29.9	1079	30.6	696	31.0	157	30.7	538	29.9	706	32.0	157	29.1	541	Currently using contraception																				No	67.7	4192	71.0	901	66.7	3256	67.6	2082	70.9	476	66.7	1594	67.8	2107	71.1	425	66.8	1662	Yes	32.3	2517	29.0	425	33.3	2082	32.4	1253	29.1	214	33.3	1036	32.2	1260	28.9	211	33.2	1046	Method mix (among current users)																				Sterilization	0.2	7	0.2	2	0.2	5	0.1	4	0.2	1	0.1	3	0.3	3	0.2	1	0.3	2	LARC	43.2	942	44.7	172	42.8	766	42.9	470	43.8	88	42.7	381	43.4	470	45.7	84	42.9	385	Short-acting hormonal	31.8	772	34.7	152	31.3	616	32.9	389	39.2	77	31.4	310	30.8	382	30.1	75	31.1	306	Coital dependent modern	14.6	510	8.9	51	15.9	459	14.2	250	7.7	25	15.6	225	15.0	260	10.1	26	16.1	234	Traditional/other	10.2	280	11.4	48	9.9	230	9.9	138	9.1	23	10.1	115	10.5	141	13.9	25	9.6	115	Unadjusted abortion incidence	3.9	6667	4.9	1317	3.7	5305	3.1	16	2.2	1	3.3	15.00	4.6	26.00	7.7	8.00	4.0	18.00	Total	100.0	6709	100.0	1326	100.0	5338	100.0	3335	100.0	690	100.0	2630	100.0	3367	100.0	636	100.0	2708																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Short-acting hormonal	31.8	772	34.7	152	31.3	616	32.9	389	39.2	77	31.4	310	30.8	382	30.1	75	31.1	306																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Coital dependent modern	14.6	510	8.9	51	15.9	459	14.2	250	7.7	25	15.6	225	15.0	260	10.1	26	16.1	234																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Traditional/other	10.2	280	11.4	48	9.9	230	9.9	138	9.1	23	10.1	115	10.5	141	13.9	25	9.6	115																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Unadjusted abortion incidence	3.9	6667	4.9	1317	3.7	5305	3.1	16	2.2	1	3.3	15.00	4.6	26.00	7.7	8.00	4.0	18.00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Table 2. Characteristics of female respondents age 15 to 49 and their closest female friends or relatives age 15 to 49 in Burkina Faso by network generating question*

	Respondent		Friend combined		Friend generating question			
					Confidante		Closest friend or relative	
	%	N	%	N	%	N	%	N
Age								
15-19	20.6	1412	20.2	1021	20.5	508	19.8	513
20-29	33.5	2383	34.5	1824	34.2	899	34.8	925
30-39	27.9	1828	27.7	1510	26.4	734	29.1	776
40+	17.9	1085	17.6	927	18.9	457	16.3	470
Education								
Never	57.5	2795	57.1	2202	56.2	1073	57.9	1129
Primary	18.2	1353	14.3	861	14.7	424	14.0	437
Secondary	22.5	2258	26.3	1955	26.7	970	25.8	985
Higher	1.8	301	2.4	303	2.4	157	2.3	146
Currently married	75.4	4493	73.7	3564	71.9	1730	75.5	1834
Residence								
Rural	77.8	2614	73.4	2065	73.7	1028	73.2	1037
Urban	22.2	3771	26.6	3042	26.3	1498	26.8	1544
Parity								
0	23.2	1965	26.9	1710	27.3	862	26.6	848
1-2	24.7	1863	24.0	1454	24.2	692	23.8	762
3-4	21.8	1474	26.0	1312	25.6	644	26.3	668
5+	30.3	1404	23.1	859	22.9	430	23.2	429
Has ever used contraception	52.5	3924	46.4	2668	43.5	1287	49.2	1381
Currently using contraception	32.3	2517	32.5	1890	29.4	900	35.7	990
Method mix (among current users)								
Sterilization	0.2	7	0.5	10	1.0	3	0.4	2
LARC	43.2	942	46.1	1405	46.5	387	50.5	486
Short-acting hormonal	31.8	772	37.5	1176	43.8	373	42.1	364
Coital dependent modern	14.6	510	9.4	463	6.6	85	5.1	89
Traditional/other	10.2	280	6.4	250	2.1	30	1.8	27
Unadjusted abortion incidence	3.9	42	13.6	102	16.5	57	12.4	45
Total	100.0	6709	100.0	5338	100.0	2630	100.0	2708

*Estimates weighted, Ns unweighted

Table 3. Among respondents who reported an abortion and having a confidante or closest female friend/relative, percentage who shared it with their confidante or friend, overall and by background characteristics and network generating question

	Friend generating question					
	Combined		Confidante		Closest friend or relative	
	%	N	%	N	%	N
Age						
15-19	48.0	8	44.2	4	50.5	4
20-29	60.4	39	62.7	18	59.0	21
30-39	52.4	25	30.4	13	79.8	12
40+	89.2	11	85.2	6	91.7	5
Education						
Never	64.8	25	40.4	13	84.1	12
Primary	62.5	17	68.9	9	52.8	8
Secondary	61.0	28	65.2	10	59.1	18
Higher	42.8	13	47.3	9	29.1	4
Marital status						
Currently married/cohabiting	65.8	50	47.7	24	80.2	26
Divorced or separated/widowed	65.8	6	44.8	5	0.0	1
Never married	36.4	27	59.1	12	45.8	15
Wealth tertile						
Poorest	82.8	12	84.1	7	82.2	5
Middle wealth	82.8	9	47.3	6	100.0	3
Wealthiest	65.9	58	36.4	28	55.7	30
Residence						
Rural	66.6	27	47.9	12	79.3	15
Urban	52.5	52	52.0	29	53.0	23
Total	61.8	83	49.6	41	72.0	42

Table 4. One-year abortion incidence (per 1,000) of female respondents age 15 to 49 and their closest female friend or relative age 15 to 49 by adjustment for biases and network generating question

	Respondent		Friend combined		Friend generating question							
					Confidante				Closest friend or relative			
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI		
Attempts	19.2	14.2 24.1	27.2	19.8 34.6	25.3	17.6 33.0	29.1	18.0 40.2				
Completions	3.6	1.9 5.4	13.6	8.2 19.0	15.6	9.7 21.4	11.7	4.1 19.2				
+ adjustment for transmission bias	--	-- --	22.3	13.5 31.2	25.5	15.9 35.2	19.2	6.8 31.5				
+ Poisson adjustment for missing confidantes	--	-- --	22.6	13.7 31.4	26.6	16.2 36.9	18.6	6.7 30.6				

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