Family planning uptake in Kagera and Mara regions in Tanzania: a cross-sectional community survey

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Abstract

Background

In Tanzania, 27.1% of all women of reproductive age are currently using modern contraception, and 16.8% have an unmet need for family planning. We therefore examined factors associated with family planning uptake after giving birth in two regions of Tanzania.

Methods

Sub-analysis of a cross-sectional household survey conducted in April 2016 in Mara and Kagera regions in Tanzania. A total of 1184 women aged 15-49 years, who had given birth less than two years prior to the survey were included. Logistic regression mixed effect modelling was used to examine factors associated with family planning uptake. Univariate analysis was used to present crude effects of covariates, followed by stepwise forward selection to build a multiple logistic regression model. A p-value ≥ 0.20 was applied as the criterion to retain a variable into the model.

Results

Among 1184 women within two years after giving birth, 393 (33.2%) used family planning methods. After adjusting for (1) age, (2) level of education, (3) living in union, (4) being accompanied to ANC by a partner and (5) being able to mention at least one method, factors independently associated with family planning uptake included: (1) having discussed family planning with the partner (aOR 2.90; 95% CI 1.88-4.49), (2) having been counselled on family planning during ANC (aOR 2.15; 95% CI 1.48-3.13), (3) having discussed family planning with a community health worker (aOR 3.32; 95% CI 1.91-5.77), (4) having discussed family planning with a facility health care worker (aOR 1.79; 95% CI 1.22-2.62), (5) having primary or higher educational level (aOR 1.66; 95% CI 1.01-2.273) and (6) being in union (aOR 1.86; 95% CI 1.02-3.42).

Conclusion

Supportive constitutes including educational interaction with facility and community health workers, as well as having a supportive partner are facilitators to increased uptake of family planning among women in Tanzania

Plain English Summary

Access to family planning remains a challenge in Tanzania. Family planning methods in women of reproductive age are used by 27.1%, while 16.8% has an unmet need for family planning. We collected data for 1184 women aged 15–49 years in Mara and Kagera regions in Tanzania, who had given birth two years prior to this survey to examine factors associated with family planning uptake. In our study modern family planning methods were used by 33.2%. Women were more likely to use family planning methods if they had: discussed family planning with their male partner, at least completed primary

education, received family planning counselling during antenatal care, or discussed family planning with health workers, including community health workers and when they were living in union. Efforts to increase use of family planning among women who recently gave birth are needed. Discussing family planning with community and facility health workers and having a supportive partner may all help to increase uptake.

Background

Around the world, every year around 300,000 women and girls die in childbirth or from pregnancy-related complications, including abortion (1). The majority of such deaths occur in low- and middle-income countries (LMIC), especially among the poor and socially disadvantaged. A considerable proportion of deaths occurs in women with unintended pregnancies (2). Access to family planning could avert more than 30% of maternal deaths and 10% of infant deaths, and women in LMIC are generally advised to space their pregnancies more than two years apart (3). Postpartum family planning is considered a high-impact strategy to address unmet needs (4). Demographic and Health Survey data from 27 countries showed that 95% of women who are within one year after birth want to avoid pregnancy for at least 24 months. However, only 30% use contraception during that time (5).

The maternal mortality ratio (MMR) in Tanzania has remained persistently high for over a decade with 556 deaths per 100,000 live births (6). With multiple interventions and investments, family planning uptake has started to show an upward trend. Notwithstanding this trend, only 27.1% of women of reproductive age use modern contraceptives (6). Unmet need of family planning has remained stable between 16.8% and 18.3% since 1999 (6, 7).

Antenatal care provides a gateway to access reproductive, maternal, newborn and child health services and a window of opportunity to promote use of contraception after childbirth (8, 9). Family planning counselling within the realm of antenatal care could potentially increase uptake (10–13). It may be beneficial to engage partners of women into such issues of contraception in case they have supportive attitudes towards family planning, since decision-making is often male-dominated. At the same time, uptake of family planning can improve women's socioeconomic status and increase their level of agency. (14–22). In rural Tanzania, lack of communication among couples about family planning was previously identified as a barrier to uptake (23, 24).

Evidence is available from other countries on gender-related factors including discussion among couples about family planning, participation of male partners in reproductive health issues and the effect of family planning counselling during antenatal care (ANC) on uptake of contraceptives (9, 10, 14, 20, 25–29). There is, however, paucity of evidence from Tanzania in this regard. Contextually-based studies are needed to inform policy change, strengthen male involvement and enhance women's autonomy in order to close the gaps in maternal health indicators including family planning uptake. This study therefore aimed to assess whether family planning counselling by health workers during ANC and having discussed family planning with their partners are associated with the use of family planning among

women who were within two years after childbirth. Findings are expected to contribute insights into potentially context-specific interventions to further promote the use of family planning after giving birth across the country.

Methods

Study design and setting

A cross-sectional study design was used to collect data in a survey conducted by the Maternal and Child Survival Program (MCSP). MCSP was a global project implemented in Kagera and Mara regions of Tanzania focusing on maternal and newborn health, family planning, malaria in pregnancy and immunization. More details are reported in previous papers (30, 31). This household survey was conducted in April 2016 in Mara and Kagera regions in Tanzania. Contraception prevalence rates were 39% in Kagera and 29% in Mara regions in 2015, while unmet need for family planning was 22% in Kagera and 34% in Mara (6).

Sampling and population

The survey used a two-stage, stratified-cluster sampling design. In Kagera and Mara regions, divided into administrative districts, the 333 wards are broken down into enumeration areas (EAs). Each EA has approximately 100 households. In each region, 32 EAs were selected through the probability-proportional-to-size method. The first household was selected at random from generated EA household lists. Additional households were systematically selected from a list of households until we had interviewed at least 20 women who had recently given birth in one EA. If more than one eligible woman in a household consented to participate, all were interviewed. Since the survey applied a cluster sampling strategy, sample size was inflated with a design-effect of 1.5, adjusting for higher intra-cluster correlation, as well as 10% for effects of non-responses. A total of 1,263 women of reproductive age were interviewed. Further details on the methods can be found in previous studies that used the same dataset (30, 32).

Survey respondents were women aged 15–49 years who had given birth during the two years preceding the survey. We excluded a total of 79 pregnant women who would not use any contraceptive method. A total of 1184 interviews with women who had given birth within the last two years were used in this analysis. Estimated sample size was assumed to detect an odds ratio (OR) of 2.2 with 80% power at 0.05 significance for the association, regarding risk factors between users of contraceptive methods versus non-users.

Measurements and variables

Main outcome variable was current use of family planning methods. These were defined as female and male sterilization, injectables, implants, pills, male and female condoms and the lactational amenorrhoea method. Independent variables were age, level of education, living in union, parity, number of ANC visits, obtaining family planning counselling during ANC visits, having discussed family planning with community health workers or service providers in health facilities, having a partner accompanying her for

ANC visits, having a partner participating in family planning counselling, being able to mention at least one family planning method, media exposure, partner's approval of family planning use, having discussed family planning issues with partner, and women's participation in decision making on health issues.

Family planning counselling was assessed on whether women received family planning counselling during ANC, where '0' was coded for those who did not receive counselling and '1' for those who did. Partner accompanying to ANC was defined as whether women were accompanied at least one ANC counselling visit. Exposure to media, without specifying the type of messaging, was assessed based on women's reported exposure to at least one of the media (TV, Radio, Newspaper). Being able to mention at least one family planning method spontaneously was assessed as women being able to mention any of the methods given above where '0' was coded for those who could not mention any method and '1' for those who could mention at least one method. Women's participation in decision making was a composite variable derived from six items assessing women's participation in decision making in issues related to their own health and that of their children. These six items were (i) attending the doctor, (ii) accessing child immunizations, (iii) child-feeding practices, (iv) health care for sick children, (v) where to give birth, and (vi) where to seek care in case of pregnancy complications. This was a composite variable derived from the above six decisions where each item was asked to report whether they participated in decision making alone; jointly with their male partners or with others; or whether women did not participate in decision making (32). ANC attendance was assessed on whether women attended ANC and the number of visits (no visit, 1–3 visits or ≥ 4 visits). 'Discussed family planning with community-based health workers' was defined as women who responded to having ever discussed family planning with a community health worker. 'Discussed family planning with facility based health workers' was defined as women who responded to ever having discussed family planning with a health facility worker.

Data collection

The original survey questionnaire was developed by the Child Survival Health Grants Program and MCSP (33). Technical experts in the field of Reproductive Maternal, Newborn and Child health adapted it to reflect the Tanzanian context. The questionnaire was translated into Swahili. After local experts reviewed the Swahili tool, it was pilot-tested by research assistants and refined for better understanding. The survey was uploaded to the CommCare HQ mobile data collection platform on tablets.

To collect data, we recruited 30 female and male research assistants who were trained on research ethics, informed consent, sampling, recruitment, study and other data collection procedures. Research assistants conducted face-to-face interviews in Swahili and recorded women's answers on tablets. Inbuilt skip patterns helped assure data quality where data collectors were instructed to skip some question(s) which were not supposed to be answered depending on previous responses. A data manager reviewed the data on a daily basis, alerted study supervisors about errors to be addressed immediately.

Statistical analysis

Analysis was conducted using Stata version 14. Frequency proportion tables were used to present categorical distributions of characteristics of participants. Univariate analysis was used to examine crude relationships between current contraceptive use and a number of predictors, while, at multivariable level, the effects of multiple predictors were examined in relation to contraceptive use. Since this were nested data from multistage sampling of two levels, two levels mixed effect logistic regression model was fitted to the data. Accordingly, fixed effects, effects of independent variables to contraceptives' use were presented using odds ratio (ORs) with 95% confidence intervals (Cis), while random effects were presented using Intra-Class Correlations (ICC). We used forward selection criteria in obtaining the best fit model with Maximum Likelihood Ratio Test methods. Variables were entered into multiple logistic regression model if crude analysis showed p-values ≥ 0.20 (34).

Results

This analysis included 1184 women who had given birth two years prior to the survey and 169 (14.3%) women were within six months after childbirth. The majority was aged 25–34 years 512(43.2%), had primary education and above 950(80.2%) and were in union with a partner 1004 (87.5%). Almost half had given birth to 2–4 children 544(45.9%) (Table 1)

More than half of these women had attended four or more ANC visits 631(53.3%) and less than two-thirds received family planning counselling during ANC 738(62.4%). About a third 433(36.6%) reported discussing family planning with service providers in health facilities whereas less than one in ten 102(8.6%) did this with community health workers. Participation of men in utilization of maternal health services was low: less than third 680 (57.8%)% responded that their partners accompanied them to at least one ANC counselling visit and 120(10%) responded that their partners participated in family planning counselling (Table 1)

Table 1
Characteristics of participants (N = 1184)

Variable	n	%
Age		
15–24	496	41.9
25–34	512	43.2
35+	176	14.9
Education		
No education	234	19.8
Primary and above	950	80.2
State of being in union with male Partner*		
Not in union	143	12.5
In union	1004	87.5
Parity		
1	246	20.8
2–4	544	45.9
5+	394	33.3
Maternal health Service utilization		
ANC attendance		
Never	68	5.7
1–3 visits	485	41.0
4+ visits	631	53.3
Family planning counselling during ANC*		
No	444	37.6
Yes	738	62.4
Discussed family planning with community health worker		
No	1082	91.4
Yes	102	8.6

*These variables do not add up to the total population because of missing observations

Variable	n	%
Discussed family planning with facility based health worker		
No	751	63.4
Yes	433	36.6
Partner accompany to ANC*		
No	497	42.2
Yes	680	57.8
Partner participated in family planning counselling		
No	1064	89.9
Yes	120	10.1
Knowledge on family planning		
Being able to mention at least one family planning method*		
Not able to mention any method	211	18.0
Mentioned at least one method	964	82.0
Exposure to media*		
No exposure to tv, radio & newspapers	291	30.6
Exposed to at least one media source	659	69.4
Gender related factors		
Discuss family planning with partner		
No	553	46.7
Yes	328	27.7
Opted not to disclose whether they discussed or not	303	25.6
Need husband/partner's approval to use family planning*		
No	248	21.0
Yes	929	79.0
Decision making in healthcare*		
Woman alone	175	14.9

*These variables do not add up to the total population because of missing observations

Variable	n	%
Jointly	581	49.4
Male partner alone/others alone	421	35.8
*These variables do not add up to the total population because of missing observations		

A big majority of women was able to mention at least one family planning method 964(82%) and more than two-thirds had exposure to at least one media source 559(69.4%) (Table 1). Participants reported to having discussed family planning with their male partners in 328(27.7%) whereas about 303(25.6%) of women opted not to disclose whether they consulted their male partners. Prior approval from their husband/partner to use family planning was required for 929(79%) and about half of women made decisions on health care jointly with their male partners or other family members 581(49.4%) (Table 1).

Prevalence of family planning use

One third of the women were using family planning methods 393(33.2%). Injectables (Depo-Provera) were the most frequently used method (14.3%), followed by implants (7.7%), where male sterilization (0.08%) and female condoms (0.17%) were almost never used (Table 2).

Table 2
Contraceptive methods prevalence (N = 1184)

Method	Users
	N (%)
Injectables	169(14.3)
Implants	91(7.7)
lactational amenorrhoea method	34(2.9)
Pills	32(2.7)
IUD	29(2.5)
Male condoms	21(1.8)
Female sterilization	14(1.2)
Female condoms	2(0.2)
Male sterilization	1(0.1)
*only one woman reported dual methods (LAM and male condoms), counted as one	

Factors associated with family planning use

Women who had discussed family planning with community health workers, were four times more likely to use family planning compared to those who had not (OR 4.59; 95% CI 2.53–8.33), but only few women (8.6%) got this counselling. Those who had discussed family planning with facility health workers (36.6%) were almost twice as likely to use family planning (OR 1.93; 95% CI 1.29–2.90). Women who had received family planning counselling during ANC (62.4%) had more than twice the odds of using family planning methods compared to those who had not (OR 2.68, 95%CI: 1.78–4.05). (Table 3). Moreover, women who had discussed family planning with their husband/partner, were about three times more likely to use family planning compared to women who had not (OR 3.22, 95%CI: 1.99–5.21). Those who opted not to disclose as to whether or not they had discussed family planning with their husband/partner, had twenty-four times higher odds of family planning use compared to those who had not discussed this (OR = 24.19, 95%CI: 13.62–42.95) (Table 3).

Table 3: Univariate and multivariate logistic regression analysis examining factors associated with modern family planning use (N=1,067)

Variable	FP Use		Univariate	Multivariate
	Yes	%	OR (95% CI)	aOR(95% CI)
Age				
15-24	155	31.3	1	1
25-34)	176	34.4	1.17 (0.88-1.54)	1.34(0.91-1.99)
35+	47	26.7	0.78 (0.51-1.17)	0.91(0.53-1.58)
Education				
No education	56	23.9	1	1
Primary and above	322	33.9	1.52 (1.06-2.19)	1.66(1.01-2.73)
State of being in union/or not				
Not in union	37	25.9	1	1
In union	335	33.4	1.61 (1.04-2.47)	1.86(1.02-3.42)
Region				
Mara	363	45.0	1	1
Kagera	443	55.0	1.96(1.34-2.89)	1.65(0.89-3.04)
Parity				
1	72	29.3	1	
2-4	188	34.6	1.31 (0.92-1.87)	
5+	118	30.0	1.11 (0.76-1.62)	
ANC attendance				
Never	24	35.3	1	
1 - 3	137	28.3	0.83 (0.47-1.47)	
4+	217	34.4	1.05 (0.60-1.83)	
FP Counseling during ANC				
No	84	18.9	1	1
Yes	293	39.7	3.01 (2.22-4.09)	2.68(1.78-4.05)
Discussed FP with community HWs (CHW)				
No	317	29.3	1	1
Yes	61	59.8	3.42 (2.18-5.38)	4.59(2.53-8.33)
Discussed FP with Facility HWs				
No	167	22.2	1	1
Yes	211	48.7	3.88 (2.91-5.18)	1.93(1.29-2.90)
Partner company to ANC				
No)	129	26	1	1
Yes)	245	36	1.43 (1.08-1.89)	1.26(0.84-1.90)
Partner participated in FP counseling				
No	307	28.9	1	1
Yes	71	59.2	4.03 (2.62-6.19)	0.97(0.56-1.67)
Being able to mention at least one FP methods				
Not able to mention any FP method	50	23.7	1	1
Mentioned at least one FP method	328	34.0	1.63 (1.12-2.37)	1.10(0.66-1.83)
Exposure to media				
No exposure to tv, radio & newspapers	85	29.2	1	

Exposed to atleast one media source	237	36.0	1.19 (0.85-1.66)	
Discuss FP with Partner				
No	63	11.4	1	1
Yes	119	36.3	3.72 (2.52-5.49)	3.22(1.99-5.21)
Opted not to disclose	196	64.7	27.51 (17.53-43.17)	24.19(13.62-42.95)
Need husband/Partner approval to use FP				
No	67	27	1	
Yes	307	33.1	1.25 (0.89-1.74)	
Decision making in healthcare				
Woman alone	49	29.7	1	
Jointly	167	31.2	1.08 (0.72-1.63)	
Male partner alone/others alone	122	30.6	1.16 (0.76 – 1.78)	
	Random effects			
$(\zeta_u)^2$	0.94			
ICC	0.23			
	Model fitness			
Likelihood value	-448.67			

Discussion

Women who reported discussing family planning issues with their male partners were more likely to use family planning methods. Similar results were reported in India (35), Bangladesh (36) and Tanzania (23,37). Involvement of male partners in reproductive health provides an opportunity for couples to discuss family issues and decisions to use family planning (38). When partners are open and supportive and thus create an atmosphere for discussing family planning issues (39–41), women's confidence and participation in decision making may be promoted (42). Lack of direct couple communication on family planning and spousal disapproval may increase unmet needs for family planning (43). Women who opted not to disclose whether they had discussed family planning with their husbands/partners had the highest odds of using family planning after childbirth. This can be explained by the fact that in Tanzania most women require husband/partner approval to use family planning, and due to fear of refusal or serious conflict, including violence or divorce if they went against their husbands' wishes openly, most women use family planning without their partners' knowledge (24). Having husbands/partners accompanying women to ANC, however, was not associated with increased family planning uptake. It is not merely the act of male partners accompanying women to the clinic that leads to adopting positive health behaviors, but rather the "content" of care they receive (8). It is likely that during such visits there was little or no discussion about family planning from health workers, hence not encouraging dialogue between the couple (44).

Women who reported receiving family planning counselling during ANC were more likely to use family planning after giving birth and this is in agreement with studies from India, Turkey and Mexico (45). Including family planning counselling in ANC will give women an opportunity to receive health information that extends beyond pregnancy (9-10,13,49-50). Our findings suggest that since most women

do attend ANC, family planning counselling should be offered to all women during ANC visits to increase contraceptive use after childbirth.

Discussing family planning with health workers increased the use of family planning after giving birth as has been shown in Kenya (46) and Pakistan (47). Worrying, however, is the finding that contrary to national guidelines half of the women did not discuss these issues with health workers (48). Health care workers should be supportive and open up discussions in a safe and correct manner as this may help to clarify women's misconceptions and concerns related to contraceptive methods. It may enable women to choose the methods that best match their needs (49–52). The finding of few women having the opportunity to discuss family planning with health workers, could be due to barriers faced by health care workers including work overload, lack of private space for counselling and lack of IEC materials (53). When these barriers are addressed, women will get an opportunity to receive adequate counselling and this may improve family planning uptake (53,54). Furthermore, the odds for FP uptake were higher in women who discussed family planning with community health workers. When visited in their homes women are free to discuss and express their concerns giving more opportunity for community health workers to provide relevant information about FP methods and hence promoting family planning uptake. We hypothesize that even only less than one in ten of women discussed family planning with CHWs their odds was higher, if there was an opportunity for all women to discuss family planning with CHWs, the coverage would have been much higher. This implies that more efforts should also be invested in community based interventions to reach communities with appropriate information to increase family planning uptake (55–57).

We also looked into regional differences as appears in the supplementary table. However, in this study, Kagera and Mara were taken as one population and the study was not powered to detect differences between the two regions. A next study is recommended to power it to detect regional differences and the reasons for these.

Study strengths and limitations

Strengths of this study are a stratified cluster sampling that accounted for between and within group variations on the use of family planning; and large sample sizes to represent the populations of Kagera and Mara regions. Since this study used a cross-sectional design, no causal inferences can be drawn, however. It is possible that women who took up family planning methods were more likely to discuss family planning with their husbands/partners, simply because they had husbands/partners more likely to support them in these matters. In this way, it is not the fact that they had discussed the matter that led to family planning uptake, but rather the type of relationship of the couple and attitudes of the husband that enabled them to discuss as well as take up family planning. Also, the sample was drawn from only two out of twenty six regions of Tanzania, thus limiting generalizability to the whole country.

Conclusion

Only one in three women who had recently given birth reported using family planning methods in Kagera and Mara regions in Tanzania. Such low use of family planning jeopardizes any effort to address maternal and child health challenges that remain persistent in these and other regions with a similar context in Tanzania. Addressing such challenges call for factors that influence use of family planning in this population. There is a relatively high number of women who did not want to disclose involvement of their partners and those women had the highest odds of using family planning methods. Therefore, a meaningful engagement of male partners to support their female partners in reproductive health can be of added value. Similarly improved interaction of women with health workers at both facility and community levels has the potential to increase family planning uptake in this and other areas with similar contexts. Such efforts should be streamlined within existing ANC opportunities.

Abbreviations

FP: Family planning; PPF:Postpartum family planning; ANC:Antenatal Care; CHWs:Community Health Workers; MMR Maternal Mortality Ratio; CPR Contraceptive Prevalence Rate; TDH:Tanzania Demographic Health Survey; LAM:Lactational Amenorrhoea Method; RMNCH:Reproductive Maternal Newborn and Child health; MCSP:Maternal Child Survival Program; EA:Enumeration Area; WHO:World Health Organization; OR:Odds Ration; CI:Confidence Interval; HIV:Human Immunodeficiency Virus

Declarations

Ethics approval and consent to participate

All study participants provided oral consent. This study was reviewed and approved by the National Research and Ethics Committee (NatREC) with IRB Number NIMR/HQ/R.8a/vol.IX/2131, and the Johns Hopkins Bloomberg School of Public Health Institutional Review Board (IRB Number 5931)

Consent for publication

Not applicable

Availability of data and material

The datasets from the current study available from the corresponding author on reasonable request

Competing interests

The authors declare that they have no competing interests

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Authors' contributions

Conceptualization, J.M and Y-M.K; methodology J.M , Y-K.M and O.S; formal analysis O.S, J.M and Y-M.K; writing-original draft preparation R.N, B.A,L.N, D.B and J.M; writing-review and editing T.H.A , R.J.J.M and D.B; supervision T.H.A, R.J.J.M and Y-K.M; data curation O.S and J.M

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