Influence of Different Types of Exposure to Family Planning Campaigns:

Results from a Survey of Men and Women in Tanzania

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ACRONYMS

ACQUIRE	Access, Quality, and Use in Reproductive Health
CCP	Johns Hopkins Center for Communication Programs
CHW	Community Health Worker
CPR	Contraceptive Prevalence Rate
DFID	Department for International Development (U.K.)
DO	Development Objectives
HC3	Health Communication Capacity Collaborative
IPC	Interpersonal Communication
IR	Intermediate Result
IUD	Intrauterine Device
LARC	Long-Acting Reversible Contraceptive
MST	Marie Stopes Tanzania
MOHSW	Ministry of Health and Social Welfare
m4RH	Mobile for Reproductive Health
NFCIP	National Family Planning Costed Implementation Plan
NGO	Nongovernmental Organization
OR	Odds Ratio
PSI	Population Services International
RESPOND	Responding to the Need for Family Planning Through Expanded Contraceptive Choices and Program Services
SARC	Short-Acting Reversible Contraceptive
SBCC	Social and Behavior Change Communication
SD	Standard Deviation
SMS	Short Message Service
TAMPS	Tanzania All Media Products Survey
TFR	Total Fertility Rate
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

Background

The use of modern contraceptives is important for the health and well-being of women and their families. In Tanzania, the contraceptive prevalence rate has remained relatively low at 27%, and the total fertility rate relatively high at 5.4 children per woman, with significant disparities in rural areas. To address this reality, seven family planning campaigns in mainland Tanzania used social and behavioral change communication (SBCC) to promote use of modern contraceptives, communication with a provider about family planning (provider communication), and communication with spouse or partner about family planning (spousal communication).

From January to March 2014, the Health Communication Capacity Collaborative (HC3), under the Johns Hopkins Center for Communication Programs (CCP), conducted a cross-sectional study of the cumulative effect of these family planning campaigns in a sample of 4,212 adults of reproductive age (18 to 44 years)—75% of whom were women. The study examined the association between campaign exposure and family planning-related cognitive and behavioral outcomes. The study also examined associations between specific sources of campaign exposure and outcomes. For each individual campaign, individuals answered questions as to where they had heard about or seen the campaign—with response options slightly differing by campaign. The final classification for sources of campaign exposure was as follows:

- health facility (e.g., clinic, pharmacy, hospital, health center, mobile clinic, clinician/pharmacist)
- interpersonal communication (IPC) community health workers (CHW)
- community events (e.g., community discussion groups, health fairs/festivals, student group/youth group)
- television
- radio
- IPC with friends/family

Cumulative exposure across the seven campaigns measured the dose of overall campaign exposure. Source of campaign exposure looked at single as well as multiple sources of communication. Outcomes of interest included cognitive factors (positive family planning-related health beliefs, self-efficacy, and perceived norms) as well as family planning-related behaviors (current use of modern contraceptives, provider communication, and spousal communication). The study aimed to answer the following research questions:

1. What was the cumulative dose of exposure to all campaigns and to specific sources of campaign exposure? Did the exposure differ by gender, area of residence (urban vs. rural), and age (18 to 24 vs. 25 to 44 years)?
2. To what extent were the cumulative dose of exposure and specific source of exposure associated with pro-family planning cognitive factors and family planning behaviors? Did these associations differ by gender, area of residence, and age?
3. To what extent did the number of sources of campaign exposure influence family planning

cognitions and behaviors? Did these associations differ by gender, area of residence, and age?

Key Findings

Research Question 1

Overall, about 75% of the study sample had a medium (3 to 5), high (6 to 8), or very high (9 and above) cumulative dose of exposure to the campaigns. Men and urban respondents had higher doses of exposure than women and rural respondents. For example, 27.7% of men and 28.7% of urban respondents had a very high level of campaign exposure compared to only 18.8% of women and 16.8% of rural respondents ($p<0.05$). However, there was no difference of cumulative campaign exposure by age. Respondents reported an average exposure to 2.3 different sources. Health facilities, radio, and family/friends represented the most frequently cited sources of campaign exposure. Specifically, 78.9% of the sample reported any exposure (47.6% at medium/high levels) through health facilities, 58.4% reported any exposure (22.5% at medium/high levels) through radio, and 47.6% reported any exposure (21.0% at medium/high levels) through IPC with family/friends. Exposure to family planning campaigns through television, health workers, and community events was low across groups.

Male respondents reported exposure to more sources of campaign exposure, on average, than female respondents (2.5 vs. 2.2, respectively, $p<0.05$). Men reported greater exposure to campaigns through all types of exposure except health facilities and health workers, to which women reported greater exposure. Urban respondents reported exposure to more sources than rural respondents (2.7 vs. 2.0, respectively, $p<0.05$). Compared to rural respondents, urban respondents reported greater exposure to campaigns through all sources except health workers, for which there was no difference. The average number of types of exposure did not differ by age. However, older respondents reported greater exposure through health facilities and health workers, whereas younger respondents reported greater exposure through television and family/friends. There was no difference by age in exposure through radio or community events.

Research Question 2

Odds ratios (ORs) demonstrated the relative odds of outcomes comparing individuals with and without specific sources of exposure. Statistically significant ($p<0.05$) ORs indicated that the observed association was unlikely due to chance alone. Study findings indicated a variety of dose–response relationships, whereby higher levels of exposure across campaigns increased the odds of pro-family planning cognitive factors and behaviors. For example, compared to individuals with no or low exposure to the family planning campaigns, respondents with very high levels of exposure had:

- 1.5 greater odds of holding positive health beliefs about family planning ($p<0.01$)
- 2.4 greater odds of having self-efficacy to perform family planning behaviors ($p<0.001$)
- 2.3 greater odds of believing that family planning is highly normative ($p<0.001$)
- 2.7 greater odds of currently using modern contraceptives ($p<0.001$)
- 8.0 greater odds of communication with a provider about family planning ($p<0.001$)
- 14.1 greater odds of communication with spouse/partner about family planning ($p<0.001$)

Certain sources of campaign exposure had stronger effects than others. Health facilities and IPC with family/friends appeared most effective across multiple outcomes and individuals, with health workers, television, and radio resulting in more limited effects. Compared to all other sources, exposure to family planning campaigns through health facilities had an effect across the greatest number of outcomes and types of individuals. For example, health facilities exposure had the strongest effect on provider communication (OR=3.86, $p<0.001$), current use of modern contraceptives (OR=2.06, $p<0.001$), perceived norms (OR=1.77, $p<0.001$), and self-efficacy beliefs (OR=1.71, $p<0.001$), and was the only type of exposure associated with positive family planning-related health beliefs (OR=1.36, $p<0.01$). Moreover, statistically significant differences existed by gender, residential area, and age. Exposure via health facilities was often more influential on cognitive and behavioral outcomes for women and respondents 24 years and older than for men and respondents under 24 years old. For example, compared to women with no exposure to family planning campaigns through health facilities, women with medium/high exposure had 2.38 times greater odds of current modern contraceptive use ($p<0.001$), which was the biggest effect for this outcome. However, no association existed for men between health-facility exposure and health beliefs, self-efficacy, perceived norms, current contraceptive use, or provider communication. For provider communication, the association with health facilities was greatest for younger respondents (OR=9.71, $p<0.05$).

Exposure to family planning campaigns through family/friends was the second most influential source of exposure. In particular, IPC with family/friends was most strongly associated with spousal communication (OR=5.60, $p<0.001$). IPC with family/friends was particularly influential for men, more so than women. Among men, exposure through family/friends had a larger effect than other sources of exposure on self-efficacy beliefs (OR=2.03, $p<0.001$), perceived norms (OR=1.86, $p<0.01$), current contraceptive use (OR=2.12, $p<0.001$), provider communication (OR=3.90, $p=0.01$), and spousal communication (OR=4.94, $p<0.001$). The association between family/friends and spousal communication about family planning was strongest for both rural (OR=6.12, $p<0.001$) and female respondents (OR=6.09, $p<0.001$).

Other sources of family planning campaign exposure had either no or more limited effects on the outcomes. Communication with health workers increased the odds of normative beliefs about the acceptability of family planning (OR=1.35, $p=0.039$) and provider communication (OR=1.96, $p=0.01$), but the effects were smaller than health facilities and IPC with family/friends. Television and radio increased the odds of spousal communication (OR=1.68, $p=0.01$, and OR=2.03, $p<0.001$, at medium/high exposure level, respectively). These effects were smaller than the effects of IPC with family/friends. An association did not exist between exposure through community events and any outcome.

Research Question 3

Even though specific types of exposure appeared to be more influential for certain outcomes and groups, exposure to family planning campaigns through multiple sources—regardless of the specific type—was the most impactful on nearly all outcomes. The greatest effect was for the behavioral outcomes. For all three behavioral outcomes, there was a clear dose–response effect, such that the odds of engaging in the behaviors increased as the number of sources of exposure increased. For

example, respondents exposed to campaigns through all six sources had 35.5 greater odds of current contraceptive use ($p<0.01$), 23.9 greater odds of provider communication ($p<0.01$), and 22.9 greater odds of spousal communication ($p<0.001$). For health beliefs and perceived norms, the greatest effect emerged for respondents exposed to four sources (OR=1.3, $p<0.05$, and OR=3.1, $p<0.001$, respectively). For self-efficacy, the greatest effect was for respondents exposed to all six sources of campaign exposure (OR=6.5, $p<0.01$).

Recommendations

Findings from this study provide five implications for future SBCC programs:

- Investment in SBCC campaigns is worthwhile for improving family planning cognitions and behaviors. In this study, greater exposure to campaigns had associations with multiple outcomes for various types of individuals.
- Given the evidence of a dose effect, multiple campaigns occurring simultaneously through different sources of exposure can work together to influence change.
- Specific types of campaign exposure are important for changing family planning cognitions and behaviors. For women, health facilities were a particularly important source of exposure to campaigns, whereas IPC with family/friends was particularly important for men. This difference may be partially explained by the different levels of exposure to these sources by gender.
- Television and radio, alone, may not be best way to facilitate behavior change in certain populations and for certain outcomes. In these instances, television and radio may likely be more effective when complementing additional ways of reaching individuals, such as health facilities and family/friends. As many campaigns typically do, future SBCC campaigns should consider the ideal mix of sources of exposure, taking into account potential reach and effectiveness.
- A cumulative dose of sources of campaign exposure, regardless of the specific types, can have a significant effect on family planning cognitions and behaviors.

INTRODUCTION

Reproductive Health in Tanzania

According to the World Health Organization (WHO), family planning "allows people to attain their desired number of children and determine the spacing of pregnancies."[1] One key family planning behavior is the use of modern contraceptive methods.[1] Modern contraceptive use can reduce unintended pregnancies, adolescent pregnancies, pregnancy-related health risks, and unsafe abortions. It can also lower the risk of maternal and infant mortality, empower women, and slow population growth.[1] Overall, modern contraceptive use has positive impacts on the health, economy, environment, and development of the country.

From 1996 to 2010, the Total Fertility Rate (TFR) in Tanzania has declined at a much slower rate than pre-1996.[2,3] Tanzania's TFR remains high at 5.4 children per woman, with TFR in rural areas far exceeding that of urban areas (6.1 vs. 3.7, respectively).[3] In addition, childbearing begins early in Tanzania. For example, among women aged 25 to 49 years, 28% gave birth by age 18, 56% by age 20, and 75% by age 22.[3]

Although fertility rates are high in Tanzania, awareness of contraceptive methods was also high—reflecting the possibility that high awareness does not necessarily reflect true knowledge or positive family planning attitudes/intentions. For example, in 2010, 98% of women and 99% of men reported having heard of at least one modern method of contraception.[3] However, only 24% of women aged 15 to 49 years reported using modern contraceptive methods. The most commonly used forms of family planning reported by women were short-acting methods, including injectables, oral contraceptives, and male condoms.

Analysis of unmet family planning need and trends in modern method contraceptive prevalence rate (CPR) in Tanzania has focused on women who are married or in a union.[3,4] Among married/partnered women, the CPR increased substantially from 7% in 1991, but remained low at 27% in 2010. Unmet need for family planning—those individuals who do not want children but are not currently using contraception—remained relatively constant at 25% in 2010 (compared to 27% in 1991), while the demand for family planning (CPR plus unmet need) increased from 38% in 1991 to 58% in 2010.[3,4] Rural women accounted for much of the increase in CPR from 2004 to 2010 (from 16% to 25%), but women in the Western and Lake Zones reported the lowest CPR (both 15%) and highest unmet need (26% and 33%, respectively). [3,4] Urban married women were more likely to use modern methods compared to rural women (34% vs. 35%, respectively).[3,4] Considerable inequities in CPR and unmet need exist by socioeconomic status.

The U.S. Agency for International Development's support for family planning in Tanzania is part of the Country Development Cooperation Strategy, which frames all development objectives under the overarching goal of advancing Tanzania's socioeconomic transformation toward middle-income status by 2025. (See **Appendix A** for additional background information on the Tanzanian context.)

Social and Behavioral Determinants of Family Planning

In Tanzania and other countries, multiple factors affect the use of family planning, including determinants at the individual and community levels. At the individual level, beliefs about family planning—some of which were valid and others were myths and misconceptions—created significant barriers to use of family planning methods.[5-7] Fears about the side effects of contraceptives were widespread and often based in misinformation.[6] In Tanzania, beliefs about the side effects included weight gain, bleeding changes, reduced sexual desire/performance, harm to the fetus, and cancer as well as fears of sterility and delayed return to fertility; these beliefs were the reasons why women and their partners did not use contraceptives.[5,7] Religious beliefs—including the belief that family planning was against God's will—also inhibited use of modern family planning methods in Tanzania[5] as well as other countries.[6,8] Another belief that inhibited family planning was the view that linkages exist between contraceptive use and promiscuity and infidelity. In Tanzania, women might avoid contraceptives so as not to be labeled as unfaithful to their husbands, which also prevented them from discussing family planning with their husbands.[7] Studies in Uganda and Ghana have had similar findings.[8,9] In addition, communication among couples is a key factor in family planning, and one study reported little communication about family planning in rural areas of Tanzania.[7]

At the community level, the community was an important source of information about the acceptability and side effects of family planning in Tanzania.[5] In addition, social norms about sexuality and the value of children might negatively affect family planning use. Because of the aforementioned belief that contraceptive use is associated with promiscuity and infidelity, women in Tanzania might forgo family planning and discussing family planning with others because of the social risks of being labeled as promiscuous or unfaithful.[7] In other countries, this willingness to have more children, so as to avoid the social costs of contraceptive use, was particularly true for women in settings where the status of women was low.[6] In addition, couples faced high amounts of pressure from parents and in-laws to have a child soon after marriage or risk being seen as infertile in Tanzania.[7] This was particularly true for rural areas where children were helpful as sources of labor and where the extensive social support system allowed for children to stay with relatives.[7] In Tanzania, perceptions existed which viewed men as the decision makers for the household, including initiating discussions about and choosing to use family planning.[7] Structural and resource barriers—such as distance to health facilities and the costs associated with transportation, health services, and time lost while seeking care—are determinants of accessing health-care services, including family planning, in Tanzania.[3]

Evidence for Social and Behavioral Change Communication

Social and behavioral change communication (SBCC) is an approach to influence cognitive outcomes—such as knowledge, attitudes, and social norms—and change behaviors through the use of communication. Ideally informed by theory and evidence, SBCC can systematically and strategically reach individuals with messages through various sources of exposure to improve health behaviors and support the social change needed to improve health outcomes.[10-13]

In the area of family planning and reproductive health, previous studies have documented that SBCC

programs increased use of condoms and other modern contraceptives, couples' communication about family planning, joint decision making about family planning between couples, and communication with a provider about family planning.[14-20] To increase awareness and use of family planning, SBCC programs increased knowledge and self-efficacy to engage in family planning, corrected misconceptions about family planning, and improved perceived norms and ideation about the acceptability and prevalence of family planning.[14,19-26] Previous research has shown that SBCC campaigns were more successful in improving family planning-related cognitive outcomes and practices with higher levels of exposure.[12,17,27] A combination of sources of exposure, such as mass media, interpersonal communication, and community engagement, appear to be particularly effective for reproductive health.[27] However, exposure to SBCC campaigns could differ by gender, age, and geographic region (urban vs. rural), which could affect campaign effectiveness for some populations.[14,28]

Fewer studies have looked at the influence of SBCC campaigns on family planning in Tanzania and examined the most effective ways of reaching individuals.[16,17,29] One study of women of reproductive age in Tanzania found a statistically significant association between mass-media exposure to family planning campaigns and current use of modern contraceptives among women.[16] Moreover, the likelihood of women's modern contraceptive use increased as the number of sources of exposure to campaigns increased, suggesting that multiple sources can complement one another and reinforce family planning messages.[16] In this study, radio was the type of exposure most strongly associated with improved family planning behaviors. Similarly, an evaluation of the Tanzanian entertainment-education radio soap opera, "Twende na Wakati" (Let's Go with the Time), found statistically significant associations between program exposure and family planning self-efficacy, favorable family planning attitudes, spousal communication about family planning, and use of contraceptives.[17] A more recent community-based trial evaluated the *MEMA kwa Vijana* Project, an SBCC intervention (implemented 1999 to 2002) that used community activities, teacher-led and peer-assisted sex education in schools, training and supervision of health workers, youth-friendly reproductive health services, and condom social marketing to reach youth in rural parts of Tanzania.[29,30] The evaluation found that the intervention improved knowledge and attitudes toward condom use among male and female adolescents. Increased condom use, however, was associated with program exposure only among young men.[29] Unfortunately, this evaluation did not examine the specific sources of campaign exposure and their effect on adolescent condom use.

Further research is needed to examine exposure to SBCC campaigns and the sources of exposure to family planning messages in Tanzania, their associations with cognitive and behavioral outcomes, and whether exposure through multiple sources work synergistically to improve family planning outcomes. Moreover, there is a need to examine the results by gender, geographic residence (rural vs. urban), and age. Tanzania has had a number of nationwide family planning SBCC projects (each is described in the **Family Planning SBCC Campaigns in Tanzania** section), and evaluation of those projects is needed.

Media Landscape in Tanzania

Tanzanians have a high level of exposure to different media sources, making Tanzania a favorable environment for media campaigns. According to the 2014 Tanzania All Media Products Survey (TAMPS),

in the seven days preceding the survey, 88% of Tanzanians had listened to radio, 61% had seen a billboard, 39% had watched television, 18% had read a newspaper, and 13% had used the internet.[31] Men and women spent relatively the same amount of time listening to the radio (10.7 and 10.4 hours per week, respectively), but women spent more time watching television (9.3 hours per week vs. 7.7 hours for men).[31] Urban residents spent more time watching television (9.1 vs. 7.9 hours per week) but less time listening to the radio (9.7 vs. 12.2 hours per week) than rural residents.[31] Younger people (18 to 24 years old) spent about the same amount of time watching television as older people (8.6 hours per week vs. 8.3 hours for 25 to 34 year olds and 8.0 for 35 to 44 year olds), but more time listening to the radio (12.2 hours per week vs. 10.4 hours for 25 to 34 year olds and 9.8 hours for 35 to 44 year olds).[31]

According to the 2010 Tanzania Demographic and Health Survey (TDHS), 76% of women and 78% of men heard family planning messages from at least one source.[3] The most common source for exposure to family planning messages among women were interpersonal communication (IPC) with doctors/nurses (50%), radio (49%), and IPC with health workers (42%).[3] For men, the most common sources were radio (61%), poster (48%), and billboards (35%).[3] Men were much less likely than women to hear about family planning messages from doctors/nurses (31%) and community health workers (31%).[3] Compared to women, men were more likely to have been exposed to a message from every mass-media source.[3] Exposure to family planning messages was substantially higher in urban areas (87% of women, 89% of men) compared to rural areas (71% of women, 73% of men).[3] Exposure was lowest among individuals aged 15 to 19 years (65% of women, 69% of men) and highest among women aged 30 to 34 years (83%) and men aged 40 to 44 years (84%).[3]

Family Planning SBCC Campaigns in Tanzania

The Tanzania government has supported many initiatives to increase use of family planning, including SBCC campaigns and strategic action to ensure effective and quality promotion and delivery. Clear policies and national guidelines have guided the government's strategies for increasing family planning use. At the time of this study, there were seven national SBCC campaigns designed to increase modern contraceptive use and communication with providers and spouses by improving health beliefs, self-efficacy, and perceived norms regarding family planning. The campaigns used a variety of different ways to reach individuals with SBCC (see **Table 1** below). The following is a brief overview of the campaigns.

Table 1. Possible Sources of Exposure by Tanzanian Family Planning Campaigns

Campaign	Radio	TV	Community Events	Health Facility	Community Health Worker
ACQUIRE/RESPOND	■		■	■	■
Familia	■		■	■	■
Flexi-P			■	■	
Femina Hip	■	■	■	■	■
Green Star	■	■		■	
Marie Stopes			■	■	
m4RH	■	■		■	■

ACQUIRE/RESPOND

EngenderHealth worked in partnership with the Tanzania Ministry of Health and Social Welfare (MOHSW) to improve the quality and availability of reproductive health care in Tanzania. The aims of the Access, Quality, and Use in Reproductive Health (ACQUIRE) (2003 to 2008) and the Responding to the Need for Family Planning through Expanded Contraceptive Choices and Program Services (RESPOND) (2012 to 2017) projects were to synchronize supply, demand, and advocacy needs and to expand contraceptive options. For demand creation, RESPOND supported a range of community mobilization activities linked to service delivery, which included local radio advertising, daily health talks at facilities, public address systems, and interactions with community health workers (CHWs).

Familia

Population Services International (PSI)/Tanzania uses social marketing to promote family planning commodities and services in the private and public sector. Through Familia, PSI's branded private-sector social franchise, women can access family planning products and services at cost. Communication about Familia reaches individuals through a variety of ways, including IPC, mass media, and health facilities.

Flexi-P

PSI/Tanzania reaches individuals who cannot afford or access private-sector services through its socially marketed Flexi-P brand of family planning products. Individuals can access Flexi-P products in public health facilities in rural communities. PSI drives demand creation for Flexi-P through community mobilization efforts that involve mid-media activities such as use of public address systems and engagement with local influencers, including village leaders, and local government authorities.

Femina Hip

Femina Hip is a local Tanzanian nongovernment organization working with youth, communities, and strategic partners across Tanzania, with the aim of promoting healthy lifestyles, sexual and reproductive health, and other goals. Femina Hip's media products include two magazines, a television show, and a website. At the time of the current study, Femina Hip's primary intended audience was young women and men in Tanzania aged 13 to 30 years. A secondary audience was individuals—such as teachers and youth group leaders—who supported and facilitated Femina Hip youth clubs and could serve as positive role models for the youth.

Green Star

In October 2013, the MOHSW, in partnership with CCP, revitalized the country's nationwide Green Star family planning campaign to recognize the importance of family planning as a strategy to improve maternal, newborn, and child health and promote economic and social development. The revitalized campaign used mass media and health facilities to reach Tanzanians across the country. The campaign's primary audiences included women of reproductive age with unmet need for family planning and their partners/spouses. Green Star messaging focused on healthy timing and spacing of pregnancy, male involvement, spousal communication, benefits of family planning, and alleviating family planning-related health concerns.

Marie Stopes Tanzania

Marie Stopes Tanzania (MST) provides family planning services through its branded network of urban clinics. In addition, in order to better reach rural areas, MST runs mobile outreach services in rural and peri-urban areas. MST aims to create awareness and demand for family planning methods targeting women of reproductive age, men, and adolescents through its clinics and mobile outreach efforts.

Mobile for Reproductive Health (m4RH)

At the time of the current study, Mobile for Reproductive Health (m4RH) was a free interactive short message service (SMS)-based system that provided information about contraceptive methods and health facility locations in Tanzania. In 2013, m4RH expanded in concert with the relaunch of the Green Star campaign. The enhanced platform included information on the benefits, side effects, and misconceptions of each method as well as the option to sign up to receive personal stories. Their target audiences were men and women of reproductive age.

The current study reports findings from a cumulative evaluation of these seven national SBCC campaigns and the ways in which they communicated family planning messages. (See **Appendix A** for more details on each campaign.)

RESEARCH QUESTIONS

The current study used a cross-sectional, national household-based survey with a sample of 4,212 Tanzania adults aged 18 to 44 years to evaluate the influence of seven family planning SBCC campaigns and specific sources of exposure on family planning-related cognitive factors (such as perceived norms, health beliefs, and self-efficacy) and behaviors (specifically, communication about family planning with spouse, communication with health provider about family planning, and current modern contraceptive use). The specific research questions were as follows:

1. What was the cumulative dose of exposure to these family planning campaigns and to specific sources of exposure to the campaigns? Did the exposure differ by gender, area of residence, or age?
2. To what extent were the cumulative dose of exposure and specific sources of exposure associated with pro-family planning cognitive factors and family planning behaviors? Did these associations differ by gender, area of residence, and age?
3. To what extent did the number of sources of exposure influence family planning cognitions and behaviors? Did these associations differ by gender, area of residence, and age?

METHODS

Study Sample

HC3 conducted the current study in all 25 regions of mainland Tanzania from January to March 2014. Participant recruitment occurred via a multistage sampling design in order to ensure random selection. The end result was a nationally representative sample of Tanzanian men and women ages 18 to 49 years (N=4,212), proportional to the population size at both regional and district levels. Although women represent the central actor in most family planning-related behaviors, men often play a key role. For example, while a woman may make the ultimate decision to begin using modern contraceptives, her male spouse/partner may influence which method she chooses. Given the important role that men may play, the study included both male and female samples of participants. However, because of women's central role in family planning-related behaviors, the study purposefully oversampled women (75% women versus 25% men).

All interviewers received training on the study protocol and ethical treatment of participants prior to commencing fieldwork. Prior to commencing data collection, the trained interviewers identified private locations for administering the survey in order to ensure confidentiality and limit potential interruptions. In Swahili, they first obtained participants' informed consent via an oral script, and then conducted the face-to-face surveys. In order to streamline data collection and reduce error, interviewers used mobile tablet devices to enter participants' responses to survey questions. Survey administration lasted between 45 and 60 minutes. The Johns Hopkins Bloomberg School of Public Health Institutional Review Board and the Tanzania National Institute for Medical Research approved the study. In addition, regional administrative secretaries and district executive officers granted permission to conduct the research in their respective areas of jurisdiction.

Measures

Outcome Variables: Family Planning Behaviors and Cognitions

Family planning-related **behaviors of interest** included: (1) **communication with a health provider** about family planning in the last three months, (2) **communication with a spouse/partner** about family planning in the last three months, and (3) **current use of a modern contraceptive method**. The two communication behavioral outcomes originated from responses to the following survey question: "In the last three months, have you talked with anyone about methods a couple can use to prevent pregnancy?" Those who answered "yes" received a follow-up question about with whom they had spoken. Response options to the question included "community health worker," "health provider," and "spouse/partner." As defined by WHO, modern contraceptive methods include female and male sterilization, pills, injectables, male and female condoms, intrauterine devices (IUDs), implants and breastfeeding (lactational amenorrhea method). Non-users of modern contraceptive methods encompassed individuals who reported using, for example, rhythm/calendar/periodic abstinence, withdrawal, or no method.

In addition to the three behavioral outcomes, the study measured the following three family planning **cognitive outcomes**: (1) perceived normative belief that modern contraceptive methods are widely used, and that others approve of their use; (2) positive health beliefs about modern contraceptive methods; and (3) self-efficacy (confidence) in one's ability to successfully use modern contraceptive methods. The construction of these three cognitive outcomes employed iterated principal factor analysis with varimax rotation for a set of survey questions ("items") that seemed potentially related to the same construct ("factor"). A factor had to meet a threshold of an eigenvalue greater than 1.0 in order to signify a separate outcome. To include an item as part of a particular factor, it had to have a loading value greater than 0.30. (See **Appendix B** for further information on construction of these cognitive outcome variables.)

Perceived norms variable comprised five survey questions about partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know who approve of and use modern family planning methods. Higher values meant greater perceived approval for family planning. The five items demonstrated good internal reliability (Cronbach's α=0.7518), which is a measure of how closely related a set of items are as a group. The variable ranged from -11.89 (which represents respondents who view modern family planning as not at all socially acceptable nor commonly used) to 4.30 (which represents respondents who view modern family planning as highly acceptable or commonly used). (See **Appendix B** for further information on construction of this variable.)

The **health beliefs** variable comprised seven survey questions that asked respondents' beliefs about the health consequences of using modern contraceptive methods. The survey asked respondents how much they disagreed or agreed with several misconceptions about the health effects of using modern family planning methods—such as, contraceptives could make women infertile, cause health problems, and so on. Higher values meant holding health beliefs in favor of using family planning, such as disagreeing strongly that modern family planning methods caused health problems. The final composite score, representing an average of the seven items, demonstrated good internal reliability (Cronbach's α=0.8986). The variable ranged from 1 (strongly agree) to 4 (strongly disagree), with a median value of 2.71. Higher values represented more favorable health beliefs regarding family planning. (See **Appendix B** for further information on construction of this variable.)

The **self-efficacy** variable represented a composite average across five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully, such as obtaining a method when needed or getting their partner to agree to use a modern method. Higher values equated to favorable self-efficacy beliefs to use modern family planning methods. The composite score had good internal reliability (Cronbach's α=0.8793) and ranged from 1 (not at all confident) to 4 (very confident), with a median value of 3.4. (See **Appendix B** for further information on construction of this variable.)

In order to ease interpretation, the research team transformed the original continuous data for the cognitive outcome variables to a binary structure of low vs. high norms, health beliefs, and self-efficacy. The median value for each variable served as the cut-off point between low and high.

Exposure Variables

The survey instrument assessed exposure to the following campaigns: ACQUIRE/RESPOND, Flexi-P, Familia, Marie Stopes, Green Star, Femina Hip, and m4RH. The research team then calculated two types of exposure: dose of family planning campaign exposure and source of exposure.

Dose of family planning campaign exposure measured individuals' recall of family planning campaigns based on the following survey questions: "How often did you hear or see campaign [X] in the last six months?" and "Did a friend/family member talk to you about campaign [X] in the last three months?". For each campaign, the research team scored responses as follows: 0=did not hear or see the campaign in the last six months, 1=saw/heard campaign within the last six months but more than three months ago, 2=saw/heard campaign one to five times in last three months (about less than two times a month), 3=saw/heard campaign six to 10 times in last three months (about two to three times a month), 4=saw/heard campaign 11 or more times in last three months (about four times a month). The team added an additional point to the score if the respondent reported that a friend or family member had talked to them about the campaign. For each campaign, except m4RH, the possible score ranged from 0 to 5. The survey did not measure frequency of seeing/hearing about m4RH. Instead, the survey asked if the respondent had ever heard or seen the campaign (0=No, 1=Yes) and, if yes, heard about the campaign from a friend or family member (0=No, 1=Yes). The possible score for m4RH exposure, therefore, ranged from 0 to 2. After calculating the dose of exposure to each campaign, the research team summarized the scores across all the campaigns into one overall dose of exposure to all seven family planning campaigns (scores ranged from 0 to 26). The final variable scores represented the distribution of total relative dose of exposure by quartile: none/low (0 to 2), medium (3 to 5), high (6 to 8) and very high (9 or more).

Source of exposure measured from what source respondents reported having had heard/seen each campaign. Respondents could select multiple sources through which they heard/saw each campaign. For the current study, sources of exposure to family planning campaigns included the following: television, radio, health facilities, IPC with CHWs, community events, and IPC with family/friends. Operationalization of the sources of exposure variables allowed for a variety of possible responses, due to some campaign-specific responses used in the survey instrument (see **Table 2** below).

For the current study, possible sources of exposure did not include print media or new media, such as websites and social media, as they were beyond the scope of focus. For each specific source of exposure, the research team added together the total number of campaigns respondents reported having heard/seen family planning messages from that source. Scores for source of family planning campaign exposure ranged from 0 to 3 (CHWs) and 0 to 5 (television, radio, community events) to 0 to 7 (health facilities, IPC with family/friends). The final variables for family planning campaign exposure through television, radio, health facilities, and IPC with family/friends segmented distribution of scores by tertile: none (0 exposure), low (1), and medium/high (2 or more). The final variables for family planning campaign exposure through CHWs and community events represented distribution of scores at a binary level: none (0) and any (1 or more. (See **Appendix B** for further details on construction of exposure variables.)

Table 2. Operationalization of Sources of Family Planning Campaign Exposure

Category of source of exposure	Operationalization in survey items
Television	• TV show • TV spot
Radio	• Radio show • Radio spot
Health facility	• Clinic • Clinician/pharmacist • Dispensary • Health center • Health facility • Hospital • Mobile clinic • Pharmacy
Community health worker	• Community health worker
Interpersonal communication with friends or family	• Family member • Friend • Relative
Community event	• Community activity • Community discussion group • Health fairs/festivals • Student group/youth club • Village group • Other community event

In addition, an additional variable calculated the total cumulative number of sources of exposure to family planning campaigns.

Covariates: Background Factors

Background demographic variables of interest included the following: gender (men or women), age (24 years and older or under 24 years), area of residence (urban or rural), education (less than/completed primary school or higher than primary school), religion (Catholic, other Christian, Muslim, or other), relationship status (single/widowed/separated/divorced or in a relationship/living together/married), score for ownership of assets and services as an indicator of socioeconomic status, and frequency of media use. (See **Appendix B** for more information.)

Analysis

Statistical analyses, conducted using Stata 14, included chi-square and logistic regression analyses. Chi-square analyses examined relative differences in family planning cognitive factors and behaviors as well as cumulative dose of campaign exposure and source of exposure, by gender, area of residence (urban

vs. rural), and age (18 to 24 years vs. 25 to 49 years).

A series of logistic regressions examined associations between dose of exposure (main independent variable) and each of the six distinct outcomes, adjusting for background factors, such as education, religion, and marital status. Similar regression models tested the associations between exposure to individual sources of family planning campaign exposure and outcomes, adjusting for background factors.

A two-step analysis process assessed the relationships of cognitive and behavioral outcomes with individual sources of exposure. The first step encompassed the development of a saturated model for the overall sample that included all of the sources of exposure in the model, in addition to background factors. The second step involved developing a parsimonious final model for each outcome that only included statistically significant (p<0.05) sources of exposure from the saturated model. Further analysis stratified models by gender, residential location, and age in order to explore whether differences in dose or sources of exposure existed by type of individual. Additional analysis looked at the association between number of sources of exposure and the cognitive and behavioral outcomes overall and stratified by gender, location, and age.

RESULTS

Background Characteristics of the Sample

A total of 4,212 adults participated in the survey, with an overall mean age of 29.7 years (see **Table 3**). Although the study sample was similar to the Tanzanian population across some characteristics (e.g., age, religion), several notable distinctions existed. For example, a higher percentage of study participants, compared to the population of Tanzania, reported being in a relationship (77.9% vs. 57.5%, respectively). This finding did not appear to be due to the fact that the study oversampled women; men and women in the study were equally likely to be in a relationship (77.8% vs. 77.9%, respectively). Study participants reported higher radio listenership compared to the general population in Tanzania (76.0% vs. 61.3%, respectively). Furthermore, 36.5% of the study sample, compared to only 22.8% of the Tanzanian population, was urban. These identified differences were not by design. At the same time, however, the observed difference of gender distribution in the study sample compared to the Tanzanian population (73.5% vs. 51.3% women, respectively) was by study design.

One measure of socioeconomic status was financial insecurity. The survey asked participants how often, in the past 12 months, they had experienced the following types of financial insecurity: not enough food to eat, lack of shelter, unable to afford to send children to school, and lack of money to buy medicines/medical treatment. The available responses were: almost every day, at least once a week, less than once a week, or not at all. Participants who reported experiencing any of these situations at any frequency signified financial insecurity. Over half (58.1%) of participants reported no insecurity in the past 12 months. Along those lines, the study sample appeared slightly better off than the national population when looking at several measures of socioeconomic status (see **Table 4**). One set of measures of socioeconomic status assessed family ownership of a variety of material goods and services, such as running water, working television, and refrigerator. For example, a higher percentage of study participants reported owning a radio, television, or mobile phone, compared to the national population. In addition, 27.3% of study participants reported having completed education beyond primary school, compared to only 19.0% of the national population.

Table 3. Respondent Demographic Characteristics Compared to Tanzanian Population (N=4,212)

	Study Sample % or Mean (SD)	Tanzania Population %[a]
Gender		
Men	26.5%	48.7%
Women	73.5%	51.3%
Age groups (n=4,199)		
18-24 years	32.0%	32.3%
25-49 years	68.0%	67.7%
Religion[b,c] (n=4,211)		
Christian	63.1%	60.0%
Catholic	29.2%	--
Other Christian	33.8%	--
Muslim	35.3%	36.0%
Other	1.7%	3.0%
Relationship status[d] (n=4,210)		
Single, widowed, separated, divorced	22.1%	42.4%
In relationship, living together, married	77.9%	57.5%
Sources of media used		
% who read newspaper ≥1 times a week	27.2%	21.0%
% who watch television ≥1 times a week	36.3%	26.7%
% who listen radio ≥1 times a week	76.0%	61.3%
Geographic area		
Urban	36.4%	22.8%
Rural	63.6%	77.2%

Note: Totals may not add up to 100% because of rounding.

[a] Final, complete estimates were used for the most recent year available. Data sources:[3,32-34]

[b] Estimates for the Tanzania population are for individuals age 18 years and older.

[c] The number of Catholics in Tanzania could not be determined. National estimates for religion are not reliable.

[d] Estimates for the Tanzania population are for individuals aged 15 to 49 years.

Abbreviation: SD, standard deviation.

Table 4. Respondent Socioeconomic Status Compared to Tanzanian Population

	Study Sample % or Mean (SD) (N=4,212)	Tanzania Population %[a]
Education[b] (n=4,210)		
Never attended school/some primary/completed primary school	72.7%	80.9%
Beyond primary school	27.3%	19.0%
Employment status[b] (n=4,200)		
Unemployed, student, housewife	21.0%	30.6%
Full time, part time, self-employed	34.6%	27.8%
Farmer	44.4%	41.6%
Ownership of assets and amenities,[c] mean (SD)	4.93 (2.27) Range: 0-13	-
% who own radio	78.0%	61.6%
% who own television	27.4%	15.6%
% who own bicycle	40.7%	39.9%
% who own telephone (landline)	1.4%	1.1%
% who own mobile phone (including smartphone)	78.4%	63.9%
% who own motorcycle/motor vehicle	11.3%	7.6%

Note: Totals may not add up to 100% because of rounding.

[a] Final, complete estimates were used for the most recent year available. Data sources:[3,32-34]

[b] Estimates for the Tanzania population are for individuals aged 15 to 49 years.

[c] The mean number of assets and amenities owned could not be calculated from the Tanzania Census. Therefore, the percentage of the Census households and study sample (aged 18 to 49) that own select amenities/assets are also presented in order to compare the economic status of the study sample to the national population.

Abbreviation: SD, standard deviation.

When exploring reproductive health characteristics in the study sample, including the cognitive and behavioral outcomes of interest for the current study, several interesting patterns emerged (see **Table 5**). A total of 76.8% of the sample reported having biological children. Not surprisingly, higher percentages of women, rural respondents, and older respondents reported having children compared to men, urban respondents, and younger respondents, respectively. About half of the sample had high perceived norms and health beliefs in favor of using modern family planning methods, and high self-efficacy to use modern family planning methods. Women were more likely to have high perceived norms than men (55.2% versus 37.8%, respectively, $p<0.001$), but there was no gender difference for either health beliefs or self-efficacy. Urban respondents, compared to rural respondents, were more likely to have high pro-family planning health beliefs (57.5% versus 51.4%, respectively, $p<0.001$) and self-efficacy (55.4% versus 50.9%, respectively, p=0.005), but there was no difference in perceived norms.

Table 5. Respondent Reproductive Characteristics and Family Planning Attitudes and Behaviors, Overall and by Gender, Area of Residence, and Age, % or Mean (SD) (N=4,212)

	Gender		Area		Age (years)		Total
	Men	Women	Urban	Rural	≤24	>24	
Ever given birth (women) / Have biological children (men) (n=3,225)	60.9%	82.6%*	70.9%	81.2%*	46.7%	91.0%*	76.8%
Currently pregnant (women) / Main partner is currently pregnant (men) (n=4,121)	7.8%	10.6%*	8.5%	10.7%*	11.7%	9.1%*	9.9%
# of living children, mean (SD) (n=4,198)	1.9 (2.2)	2.4 (2.0)*	1.8 (1.8)	2.5 (2.2)*	0.7 (1.0)	3.0 (1.0)*	2.3 (2.1)
High perceived norms in favor of modern FP methods	37.8%	55.2%*	52.2%	49.7%	46.3%	52.5%*	50.6%
High level of health beliefs in favor of modern FP methods (n=4,198)	53.0%	53.8%	57.5%	51.4%*	57.9%	51.6%*	53.6%
High self-efficacy to use modern FP methods (n=4,201)	53.5%	52.2%	55.4%	50.9%*	48.8%	54.3%*	52.5%
FP communication with provider in last 3 months (n=4,211)	3.9%	3.6%	4.0%	3.5%	2.9%	4.0%	3.7%
FP communication with spouse/partner in last 3 months (n=4,211)	23.3%	7.2%*	13.5%	10.3%*	9.9%	12.2%*	11.5%
Ever use of modern FP methods (n=4,203)	70.3%	67.7%	70.9%	66.9%*	56.6%	73.9%*	68.4%
Current use of modern FP methods[a] (n=3,791)	56.1%	43.4%*	46.6%	47.1%	40.0%	50.0%*	46.7%

[a] Excluding those who are currently pregnant.
* $p<0.05$ for women vs men, rural vs. urban, and >24 years vs. ≤24 years
Abbreviations: FP, family planning; SD, standard deviation.

Slightly higher percentages of older respondents than younger respondents reported a high level of pro-family planning norms (57.9% versus 51.6%, respectively, $p<0.001$) and self-efficacy (54.3% vs. 48.8%, $p<0.001$). At the same time, younger respondents were more likely than those who were older to have high pro-family planning health beliefs (57.9% versus 51.6%, respectively, $p<0.001$).

In terms of behaviors, only a small percentage of the overall sample reported family planning communication with either a provider (3.7%) or their spouse (about 11.5%). There were no statistically significant differences in provider communication by background characteristics. In terms of spousal communication, however, a greater percentage of men, urban respondents, and older respondents reported the behavior compared to women, rural respondents, and younger respondents, respectively. The biggest disparity was by gender, whereby 23.3% of men reported having spoken with their spouse

about family planning compared to only 7.2% of women (p<0.001).

Although over two-thirds of the overall sample reported ever having used of a modern family planning method, fewer than half of those not currently pregnant reported current use of a modern method (46.7%). Men and women were equally likely to have ever used modern methods, but men were more likely to report current use than women (56.1% vs. 43.4%, respectively, p<0.001). Rural and urban respondents who were not currently pregnant were equally likely to currently use modern family planning methods, although ever use was higher among urban respondents (66.9% vs. 70.9%, respectively, p=0.008). Older respondents were more likely than younger respondents to report both ever (73.9% vs. 56.6%, respectively, p<0.001) and current use (50.0% vs. 40.0%, respectively, p<0.001) of modern family planning methods. (See **Appendix B** for more information on all background variables.)

Campaign/Source of Exposure Overall and by Background Characteristics

About 75% of respondents received a medium, high, or very high dose across all campaigns (see **Table 6**). Dose significantly differed by gender and location, but not age. In general, women and rural residents reported lower levels of exposure to family planning campaigns than men and urban residents. For example, only 18.8% of women and 16.8% of rural residents reported very high levels of exposure to the family planning campaigns, compared to 27.7% of men (p<0.001) and 28.7% of urban residents (p<0.001).

Looking at exposure by source, most respondents reported exposure to family planning campaigns via health facilities (78.9%), followed by radio (58.4%) and IPC with family/friends (47.6%). Only 23.0% of the sample reported exposure to campaigns via television. Source of exposure differed by gender, area of residence, and age. The most notable differences by gender were in exposure to family planning messages through health facilities and IPC with family/friends. Women were more likely than men to report medium/high level of exposure through health facilities (52.0 vs. 35.4%, p<0.001), whereas the reverse was true for IPC with friends/family (27.9% of men vs. 18.5% of women, p<0.001). The largest urban–rural gap was for television exposure: 16.7% of urban residents compared to 2.1% of rural residents reported medium/high exposure to the campaigns through television (p<0.001). Compared to gender and area, fewer differences by age existed for sources of family planning campaign exposure. The largest gap was for exposure via health facilities: 49.7% of older respondents vs. 43.3% of younger respondents reported medium/high level of exposure (p<0.001).

Respondents reported an average of 2.3 sources of exposure to family planning campaigns. Men and urban residents reported exposure to the campaigns through a greater number of sources, on average, than women (2.5 vs. 2.2, p<0.001) and rural residents (2.7 vs. 2.0, p<0.001). Interestingly, younger and older respondents reported exposure to family planning campaigns through the same number of sources, on average (2.3 vs. 2.2, p>0.05).

Table 6. Dose and Sources of Exposure to Family Planning Campaigns in the Last Six Months, Overall and by Gender, Area of Residence, and Age, % (N=4,212)

	Gender		Area		Age (years)		Total
	Men	Women	Urban	Rural	≤24	>24	
Dose of exposure							
None/Low (0-2)	20.2%	25.7%	16.7%	28.6%	22.4%	25.1%	24.3%
Medium (3-5)	26.9%	30.0%	26.3%	30.9%	31.5%	28.2%	29.2%
High (6-8)	25.1%	25.5%	28.2%	23.8%	25.3%	25.4%	25.5%
Very High (9+)	27.7%	18.8%*	28.7%	16.8%*	20.8%	21.3%	18.8%
Source of exposure:							
TV							
None (0)	71.2%	79.1%	56.1%	88.9%	74.2%	78.3%	77.0%
Low (1)	18.5%	14.6%	21.2%	9.0%	18.4%	14.4%	15.6%
Medium/High (2+)	10.3%	6.4%*	16.7%	2.1%*	7.5%	7.4%*	7.4%
Radio							
None (0)	28.7%	46.3%	34.4%	45.8%	40.2%	42.3%	41.6%
Low (1)	41.5%	33.9%	38.3%	34.5%	36.9%	35.5%	35.9%
Medium/High (2+)	29.8%	19.8%*	27.3%	19.7%*	22.9%	22.2%	22.5%
Health facility							
None (0)	26.6%	19.1%	17.4%	23.1%	23.2%	20.0%	21.1%
Low (1)	38.0%	28.9%	31.9%	31.0%	33.5%	30.3%	31.3%
Medium/High (2+)	35.4%	52.0%*	50.7%	45.9%*	43.3%	49.7%*	47.6%
Community health worker							
None (0)	97.1%	93.7%	94.3%	94.7%	96.3%	93.8%	94.6%
Any (1+)	2.9%	6.3%*	5.7%	5.3%	3.7%	6.2%*	5.4%
Community event							
None (0)	85.0%	87.5%	83.9%	88.5%	87.0%	86.8%	86.9%
Any (1+)	15.0%	12.5%*	16.1%	11.5%*	13.0%	13.2%	13.1%
Family/friends							
None (0)	43.7%	55.6%	46.2%	56.0%	49.1%	54.1%	52.4%
Low (1)	28.4%	25.9%	26.7%	26.5%	28.3%	25.7%	26.6%
Medium/High (2+)	27.9%	18.5%*	27.1%	17.5%*	22.6%	20.2%*	21.0%
Total number of sources of exposure, mean (SD) Range: 0-6	2.5 (1.3)	2.2 (1.3)*	2.7 (1.3)	2.0 (1.2)*	2.3 (1.3)	2.2 (1.3)	2.3 (1.3)
0 source	8.2%	9.1%	5.7%	10.7%	8.4%	9.1%	8.9%
1 source	15.3%	23.1%	14.7%	24.7%	19.4%	21.8%	21.0%
2 sources	24.5%	28.2%	22.7%	29.8%	28.3%	26.7%	27.2%
3 sources	28.9%	24.1%	27.7%	24.0%	26.7%	24.7%	25.4%
4 sources	18.6%	11.2%	22.3%	7.9%	12.6%	13.4%	13.1%
5 sources	4.4%	3.9%	6.3%	2.7%	4.2%	4.0%	4.0%
6 sources	0.1%	0.4%	0.6%	0.2%	0.4%	0.3%	0.4%

* $p<0.05$ for women vs. men, rural vs. urban, >24 years vs. ≤24 years

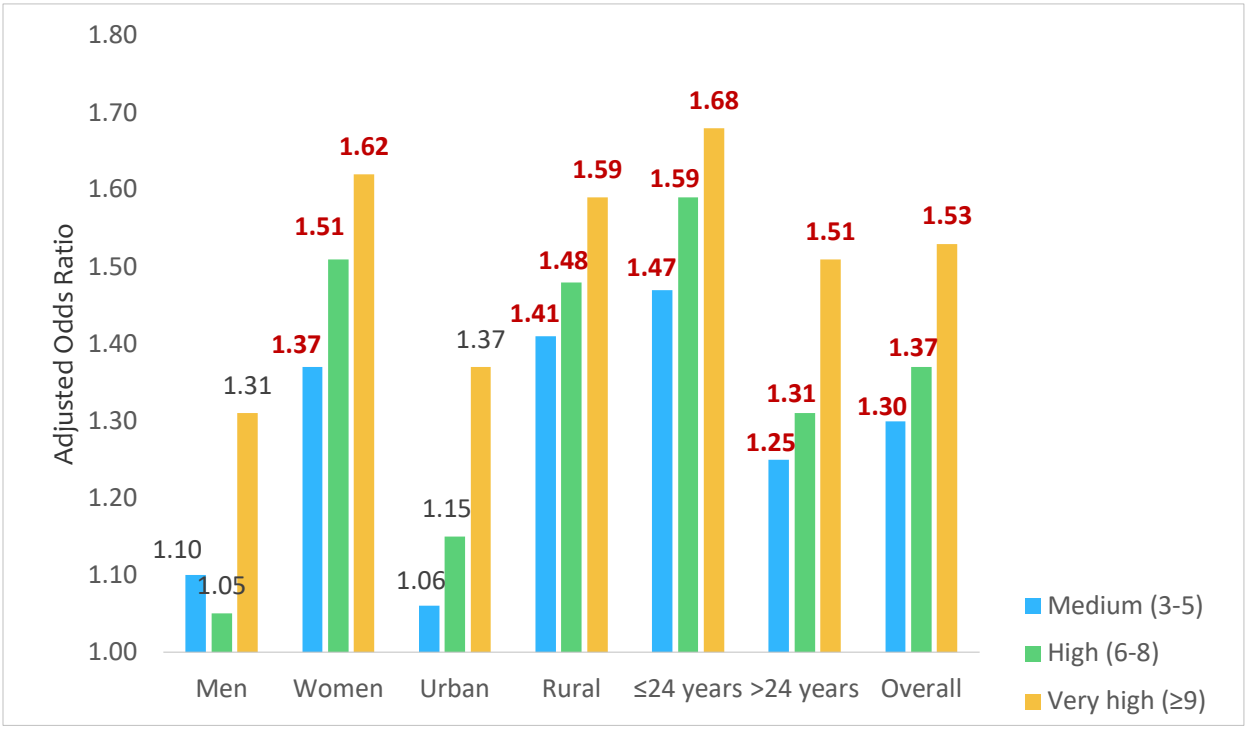
Abbreviation: SD, standard deviation.

Campaign/Source of Exposure and Family Planning Cognitions

Health Beliefs in Favor of Using Modern Family Planning Methods

Overall, dose of family planning campaign exposure had a dose–response effect on positive health beliefs about family planning, such that respondents with higher levels of exposure had greater odds of holding positive health beliefs (see **Figure 1**). Respondents with very high levels of exposure had 1.53 greater odds of having positive health beliefs than those with no or low exposure (p<0.001). This effect existed for women and rural residents, but not for men or urban residents. (See **Table 7**. For additional details, see **Appendix C: Supplemental Tables 1-3**.) For both younger and older respondents, a statistically significant association existed between dose of exposure and health beliefs, but the effect was greater among younger respondents.

Figure 1. Association Between Odds of Positive Family Planning Health Beliefs and Dose of Exposure to Family Planning Campaigns, Tanzania (N=4,180)



Notes:

- Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.
- Reference group: no/low exposure
- Dose of campaign exposure represents the sum of general frequency across campaigns (levels determined by quartile).
- Each set of three bars represents a separate multiple logistic regression, adjusting for background factors including age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at p<0.05.

Table 7. Summary of Statistically Significant Associations Between Relative Dose of Exposure to Family Planning Campaigns and Specific Outcomes, by Gender, Location, and Age

	Men			Women			Urban			Rural			≤24 years			>24 years		
	Med	High	Very High	Med	High	Very High	Med	High	Very High	Med	High	Very High	Med	High	Very High	Med	High	Very High
Positive family planning beliefs				+	+	+				+	+	+	+	+	+	+	+	+
Self-efficacy			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Perceived norms		+	+		+	+		+	+		+	+		+	+		+	+
Use of modern contraceptive	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Communication with provider about family planning			+	+	+	+			+	+	+	+			+	+	+	+
Communication with spouse about family planning	+	+	+	+	+	+		+	+	+	+	+		+	+	+	+	+

Notes:

- Each cell represents a separate logistic regression controlling for various relevant demographic characteristics.
- Size of "+" represents relative size of statistically significant effect.

+= 1.0 > OR ≤2.0; + = 2.0> OR ≤ 6.0; + = 6.0 > OR ≤10.0; + = OR >10.0

Looking across sources of family planning campaign exposure, an association with positive family planning health beliefs existed only for health facilities. Overall, respondents exposed to campaigns via health facilities at either low or medium/high levels both had 1.36 greater odds of holding positive health beliefs than those with no exposure (p=0.001 and p<0.001, respectively). (See **Table 8** and see **Appendix C: Supplemental Tables 4-6**.) Statistically significant effects between exposure and beliefs existed only for women, respondents living in rural areas, and older respondents (>24 years). The strongest association existed for rural respondents with medium/high exposure (OR=1.68, *p*<0.001) followed by women at medium/high exposure (OR=1.61, *p*<0.001).

Table 8. Summary of Statistically Significant Associations Between Source of Exposure to Family Planning Campaigns and Specific Outcomes, by Various Demographic Characteristics

Outcome	Source of exposure	Men		Women		Urban		Rural		≤24 years		>24 years	
		Low	Med/ High	Low	Med/ High	Low	Med/ High	Low	Med/ High	Low	Med/ High	Low	Med/ High
Positive family planning beliefs	**Health facility**			+	+			+	+			+	+
Self-efficacy	**Health facility**			+	+		+		+		+		+
	Family/ friends	+	+						+				+
Perceived norms	**Health facility**			+	+	+	+	+	+		+	+	+
	Family/ friends		+		+		+			+	+		+
	Community health worker*							+			+		
Use of modern contraceptive	**Health facility**			+	+	+	+	+	+	+	+	+	+
	Family/ friends		+		+	+	+	+	+		+	+	+
Communication with provider about family planning	**Health facility**			+	+				+		+		+
	Family/ friends		+		+		+		+		+	+	+
	Health worker*				+				+				+
Communication with spouse about family planning	**Health facility**		+										
	Family/ friends	+	+	+	+	+	+	+	+	+	+	+	+
	Television				+	+	+					+	+
	Radio		+		+		+		+		+		+

Notes:

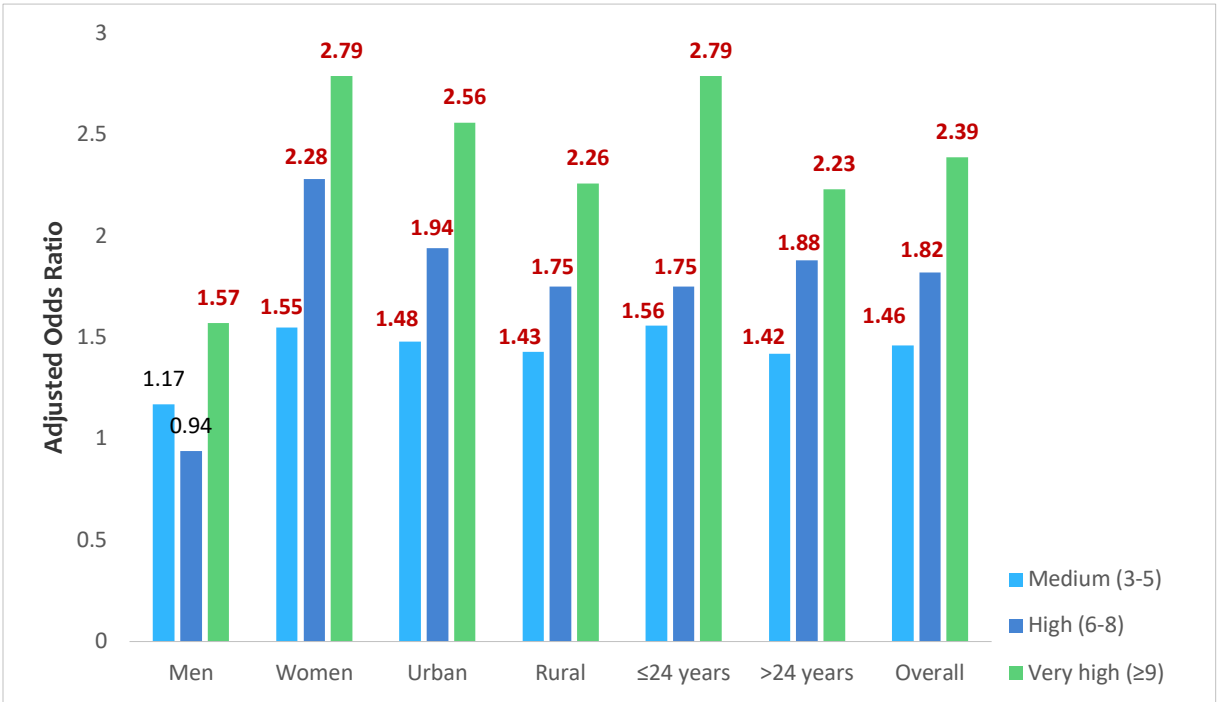
- Each set of bolded cells represents one logistic regression model for each outcome (e.g., self-efficacy) and for each group (e.g., men). The logistic regression models tested the associations between source of family planning campaign exposure and outcome, controlling for various relevant demographic characteristics. Sources of exposure that were statistically significant for the total study sample were included in the final model for each outcome.
- * Due to small numbers, exposure to family planning campaigns via a community health worker was any versus none.

Self-Efficacy to Use Modern Family Planning Methods

Similar to health beliefs, respondents with higher levels of dose of exposure to the family planning campaigns had greater odds of feeling confident in their ability to use modern methods (that is, a dose–response effect). (See **Figure 2** and **Appendix C: Supplemental Tables 7-9**.) Respondents with a very high

dose of exposure had 2.39 greater odds of self-efficacy than those with no/low exposure (p<0.001). This dose–response effect existed in all of the groups, except men. Only men with very high exposure to the family planning campaigns had greater odds of having self-efficacy than men with no/low exposure (OR=1.57, p=0.022). Notably, the effect was biggest for women and younger respondents; for both groups, those with very high exposure to the campaigns experienced 2.79 greater odds of self-efficacy than similar individuals with no/low exposure (p<0.001 for both).

Figure 2. Association Between Odds of Pro-Family Planning Self-Efficacy Beliefs and Dose of Exposure to Family Planning Campaigns, Tanzania (N=4,183)



Notes:

- Pro-family planning self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully. Higher values = Positive beliefs. Dichotomized at the median split**.**
- Reference group: no/low exposure (0-2)
- Dose of campaign exposure represents the sum of frequency of exposure across campaigns (levels determined by quartile).
- Each set of three bars represents a separate multiple logistic regression, adjusting for background factors including age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at p<0.05.

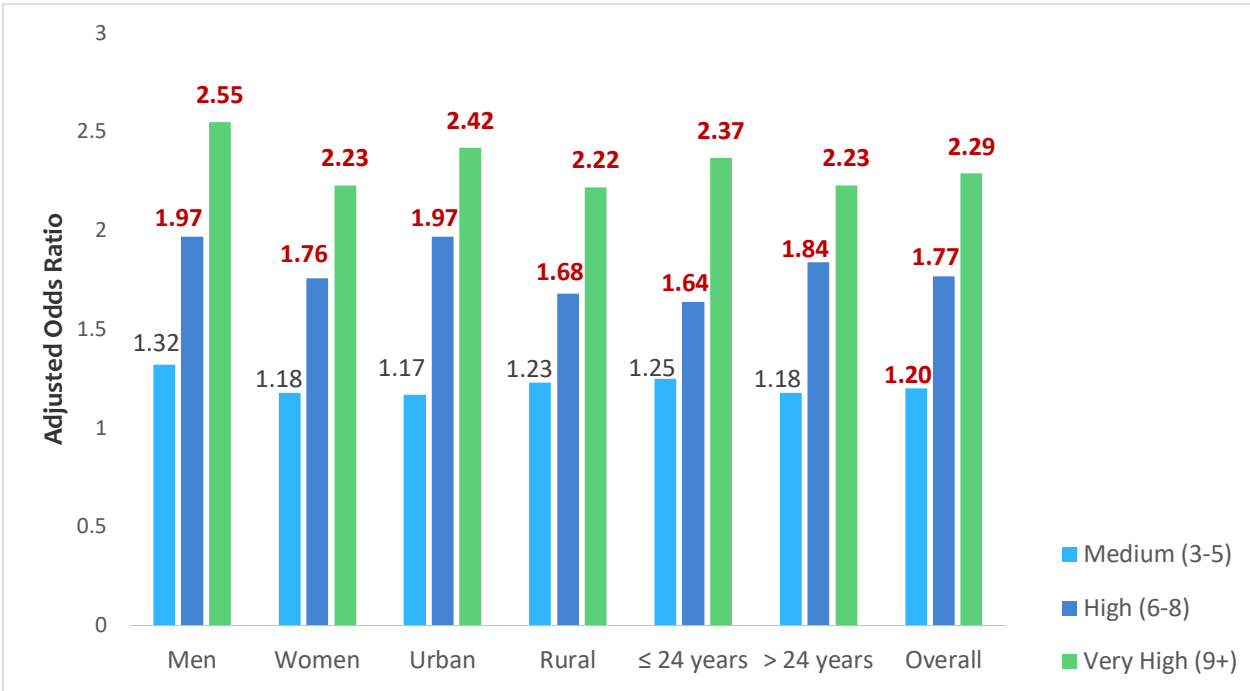
Looking across sources of family planning campaign exposure, an association with positive self-efficacy existed only for exposure through health facilities and IPC with friends and family (See **Table 8**, as well as **Appendix C: Supplemental Tables 10-12**). The final model adjusted for both sources of exposure. A statistically significant association between medium/high exposure through health facilities and self-efficacy existed for all groups except for men. The effect of health facilities was biggest for women (OR=2.32, p<0.001) and younger respondents (≤24 years; OR=2.01, p<0.001). For men, medium/high exposure to family/friends had the strongest association with self-efficacy (OR=2.03, p<0.001).

Regardless of level of exposure, there was no association between exposure via family/friends and self-efficacy for women, urban respondents, and younger respondents.

Perceptions of Modern Family Planning Methods as Highly Normative

Similar to health beliefs and self-efficacy, there was a dose–response effect between dose of exposure to family planning campaigns and perceived norms (see **Figure 3, Table 7**, and **Appendix C: Supplemental Tables 13-15**). Respondents with a very high dose of exposure had 2.29 greater odds of perceiving modern family planning methods as normative than those with low/no exposure (p<0.001). For each subgroup, only respondents with high or very high levels of exposure had greater odds of perceived norms. Very high exposure more than doubled the odds of pro-family planning perceived norms for each group, but the effect was largest in men. Men had a 2.55 greater odds of pro-family planning perceived norms than those with low/no exposure (p<0.001).

Figure 3. Association Between Odds of Pro-Family Planning Perceived Norms and Dose of Exposure to Family Planning Campaigns, Tanzania (N=4,194)



Notes:

- Pro-family planning normative beliefs = Composite of five survey questions about respondents' perceptions of partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods. Higher values = Positive beliefs. Dichotomized at the median split.
- Reference group: no/low exposure (0-2)
- Each set of three bars represents a separate multiple logistic regression, adjusting for background factors including age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at p<0.05.

Looking across sources of family planning campaign exposure, an association with pro-family planning perceived norms existed for health facilities, health workers, and IPC with family/friends (see **Table 8**

and **Appendix C: Supplemental Tables 16-18**). Overall, exposure to family planning campaigns via health facilities had the strongest association with perceived norms (OR=1.77, p<0.001), and the effects were evident at both low and medium/high exposure levels for female, urban, rural, and older respondents. No association existed for men between health facilities and perceived norms. Among younger respondents, an association existed for perceived norms only with exposure at the medium/high level. Medium/high exposure to family planning campaigns via health facilities had the strongest effect on women (OR=1.89, p<0.001) followed by urban respondents (OR=1.82, p<0.001). Overall, individuals exposed to campaigns via health worker had 1.35 greater odds of reporting positive family planning normative beliefs (p=0.039). Statistically significant effects between health worker exposure and normative beliefs only existed for rural respondents (OR=1.81, p=0.002) and younger respondents (OR=2.05, p=0.030). Overall, medium/high exposure to campaigns via IPC with family/friends was statistically significant in the total study sample as well as for men, women, urban respondents, and both age groups. The strongest association existed for urban residents (OR=1.95, p<0.001) followed by men (OR=1.86, p<0.001) at medium/high exposure.

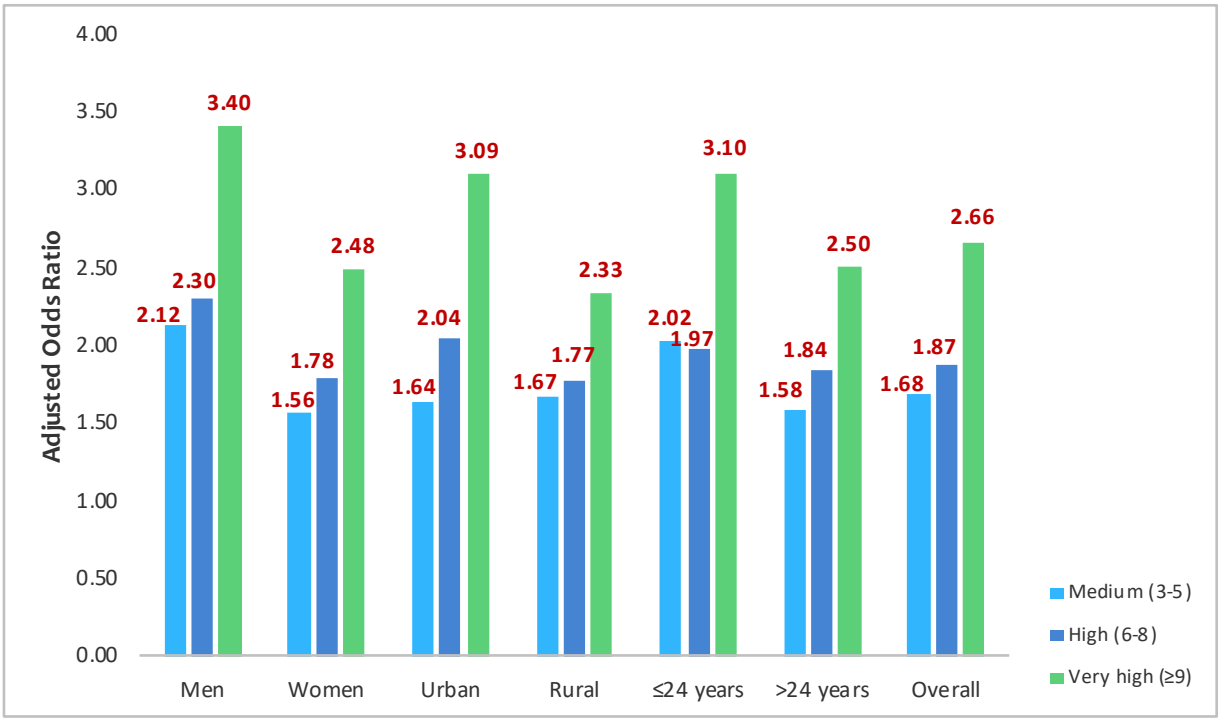
Campaign/Source of Exposure and Family Planning Behaviors

Current Use of Modern Contraceptives

Similar to the cognitive outcomes, dose of exposure to family planning campaigns had a dose–response effect on current use of modern contraceptives (see **Figure 4** and **Appendix C: Supplemental Tables 19-21**). Overall, respondents with very high exposure to the family planning campaigns had 2.66 greater odds of currently using a modern contraceptive than those with no/low exposure (p<0.001). The effect existed for all groups, the biggest effect for men (OR=3.40, p<0.001), followed by younger (OR=3.10, p<0.001) and urban (OR=3.09, p<0.001) respondents with very high exposure (see **Table 7**).

Looking across sources of family planning campaign exposure, an association with current contraceptive use existed for exposure via health facilities and IPC with family/friends. Overall, medium/high exposure to family planning campaigns through health facilities more than doubled respondents' odds of using contraceptives (OR=2.06, p<0.001). (See **Figure 5, Table 8,** and **Appendix C: Supplemental Tables 22-24**.) Effects appeared at the low and medium/high levels for all groups. The largest effect occurred among women (OR=2.38, p<0.001) and younger respondents (OR=2.24, p<0.001) at the medium/high level.

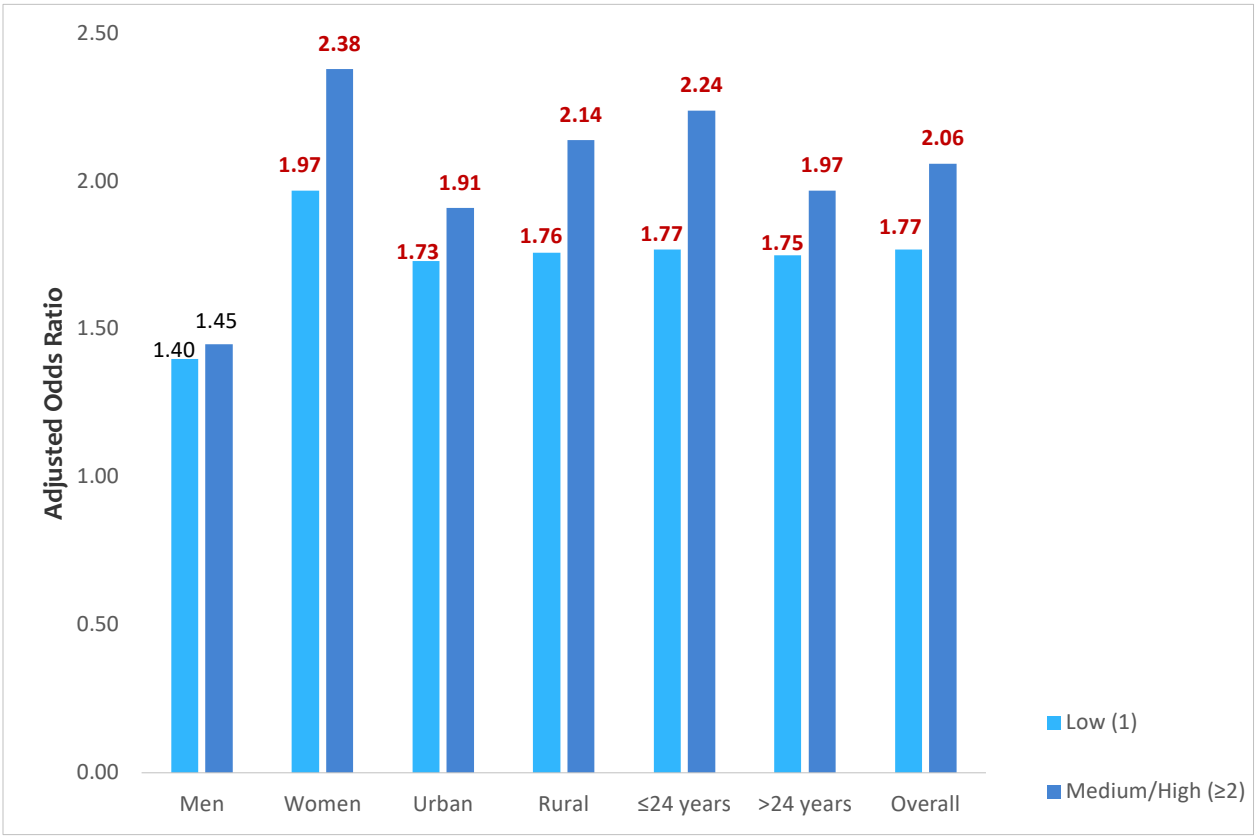
Figure 4. Association Between Odds of Current Modern Contraceptive Use and Dose of Exposure to Family Planning Campaigns, Tanzania (N=3,773)



Notes:

- Excluding pregnant women.
- Reference group: no/low exposure (0-2)
- Dose of campaign exposure represents the sum of general frequency across campaigns (levels determined by quartile).
- Each set of three bars represents a separate multiple logistic regression, adjusting for background factors including age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at $p<0.05$.

Figure 5. Association Between Odds of Current Modern Contraceptive Use and Health-Facility Exposure to Family Planning Campaigns, Tanzania (N=3,773)

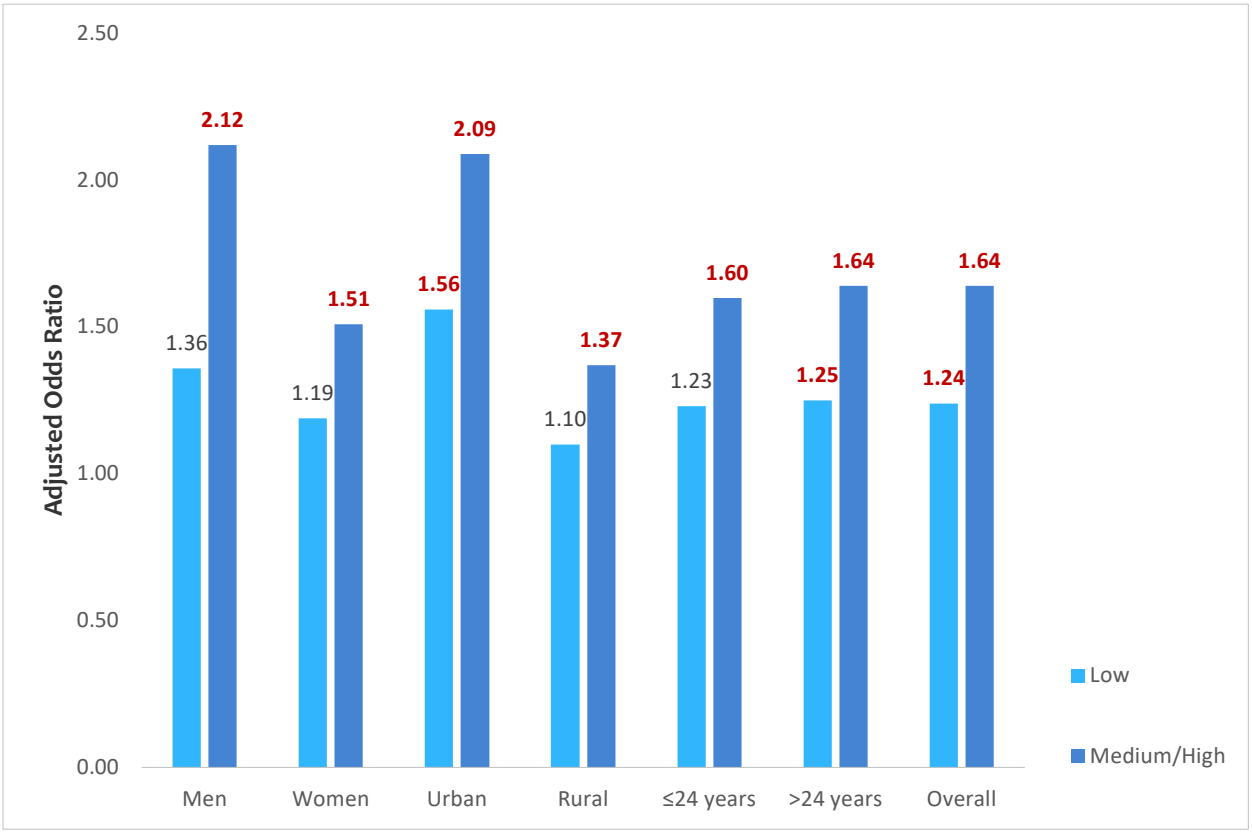


Notes:

- Reference group: no exposure
- Health facilities include health facilities, clinics, pharmacies, dispensaries, mobile clinics, hospitals, and health centers.
- Each set of three bars represents a separate multiple logistic regression, adjusting for family/friend exposure as well as background factors including age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at $p<0.05$.

Overall, respondents with medium/high exposure to family planning campaigns through IPC with family/friends had 1.64 greater odds of contraceptive use than those with no exposure ($p<0.001$). (See **Figure 6, Table 8,** and **Appendix C: Supplemental Tables 22-24**.) Effects emerged at the medium/high levels for all groups, and the largest effect was in men (OR=2.12, $p<0.001$) followed by urban residents (OR=2.09, $p<0.001$).

Figure 6. Association Between Odds of Current Modern Contraceptive Use and Exposure to Interpersonal Communication with Friends/Family about Family Planning Campaigns, Tanzania (N=3,773)



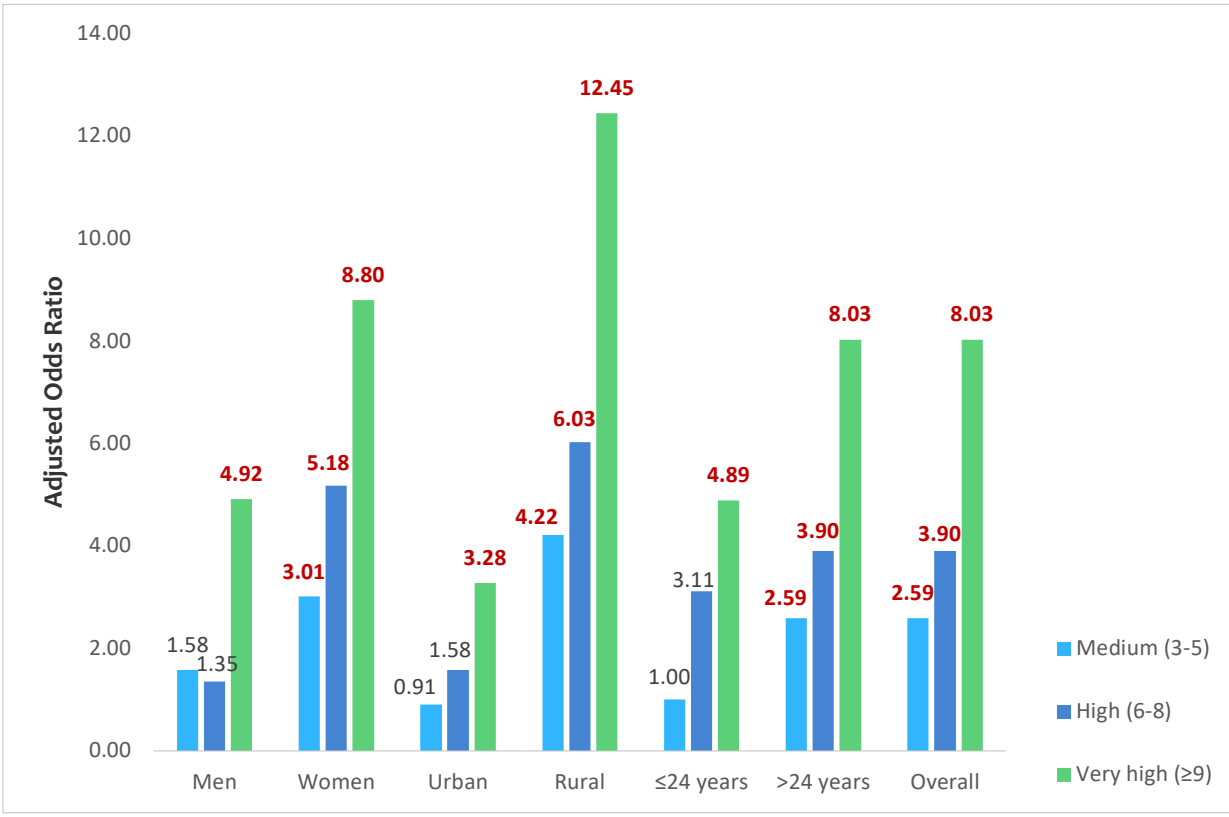
Notes:

- Reference group: no exposure
- Each set of three bars represents a separate multiple logistic regression, adjusting for health-facility exposure as well as background factors including age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at $p<0.05$.

Communication about Family Planning with Health-Care Providers

Overall, dose of exposure had a dose–response effect on communication with health-care providers about family planning (see **Figure 7**, **Table 7**, and **Appendix C: Supplemental Tables 25-27**). Respondents with very high exposure to family planning campaigns had more than eight times greater odds of communicating with a provider about family planning than those with no/low exposure (OR=8.03, $p<0.001$). Effects emerged at every level of exposure for every group. The largest effect was in rural residents (OR=12.45, $p<0.001$), followed by women (OR=8.80, $p<0.001$).

Figure 7. Association Between Odds of Communicating with Provider about Family Planning and Dose of Exposure to Family Planning Campaigns, Tanzania (N=4,193)



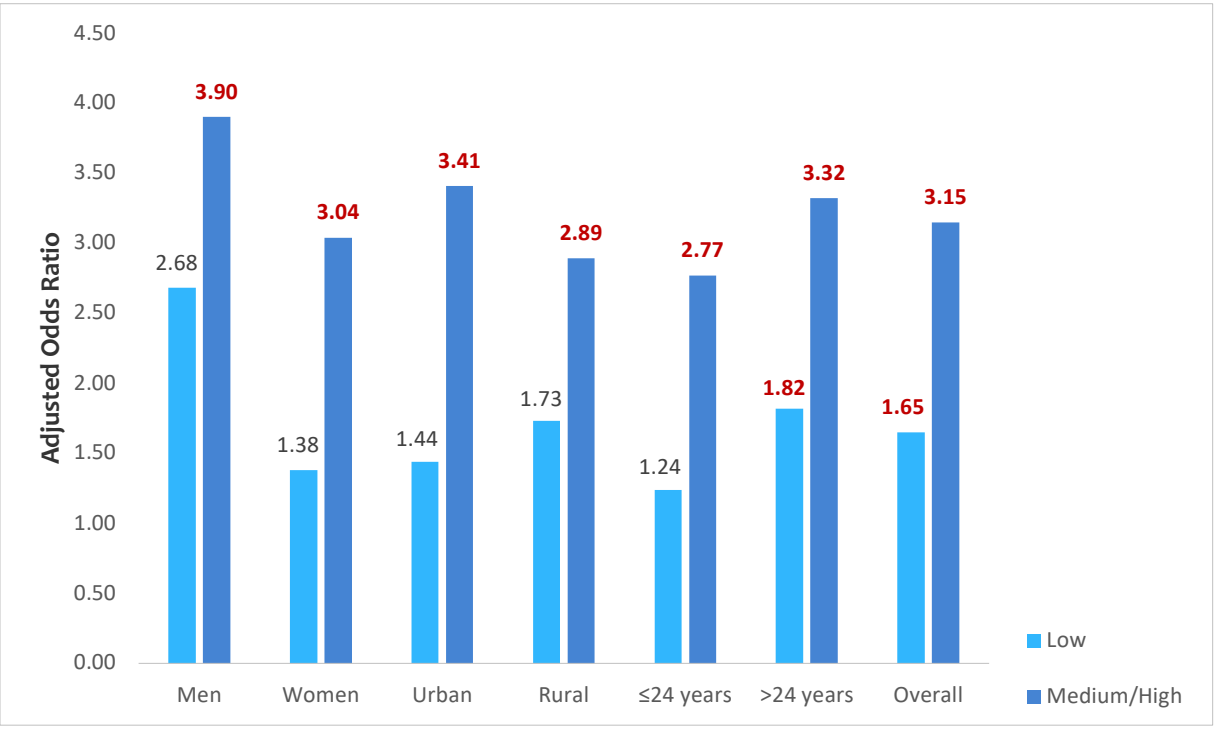
Notes:

- Reference group: no/low exposure (0-2)
- Each set of three bars represents a separate multiple logistic regression, adjusting for various factors such as age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at $p<0.05$.

Across all the sources of family planning campaign exposure, health facilities, IPC with family/friends, and health workers all had statistically significant associations with communication with providers about family planning (see **Table 8** and **Appendix C: Supplemental Tables 28-30**). Medium/high exposure to campaigns through health facilities nearly quadrupled the odds of communicating with providers in the total sample (OR=3.86, $p<0.001$). The effects were greatest for women (OR=6.05, $p<0.001$), rural respondents (OR=6.22, $p<0.001$), and younger respondents (OR=9.71, $p=0.03$) at medium/high levels, but there was no effect in men or urban respondents. Moreover, only women had a statistically significant effect at low exposure via health facilities (OR=3.72, $p=0.04$). Exposure via health workers nearly doubled the odds of communication with providers (OR=1.96, $p=0.01$). The effects of exposure via health workers was greatest for rural respondents (OR=2.32, $p=0.01$), followed by older respondents (OR=2.18, $p=0.01$) and women (OR=2.01, $p=0.01$). There was no effect for men, urban respondents, or younger respondents.

Medium/high exposure to campaigns via IPC with family/friends more than tripled the odds of communicating with providers (OR=3.15, p<0.001), and the effects were greatest for men (OR=3.90, p=0.01) followed by urban (OR=3.41, p<0.01) and older respondents (OR=3.32, p<0.001). (See **Figure 8**.) Notably, the only statistically significant effect of low exposure via IPC with family/friends was in older respondents.

Figure 8. Association Between Odds of Communicating with Provider about Family Planning and Exposure to Interpersonal Communication with Friends/Family about Family Planning Campaigns, Tanzania (N=4,193)



Notes:

- Reference group: no exposure
- Each set of three bars represents a separate multiple logistic regression, adjusting for various factors such as age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at p<0.05.

Communication about Family Planning with Spouse/Partner

Exposure to family planning campaigns had a large effect on communication with a spouse or partner about family planning, also in a dose–response relationship (see **Table 7** and **Figure 9**). Respondents with very high exposure to family planning campaigns had 14.14 greater odds of spousal communication than those with no/low exposure (p<0.001). The effect was greatest for women (OR=17.63, p<0.001), followed by older respondents (OR=15.80, p<0.001). (See **Appendix C: Supplemental Tables 31-33**.)

Looking across sources, exposure to family planning campaigns through television, radio, health facilities, and IPC with family/friends had statistically significant associations with spousal communication (see **Table 8**, and **Appendix C: Supplemental Tables 34-36**). IPC with family/friends at

the medium/high level had the largest effect on spousal communication (OR=5.60, p<0.001). This effect was greatest in rural (OR=6.12, p<0.001) and female respondents (OR=6.09, p<0.001). (See **Figure 10**.) Notably, exposure via health facilities only had an effect in men, and only at the medium/high level (OR=1.61, p=0.03).

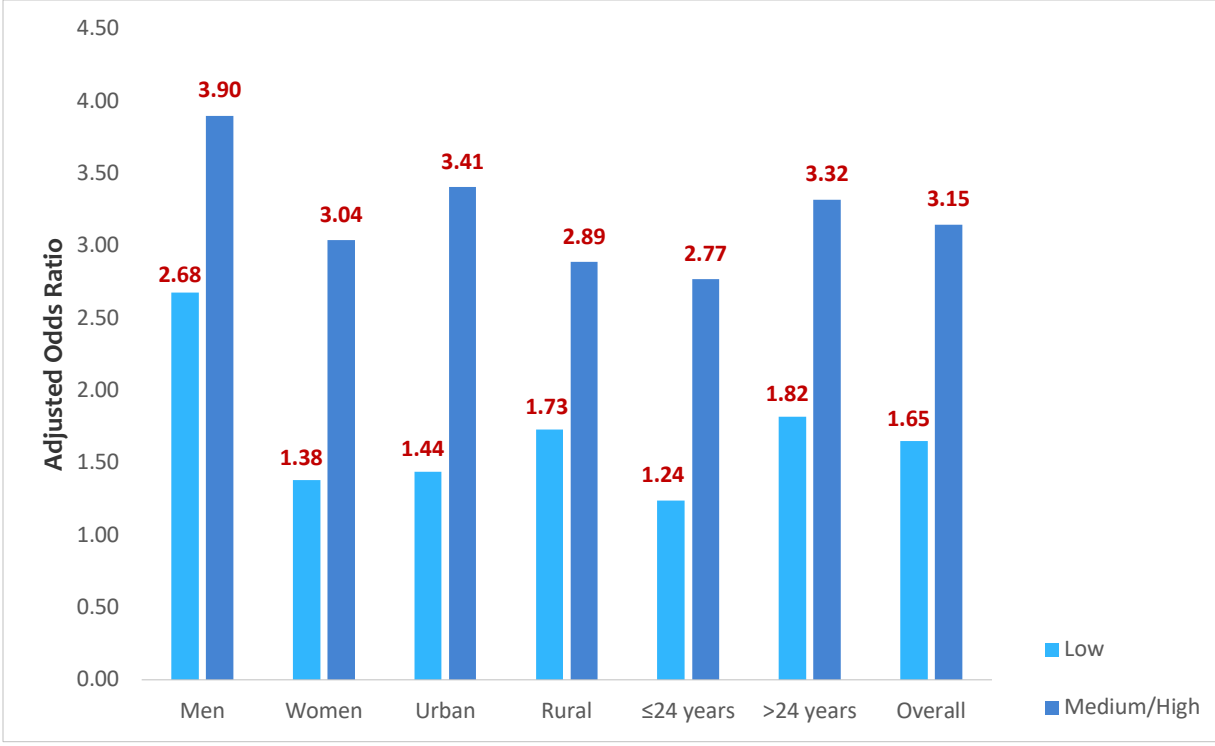
Figure 9. Association Between Odds of Communicating with Spouse about Family Planning and Dose of Exposure to Family Planning Campaigns, Tanzania (N=4,193)

Notes:

- Reference group: no/low exposure (0-2)
- Dose of campaign exposure represents the sum of general frequency across campaigns (levels determined by quartile).
- Each set of three bars represents a separate multiple logistic regression, adjusting for various factors such as age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at p<0.05.

Exposure to family planning campaigns via television had the strongest effect in older respondents, and the effect was slightly stronger at low (OR=1.85, p=0.001) than medium/high (OR=1.70, p=0.025) level of exposure (see Appendix C: Supplemental Tables 34-36). Television exposure also affected spousal communication for urban respondents at both the medium/high (OR=2.22, p=0.001) and low (OR=1.63, p=-0.026) level of exposure, and for women only with the medium/high exposure (OR=1.73, p=0.03). Television exposure did not affect spousal communication for men, rural respondents, or younger respondents. Only medium/high exposure via radio affected spousal communication (OR=2.03, p<0.001), and the odds ranged from 1.88 for men (p<0.01) to 2.38 for younger respondents (p<0.01).

Figure 10. Association Between Odds of Communicating with Spouse about Family Planning and Exposure to Interpersonal Communication with Friends/Family about Family Planning Campaigns, Tanzania (N=4,193)



Notes:

- Reference group: no exposure
- Each set of three bars represents a separate multiple logistic regression, adjusting for health facility, TV, and radio exposure as well as background factors including age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at $p<0.05$.

Multiple Sources of Exposure and Family Planning Cognitions and Behaviors

On average, respondents reported exposure to family planning campaigns through 2.3 sources (see **Table 6**). Men and urban respondents reported exposure to more sources, on average, than women (2.5 vs. 2.2, $p<0.001$) and rural respondents (2.7 vs. 2.0, $p<0.001$). No statistically significant difference in number of sources of exposure existed between younger and older respondents (2.3 vs. 2.2, $p=0.23$).

In the total sample, only exposure to family planning campaigns through two or four sources had an effect on health beliefs (OR=1.29, $p=0.039$, and OR=1.34, $p=0.045$, respectively). (See **Figure 11** and **Appendix C: Supplemental Tables 37-39**.) Notably, number of sources of exposure did not have an effect on health beliefs in men, urban respondents, and younger respondents, only in women, rural respondents, and older respondents. There was a dose–response relationship between number of sources and self-efficacy beliefs. In other words, the greater the number of sources of exposure to

family planning campaigns, the greater the odds of expressing confidence in their ability to use modern contraceptives (see **Figure 11** and **Appendix C: Supplemental Tables 40-42**). Respondents exposed to family planning campaigns through all six sources had nearly 6.5 times greater odds of holding self-efficacious beliefs (p=0.005). For women, the effect was even greater. Women exposed to family planning campaigns through six sources experienced 6.8 times greater odds of holding self-efficacious beliefs (p=0.005). For men, only exposure to family planning campaigns via four or five sources had an effect on self-efficacy (OR=2.27, p=0.004, and OR=2.99, p=0.007, respectively).

Exposure to family planning campaigns through multiple sources also had an effect on perceived norms about family planning use (see **Figure 11** and **Appendix C: Supplemental Tables 43-45**). For the overall sample, exposure to four sources had the largest effect (OR=3.13, p<0.001). Looking at it by subgroup, exposure to family planning campaigns via five sources in younger respondents had the largest effect on perceived norms (OR=4.39, p<0.001), followed by exposure via four sources in men (OR=3.66, p<0.001).

Exposure to family planning campaigns through six sources in the total sample had the largest effect on all three behavioral outcomes. For example, among the total sample, this number of sources increased the odds of current use of modern contraceptives by more than 35 times (p=0.001). (See **Figure 11** and **Appendix C: Supplemental Tables 46-48**.) The effect was largest in urban respondents exposed via six sources (OR=20.48, p=0.007), followed by older respondents exposed via six sources (OR=16.64, p=0.010). Similarly, among the total sample, exposure to family planning campaigns through six sources had the largest effect on communication with a provider about family planning (OR=23.85, p=0.003). (See **Figure 11** and **Appendix C: Supplemental Tables 49-51**.) The largest effect emerged in rural respondents exposed via six (OR=56.43, p=0.009) and five (OR=34.21, p=0.001) sources, followed by older respondents exposed via six sources (OR=28.16, p=0.003). For the total sample, exposure to family planning campaigns through six sources also had the largest effect on communication with a spouse/partner about family planning (OR=22.86, p<0.001). (See **Figure 11** and **Appendix C: Supplemental Tables 52-54**.) The effect was largest in younger respondents exposed via six sources (OR=56.72, p<0.01), followed by urban respondents (OR=31.95, p<0.01) and women (OR=29.27, p<0.001) exposed via six sources.

Figure 11. Association Between Odds of Pro-Family Planning Outcomes and Exposure to Family Planning Campaigns Through Multiple Communication Sources, Tanzania

Notes:

- Reference group: 0 sources
- Each set of six bars represents a separate multiple logistic regression, adjusting for background factors including age, gender, residential location, religion, marital status, ownership of goods, media use, and education.
- **Bolded red** ORs are statistically significant at $p<0.05$.

DISCUSSION

The current study of 4,212 men and women in mainland Tanzania explored the association between several measurements of exposure to family planning campaigns and various family planning-related cognitive and behavioral outcomes. Measurements of exposure captured not only cumulative frequency of exposure to the family planning campaigns in general, but also to cumulative exposure to the campaigns via individual sources of communication. Results are discussed below in order of the research questions presented at the beginning of the report.

Relative Dose of Exposure to Family Planning Campaigns and Specific Sources of Exposure

Most of the sample received a medium, high, or very high dose of exposure to family planning campaigns, but women and individuals living in rural areas generally reported a lower dose of exposure than men and individuals living in urban areas. For example, about 28% of men and 29% of urban residents received a very high dose of exposure to the family planning campaigns compared to only 19% of women and 17% of rural residents. These findings are somewhat similar to the 2010 TDHS.[3] The TDHS found that men were slightly more likely than women to have been exposed to family planning messages in the past six months (77.7% vs. 75.8%, respectively), and urban residents were more likely to have been exposed (88.9% of urban men, 86.9% of urban women) than rural residents (73.5% of rural men, 71.3% of rural women).

The most frequently cited source for exposure to family planning campaigns was health facilities (nearly 80% of the total sample), followed by radio and IPC with family/friends. Health workers, community events, and television were the three least frequently cited sources of exposure to family planning campaigns. Urban residents were more likely than rural residents to report exposure to family planning campaigns through all sources except health workers (for which there was no statistically significant difference). The 2010 TDHS also found significant urban–rural gaps across all sources of exposure to family planning messages.[3] These findings might explain the urban–rural gap in the relative dose of exposure to family planning campaigns found in this study (as described above). Individuals living in rural areas often do not have the same level of access as urban residents to health facilities that provide family planning counseling and services. A literature review concluded that community-based outreach, such as through health workers and community events, can effectively reach isolated populations to promote and provide modern contraception.[35] Several studies in sub-Saharan African countries verify the utility of community outreach for increasing family planning behaviors, including contraception, in rural areas.[36-38] In this study, few respondents reported exposure to family planning campaigns through health workers and community events; greater emphasis to promote these sources of exposure by family planning interventions may be especially valuable for more rural regions where access to health facilities and mass media may be more difficult.

Notably, women were much more likely to report exposure through health facilities, whereas men were more likely to report exposure through IPC with family/friends. Likewise, in the 2010 TDHS communication with a doctor or nurse was the largest source of exposure to family planning messages for women (50.1%), but not for men (31.1%).[3] The TDHS did not measure family and friends as a source of information for family planning messages. However, studies conducted in other settings have shown IPC with family and friends to be an important source of information about family planning for women.[39,40] One explanation for the more limited effect of IPC with family/friends in women in this study might be a taboo against speaking with others about family planning. A qualitative study conducted in Tanzania found that women feared being labeled as unfaithful or promiscuous if they used contraception.[7] This social risk might have prevented them from discussing family planning campaign messages with others. Alternatively, the family planning campaigns might have been designed to target women through health facilities and did not specifically promote IPC with family and friends.

Effects of Relative Dose of Family Planning Campaign Exposure on Outcomes

In the total sample, the dose of exposure to family planning campaigns, at every level of exposure, increased the odds of positive family planning health beliefs and self-efficacy to engage in family planning behaviors. A clear dose–response effect existed, such that higher levels of exposure resulted in an even greater effect. These patterns in the total sample also existed for women, individuals living in rural areas, individuals of both age groups, and, for self-efficacy only, individuals living in urban areas. For men and urban residents, however, exposure to the campaigns did not affect health beliefs. Also for men, only exposure at the highest level increased self-efficacy to use modern contraceptives. Only a little more than half of men in the study reported a high level of self-efficacy, suggesting that further work is needed to adapt messages to better target men's confidence in their ability to use/support their partner's use of family planning. For normative beliefs favorable to family planning, only exposure at high and very high levels, but not medium level, had an effect in the total sample as well as for each gender, residential, and age group. Notably, about a third of men in the sample held normative beliefs favorable to family planning, suggesting that family planning campaigns need messages designed to target men to increase their perceptions that modern contraceptive use is a highly prevalent and normative behavior that others engage in.

Use of modern contraception is a key behavior for family planning. Exposure to the campaigns at the highest level nearly tripled the odds that individuals would be a current user of modern contraception, and statistically significant effects also appeared at the medium and high levels of exposure. However, the association was stronger for men than women, for urban residents than rural residents, and for younger respondents than older respondents.

In the current study, women were much less likely than men to communicate in the last three months with their spouse/partner about family planning (7.2% versus 23.3%, respectively). This finding is not surprising, given that in this geographic region men are often perceived to be the primary decision makers on family size and use of family planning methods.[7,42] Therefore, women might hesitate

discussing family planning with their partner because of these norms around decision making. Interestingly, for both men and women, statistically significant associations existed across all levels of exposure for communication with spouse/partner about family planning. Moreover, exposure to family planning campaigns had the strongest relationship with spousal communication about family planning compared to the other outcomes of interest. Individuals across all groups with very high exposure to family planning campaigns had more than 10 times greater communication with a spouse about family planning compared to similar individuals with low/no exposure. The strongest association across all groups existed for women with very high exposure (OR= 17.63), followed by older respondents with very high exposure (OR=15.80). Spousal communication can facilitate engagement in family planning by correcting misperceptions about spouses' attitudes towards family planning, creating a perception of spousal support for and acceptability of family planning, increasing feelings of control over reproductive decision making, providing information and resources for family planning, normalizing discussions about family planning, improving adherence with contraception, and decreasing conflict over family planning decisions.[18,41] Consequently, open communication with a spouse/partner about family planning can significantly increase contraceptive use.[17,18,41] These study findings suggest both the potential of campaigns to affect spousal communication about family planning as well as the continued opportunity to increase the percentage of men and women that talk with their partner.

Only 3.7% of respondents in this study reported the behavior of having spoken with a provider about family planning in the last three months, with no statistically significant differences by gender, area, or age. Several possible explanations exist for the lack of recent family planning communication with a provider in the current study. First, these findings are similar to, although more extreme than, the 2010 TDHS, which found that 20% of Tanzanian women who were not using contraception (i.e., non-users) spoke to a provider or health worker about family planning in the last 12 months.[3] Respondents who discussed family planning methods with a provider more than three months ago would not have been captured by the current study's survey instrument. Second, factors such as long distances to travel and shortage of required health workers may complicate access to health facilities and providers difficult for some populations, especially those in rural areas.[43] Third, providers might have difficulty discussing family planning with patients. Lack of skills to effectively communicate and personalize the message, especially when discussing family planning with men, might also be a challenge.[27,44,45] Nevertheless, a clear dose–response relationship existed between campaign exposure and communication with a provider about family planning in the total sample and in women, rural residents, and individuals older than 24 years. For younger respondents, urban residents, and men, only the highest level of exposure was associated with increased odds of having had communicated with a provider about family planning in the last three months. Regardless, current study findings suggest both the potential of family planning campaigns to affect communication with a provider about family planning as well as the continued need to increase the percentage of men and women that talk with a health provider.

Effects of Exposure Depending on Source of Exposure to Family Planning Campaigns

Different sources of exposure to family planning campaigns seemed more effective than others for certain outcomes and certain audiences. It might be that the family planning campaigns addressed specific determinants through specific sources; however, that information was unavailable for this study.

Across outcomes, health facilities and IPC with family/friends surfaced as the two sources that had the greatest influence. Exposure via health facilities was the only source of family planning campaign exposure that had statistically significant associations with all of the outcomes. Compared to other sources, exposure via health facilities had the strongest association with all outcomes except communication with a spouse, which appeared to be the most affected by IPC with family/friends. For health-facility exposure, the strongest effect appeared between the medium/high level of exposure and communication with a provider, followed by current use of modern contraceptives. It is also interesting to note that health facilities were the only source of exposure associated with increased pro-family planning health beliefs, indicating their potential utility as a venue to promote positive beliefs about the health effects of using modern family planning methods and to correct myths and misperceptions about the side effects.

IPC with family/friends, on the other hand, did not have an association with health beliefs, although it did have statistically significant associations with all other outcomes. Previous research has suggested that family and friends may actually spread misinformation and strengthen misperceptions about the health effects of contraceptive use.[39] Taken in conjunction with the current study's negative finding about exposure via IPC with family/friends and health beliefs, future SBCC campaigns may want to consider addressing beliefs—including correcting myths and misinformation—via health facilities but then using the power of IPC with family and friends to reinforce other outcomes.

In particular, for IPC with family/friends, the greatest effect appeared to be for communication with one's spouse about family planning, followed by communication with a health provider about family planning and then use of modern contraception. These findings suggest the ability of family and friends to diffuse information and messages to other individuals. Other studies have similarly demonstrated the importance of family and friends for message adoption and behavior change.[40,46] For example, an evaluation study of a health communication intervention to promote HIV prevention behaviors in Malawi found that both direct exposure to the campaign and indirect exposure through interpersonal discussions had statistically significant associations with self-efficacy and HIV testing.[47] Interestingly, IPC filled the gaps left by the campaign; those with low direct exposure to the campaign benefited more from discussion than those with high exposure.[47] An evaluation of a family planning mass-media campaign in Nepal similarly found that hearing campaign messages indirectly through discussion with others had a statistically significant association with increased contraceptive use.[40] Moreover, women who heard messages both indirectly and directly had significantly stronger attitudes in favor of family planning than those with just one type of exposure or none.[40] A study in Kenya found that dialogues

within the community about family planning might have increased the perceived social acceptability of and benefits of communication with spouses/partners about family planning, which allowed for more equitable communication between couples.[41]

In the current study, the influence of IPC with family/friends on norms was not surprising, given that social networks are often a major mechanism through which social norms convey.[23,39] IPC with family/friends can also amplify the effects of normative beliefs on contraceptive use.[39,47] As a result, family planning campaigns should consider maximizing the potential of word-of-mouth and more indirect exposure to messages by incorporating IPC with family and friends as a strategic source for diffusion of new information, norms, and behaviors. IPC can help solidify the family planning messages heard through other sources, like health facilities.

When looking at effects of specific sources of exposure by gender, differences emerged. For men, IPC with family/friends appeared to be the most effective source of family planning campaign exposure. At the medium/high exposure level, strong associations across all outcomes, except for health beliefs, existed for men. Indeed, IPC with family/friends was the only source that affected normative beliefs. Even men with low exposure via family and friends experienced greater odds of self-efficacy and communication with one's spouse about family planning. For women, on the other hand, the most effective source was health facilities. At both low and medium/high exposure levels, strong associations existed for women for all outcomes except for spousal communication. Indeed, health facilities was one of the only sources through which women had greater exposure to family planning campaigns than men, further suggesting the utility of this type of exposure for women. The 2010 TDHS similarly found that health-care personnel were a greater source of exposure to family planning messages for women than men.[3] Interestingly, no association existed for women between health-facility exposure and communication with one's spouse about family planning—although it was not known whether any of the campaigns in this evaluation incorporated any messages on this topic. Nevertheless, this finding suggests a potential missed opportunity for messaging, given women's relatively high level of exposure to health facilities and the important role that their male spouses/partners play in their access to and use of family planning methods. On the other hand, however, for men the only outcome with a statistically significant association with health-facility exposure was spousal communication. This finding reinforces the potential role of health facilities to encourage and foster spousal communication. These findings also highlight additional missed opportunities in health facilities to promote contraceptive use, provider communication, and pro-family planning cognitions in men.

In contrast to the current study's findings, other studies have shown IPC with family and friends to be an important influence on family planning behaviors for women.[39,40] Through these discussions, they can learn about modern contraceptives and the importance of family planning, learn from others' experiences using a contraceptive method, determine the appropriateness of different methods for their own use, and gauge whether community norms favor the use of family planning. Therefore, it is unclear why exposure via family and friends had a greater influence in men than women in the present study. This might be an artifact of men having greater exposure than women to family planning campaigns through IPC with family and friends (discussed above). Perhaps the women in the study put

greater importance and credibility on sources other than their family and friends. For example, one study in India found that women prioritized their husbands' preferences as more important for their family planning decisions than their discussions with other family and friends.[39]

Independently, television and radio yielded minimal effects, separate from other sources of family planning campaign exposure. For television, independent associations existed only for spousal communication, and only among women (at the medium/high exposure level), urban residents, and older respondents. Similarly, radio only had an independent effect on spousal communication. The effect of radio was seemingly stronger than that of television, as evidenced by its effect across all groups (at medium/high exposure). The effect of radio was surprising, especially given the high prevalence of radio use (76% listen at least once a week) and radio ownership (78%) in the study sample. Despite this high prevalence of radio usage, only 58% of study participants had at least some exposure to family planning campaigns through the radio and less than a quarter (23%) had medium/high exposure. Information about the frequency of airing radio and television campaign ads was not available for this study and might have provided insight into the lower levels of exposure and effects compared to other sources. It might be that the specific campaigns did not use radio and television to promote changes in pro-family planning cognitive factors, contraceptive use, and provider communication. In addition, the current study did not have information regarding the quality of messages delivered via television or radio.

Given the strong dose–response effects observed across multiple behaviors and groups for the number of sources, however, the somewhat limited independent effects of television and radio should not eliminate their strategic inclusion in future campaigns. Rather, the current study findings suggest that successful campaigns employ a strategic mix of communication sources that maximizes reach and is tailored to the unique needs of the target audiences. Modes of communication that can reach the masses, such as radio and television, can be especially useful for addressing misconceptions about certain behaviors and sparking dialogue about topics as well as linking individuals to services. For example, television and radio could be strategically employed to encourage or model spousal communication as well as provide information about where to access family planning services in their area. Health facilities, could in turn, reinforce positive health beliefs about family planning. In addition, future campaigns should consider newer technologies, such as social media, as platforms for family planning messaging. This approach is supported by research showing increased usage of mobile phones and social media in Tanzania since 2013. Ipsos's Tanzania All Media Products Surveys indicated that 81% of Tanzanians owned a mobile phone in 2014[31] and two-thirds of internet users were members of social media networks in 2013, with Facebook overwhelmingly the most popular.[48]

Interactions with health workers served as an effective source of family planning campaign exposure for only two outcomes—perceived norms and communication with a health provider about family planning—and for select audiences. Rural individuals were the only ones with statistically significant effects between health-worker exposure and both outcomes. A few other select audiences demonstrated associations for only communication with a health-care provider about family planning (men and older individuals) and perceived norms (young individuals). In addition to health facilities, health workers were the only source through which women had greater exposure to family planning

campaigns than men. The 2010 TDHS similarly found that health-care personnel were a greater source of exposure to family planning messages for women than men.[3] Exposure to family planning campaigns through health workers was low (about 5%), which might explain its minimal effects.

Certain types of exposure to family planning campaigns might be better suited to address some social determinants of family planning behaviors compared to others. For example, IPC with family/friends is particularly conducive to increasing perceptions that family planning behaviors are highly normative, and campaigns can promote family planning by encouraging interpersonal discussion.[39,47,49] These findings highlight the importance of targeting the type of exposure to the appropriate audience and with the appropriate message.

Effects of Number of Sources of Family Planning Campaign Exposure on Outcomes

Although there appeared to be different effects of specific types of exposure that varied by group, it is noteworthy that, irrespective of the source, a clear dose–response effect existed across most outcomes. Similar to the effects of the relative dose of exposure, an association existed between the number of sources for exposure to the family planning campaigns and family planning cognitive factors and behaviors. Health beliefs, and to a certain extent perceived norms, was the only outcome with no real dose–response effect as the number of sources increased. For self-efficacy, provider communication, and current modern contraceptive use, however, a clear dose effect occurred with each additional source of exposure to family planning campaigns, with statistically significant effects starting at exposure to even just one source. Across all outcomes and number of sources, the strongest dose–response effects emerged for the three behavioral outcomes. Exposure to all six types of exposure increased the odds of modern contraceptive use by 35-fold, provider communication by 24-fold, and spousal communication by 23-fold. Other studies have shown a similar dose effect for campaign exposure on knowledge of modern methods, approval of family planning, advocacy for family planning, discussion with others about family planning, and current use of modern methods.[16,24,26] Hearing or seeing messages from more than one source likely increased message recall and persuasiveness. These findings highlight the value added by including multiple types of exposure to family planning campaigns and increasing the number of touch points and total dose to messages.

Limitations

This study has four limitations. First, the study was cross-sectional, which limited the team's ability to draw causal inferences about effects of exposure to family planning campaigns and type of exposure on the cognitive and behavioral outcomes. Second, because of the multiple simultaneous family planning campaigns and multiple types of exposure to these campaigns, recall bias for individual campaigns/sources of exposure may have occurred. At the same time, the goal of this study was to determine cumulative effectiveness, and not to compare campaign effectiveness. Third, some of the campaigns focused on specific audiences and used specific sources of exposure more than others. Therefore, the limited effects of certain sources of exposure on specific groups might be an artifact of

what types of exposure campaigns actually used. For example, the Familia and Flexi-P campaigns focused on women and relied heavily on health facilities as a source for communication, which may partially explain why health facilities in this study demonstrated a more limited effect on men. Finally, there were a few shortcomings in the measurement of specific sources of family planning campaign exposure. In particular, the study did not measure campaign exposure from newer technologies, such as social media and SMS, which have become increasingly popular forms of communication in Tanzania.[48] In addition, the measurement of exposure to family planning campaigns through health facilities was imprecise in this study. The survey question did not distinguish between the types of exposure in health facilities, such as posters or other educational materials posted in the clinics, communication with doctors or nurses in the clinics, or educational sessions held in facilities. Therefore, study findings reflect the importance of health facilities as a venue for family planning promotion, but do not indicate which specific types of communication activities within health facilities are most effective.

Implications

Overall, study findings illustrated five key points for SBCC programs. First, investment in communication campaigns for social and behavioral change is worthwhile for improving family planning cognitions and behaviors. In this study, associations existed between exposure to family planning campaigns and multiple outcomes for various types of individuals, including men, women, urban residents, rural residents, individuals aged 18 to 24 years, and individuals aged 25 to 44 years. SBCC campaigns to promote family planning were successful in correcting misperceptions about the health effects of family planning methods, increasing confidence to use modern contraceptives, increasing perceived social acceptability of contraceptive use, promoting communication with partners and providers about family planning, and increasing the current use of modern contraceptives. Second, given the evidence of a dose effect, multiple campaigns occurring simultaneously through various sources of exposure can work together to influence change. This study evaluated the cumulative effect of multiple family planning campaigns working simultaneously across multiple years to improve family planning outcomes. In this study, not only did exposure to family planning campaigns appear to increase family planning cognitions and behaviors, but more frequent exposure had even greater effects.

Third, specific types of exposure might be important for different outcomes and work better for different audiences. Health facilities appeared to be the most effective source of family planning campaign exposure for promoting family planning cognitive factors and behaviors for women. IPC with family/friends appeared to be the most effective source for men. This difference might be partially explained by the different levels of exposure, by gender, to these two sources. The notable exception was communication with a spouse/partner about family planning; IPC with family/friends was the most effective source of family planning campaign exposure for both men and women. Future campaigns might be able to facilitate the adoption of family planning messages by incorporating IPC with family/friends as a strategic source of exposure for diffusion of new information, ideas, and behaviors in conjunction with health facilities and other types of exposure.

Fourth, more commonly used sources for reaching individuals with SBCC messages—such as television and radio—might not be the most effective methods on their own. They are likely more effective when

paired with additional types of exposure, particularly health facilities and IPC with family/friends. When choosing approaches for exposing audiences to family planning campaigns, SBCC program planners should consider the level of exposure to each source given gender, location, or age of the intended audience. For example, individuals aged 24 years and older and urban residents were more likely to be exposed to family planning campaigns through television than individuals aged under 24 years and rural residents. Therefore, messages broadcast on television could be tailored to these groups. These findings also support the fifth and final key point: a cumulative dose of sources, regardless of the specific types, can have a significant impact on family planning cognitions and behaviors. The greater the number of sources through which individuals hear family planning messages, the greater the effect on family planning self-efficacy, normative beliefs, and behaviors. Exposure to five or six sources was particularly impactful for communication with a provider and a spouse or partner about family planning and for current use of modern contraception.

In conclusion, exposure to SBCC campaigns about family planning had a significant and positive dose effect on correcting myths and misperceptions about the health effect of family planning methods, self-efficacy to use modern contraception, perceived normative beliefs about the social acceptability of contraceptive use, communication with providers and spouses about family planning, and current use of modern contraception. The effect of the campaigns on contraceptive use was particularly high in men, urban residents, and individuals aged 24 years and older, more than tripling their odds of use. Health facilities, followed by IPC with family/friends, appeared to be the most effective way to communicate family planning messages. However, this finding differed significantly by group. In general, health facilities were the most influential to reach women, whereas exposure via family and friends was the most influential for men. This finding also differed by outcome. For example, IPC with family/friends was the most influential way for promoting communication with a spouse/partner about family planning, whereas health facilities were most influential for the other outcomes. Notably, exposure to family planning campaigns through multiple sources—regardless of specific type of exposure—had a dose effect for nearly all of the outcomes. Therefore, multi-pronged projects that use multiple ways to reach individuals with family planning messages might have the greatest effect on family planning behaviors. Moreover, program planners should consider their specific audiences when devising the most effective ways to reach individuals with messages.

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APPENDIX A: ADDITIONAL BACKGROUND INFORMATION

Additional Reproductive Health History in Tanzania

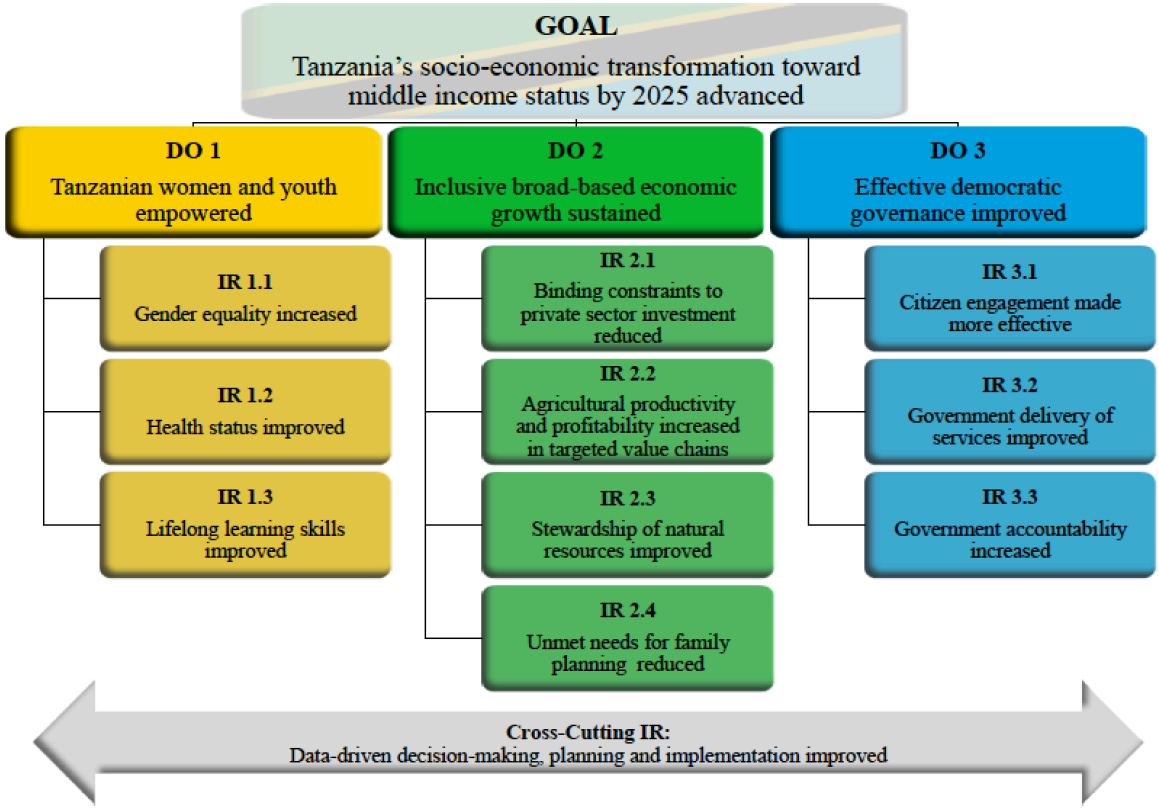
The Tanzania government has supported many initiatives to increase use of family planning, including strategic action to ensure effective and quality promotion and delivery. Clear policies and national guidelines have guided the government's strategies for increasing use for decades. More recently, the *National Road Map Strategic Plan to Accelerate Reduction of Maternal, Newborn, and Child Deaths in Tanzania 2008–2015*, also known as One Plan, aimed to ensure improved coordination of interventions and delivery of services across the continuum of care, and guide implementation from national to regional, district, and community levels through the creation of a joint plan. In March 2010, the government launched the *National Family Planning Costed Implementation Plan* (NFPCIP), based on One Plan's goal to increase the contraceptive prevalence rate to 60% by 2015. The NFPCIP served as the country's strategic plan for repositioning family planning in the country. The goals of the plan were to inform policymakers of the current status of family planning in the country, to improve the budget allocated to family planning activities within the national development agenda for both central and local governments, to clarify budget needs for implementation, and to ensure monitoring and evaluation of the existing interventions and programs. In 2013, the government reviewed and updated the NFPCIP to realign the plan in response to lessons learned, emerging issues, updated projections, and the latest national and international family planning recommendations. At the end of 2015, the government extended One Plan to create One Plan II, which covers 2016 through 2020.

In July 2012, former President of the United Republic of Tanzania, Dr. Jakaya Mrisho Kikwete, attended the high-profile London Summit on Family Planning and intensified Tanzania's international accountability for family planning upon making six commitments expected to double the number of family planning users by 2015.

USAID's Support for Family Planning in Tanzania

The U.S. Agency for International Development (USAID)/Tanzania Mission's Country Development Cooperation Strategy frames all development objectives under the overarching goal of advancing Tanzania's socioeconomic transformation toward middle-income status by 2025 (Figure 6). Development objectives (DO) include: DO1: Empowering Tanzania women and youth; DO2: Sustaining inclusive broad-based economic growth; and DO3: Improving effective democratic governance.

Supplemental Figure 1. USAID/Tanzania Country Development Cooperation Strategy Results Framework



The Mission's strategic approach to family planning is grounded in the notion that the country's economy has been unable to keep pace with its rapidly expanding population. Reducing the unmet need for family planning is a dedicated Intermediate Result (IR) within DO2, where it is expected that a slower population growth rate will ease pressures placed on service delivery systems and natural resources. The importance of family planning is also reflected in its close linkages to several other IRs, including increased sex equality and improved health status under DO1, and improved government delivery of services and increased government accountability under DO3. USAID/Tanzania aims to address the high population growth rate at both policy and practical levels, including social and behavior change.

More Information on Current Family Planning SBCC Projects in Tanzania

ACQUIRE/RESPOND

Through the USAID-funded ACQUIRE and RESPOND projects, EngenderHealth addressed unmet need for contraception and advances the use of family planning and reproductive health services among Tanzanian women, men, and adolescents. EngenderHealth worked in partnership with the Tanzania Ministry of Health and Social Welfare (MOHSW), as well as other organizations, to improve the quality and availability of reproductive

health care in Tanzania. The aims of ACQUIRE (2003–2008) and RESPOND (2012–2017) were to synchronize supply, demand, and advocacy needs, and to expand contraceptive options.

For demand creation, RESPOND supported community mobilization activities linked to service delivery. Prior to service delivery, sensitization activities included advertising through local radio, daily health talks at facilities, public address systems, and placement of posters announcing where family planning services would be provided in selected health facilities. Village leaders and community health workers were also involved in mobilization and sensitizing the community.

Between October 2013 and March 2014, RESPOND conducted community mobilization meetings in collaboration with council health management teams in 16 districts, reaching 513 community resource persons at least one week before the planned outreach or family planning event. Participants received orientation on family planning, the role of family planning in health and development, facts about family planning to address myths and misconceptions, and the role of community leaders in promotion of family planning. Participants developed strategies for mobilizing clients for family planning services. The trained resource persons reached approximately 10,260 people and mobilized 2,211 clients for family planning services. Distribution of family planning social and behavior change communication (SBCC) materials—including approximately 5,000 family planning brochures and 545 posters—accompanied community mobilization activities.

Familia and Flexi-P

Population Services International (PSI)/Tanzania is a locally registered nongovernmental organization (NGO) working with the Tanzanian government through the MOHSW, government agencies, and public and private entities. PSI focuses on improving healthy living among Tanzanians through social marketing of HIV prevention and family planning commodities and services.

PSI uses two approaches to reach women with family planning and reproductive health services: Familia and Flexi-P. Through the private sector, PSI developed a social franchise, branded Familia, which delivers family planning products and services at cost. Demand for these services is driven through interpersonal communication and mass media at the consumer level, and medical detailing at the provider level. Additional ways to reach individuals through the private sector include pharmacies, accredited drug dispensing outlets and other retail outlets that stock a range of branded long-acting reversible contraceptives (LARCs) and short-acting reversible contraceptives (SARCs), including intrauterine devices (IUDs), implants, injectables, oral contraceptives, condoms, and emergency contraceptives. Within the public sector, as part of Flexi-P, PSI supports the Tanzanian government to provide family planning products and services to consumers who cannot afford or access private sector services. Services are delivered through an outreach model at health facilities in rural communities. Demand is driven through community mobilization efforts that involve mid-media activities such as public address systems and engagement with local influencers, including village leaders, and local government authorities.

Femina Hip

Femina Hip is a local Tanzanian NGO working with youth, communities, and strategic partners across Tanzania, with the aim of promoting healthy lifestyles and sexual and reproductive health, including family planning, HIV/AIDS prevention, sex equality, entrepreneurship, and citizen engagement. Femina Hip's media products include *Fema* magazine, *Si Mchezo!* magazine, Fema TV Talk Show and Chezasalama.com. All media products are rooted in an entertainment-education approach and operate under the belief that positive, open talk is the best way to learn about love and life.

At the time of the study, *Fema* magazine was a quarterly, 64-page magazine written in both Swahili and English. The typical print run was around 170,000 copies per edition, with an estimated readership of 2.8 million readers per issue. *Fema* targeted secondary school students. The magazine was hand-delivered to more than 2,400 schools in every district in Tanzania and distributed to more than 400 partner organizations. *Si Mchezo!* magazine was a bimonthly, 32-page magazine written in Swahili, tailored for semi-literate youth, targeting rural, out-of-school youth and their communities. Almost 600 partner organizations in every region of Tanzania received *Fema* magazine free of charge, with an estimated 2.6 million readers per issue. Each issue of *Fema* and *Si Mchezo!* had a specific theme and included a cover story featuring a role model, club and advice pages, photo novels, letters from readers, and competitions. Femina Hip's young journalists traveled to different districts to collect stories and give voice to young people and their communities.

The Fema TV Talk Show is a seasonal, half-hour program broadcast on national television four times weekly (ITV and TBC1, with repeats). Targeting rural and urban youth aged 15 to 25 years, the talk show's dynamic young hosts invite youth, experts, celebrities, and politicians to the studio to discuss critical, and sometimes controversial, issues relating to youth lifestyles. Segments also include testimonials as well as letters and text messages from viewers. Short message system (SMS) messages are used for feedback and voting. Topics, although varied, include family planning and reproductive health.

ChezaSalama.com is an interactive website for youth that aims to mirror the content and messages of other Femina Hip multimedia products. With information and activities on relationships, safe sex, reproductive health, job opportunities, music, fashion, and celebrities, the site encourages young people to talk, ask questions, and share their experiences on interactive pages with opinion polls and online chat and feedback mechanisms. The website works in concert with other Femina Hip products: the website promotes and is promoted by the *Fema* and *Si Mchezo!* magazines and the Fema TV Talk Show.

Green Star

In October 2013, the Tanzania MOHSW—in partnership with the Johns Hopkins Center for Communication Programs (CCP) through the USAID-supported Tanzania Capacity and Communication Project (TCCP)—revitalized the country's Green Star family planning campaign. The campaign recognized the importance of family planning as a strategy to improve maternal, newborn, and child health, and promote economic and social development in the country. With the slogan, "Follow the Green Star for success," the new campaign aimed to contribute toward the national target of a 60% contraceptive prevalence rate by 2015 by increasing demand for family planning information, products, and services. The program is ongoing.

The revitalized Green Star campaign rolled out messages through mass media and in health facilities, both at regional and community levels. All campaign messages derived from the *National Family Planning Message Guide*, a MOHSW-endorsed information booklet developed through the Advocacy and Social and Behavior Change Communication Working Group. The Message Guide ensured family planning messages were technically accurate and consistent across different potential sources of campaign exposure. The campaign's intended audiences included women of reproductive age with unmet need for family planning and their partners/spouses. Green Star messaging focused on healthy timing and spacing of pregnancy, male involvement, couple communication, benefits of family planning, and alleviating family planning-related health concerns.

Primary ways of exposure to the campaign at the time of the study included six 60-second radio spots, a set of 10 family planning methods brochures, branded Green Star health facilities providing family planning, and promotional materials, such as banners, t-shirts, bumper stickers, and tote bags. Materials also referred individuals to the Mobile for Reproductive Health (m4RH) SMS messaging platform (see more on m4RH below). The Green Star community resource kit contained participatory, low-resource games and activities. However, orientation of Community Resource Persons had only just started in April 2014.

Marie Stopes Tanzania

With USAID and the U.K. Department for International Development (DFID) funding, Marie Stopes Tanzania (MST) supports the family planning effort with a focus on the provision of family planning services through urban clinics and mobile outreach in rural areas. First started in 1989, MST continues to be the country's largest specialized sexual and reproductive health service provider.

At the time of the study, MST operated a network of 11 clinics: four in Dar es Salaam, and one each in

Zanzibar, Mwanza, Iringa, Arusha, Musuma, Mbeya, and Kahama. Run as a sustainable social enterprise, the clinics are not subsidized by donor funding. MST also introduced a mobile outreach service by bajaj (rickshaw), in which trained nurses offered family planning counseling and long-acting methods of family planning (implants and IUDs) to peri-urban areas. MST's SBCC Interventions aimed to create awareness and demand for family planning methods. Target audiences included women of reproductive age, men, and adolescents. The program covered all regions in Tanzania, with the exception of Tanga, Lindi, Mtwara, Pwani, Morogoro, and Dar es Salaam.

Mobile for Reproductive Health

Mobile for Reproductive Health (m4RH) is a free, opt-in, interactive, menu-based, "ping-pong" system that provides automated, Kiswahili information about contraceptive methods and health-facility locations by SMS across all mobile networks in Tanzania. Through support from USAID, FHI360, in collaboration with the MOHSW Reproductive and Child Health Section, developed the platform as an operational research study to test the feasibility and acceptability of using SMS messages to provide information on family planning.

m4RH first ran in limited geographic sites through posters and promotional cards in health facilities and by community health workers. National scale up of the platform occurred through two SBCC campaigns: Jiamini (Trust yourself), which ran from April to September 2012, and Green Star, which launched in October 2013 (see above). In each case, all of the campaign's communication efforts incorporated referrals to m4RH for more family planning information: at the end of every radio spot, as the closing screen on television spots, and as a call to action in magazine advertisements, family planning methods brochures, posters, and promotional cards and on campaign promotional materials, such as banners and tire covers.

In 2013, m4RH expanded in concert with the relaunch of the national Green Star campaign. The enhanced platform included additional information on the benefits, side effects, and misconceptions of each method as well as the option to sign up to receive personal stories. In line with the *National Family Planning Message Guide*, MOHSW co-developed and approved all m4RH messages.

APPENDIX B: SURVEY MEASURES

Construct	Coding	Frequency or Mean/Median & Range[1]
Background Factors		
Gender	0: Men 1: Women	1,118 3,094
Age	Continuous	Mean = 29.7 Median = 28.0 Range = 18-49 Missing = 13
Age, younger vs. older	0: ≤ 24 years 1: >24 years	1,343 2,856 Missing = 13
Relationship status	0: Single, widowed, separated, divorced 1: In a relationship, living together, married	932 3,278 Missing = 2
Education	0: Never attended school 1: Some primary 2: Completed primary 3: Some secondary 4: Completed secondary 5: Any post-secondary	359 275 2,428 301 683 164 Missing = 2
Education, categorical	0: Never attended primary school 1: Some primary/primary completed 2: Higher than primary	359 2,703 1,148 Missing = 2
Education, median[2]	0: Completed primary or less 1: Higher than primary	3,062 1,148 Missing = 2

[1] Missing observations are indicated when present.

[2] The sample median for educational attainment is roughly the same as the national median. According to WHO, over half finish primary school (about 7th grade). See: http://iresearch.worldbank.org/edattain/ and http://www.unicef.org/tanzania/6911_10874.html

Construct	Coding	Frequency or Mean/Median & Range[1]
Religion[3]	0: Catholic 1: Other Christian 2: Muslim 3: Other	1,232 1,424 1,485 70 Missing = 1
Employment status[4]	0: Unemployed, student, housewife 1: full time employment, part time employment, self -employment 2: Farmer	881 1,455 1,864 Missing = 12
Score for ownership of 16 assets, goods, and services (e.g., electricity, running water, bicycle)	Discrete	Median = 5.0 Range = 0-13
Financial insecurity	0: None 1: Any	2,446 1,764 Missing = 2
Media use	Discrete	Median = 8.0 Range = 2-16
Ever given birth (women) / Have biological children (men)	0: No 1: Yes	973 3,225 Missing = 14
Currently pregnant (women) / main partner is currently pregnant (men)	0: No 1: Yes	3,713 408 Missing = 91
Number of living children	Discrete	Median = 2.0 Range = 0-15

[3] Per the US State Department, Christian and Muslim are the dominant religions in Tanzania. See: http://www.state.gov/j/drl/rls/irf/religiousfreedom/index.htm#wrapper

[4] Categories are based on the dominant employment groups. "Other" responses were recoded as follows: "small businessman", "entrepreneur", and "fishermen" were recoded as "self-employed"; "herdsman", "computerized", "refused to answer", "volunteer or some street work", "driver", "carpenter", and "casual labor" were recoded as "other"; "some farm work" was recoded as "farmer".

Campaign Exposures		
ACQUIRE/RESPOND Projects		
0 points: did not hear or see the campaign in the last 6 months 1 point: saw/heard campaign within the last 6 months, but more than 3 months 2 points: saw/heard campaign 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: saw/heard campaign 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: saw/heard 11 or more times in last 3 months (i.e., about 4 or more times a month) ADD 1 point: if friend/family member talked to them about the campaign	Discrete	Mean = 0.50 Median = 0 Range = 0-5
PSI: Flexi-P		
0 points: did not hear or see the brand in the last 6 months 1 point: saw/heard brand within the last 6 months, but more than 3 months 2 points: saw/heard brand within the last 3 months OR clinician/pharmacist talked about the brand 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: clinician/pharmacist talked about the brand 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: clinician/pharmacist talked about the brand 11 or more times in last 3 months (i.e., about 4 or more times a month) ADD 1 point: if friend/family member talked to them about the brand	Discrete	Mean = 0.81 Median = 0 Range = 0-5

PSI: Familia		
0 points: did not hear or see the brand in the last 6 months 1 point: saw/heard brand within the last 6 months, but more than 3 months 2 points: saw/heard brand within the last 3 months OR clinician/pharmacist talked about the brand 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: clinician/pharmacist talked about the brand 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: clinician/pharmacist talked about the brand 11 or more times in last 3 months (i.e., about 4 or more times a month) ADD 1 point: if friend/family member talked to them about the brand	Discrete	Mean = 1.47 Median = 2 Range = 0-5

Marie Stopes: USAID and DFID Family Planning Program		
Materials: 0 points: did not hear or see the campaign in the last 6 months 1 point: saw/heard campaign within the last 6 months, but was not exposed to materials within the last 3 months. 2 points: saw materials within the last 3 months (and frequency unknown) OR saw materials 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: saw materials 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: saw materials 11 or more times in last 3 months (i.e., about 4 or more times a month)	Discrete	Mean = 0.49 Median = 0 Range = 0-5

Community Activities: 0 points: did not hear or see the campaign in the last 6 months 1 point: saw/heard campaign within the last 6 months, but was not exposed to community activities within the last 3 months. 2 points: participated in community activities within the last 3 months (and frequency unknown) OR participated in community activities once or twice 3 points: participated in community activities three times 4 points: participated in community activities more than three times		
Health Facilities 0 points: did not hear or see the campaign in the last 6 months 1 point: saw/heard campaign within the last 6 months, but was not exposed to health facilities within the last 3 months. 2 points: went to health facility where MS was working for family planning services within the last 3 months (and frequency unknown) OR went to health facility where MS was working for family planning services 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: went to health facility where MS was working for family planning services 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: went to health facility where MS was working for family planning services 11 or more times in last 3 months (i.e., about 4 or more times a month)		

Because the survey asks about the frequency of exposure to three components of the Marie Stopes campaign (materials, community activities, and health facilities), Marie Stopes would be weighted more than the other campaigns if we only added them up. In order to make Marie Stopes have equal weight to the other campaigns, we will multiple each component's frequency by 1/3: SUM = (MATERIALS SCORE X 1/3) + (COMMUNITY SCORE X 1/3) + (FACILITIES SCORE X 1/3) ADD 1 point: if friend/family member talked to them about the family planning services at MS ROUND UP to the nearest whole number		

Marie Stopes/TCCP: Green Star		
0 points: did not hear or see the campaign in the last 6 months 1 point: saw/heard campaign within the last 6 months, but more than 3 months 2 points: saw/heard the campaign within the last 3 months (and frequency unknown) OR saw/heard campaign 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: saw/heard campaign 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: saw/heard 11 or more times in last 3 months (i.e., about 4 or more times a month) ADD 1 point: if friend/family member talked to them about the campaign	Discrete	Mean = 1.62 Median = 2 Range = 0-5

Femina		
***Fema* Magazine** 0 points: did not hear or see the *Fema* magazine in the past 6 months 1 point: saw/heard magazine within the last 6 months, but more than 3 months 2 points: saw/heard magazine 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: saw/heard magazine 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: saw/heard magazine 11 or more times in last 3 months (i.e., about 4 or more times a month) ADD 1 point: if friend/family member talked to them about magazine	Discrete	Mean = 0.49 Median = 0 Range = 0-5

***Si Mchezo!* Magazine** 0 points: did not hear or see the *Si Mchezo!* magazine in the past 6 months 1 point: saw/heard magazine within the last 6 months, but more than 3 months 2 points: saw/heard magazine 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: saw/heard magazine 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: saw/heard magazine 11 or more times in last 3 months (i.e., about 4 or more times a month) ADD 1 point: if friend/family member talked to them about magazine **Fema Talk Show** 0 points: did not hear or see the talk show in the past 6 months 1 point: saw/heard talk show within the last 6 months, but more than 3 months 2 points: saw/heard talk show 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: saw/heard talk show 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: saw/heard talk show 11 or more times in last 3 months (i.e., about 4 or more times a month) ADD 1 point: if friend/family member talked to them about talk show **ChezSalama Website**		

0 points: did not hear or see the website in the past 6 months 1 point: saw/heard website within the last 6 months, but more than 3 months 2 points: saw/heard website 1-5 times in last 3 months (i.e., about <2 times a month) 3 points: saw/heard website 6-10 times in last 3 months (i.e., about 2-3 times a month 4 points: saw/heard website 11 or more times in last 3 months (i.e., about 4 or more times a month) ADD 1 point: if friend/family member talked to them about website Because the survey asks about the frequency of exposure to four components of the Femina campaign (two magazines, talk show, and website), Femina would be weighted more than the other campaigns if we only added them up. In order to make Femina have equal weight to the other campaigns, we will multiple each component's frequency by 1/4: SUM = (FEMA MAGAZINE SCORE X 1/4) + (MCHEZO MAGAZINE SCORE X 1/4) + (TALK SHOW SCORE X 1/4) + (WEBSITE SCORE X 1/4) ROUND UP to the nearest whole number		

FHI360: m4RH		
0 points: never heard or saw the campaign 1 point: ever heard or saw the campaign ADD 1 point: if friend/family member talked to them about in the last 3 months	Discrete	Mean = 0.15 Median = 0 Range = 0-2

Dose of Exposure to All 7 Campaigns			
Dose of exposure	Discrete	Mean = 5.5 Median = 5 Range = 0-26	Summary of campaign-specific dose variables
Dose of exposure, quartiles	0: No/low (0-2) 1: Medium (3-5) 2: High (6-8) 3: Very high (9+)	1,022 1,230 1,069 891	Created from total dose variable based on quartiles
Dose of exposure	Discrete	Mean = 5.5 Median = 5 Range = 0-26	Summary of campaign-specific dose variables

Sources of Exposure		
TV, includes: TV spot Ruka Juu TV show	Discrete 0: None 1: Low (1) 2: Medium/High (2+)	Mean = 0.3 Median = 0 Range = 0-5 3,242 658 312
Radio, includes: Radio spot FEMA radio show	Discrete 0: None 1: Low (1) 2: Medium/High (2+)	Mean = 0.8 Median = 1 Range = 0-5 1,754 1,513 945
Health facilities, includes: Health facility Clinic/health facility Pharmacy Dispensary Mobile clinic Hospital Health center "Went to a health facility where Marie Stopes was working in the past 3 months" "A clinician or pharmacist talked to you about this brand in the past 3 months?"	Discrete 0: None 1: Low (1) 2: Medium/High (2+)	Mean = 1.6 Median = 1 Range = 0-7 886 1,320 2,006

Communication with health workers	Discrete 0: None 1: Any	Mean = 0.1 Median = 0 Range = 0-3 3,984 228
Community events, includes: Health fair Community discussion group Other community event FEMINA fairs/festivals Youth clubs Village group FEMA club “Attended a Marie Stopes community activity in the past 3 months”	Discrete 0: None 1: Any	Mean = 0.2 Median = 0 Range = 0-5 3,658 554
Interpersonal communication with friends and family	Discrete 0: None 1: Low 2: Medium/High	Mean = 0.8 Median = 0 Range = 0-7 2,209 1,119 884

Perceived norms[5] Q405: "Do you think your husband / partner approves or disapproves of couples that use modern methods to avoid a pregnancy?" Original responses: 1=Approve, 2=Disapprove, 99=Don't know/not sure Recoded responses: 1=Disapprove, 2=DK/not sure, 3=Approve Q407: "Among the people you know, how many of them use modern methods to avoid getting pregnant?" Original responses: 1=Most of them, 2=Some of them, 3=few of them, 4=none of them, 99=Don't know/not sure Recoded responses: 1=none, 2=few, 3=DK/not sure, 4=some, 5=most Q409: "Among the people you know, how many of them approve of couples that use modern methods to avoid getting pregnant?" Responses: same as 407 Q410: "Among the married women you know, how many of their husbands approve of couples who use modern methods to avoid unwanted pregnancies?" Responses: same as 407 Q411: "Of the people who are close to you, those whose opinions matter to you, how many of them would approve of your use of modern methods to avoid unwanted pregnancies?" Responses: same as 407	Discrete Cronbach's alpha = 0.7518 Eigenvalue = 1.9237	Median = 0.87 Range = -11.89-4.30 Higher values = perceived norms more favorable towards modern family planning (that is, that others approve of it)

[5] Higher values reflect more positive perceived norms toward family planning.

Health beliefs Q422: "People who use modern family planning methods end up with health problems." Original responses: 1=Strongly disagree, 2=Disagree, 3=Agree, 4=Strongly agree Recoded responses: 1=Strongly agree, 2=Agree, 3=Disagree, 4=Strongly disagree Q423: "Use of contraceptive injections can make a woman permanently infertile." Responses: same as Q422 Q424: "Modern family planning methods can harm a woman's uterus." Responses: same as Q422 Q425: "Modern family planning methods reduce women's sexual urge." Responses: same as Q422 Q426: "Modern family planning methods can cause cancer." Responses: same as Q422 Q427: "Some modern family planning methods can give you deformed babies." Responses: same as Q422 Q428: "Modern family planning methods are dangerous for your health." Responses: same as Q422	Discrete Cronbach's alpha = 0.8986 Eigenvalue = 3.9521	Median = 2.71 Range = 1-4 Missing = 14 Higher values = health beliefs more favorable towards modern family planning

Self-efficacy **"**How confident are you that you would be able to…" Q435: "…ask a health-care provider about modern family planning methods?" Responses: 1=Not at all confident, 2=A little confident, 3=Mostly confident, 4=Very confident Q436: "…obtain a modern family planning method when you need one?" Responses: same as Q435 Q437: "…use a modern family planning method consistently if you do not desire to get pregnant?" Responses: same as Q435 Q438: "…get your husband/partner to agree to your use modern family planning methods if you wanted to?" Responses: same as Q435 Q439: "…get your husband/partner to use a male form of contraception, such as sterilization or male condoms?" Responses: same as Q435	Discrete Cronbach's alpha = 0.8793 Eigenvalue = 2.9937	Median = 3.4 Range = 1-4 Missing = 11
Communication about family planning with health-care provider (provider communication)	0: No one/with other people 1: Community health worker/health provider	4,121 86 Missing = 5
Communication about family planning with spouse/partner (spousal communication)	0: No one/with other people 1: Spouse/partner	3,725 482 Missing = 5
Current use of any modern[6] family planning method	0: No 1: Yes	2,027 1,777 M = 408

[6] Per the definition of the World Health Organization. Pregnant women are excluded.

APPENDIX C: SUPPLEMENTAL TABLES

Key

† Dose of campaign exposure represents the sum of general frequency across campaigns (levels determined by quartile).

†† Sources of exposure to family planning campaigns included: television, radio, health facilities, community health workers, community events, and interpersonal communication with friends and family

‡ For marital status categories: Single =Individuals that are single, widowed, separated, or divorced; Partnered=Individuals in a relationship, living together or married

‡ ‡ Summarized score of family ownership of 16 material foods and services (e.g., running water, working television, refrigerator)

Abbreviation: CI, confidence interval.

Tables

Supplemental Table 1. Association, by gender, between odds of positive family planning health beliefs* and dose of exposure† to family planning campaigns, Tanzania

	Men (n=1,108)		Women (n=3,072)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Dose of exposure†						
None/Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	1.10 (0.77, 1.57)	0.606	**1.37 (1.12, 1.66)**	**0.002**	**1.30 (1.09, 1.54)**	**0.003**
High (6-8)	1.05 (0.73, 1.52)	0.784	**1.51 (1.22, 1.86)**	**<0.001**	**1.37 (1.14, 1.64)**	**0.001**
Very high (≥9)	1.31 (0.89, 1.92)	0.169	**1.62 (1.28, 2.06)**	**<0.001**	**1.53 (1.25, 1.87)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	0.79 (0.59, 1.06)	0.118	**0.75 (0.64, 0.88)**	**0.001**	**0.77 (0.67, 0.88)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.07 (0.81, 1.42)	0.632	**0.83 (0.71, 0.98)**	**0.028**	0.87 (0.76, 1.00)	0.055
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.84 (0.62, 1.14)	0.257	1.06 (0.88, 1.27)	0.545	1.01 (0.86, 1.18)	0.934
Muslim	1.19 (0.88, 1.61)	0.252	1.03 (0.86, 1.24)	0.718	1.07 (0.92, 1.25)	0.400
Other religion	1.30 (0.54, 3.14)	0.555	1.09 (0.61, 1.98)	0.764	1.13 (0.69, 1.84)	0.623
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.01 (0.73, 1.38)	0.970	0.99 (0.82, 1.18)	0.873	0.99 (0.85, 1.16)	0.934
Ownership of goods and assets‡ ‡	0.95 (0.88, 1.01)	0.117	1.00 (0.96, 1.05)	0.932	0.99 (0.95, 1.02)	0.437
Media use	**1.11 (1.04, 1.18)**	**0.002**	1.03 (0.99, 1.07)	0.197	1.05 (1.01, 1.08)	0.007
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.12 (0.83, 1.53)	0.454	**0.76 (0.62, 0.92)**	**0.006**	0.86 (0.73, 1.01)	0.064
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.12 (0.97, 1.30)	0.129

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 2. Association, by geographic location, between odds of positive family planning health beliefs* and dose of exposure† to family planning campaigns, Tanzania

	Urban (n=1,524)		Rural (n=2,656)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
None/Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	1.06 (0.77, 1.46)	0.721	**1.41 (1.15, 1.73)**	**0.001**	**1.30 (1.09, 1.54)**	**0.003**
High (6-8)	1.15 (0.83, 1.60)	0.406	**1.48 (1.19, 1.85)**	**0.001**	**1.37 (1.14, 1.64)**	**0.001**
Very High (≥9)	1.37 (0.97, 1.92)	0.073	**1.59 (1.23, 2.06)**	**<0.001**	**1.53 (1.25, 1.87)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	0.93 (0.74, 1.18)	0.564	**0.69 (0.58, 0.83)**	**<0.001**	**0.77 (0.67, 0.88)**	**<0.001**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.18 (0.92, 1.51)	0.190	1.08 (0.90, 1.30)	0.413	1.12 (0.97, 1.30)	0.129
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.96 (0.73, 1.27)	0.773	1.03 (0.86, 1.25)	0.734	1.01 (0.86, 1.18)	0.934
Muslim	1.08 (0.83, 1.40)	0.563	1.06 (0.87, 1.29)	0.566	1.07 (0.92, 1.25)	0.400
Other religion	1.08 (0.35, 3.31)	0.892	1.17 (0.68, 2.02)	0.577	1.13 (0.69, 1.84)	0.623
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**0.73 (0.57, 0.94)**	**0.016**	1.20 (0.98, 1.46)	0.071	0.99 (0.85, 1.16)	0.934
Ownership of goods and assets‡‡	0.98 (0.93, 1.03)	0.437	0.99 (0.94, 1.04)	0.650	0.99 (0.95, 1.02)	0.437
Media use	**1.08 (1.03, 1.14)**	**0.002**	1.02 (0.98, 1.07)	0.329	1.05 (1.01, 1.08)	0.007
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	**0.70 (0.54, 0.90)**	**0.006**	1.01 (0.81, 1.25)	0.959	0.86 (0.73, 1.01)	0.064
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	0.87 (0.76, 1.00)	0.055

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 3. Association, by age, between odds of positive family planning health beliefs* and dose of exposure† to family planning campaigns, Tanzania

	≤24 years (n=1,332)		>24 years (n=2,848)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
None/Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	**1.47 (1.07, 2.00)**	**0.016**	**1.25 (1.02, 1.54)**	**0.032**	**1.30 (1.09, 1.54)**	**0.003**
High (6-8)	**1.59 (1.14, 2.22)**	**0.007**	**1.31 (1.05, 1.63)**	**0.015**	**1.37 (1.14, 1.64)**	**0.001**
Very High (≥9)	**1.68 (1.16, 2.42)**	**0.006**	**1.51 (1.19, 1.93)**	**0.001**	**1.53 (1.25, 1.87)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.03 (0.80, 1.33)	0.821	**0.82 (0.69, 0.97)**	**0.024**	0.87 (0.76, 1.00)	0.055
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.08 (0.83, 1.40)	0.576	1.13 (0.95, 1.35)	0.169	1.12 (0.97, 1.30)	0.129
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.97 (0.74, 1.28)	0.838	1.04 (0.86, 1.26)	0.691	1.01 (0.86, 1.18)	0.934
Muslim	0.81 (0.61, 1.06)	0.128	**1.22 (1.01, 1.48)**	**0.036**	1.07 (0.92, 1.25)	0.400
Other religion	2.57 (0.80, 8.27)	0.113	0.95 (0.54, 1.67)	0.868	1.13 (0.69, 1.84)	0.623
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	0.90 (0.71, 1.14)	0.381	1.03 (0.84, 1.27)	0.763	0.99 (0.85, 1.16)	0.934
Ownership of goods and assets‡‡	0.97 (0.91, 1.04)	0.405	0.99 (0.95, 1.03)	0.589	0.99 (0.95, 1.02)	0.437
Media use	**1.07 (1.01, 1.14)**	**0.022**	1.03 (0.99, 1.08)	0.107	1.05 (1.01, 1.08)	0.007
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	**0.69 (0.53, 0.89)**	**0.005**	1.00 (0.81, 1.25)	0.977	0.86 (0.73, 1.01)	0.064
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**0.77 (0.67, 0.88)**	**<0.001**

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 4. Association, by gender, between odds of positive family planning health beliefs* and sources of exposure†† to family planning campaigns, Tanzania

	Men (n=1,108)		Women (n=3,072)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.07 (0.79, 1.46)	0.66	**1.54 (1.24, 1.91)**	**<0.01**	**1.36 (1.15, 1.62)**	**<0.01**
Medium/High (≥2)	0.86 (0.62, 1.19)	0.35	**1.61 (1.32, 1.97)**	**<0.01**	**1.36 (1.15, 1.60)**	**<0.01**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	0.82 (0.61, 1.11)	0.20	**0.74 (0.63, 0.87)**	**<0.01**	**0.76 (0.66, 0.88)**	**<0.01**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.09 (0.82, 1.45)	0.54	**0.83 (0.70, 0.98)**	**0.03**	0.87 (0.75, 1.00)	0.05
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.88 (0.65, 1.19)	0.41	1.06 (0.88, 1.27)	0.56	1.01 (0.86, 1.17)	0.94
Muslim	1.20 (0.89, 1.62)	0.24	1.04 (0.87, 1.25)	0.67	1.07 (0.92, 1.25)	0.37
Other religion	1.36 (0.56, 3.28)	0.50	1.18 (0.65, 2.13)	0.59	1.16 (0.71, 1.89)	0.56
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.02 (0.74, 1.40)	0.90	0.98 (0.82, 1.17)	0.81	0.99 (0.85, 1.16)	0.95
Ownership of goods and assets‡‡	0.95 (0.89, 1.02)	0.17	1.00 (0.96, 1.05)	0.86	0.99 (0.95, 1.02)	0.51
Media use	**1.12 (1.05, 1.20)**	**<0.01**	1.04 (1.00, 1.08)	0.05	**1.06 (1.02, 1.09)**	**<0.01**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.16 (0.86, 1.58)	0.34	**0.77 (0.63, 0.94)**	**0.01**	0.87 (0.73, 1.02)	0.08
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.09 (0.94, 1.26)	0.27

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 5. Association, by geographic location, between odds of positive family planning health beliefs* and sources of exposure†† to family planning campaigns, Tanzania

	Urban (n=1,524)		Rural (n=2,656)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.09 (0.80, 1.49)	0.59	**1.50 (1.21, 1.86)**	**<0.01**	**1.36 (1.15, 1.62)**	**<0.01**
Medium/High (≥2)	0.88 (0.65, 1.18)	0.40	**1.68 (1.37, 2.06)**	**<0.01**	**1.36 (1.15, 1.60)**	**<0.01**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	0.94 (0.75, 1.19)	0.63	**0.68 (0.57, 0.81)**	**<0.01**	**0.76 (0.66, 0.88)**	**<0.01**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.24 (0.96, 1.59)	0.09	1.01 (0.84, 1.22)	0.90	1.09 (0.94, 1.26)	0.27
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.98 (0.74, 1.29)	0.88	1.02 (0.85, 1.24)	0.81	1.01 (0.86, 1.17)	0.94
Muslim	1.07 (0.82, 1.38)	0.63	1.07 (0.88, 1.30)	0.50	1.07 (0.92, 1.25)	0.37
Other religion	()		1.22 (0.70, 2.11)	0.48	1.16 (0.71, 1.89)	0.56
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**0.77 (0.60, 0.98)**	**0.04**	1.18 (0.97, 1.44)	0.11	0.99 (0.85, 1.16)	0.95
Ownership of goods and assets‡‡	0.98 (0.93, 1.03)	0.48	0.99 (0.94, 1.04)	0.70	0.99 (0.95, 1.02)	0.51
Media use	**1.10 (1.05, 1.16)**	**<0.01**	1.03 (0.99, 1.08)	0.15	**1.06 (1.02, 1.09)**	**<0.01**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	**0.71 (0.55, 0.92)**	**0.01**	1.01 (0.81, 1.26)	0.93	0.87 (0.73, 1.02)	0.08
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	0.87 (0.75, 1.00)	0.05

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 6. Association, by age, between odds of positive family planning health beliefs* and sources of exposure†† to family planning campaigns, Tanzania

	≤24 years (n=1,332)		>24 years (n=2,848)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.28 (0.95, 1.73)	0.10	**1.43 (1.15, 1.77)**	**<0.01**	**1.36 (1.15, 1.62)**	**<0.01**
Medium/High (≥2)	1.31 (0.97, 1.75)	0.08	**1.42 (1.15, 1.74)**	**<0.01**	**1.36 (1.15, 1.60)**	**<0.01**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.03 (0.80, 1.32)	0.84	**0.82 (0.69, 0.97)**	**0.02**	0.87 (0.75, 1.00)	0.05
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.06 (0.81, 1.38)	0.68	1.09 (0.91, 1.31)	0.35	1.09 (0.94, 1.26)	0.27
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.97 (0.73, 1.28)	0.81	1.04 (0.86, 1.26)	0.68	1.01 (0.86, 1.17)	0.94
Muslim	0.82 (0.63, 1.08)	0.16	**1.23 (1.01, 1.48)**	**0.04**	1.07 (0.92, 1.25)	0.37
Other religion	2.42 (0.76, 7.74)	0.14	1.00 (0.57, 1.75)	0.99	1.16 (0.71, 1.89)	0.56
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	0.91 (0.72, 1.16)	0.45	1.03 (0.84, 1.27)	0.77	0.99 (0.85, 1.16)	0.95
Ownership of goods and assets‡‡	0.98 (0.92, 1.04)	0.51	0.99 (0.95, 1.03)	0.62	0.99 (0.95, 1.02)	0.51
Media use	**1.09 (1.02, 1.15)**	**0.01**	**1.04 (1.00, 1.09)**	**0.03**	**1.06 (1.02, 1.09)**	**<0.01**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	**0.71 (0.55, 0.91)**	**0.01**	1.01 (0.82, 1.26)	0.91	0.87 (0.73, 1.02)	0.08
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**0.76 (0.66, 0.88)**	**<0.01**

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 7. Association, by gender, between odds of pro-family planning self-efficacy beliefs* and dose of exposure† to family planning campaigns, Tanzania

	Men (n=1,109)		Women (n=3,074)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
None/Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	1.17 (0.82, 1.68)	0.39	**1.55 (1.27, 1.90)**	**<0.001**	**1.46 (1.23, 1.74)**	**<0.001**
High (6-8)	0.94 (0.65, 1.36)	0.74	**2.28 (1.84, 2.83)**	**<0.001**	**1.82 (1.51, 2.19)**	**<0.001**
Very high (≥9)	**1.57 (1.07, 2.32)**	**0.02**	**2.79 (2.18, 3.56)**	**<0.001**	**2.39 (1.95, 2.93)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	**1.83 (1.36, 2.46)**	**<0.001**	1.11 (0.94, 1.31)	0.20	**1.25 (1.09, 1.44)**	**<0.01**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	**1.40 (1.05, 1.86)**	**0.02**	1.05 (0.89, 1.24)	0.56	1.12 (0.97, 1.29)	0.12
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.91 (0.67, 1.23)	0.53	1.14 (0.94, 1.37)	0.18	1.07 (0.91, 1.25)	0.40
Muslim	**1.45 (1.07, 1.97)**	**0.02**	1.05 (0.87, 1.26)	0.62	1.16 (0.99, 1.35)	0.07
Other religion	1.30 (0.53, 3.16)	0.57	**0.46 (0.23, 0.92)**	**0.03**	0.64 (0.38, 1.08)	0.10
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	0.92 (0.67, 1.27)	0.61	**1.48 (1.23, 1.78)**	**<0.001**	**1.33 (1.14, 1.55)**	**<0.001**
Ownership of goods and assets‡‡	1.06 (0.98, 1.13)	0.13	**1.07 (1.03, 1.12)**	**<0.01**	**1.07 (1.03, 1.11)**	**<0.001**
Media use	1.06 (0.99, 1.13)	0.08	1.02 (0.98, 1.06)	0.38	1.03 (0.99, 1.06)	0.11
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.22 (0.89, 1.66)	0.21	1.10 (0.90, 1.35)	0.35	1.11 (0.94, 1.31)	0.23
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.10 (0.95, 1.28)	0.19

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

Supplemental Table 8. Association, by geographic location, between odds of pro-family planning self-efficacy beliefs* and dose of exposure to family planning campaigns†, Tanzania

	Urban (n=1,521)		Rural (n=2,662)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	**1.48 (1.07, 2.05)**	**0.02**	**1.43 (1.17, 1.76)**	**<0.01**	**1.46 (1.23, 1.74)**	**<0.001**
High (6-8)	**1.94 (1.39, 2.71)**	**<0.001**	**1.75 (1.40, 2.19)**	**<0.001**	**1.82 (1.51, 2.19)**	**<0.001**
Very high (≥9)	**2.56 (1.81, 3.63)**	**<0.001**	**2.26 (1.74, 2.94)**	**<0.001**	**2.39 (1.95, 2.93)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.24 (0.98, 1.57)	0.07	**1.27 (1.06, 1.51)**	**0.01**	**1.25 (1.09, 1.44)**	**<0.01**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.23 (0.96, 1.58)	0.10	1.04 (0.87, 1.26)	0.66	1.10 (0.95, 1.28)	0.19
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.94 (0.71, 1.24)	0.64	1.15 (0.95, 1.40)	0.15	1.07 (0.91, 1.25)	0.40
Muslim	1.03 (0.79, 1.33)	0.85	**1.23 (1.01, 1.50)**	**0.04**	1.16 (0.99, 1.35)	0.07
Other religion	0.67 (0.20, 2.18)	0.50	0.68 (0.38, 1.23)	0.20	0.64 (0.38, 1.08)	0.10
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.34 (1.04, 1.71)**	**0.02**	**1.33 (1.08, 1.62)**	**0.01**	**1.33 (1.14, 1.55)**	**<0.001**
Ownership of goods and assets‡ ‡	1.05 (1.00, 1.11)	0.06	**1.08 (1.03, 1.14)**	**<0.01**	**1.07 (1.03, 1.11)**	**<0.001**
Media use	1.03 (0.98, 1.09)	0.20	1.03 (0.98, 1.08)	0.20	1.03 (0.99, 1.06)	0.11
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.89 (0.68, 1.15)	0.36	**1.35 (1.08, 1.68)**	**0.01**	1.11 (0.94, 1.31)	0.23
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.12 (0.97, 1.29)	0.12

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

Supplemental Table 9. Association, by age, between odds of pro-family planning self-efficacy beliefs* and dose of exposure to family planning campaigns†, Tanzania

	≤24 years (n=1,335)		>24 years (n=2,848)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	**1.56 (1.13, 2.13)**	**0.01**	**1.42 (1.15, 1.75)**	**<0.01**	**1.46 (1.23, 1.74)**	**<0.001**
High (6-8)	**1.75 (1.25, 2.45)**	**<0.01**	**1.88(1.51, 2.34)**	**<0.001**	**1.82 (1.51, 2.19)**	**<0.001**
Very high (≥9)	**2.79 (1.92, 4.06)**	**<0.001**	**2.23 (1.74, 2.86)**	**<0.001**	**2.39 (1.95, 2.93)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.14 (0.89, 1.48)	0.30	1.11 (0.93, 1.32)	0.25	1.12 (0.97, 1.29)	0.12
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**1.47 (1.12, 1.91)**	**0.01**	0.97 (0.81, 1.17)	0.76	1.10 (0.95, 1.28)	0.19
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.01 (0.77, 1.34)	0.93	1.11 (0.92, 1.35)	0.29	1.07 (0.91, 1.25)	0.40
Muslim	0.92 (0.70, 1.21)	0.56	**1.28 (1.05, 1.55)**	**0.01**	1.16 (0.99, 1.35)	0.07
Other religion	0.69 (0.23, 2.08)	0.51	0.64 (0.35, 1.16)	0.15	0.64 (0.38, 1.08)	0.10
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.20 (0.94, 1.52)	0.14	**1.37 (1.11, 1.69)**	**<0.01**	**1.33 (1.14, 1.55)**	**<0.001**
Ownership of goods and assets‡ ‡	1.04 (0.98, 1.11)	0.22	**1.09 (1.04, 1.14)**	**<0.001**	**1.07 (1.03, 1.11)**	**<0.001**
Media use	1.03 (0.98, 1.10)	0.25	1.02 (0.98, 1.06)	0.29	1.03 (0.99, 1.06)	0.11
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.14 (0.88, 1.48)	0.31	1.11 (0.89, 1.39)	0.36	1.11 (0.94, 1.31)	0.23
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.25 (1.09, 1.44)**	**<0.01**

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

Supplemental Table 10. Association, by gender, between odds of pro-family planning self-efficacy beliefs*and sources of exposure[††] to family planning campaigns, Tanzania

	Men (n=1,109)		Women (n=3,074)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	0.84 (0.61, 1.16)	0.29	**1.53 (1.22, 1.90)**	**<0.001**	**1.25 (1.04, 1.49)**	**0.02**
Medium/High (≥2)	0.74 (0.53, 1.05)	0.09	**2.32 (1.88, 2.86)**	**<0.001**	**1.71 (1.43, 2.03)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	**1.44 (1.07, 1.95)**	**0.02**	1.14 (0.96, 1.37)	0.14	**1.19 (1.02, 1.38)**	**0.03**
Medium/High	**2.03 (1.47, 2.80)**	**<0.001**	1.01 (0.82, 1.25)	0.93	**1.23 (1.03, 1.47)**	**0.02**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	**1.94 (1.44, 2.63)**	**<0.001**	1.09 (0.93, 1.29)	0.28	**1.24 (1.08, 1.43)**	**<0.01**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	**1.43 (1.07, 1.91)**	**0.02**	1.02 (0.87, 1.21)	0.78	1.10 (0.95, 1.27)	0.20
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.93 (0.68, 1.27)	0.65	1.13 (0.94, 1.36)	0.20	1.06 (0.90, 1.24)	0.49
Muslim	**1.44 (1.06, 1.96)**	**0.02**	1.04 (0.86, 1.25)	0.68	1.14 (0.97, 1.33)	0.10
Other religion	1.25 (0.51, 3.05)	0.63	0.50 (0.25, 1.00)	0.05	0.64 (0.38, 1.09)	0.10
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	0.90 (0.65, 1.24)	0.53	**1.47 (1.23, 1.77)**	**<0.001**	**1.33 (1.14, 1.55)**	**<0.001**
Ownership of goods and assets[‡‡]	1.06 (0.99, 1.14)	0.10	**1.07 (1.03, 1.12)**	**<0.01**	**1.07 (1.03, 1.11)**	**<0.001**
Media use	1.06 (0.99, 1.13)	0.08	**1.05 (1.01, 1.09)**	**0.02**	**1.04 (1.01, 1.08)**	**<0.01**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.26 (0.92, 1.72)	0.15	1.18 (0.96, 1.44)	0.12	1.14 (0.97, 1.35)	0.12
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.02 (0.88, 1.19)	0.76

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

Supplemental Table 11. Association, by geographic location, between odds of pro-family planning self-efficacy beliefs* and sources of exposure[††] to campaigns, Tanzania

	Urban (n=1,521)		Rural (n=2,662)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.31 (0.96, 1.79)	0.09	1.20 (0.96, 1.49)	0.10	**1.25 (1.04, 1.49)**	**0.02**
Medium/High (≥2)	**1.79 (1.32, 2.44)**	**<0.001**	**1.65 (1.33, 2.04)**	**<0.001**	**1.71 (1.43, 2.03)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	0.99 (0.76, 1.27)	0.92	**1.30 (1.08, 1.58)**	**0.01**	**1.19 (1.02, 1.38)**	**0.03**
Medium/High	1.21 (0.92, 1.59)	0.17	1.21 (0.96, 1.52)	0.10	**1.23 (1.03, 1.47)**	**0.02**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.23 (0.97, 1.55)	0.09	**1.26 (1.05, 1.50)**	**0.01**	**1.24 (1.08, 1.43)**	**<0.01**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.14 (0.89, 1.48)	0.30	0.97 (0.80, 1.17)	0.75	1.02 (0.88, 1.19)	0.76
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.94 (0.71, 1.24)	0.66	1.13 (0.93, 1.37)	0.21	1.06 (0.90, 1.24)	0.49
Muslim	1.01 (0.78, 1.31)	0.94	1.21 (0.99, 1.48)	0.06	1.14 (0.97, 1.33)	0.10
Other religion	0.65 (0.20, 2.13)	0.48	0.69 (0.38, 1.23)	0.21	0.64 (0.38, 1.09)	0.10
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.35 (1.06, 1.74)**	**0.02**	**1.31 (1.07, 1.60)**	**0.01**	**1.33 (1.14, 1.55)**	**<0.001**
Ownership of goods and assets[‡‡]	1.05 (1.00, 1.11)	0.06	**1.09 (1.03, 1.14)**	**<0.01**	**1.07 (1.03, 1.11)**	**<0.001**
Media use	**1.05 (1.00, 1.11)**	**0.04**	1.05 (1.00, 1.09)	0.05	**1.04 (1.01, 1.08)**	**<0.01**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.93 (0.72, 1.20)	0.57	**1.37 (1.10, 1.72)**	**0.01**	1.14 (0.97, 1.35)	0.12
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.10 (0.95, 1.27)	0.20

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

Supplemental Table 12. Association, by age, between odds of pro-family planning self-efficacy beliefs* and sources of exposure[††] to family planning campaigns, Tanzania

	≤24 years (n=1,335)		>24 years (n=2,848)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.28 (0.94, 1.74)	0.116	1.23 (0.99, 1.54)	0.061	**1.25 (1.04, 1.49)**	**0.02**
Medium/High (≥2)	**2.01 (1.49, 2.73)**	**<0.001**	**1.59 (1.28, 1.97)**	**<0.001**	**1.71 (1.43, 2.03)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	1.19 (0.91, 1.55)	0.194	1.19 (0.99, 1.44)	0.062	**1.19 (1.02, 1.38)**	**0.03**
Medium/High	1.17 (0.87, 1.58)	0.304	**1.27 (1.02, 1.58)**	**0.030**	**1.23 (1.03, 1.47)**	**0.02**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.11 (0.86, 1.43)	0.421	1.08 (0.91, 1.29)	0.364	1.10 (0.95, 1.27)	0.20
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.30 (0.99, 1.71)	0.057	0.92 (0.76, 1.10)	0.359	1.02 (0.88, 1.19)	0.76
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.00 (0.76, 1.32)	0.981	1.10 (0.91, 1.33)	0.334	1.06 (0.90, 1.24)	0.49
Muslim	0.90 (0.68, 1.19)	0.460	**1.26 (1.04, 1.52)**	**0.020**	1.14 (0.97, 1.33)	0.10
Other religion	0.69 (0.23, 2.08)	0.511	0.65 (0.36, 1.17)	0.152	0.64 (0.38, 1.09)	0.10
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.18 (0.93, 1.50)	0.176	**1.38 (1.12, 1.71)**	**0.002**	**1.33 (1.14, 1.55)**	**<0.001**
Ownership of goods and assets[‡‡]	1.04 (0.97, 1.10)	0.275	**1.09 (1.04, 1.14)**	**<0.001**	**1.07 (1.03, 1.11)**	**<0.001**
Media use	1.05 (0.99, 1.12)	0.080	1.04 (1.00, 1.08)	0.071	**1.04 (1.01, 1.08)**	**<0.01**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.20 (0.93, 1.55)	0.160	1.13 (0.91, 1.41)	0.279	1.14 (0.97, 1.35)	0.12
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.24 (1.08, 1.43)**	**<0.01**

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

Supplemental Table 13. Association, by gender, between odds of pro-family planning perceived norms* and dose of exposure† to family planning campaigns, Tanzania

	Men (n=1,113)		Women (n=3,081)		Overall (N=4,194)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
None/Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	1.32 (0.89, 1.96)	0.169	1.18 (0.97, 1.44)	0.094	**1.20 (1.01, 1.43)**	**0.038**
High (6-8)	**1.97 (1.32, 2.93)**	**0.001**	**1.76 (1.42, 2.18)**	**<0.001**	**1.77 (1.47, 2.13)**	**<0.001**
Very high (≥9)	**2.55 (1.69, 3.84)**	**<0.001**	**2.23 (1.74, 2.85)**	**<0.001**	**2.29 (1.86, 2.81)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	**1.56 (1.14, 2.13)**	**0.005**	1.12 (0.96, 1.32)	0.157	**1.22 (1.06, 1.40)**	**0.007**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.05 (0.78, 1.41)	0.760	1.09 (0.92, 1.29)	0.298	1.07 (0.93, 1.24)	0.332
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	**1.49 (1.08, 2.06)**	**0.016**	1.01 (0.84, 1.21)	0.918	1.12 (0.96, 1.31)	0.158
Muslim	**2.29 (1.66, 3.16)**	**<0.001**	1.10 (0.92, 1.33)	0.290	**1.33 (1.14, 1.56)**	**<0.001**
Other religion	1.49 (0.59, 3.77)	0.397	**0.26 (0.13, 0.53)**	**<0.001**	**0.44 (0.25, 0.77)**	**0.004**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.12 (0.80, 1.57)	0.506	**1.22 (1.02, 1.46)**	**0.027**	**1.22 (1.04, 1.43)**	**0.013**
Ownership of goods and assets‡‡	0.99 (0.92, 1.06)	0.737	**1.08 (1.03, 1.12)**	**0.001**	**1.05 (1.01, 1.09)**	**0.009**
Media use	1.03 (0.97, 1.10)	0.357	0.98 (0.94, 1.02)	0.289	0.99 (0.96, 1.02)	0.739
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.06 (0.77, 1.46)	0.718	0.85 (0.70, 1.04)	0.121	0.90 (0.76, 1.06)	0.213
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**2.21 (1.90, 2.57)**	**<0.001**

* Perceived norms = Composite of five survey questions about partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods.

Supplemental Table 14. Association, by geographic location, between odds of pro-family planning perceived norms* and dose of exposure to family planning campaigns†, Tanzania

	Urban (n=1,526)		Rural (n=2,668)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	1.17 (0.84, 1.62)	0.355	1.23 (1.00, 1.52)	0.050	**1.20 (1.01, 1.43)**	**0.038**
High (6-8)	**1.97 (1.41, 2.75)**	**<0.001**	**1.68 (1.34, 2.10)**	**<0.001**	**1.77 (1.47, 2.13)**	**<0.001**
Very high (≥9)	**2.42 (1.71, 3.43)**	**<0.001**	**2.22 (1.70, 2.89)**	**<0.001**	**2.29 (1.86, 2.81)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.21 (0.96, 1.53)	0.109	**1.23 (1.03, 1.47)**	**0.025**	**1.22 (1.06, 1.40)**	**0.007**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.00 (1.56, 2.57)**	**<0.001**	**2.34 (1.93, 2.83)**	**<0.001**	**2.21 (1.90, 2.57)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.08 (0.82, 1.43)	0.591	1.14 (0.94, 1.38)	0.174	1.12 (0.96, 1.31)	0.158
Muslim	1.14 (0.88, 1.47)	0.335	**1.48 (1.21, 1.80)**	**<0.001**	**1.33 (1.14, 1.56)**	**<0.001**
Other religion	0.39 (0.10, 1.49)	0.170	**0.46 (0.25, 0.85)**	**0.014**	**0.44 (0.25, 0.77)**	**0.004**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.28 (1.00, 1.65)**	**0.049**	1.18 (0.96, 1.44)	0.111	**1.22 (1.04, 1.43)**	**0.013**
Ownership of goods and assets‡‡	1.05 (0.99, 1.11)	0.082	1.05 (1.00, 1.10)	0.057	**1.05 (1.01, 1.09)**	**0.009**
Media use	0.98 (0.93, 1.04)	0.534	1.00 (0.96, 1.05)	0.939	0.99 (0.96, 1.02)	0.739
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.90 (0.70, 1.17)	0.450	0.88 (0.71, 1.10)	0.278	0.90 (0.76, 1.06)	0.213
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.07 (0.93, 1.24)	0.332

* Perceived norms = Composite of five survey questions about partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods.

Supplemental Table 15. Association, by age, between odds of pro-family planning perceived norms* and dose of exposure to family planning campaigns†, Tanzania

	≤24 years (n=1,346)		>24 years (n=2,854)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	1.25 (0.91, 1.72)	0.173	1.18 (0.96, 1.46)	0.118	**1.20 (1.01, 1.43)**	**0.038**
High (6-8)	**1.64 (1.16, 2.30)**	**0.005**	**1.84 (1.47, 2.30)**	**<0.001**	**1.77 (1.47, 2.13)**	**<0.001**
Very high (≥9)	**2.37 (1.63, 3.46)**	**<0.001**	**2.23 (1.74, 2.85)**	**<0.001**	**2.29 (1.86, 2.81)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.00 (0.77, 1.30)	0.980	1.10 (0.93, 1.32)	0.264	1.07 (0.93, 1.24)	0.332
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.53 (1.91, 3.34)**	**<0.001**	**2.05 (1.71, 2.46)**	**<0.001**	**2.21 (1.90, 2.57)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.12 (0.85, 1.49)	0.415	1.13 (0.93, 1.37)	0.211	1.12 (0.96, 1.31)	0.158
Muslim	**1.32 (1.00, 1.75)**	**0.049**	**1.35 (1.11, 1.64)**	**0.002**	**1.33 (1.14, 1.56)**	**<0.001**
Other religion	**0.20 (0.04, 0.91)**	**0.037**	**0.52 (0.28, 0.95)**	**0.035**	**0.44 (0.25, 0.77)**	**0.004**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.34 (1.05, 1.71)**	**0.017**	1.10 (0.90, 1.36)	0.350	**1.22 (1.04, 1.43)**	**0.013**
Ownership of goods and assets‡‡	1.04 (0.98, 1.11)	0.234	**1.06 (1.01, 1.11)**	**0.015**	**1.05 (1.01, 1.09)**	**0.009**
Media use	0.99 (0.94, 1.06)	0.860	0.99 (0.95, 1.03)	0.683	0.99 (0.96, 1.02)	0.739
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.78 (0.60, 1.01)	0.057	1.02 (0.82, 1.27)	0.857	0.90 (0.76, 1.06)	0.213
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.22 (1.06, 1.40)**	**0.007**

* Perceived norms = Composite of five survey questions about partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods.

Supplemental Table 16. Association, by gender, between odds of pro-family planning perceived norms* and sources of exposure[††] to family planning campaigns, Tanzania

	Men (n=1,113)		Women (n=3,081)		Overall (N=4,194)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.24 (0.88, 1.73)	0.217	**1.46 (1.18, 1.81)**	**0.001**	**1.39 (1.16, 1.66)**	**<0.001**
Medium/High (≥2)	1.42 (0.99, 2.03)	0.054	**1.89 (1.54, 2.32)**	**<0.001**	**1.77 (1.48, 2.11)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	1.17 (0.85, 1.60)	0.331	1.13 (0.95, 1.35)	0.173	1.13 (0.97, 1.31)	0.125
Medium/High	**1.86 (1.35, 2.58)**	**<0.001**	**1.37 (1.11, 1.70)**	**0.004**	**1.50 (1.25, 1.78)**	**<0.001**
Health worker						
None	Ref	Ref	Ref	Ref	Ref	Ref
Any	1.58 (0.76, 3.29)	0.220	1.35 (0.99, 1.85)	0.059	**1.35 (1.02, 1.81)**	**0.039**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	**1.56 (1.14, 2.13)**	**0.006**	1.12 (0.95, 1.35)	0.185	**1.21 (1.05, 1.39)**	**0.009**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.04 (0.77, 1.40)	0.782	1.07 (0.90, 1.26)	0.434	1.05 (0.91, 1.21)	0.502
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	**1.48 (1.07, 2.06)**	**0.019**	1.00 (0.83, 1.20)	0.970	1.10 (0.94, 1.29)	0.224
Muslim	**2.24 (1.63, 3.09)**	**<0.001**	1.08 (0.90, 1.30)	0.425	**1.30 (1.11, 1.53)**	**0.001**
Other religion	1.40 (0.55, 3.52)	0.478	**0.28 (0.13, 0.57)**	**0.001**	**0.45 (0.26, 0.79)**	**0.006**
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.11 (0.79, 1.56)	0.535	1.19 (1.00, 1.43)	0.053	**1.19 (1.02, 1.40)**	**0.026**
Ownership of goods and assets[‡‡]	0.99 (0.92, 1.06)	0.691	**1.07 (1.03, 1.12)**	**0.001**	**1.05 (1.01, 1.09)**	**0.011**
Media use	1.04 (0.98, 1.12)	0.203	0.99 (0.95, 1.03)	0.585	1.00 (0.97, 1.04)	0.803
Education						
≤ Primary school	--	--	--	--	Ref	Ref
> Primary school	1.08 (0.78, 1.49)	0.651	0.89 (0.73, 1.08)	0.236	0.92 (0.78, 1.09)	0.328
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**2.04 (1.75, 2.38)**	**<0.001**

* Pro-family planning normative beliefs = Composite of five survey questions about respondents' perceptions of partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 17. Association, by geographic location, between odds of pro-family planning perceived norms* and sources of exposure[††] to campaigns, Tanzania

	Urban (n=1,526)		Rural (n=2,668)		Overall (N=4,194)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	**1.66 (1.21, 2.29)**	**0.002**	**1.26 (1.01, 1.58)**	**0.037**	**1.39 (1.16, 1.66)**	**<0.001**
Medium/High (≥2)	**1.82 (1.33, 2.50)**	**<0.001**	**1.77 (1.43, 2.20)**	**<0.001**	**1.77 (1.48, 2.11)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	1.22 (0.95, 1.58)	0.122	1.08 (0.89, 1.31)	0.412	1.13 (0.97, 1.31)	0.125
Medium/High	**1.95 (1.48, 2.57)**	**<0.001**	1.21 (0.96, 1.53)	0.110	**1.50 (1.25, 1.78)**	**<0.001**
Community health worker (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Any	0.88 (0.56, 1.39)	0.593	**1.81 (1.23, 2.66)**	**0.002**	**1.35 (1.02, 1.81)**	**0.039**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.25 (0.98, 1.58)	0.067	1.20 (1.00, 1.43)	0.052	**1.21 (1.05, 1.39)**	**0.009**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**1.94 (1.50, 2.51)**	**<0.001**	**2.08 (1.71, 2.53)**	**<0.001**	**2.04 (1.75, 2.38)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.05 (0.79, 1.39)	0.737	1.12 (0.93, 1.36)	0.240	1.10 (0.94, 1.29)	0.224
Muslim	1.10 (0.85, 1.43)	0.456	**1.43 (1.17, 1.75)**	**<0.001**	**1.30 (1.11, 1.53)**	**0.001**
Other religion	0.40 (0.10, 1.53)	0.181	**0.47 (0.25, 0.88)**	**0.018**	**0.45 (0.26, 0.79)**	**0.006**
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.27 (0.99, 1.64)	0.061	1.14 (0.93, 1.40)	0.202	**1.19 (1.02, 1.40)**	**0.026**
Ownership of goods and assets[‡‡]	1.05 (0.99, 1.11)	0.081	1.05 (1.00, 1.10)	0.072	**1.05 (1.01, 1.09)**	**0.011**
Media use	0.99 (0.94, 1.04)	0.744	1.01 (0.97, 1.06)	0.520	1.00 (0.97, 1.04)	0.803
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.93 (0.72, 1.20)	0.577	0.90 (0.72,1.13)	0.372	0.92 (0.78, 1.09)	0.328
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.05 (0.91, 1.21)	0.502

* Pro-family planning normative beliefs = Composite of five survey questions about respondents' perceptions of partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 18. Association, by age, between odds of pro-family planning perceived norms* and sources of exposure†† to family planning campaigns, Tanzania

	≤24 years (n=1,340)		>24 years (n=2,854)		Overall (N=4,194)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.36 (0.99, 1.87)	0.055	**1.39 (1.11, 1.74)**	**0.004**	**1.39 (1.16, 1.66)**	**<0.001**
Medium/High (≥2)	**1.75 (1.28, 2.38)**	**<0.001**	**1.78 (1.43, 2.20)**	**<0.001**	**1.77 (1.48, 2.11)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	**1.56 (1.19, 2.05)**	**0.001**	0.97 (0.80, 1.17)	0.730	1.13 (0.97, 1.31)	0.125
Medium/High	**1.58 (1.16, 2.15)**	**0.004**	**1.45 (1.17, 1.81)**	**0.001**	**1.50 (1.25, 1.78)**	**<0.001**
Community health worker (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Any	**2.05 (1.07, 3.92)**	**0.030**	1.22 (0.89, 1.69)	0.221	**1.35 (1.02, 1.81)**	**0.039**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.32 (1.75, 3.09)**	**<0.001**	**1.90 (1.58, 2.29)**	**<0.001**	**2.04 (1.75, 2.38)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.98 (0.76, 1.27)	0.884	1.08 (0.90, 1.28)	0.406	1.05 (0.91, 1.21)	0.502
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.08 (0.81, 1.43)	0.601	1.12 (0.93, 1.36)	0.238	1.10 (0.94, 1.29)	0.224
Muslim	1.25 (0.94, 1.66)	0.120	**1.32 (1.09, 1.60)**	**0.005**	**1.30 (1.11, 1.53)**	**0.001**
Other religion	**0.21 (0.05, 0.96)**	**0.045**	**0.52 (0.28, 0.97)**	**0.040**	**0.45 (0.26, 0.79)**	**0.006**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.30 (1.02, 1.66)**	**0.034**	1.10 (0.89, 1.35)	0.382	**1.19 (1.02, 1.40)**	**0.026**
Ownership of goods and assets‡‡	1.03 (0.97, 1.10)	0.339	**1.06 (1.01, 1.11)**	**0.015**	**1.05 (1.01, 1.09)**	**0.011**
Media use	1.00 (0.94, 1.06)	0.974	1.00 (0.96, 1.04)	0.864	1.00 (0.97, 1.04)	0.803
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.81 (0.62, 1.05)	0.113	1.04 (0.83, 1.30)	0.741	0.92 (0.78, 1.09)	0.328
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.21 (1.05, 1.39)**	**0.009**

* Pro-family planning normative beliefs = Composite of five survey questions about respondents' perceptions of partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 19. Association, by gender, between odds of current modern contraceptive use and dose of exposure to family planning campaigns†, Tanzania

	Men (n=1,023)		Women (n=2,750)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	**2.12 (1.43, 3.15)**	**<0.001**	**1.56 (1.26, 1.94)**	**<0.001**	**1.68 (1.39, 2.03)**	**<0.001**
High (6-8)	**2.30 (1.54, 3.45)**	**<0.001**	**1.78 (1.41, 2.24)**	**<0.001**	**1.87 (1.53, 2.28)**	**<0.001**
Very high (≥9)	**3.40 (2.22, 5.20)**	**<0.001**	**2.48 (1.91, 3.22)**	**<0.001**	**2.66 (2.13, 3.32)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.21 (0.88, 1.67)	0.25	**1.37 (1.15, 1.64)**	**<0.001**	**1.36 (1.16, 1.58)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.21 (0.89, 1.66)	0.22	**1.21 (1.01, 1.44)**	**0.04**	**1.19 (1.02, 1.39)**	**0.02**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.04 (0.74, 1.45)	0.83	0.93 (0.76, 1.13)	0.48	0.97 (0.82, 1.15)	0.76
Muslim	1.22 (0.88, 1.70)	0.23	0.82 (0.68, 1.00)	0.05	0.91 (0.77, 1.07)	0.26
Other religion	0.64 (0.26, 1.58)	0.33	**0.40 (0.19, 0.83)**	**0.01**	**0.47 (0.27, 0.83)**	**0.01**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**3.40 (2.42, 4.77)**	**<0.001**	**1.81 (1.49, 2.19)**	**<0.001**	**2.13 (1.80, 2.52)**	**<0.001**
Ownership of goods and assets‡‡	0.97 (0.90, 1.04)	0.38	**1.05 (1.00, 1.10)**	**0.02**	1.03 (0.99, 1.07)	0.17
Media use	1.03 (0.96, 1.11)	0.39	1.00 (0.96, 1.04)	0.99	1.01 (0.98, 1.05)	0.58
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.37 (0.98, 1.93)	0.07	0.87 (0.70, 1.07)	0.19	1.00 (0.83, 1.19)	0.98
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**0.63 (0.54, 0.74)**	**<0.001**

Supplemental Table 20. Association, by geographic location, between odds of current modern contraceptive use and dose of exposure to family planning campaigns†, Tanzania

	Urban (n=1,393)		Rural (n=2,380)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	**1.64 (1.14, 2.35)**	**0.01**	**1.67 (1.33, 2.09)**	**<0.01**	**1.68 (1.39, 2.03)**	**<0.001**
High (6-8)	**2.04 (1.41, 2.94)**	**<0.01**	**1.77 (1.39, 2.26)**	**<0.01**	**1.87 (1.53, 2.28)**	**<0.001**
Very high (≥9)	**3.09 (2.11, 4.51)**	**<0.01**	**2.33 (1.76, 3.10)**	**<0.01**	**2.66 (2.13, 3.32)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.18 (0.91, 1.53)	0.20	**1.48 (1.22, 1.80)**	**<0.01**	**1.36 (1.16, 1.58)**	**<0.001**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.60 (0.46, 0.78)**	**<0.01**	**0.67 (0.55, 0.81)**	**<0.01**	**0.63 (0.54, 0.74)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.03 (0.77, 1.39)	0.83	0.94 (0.76, 1.15)	0.55	0.97 (0.82, 1.15)	0.76
Muslim	0.84 (0.63, 1.10)	0.21	0.95 (0.77, 1.18)	0.66	0.91 (0.77, 1.07)	0.26
Other religion	1.30 (0.36, 4.71)	0.69	**0.39 (0.20, 0.74)**	**<0.01**	**0.47 (0.27, 0.83)**	**0.01**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**2.36 (1.80, 3.09)**	**<0.01**	**1.99 (1.60, 2.47)**	**<0.01**	**2.13 (1.80, 2.52)**	**<0.001**
Ownership of goods and assets‡‡	0.98 (0.92, 1.04)	0.43	**1.07 (1.02, 1.13)**	**0.01**	1.03 (0.99, 1.07)	0.17
Media use	1.00 (0.95, 1.06)	0.92	1.02 (0.97, 1.07)	0.49	1.01 (0.98, 1.05)	0.58
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.00 (0.76, 1.33)	0.97	0.99 (0.78, 1.26)	0.96	1.00 (0.83, 1.19)	0.98
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	**1.19 (1.02, 1.39)**	**0.02**

Supplemental Table 21. Association, by age, between odds of current modern contraceptive use and dose of exposure to family planning campaigns†, Tanzania

	≤24 years (n=1,187)		>24 years (n=2,586)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	**2.02 (1.40, 2.93)**	**<0.001**	**1.58 (1.26, 1.98)**	**<0.001**	**1.68 (1.39, 2.03)**	**<0.001**
High (6-8)	**1.97 (1.34, 2.90)**	**<0.01**	**1.84 (1.46, 2.34)**	**<0.001**	**1.87 (1.53, 2.28)**	**<0.001**
Very high (≥9)	**3.10 (2.04, 4.70)**	**<0.001**	**2.50 (1.92, 3.25)**	**<0.001**	**2.66 (2.13, 3.32)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	0.99 (0.75, 1.32)	0.97	**1.30 (1.08, 1.55)**	**0.01**	**1.19 (1.02, 1.39)**	**0.02**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.56 (0.42, 0.74)**	**<0.001**	**0.64 (0.53, 0.78)**	**<0.001**	**0.63 (0.54, 0.74)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.21 (0.89, 1.65)	0.22	0.89 (0.73, 1.09)	0.27	0.97 (0.82, 1.15)	0.76
Muslim	1.15 (0.84, 1.57)	0.37	0.83 (0.68, 1.02)	0.07	0.91 (0.77, 1.07)	0.26
Other religion	0.71 (0.21, 2.46)	0.59	**0.41 (0.22, 0.77)**	**0.01**	**0.47 (0.27, 0.83)**	**0.01**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**2.92 (2.23, 3.84)**	**<0.001**	**1.70 (1.37, 2.12)**	**<0.001**	**2.13 (1.80, 2.52)**	**<0.001**
Ownership of goods and assets‡‡	0.97 (0.91, 1.04)	0.45	**1.05 (1.01, 1.10)**	**0.03**	1.03 (0.99, 1.07)	0.17
Media use	1.04 (0.97, 1.11)	0.25	1.00 (0.96, 1.04)	0.88	1.01 (0.98, 1.05)	0.58
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.87 (0.65, 1.16)	0.34	1.09 (0.86, 1.38)	0.46	1.00 (0.83, 1.19)	0.98
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	--	--	--	--	**1.36 (1.16, 1.58)**	**<0.001**

Supplemental Table 22. Association, by gender, between odds of current modern contraceptive use and sources of exposure[††] to family planning campaigns, Tanzania

	Men (n=1,023)		Women (n=2,750)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.40 (1.00, 1.97)	0.05	**1.97 (1.54, 2.53)**	**<0.001**	**1.77 (1.45, 2.16)**	**<0.001**
Medium/High (≥2)	1.45 (1.01, 2.09)	0.05	**2.38 (1.88, 2.01)**	**<0.001**	**2.06 (1.70, 2.50)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	1.36 (0.99, 1.87)	0.06	1.19 (0.98, 1.44)	0.07	**1.24 (1.05, 1.46)**	**0.01**
Medium/High	**2.12 (1.50, 2.99)**	**<0.001**	**1.51 (1.21, 1.89)**	**<0.001**	**1.64 (1.36, 1.97)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.23 (0.89, 1.69)	0.21	**1.37 (1.15, 1.64)**	**<0.01**	**1.36 (1.16, 1.59)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.22 (0.89, 1.66)	0.22	1.20 (1.00, 1.43)	0.05	**1.18 (1.01, 1.38)**	**0.04**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.03 (0.74, 1.44)	0.86	0.91 (0.75, 1.11)	0.37	0.95 (0.80, 1.13)	0.57
Muslim	1.21 (0.87, 1.68)	0.25	0.81 (0.67, 0.99)	0.04	0.90 (0.76, 1.06)	0.21
Other religion	0.59 (0.24, 1.44)	0.24	**0.45 (0.21, 0.94)**	**0.03**	**0.48 (0.27, 0.85)**	**0.01**
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**3.35 (2.38, 4.71)**	**<0.001**	**1.76 (1.44, 2.14)**	**<0.001**	**2.08 (1.76, 2.46)**	**<0.001**
Ownership of goods and assets[‡‡]	0.97 (0.90, 1.05)	0.48	**1.06 (1.01, 1.11)**	**0.01**	1.03 (0.99, 1.07)	0.12
Media use	1.05 (0.98, 1.12)	0.19	1.01 (0.96, 1.05)	0.80	1.02 (0.98, 1.05)	0.32
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.40 (1.00, 1.97)	0.05	0.88 (0.71, 1.09)	0.24	1.00 (0.84, 1.20)	0.97
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**0.59 (0.50, 0.70)**	**<0.001**

Supplemental Table 23. Association, by geographic location, between odds of current modern contraceptive use and sources of exposure[††] to family planning campaigns, Tanzania

	Urban (n=1,393)		Rural (n=2,380)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	**1.73 (1.22, 2.46)**	**<0.01**	**1.76 (1.38, 2.24)**	**<0.001**	**1.77 (1.45, 2.16)**	**<0.001**
Medium/High (≥2)	**1.91 (1.35, 2.70)**	**<0.001**	**2.14 (1.70, 2.71)**	**<0.001**	**2.06 (1.70, 2.50)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	**1.56 (1.18, 2.05)**	**<0.01**	1.10 (0.90, 1.35)	0.36	**1.24 (1.05, 1.46)**	**0.01**
Medium/High	**2.09 (1.57, 2.77)**	**<0.001**	**1.37 (1.07, 1.76)**	**0.01**	**1.64 (1.36, 1.97)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.22 (0.95, 1.59)	0.12	**1.45 (1.20, 1.77)**	**<0.001**	**1.36 (1.16, 1.59)**	**<0.001**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.57 (0.44, 0.75)**	**<0.001**	**0.61 (0.50, 0.75)**	**<0.001**	**0.59 (0.50, 0.70)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.99 (0.73, 1.34)	0.92	0.93 (0.75, 1.14)	0.48	0.95 (0.80, 1.13)	0.57
Muslim	0.81 (0.61, 1.07)	0.14	0.95 (0.77, 1.18)	0.67	0.90 (0.76, 1.06)	0.21
Other religion	1.32 (0.37, 4.76)	0.67	**0.39 (0.20, 0.76)**	**0.01**	**0.48 (0.27, 0.85)**	**0.01**
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**2.39 (1.82, 3.13)**	**<0.001**	**1.93 (1.55, 2.40)**	**<0.001**	**2.08 (1.76, 2.46)**	**<0.001**
Ownership of goods and assets[‡‡]	0.98 (0.92, 1.04)	0.47	**1.08 (1.02, 1.13)**	**0.01**	1.03 (0.99, 1.07)	0.12
Media use	1.01 (0.95, 1.06)	0.80	1.03 (0.98, 1.08)	0.27	1.02 (0.98, 1.05)	0.32
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.06 (0.80, 1.40)	0.69	0.98 (0.77, 1.25)	0.89	1.00 (0.84, 1.20)	0.97
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	--	--	--	--	**1.18 (1.01, 1.38)**	**0.04**

Supplemental Table 24. Association, by age, between odds of current modern contraceptive use and sources of exposure[††] to family planning campaigns, Tanzania

	≤24 years (n=1,187)		>24 years (n=2,586)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	**1.77 (1.23, 2.53)**	**<0.01**	**1.75 (1.38, 2.22)**	**<0.001**	**1.77 (1.45, 2.16)**	**<0.001**
Medium/High (≥2)	**2.24 (1.57, 3.20)**	**<0.001**	**1.97 (1.56, 2.48)**	**<0.001**	**2.06 (1.70, 2.50)**	**<0.001**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	1.23 (0.91, 1.65)	0.18	**1.25 (1.03, 1.52)**	**0.02**	**1.24 (1.05, 1.46)**	**0.01**
Medium/High	**1.60 (1.15, 2.22)**	**0.01**	**1.64 (1.31, 2.06)**	**<0.001**	**1.64 (1.36, 1.97)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.00 (0.75, 1.33)	0.98	**1.27 (1.06, 1.52)**	**0.01**	**1.18 (1.01, 1.38)**	**0.04**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.51 (0.38, 0.68)**	**<0.01**	**0.61 (0.50, 0.74)**	**<0.001**	**0.59 (0.50, 0.70)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.16 (0.85, 1.58)	0.36	0.88 (0.72, 1.08)	0.22	0.95 (0.80, 1.13)	0.57
Muslim	1.13 (0.83, 1.54)	0.44	0.82 (0.67, 1.01)	0.06	0.90 (0.76, 1.06)	0.21
Other religion	0.73 (0.21, 2.54)	0.63	**0.42 (0.22, 0.79)**	**0.01**	**0.48 (0.27, 0.85)**	**0.01**
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**2.80 (2.13, 3.68)**	**<0.001**	**1.69 (1.36, 2.10)**	**<0.001**	**2.08 (1.76, 2.46)**	**<0.001**
Ownership of goods and assets[‡‡]	0.98 (0.91, 1.05)	0.56	**1.06 (101, 1.11)**	**0.02**	1.03 (0.99, 1.07)	0.12
Media use	1.05 (0.98, 1.12)	0.15	1.00 (0.96, 1.05)	0.87	1.02 (0.98, 1.05)	0.32
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.88 (0.66, 1.18)	0.40	1.10 (0.87, 1.38)	0.44	1.00 (0.84, 1.20)	0.97
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.36 (1.16, 1.59)**	**<0.001**

Supplemental Table 25. Association, by gender, between odds of communicating with provider about family planning and dose of exposure to family planning campaigns†, Tanzania

	Men (n=1,113)		Women (n=3,032)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	1.58 (0.39, 6.31)	0.52	**3.01 (1.21, 7.49)**	**0.02**	**2.59 (1.22, 5.52)**	**0.01**
High (6-8)	1.35 (0.33, 5.60)	0.68	**5.18 (2.13, 12.60)**	**<0.001**	**3.90 (1.86, 8.17)**	**<0.001**
Very high (≥9)	**4.92 (1.39, 17.36)**	**0.01**	**8.80 (3.60, 21.51)**	**<0.001**	**8.03 (3.87, 16.68)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.82 (0.74, 4.47)	0.19	1.12 (0.72, 1.74)	0.61	1.27 (0.86, 1.88)	0.23
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.93 (0.85, 4.37)	0.11	1.04 (0.68, 1.60)	0.85	1.24 (0.85, 1.80)	0.26
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.48 (0.72, 3.02)	0.28	0.85 (0.53, 1.36)	0.50	1.04 (0.70, 1.52)	0.86
Muslim	**0.27 (0.09, 0.87)**	**0.03**	0.70 (0.43, 1.13)	0.14	**0.62 (0.40, 0.95)**	**0.03**
Other religion	2.49 (0.49, 12.76)	0.27	--	--	1.02 (0.23, 4.40)	0.98
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	3.46 (0.78, 15.31)	0.10	**1.09 (0.66, 1.82)**	**0.73**	1.34 (0.84, 2.16)	0.22
Ownership of goods and assets‡‡	1.12 (0.94, 1.34)	0.19	1.01 (0.91, 1.13)	0.86	1.04 (0.70, 1.52)	0.43
Media use	1.12 (0.94, 1.34)	0.21	1.10 (0.99, 1.21)	0.07	**1.10 (1.01, 1.20)**	**0.02**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.60 (0.26, 1.42)	0.25	0.74 (0.45, 1.23)	0.25	0.68 (0.44, 1.05)	0.08
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.24 (0.85, 1.81)	0.27

Supplemental Table 26. Association, by geographic location, between odds of communicating with provider about family planning and dose of exposure to family planning campaigns†, Tanzania

	Urban (n=1,513)		Rural (n=2,667)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	0.91 (0.26, 3.18)	0.88	**4.22 (1.58, 11.24)**	**<0.01**	**2.59 (1.22, 5.52)**	**0.01**
High (6-8)	1.58 (0.50, 4.96)	0.44	**6.03 (2.27, 16.00)**	**<0.001**	**3.90 (1.86, 8.17)**	**<0.001**
Very high (≥9)	**3.28 (1.09, 9.87)**	**0.04**	**12.45 (4.71, 32.93)**	**<0.001**	**8.03 (3.87, 16.68)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.21 (0.66, 2.21)	0.55	1.25 (0.75, 2.09)	0.39	1.27 (0.86, 1.88)	0.23
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.08 (1.05, 4.10)**	**0.04**	0.93 (0.58, 1.48)	0.76	1.24 (0.85, 1.81)	0.27
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.95 (0.51, 1.78)	0.88	1.07 (0.65, 1.75)	0.78	1.04 (0.70, 1.52)	0.86
Muslim	0.51 (0.26, 1.00)	0.05	0.72 (0.41, 1.28)	0.27	**0.62 (0.40, 0.95)**	**0.03**
Other religion	--	--	1.24 (0.28, 5.54)	0.78	1.02 (0.23, 4.40)	0.98
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.37 (0.68, 2.74)**	**0.38**	1.42 (0.74, 2.74)	0.30	1.34 (0.84, 2.16)	0.22
Ownership of goods and assets‡‡	1.10 (0.95, 1.26)	0.20	0.98 (0.86, 1.11)	0.76	1.04 (0.70, 1.52)	0.43
Media use	1.15 (1.00, 1.31)	0.05	1.08 (0.96, 1.21)	0.18	**1.10 (1.01, 1.20)**	**0.02**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.71 (0.37, 1.35)	0.29	0.63 (0.34, 1.17)	0.14	0.68 (0.44, 1.05)	0.08
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.24 (0.85, 1.80)	0.26

Supplemental Table 27. Association, by age, between odds of communicating with provider about family planning and dose of exposure to family planning campaigns†, Tanzania

	≤24 years (n=1,323)		>24 years (n=2,854)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	1.00 (0.23, 4.31)	1.00	**3.49 (1.42, 8.62)**	**0.01**	**2.59 (1.22, 5.52)**	**0.01**
High (6-8)	3.11 (0.85, 11.43)	0.09	**4.19 (1.70, 10.32)**	**<0.01**	**3.90 (1.86, 8.17)**	**<0.001**
Very high (≥9)	**4.89 (1.32, 18.11)**	**0.02**	**9.63 (3.98, 23.32)**	**<0.001**	**8.03 (3.87, 16.68)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.32 (0.63, 2.75)	0.47	1.19 (0.77, 1.85)	0.42	1.24 (0.85, 1.80)	0.26
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.53 (1.06, 6.07)**	**0.04**	1.03 (0.67, 1.58)	0.89	1.24 (0.85, 1.81)	0.27
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.12 (0.54, 2.32)	0.77	0.98 (0.62, 1.54)	0.92	1.04 (0.70, 1.52)	0.86
Muslim	0.43 (0.17, 1.09)	0.08	0.66 (0.40, 1.09)	0.11	**0.62 (0.40, 0.95)**	**0.03**
Other religion	--	--	1.15 (0.26, 5.06)	0.86	1.02 (0.23, 4.40)	0.98
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.31 (0.61, 2.79)	0.49	1.31 (0.61, 2.79)	0.49	1.34 (0.84, 2.16)	0.22
Ownership of goods and assets‡‡	1.07 (0.90, 1.28)	0.44	1.07 (0.90, 1.28)	0.44	1.04 (0.70, 1.52)	0.43
Media use	1.12 (0.95, 1.33)	0.18	1.12 (0.95, 1.33)	0.18	**1.10 (1.01, 1.20)**	**0.02**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.88 (0.41, 1.89)	0.74	0.61 (0.36, 1.05)	0.08	0.68 (0.44, 1.05)	0.08
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	1.27 (0.86, 1.88)	0.23

Supplemental Table 28. Association, by gender, between odds of communicating with provider about family planning and sources of exposure[††] to family planning campaigns, Tanzania

	Men (n=1,113)		Women (n=3,032)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	0.33 (0.08, 1.27)	0.11	**3.72 (1.10, 12.58)**	**0.04**	1.62 (0.72, 3.63)	0.24
Medium/High (≥2)	2.13 (0.76, 5.95)	0.15	**6.05 (1.87, 19.62)**	**<0.01**	**3.86 (1.83, 8.15)**	**<0.001**
Community health worker (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Any	2.04 (0.62, 6.69)	0.24	**2.01 (1.15, 3.49)**	**0.01**	**1.96 (1.19, 3.22)**	**0.01**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	2.68 (0.97, 7.44)	0.06	1.38 (0.82, 2.33)	0.23	**1.65 (1.05, 2.60)**	**0.03**
Medium/High	**3.90 (1.46, 10.44)**	**0.01**	**3.04 (1.87, 4.94)**	**<0.001**	**3.15 (2.05, 4.84)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.53 (0.61, 3.84)	0.37	1.10 (0.71, 1.72)	0.66	**1.23 (0.83, 1.82)**	**0.31**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.71 (0.74, 3.96)	0.21	0.99 (0.64, 1.52)	0.97	1.16 (0.80, 1.69)	0.44
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.27 (0.61, 2.66)	0.53	0.82 (0.51, 1.31)	0.40	0.97 (0.66, 1.43)	0.88
Muslim	**0.23 (0.07, 0.75)**	**0.01**	0.64 (0.39, 1.03)	0.07	**0.54 (0.35, 0.84)**	**0.01**
Other religion	1.83 (0.35, 9.61)	0.47	--	--	0.92 (0.21, 4.00)	0.91
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	3.18 (0.71, 14.15)	0.13	1.02 (0.61, 1.70)	0.94	1.25 (0.77, 2.02)	0.36
Ownership of goods and assets[‡‡]	1.12 (0.94, 1.34)	0.21	1.02 (0.91, 1.13)	0.79	1.04 (0.95, 1.14)	0.42
Media use	1.11 (0.93, 1.33)	0.25	1.10 (0.99, 1.21)	0.07	**1.11 (1.01, 1.20)**	**0.02**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.61 (0.25, 1.47)	0.27	0.76 (0.46, 1.28)	0.30	0.70 (0.45, 1.08)	0.11
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.01 (0.68, 1.50)	0.95

Supplemental Table 29. Association, by geographic location, between odds of communicating with provider about family planning and sources of exposure[††] to family planning campaigns, Tanzania

	Urban (n=1,513)		Rural (n=2,667)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	0.95 (0.29, 3.10)	0.94	2.26 (0.74, 6.92)	0.15	1.62 (0.72, 3.63)	0.24
Medium/High (≥2)	1.81 (0.61, 5.37)	0.29	**6.22 (2.20, 17.60)**	**<0.01**	**3.86 (1.83, 8.15)**	**<0.001**
Community health worker (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Any	1.53 (0.65, 3.59)	0.33	**2.32 (1.25, 4.30)**	**0.01**	**1.96 (1.19, 3.22)**	**0.01**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	1.44 (0.65, 3.19)	0.37	1.73 (0.99, 3.02)	0.05	**1.65 (1.05, 2.60)**	**0.03**
Medium/High	**3.41 (1.70, 6.96)**	**<0.01**	**2.89 (1.67, 5.02**	**<.001**	**3.15 (2.05, 4.84)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.23 (0.67, 2.25)	0.51	1.16 (0.69, 1.95)	0.57	**1.23 (0.83, 1.82)**	**0.31**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.84 (0.91, 3.69)	0.51	0.71 (0.44, 1.16)	0.18	1.01 (0.68, 1.50)	0.95
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.90 (0.48, 1.70)	0.76	0.98 (0.60, 1.62)	0.95	0.97 (0.66, 1.43)	0.88
Muslim	**0.47 (0.24, 0.91)**	**0.03**	0.63 (0.35, 1.12)	0.12	**0.54 (0.35, 0.84)**	**0.01**
Other religion			1.09 (0.24, 4.93)	0.91	0.92 (0.21, 4.00)	0.91
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.34 (0.67, 2.71)**	**0.41**	1.24 (0.64, 2.40)	0.53	1.25 (0.77, 2.02)	0.36
Ownership of goods and assets[‡‡]	**1.09 (0.95, 1.26)**	**0.24**	0.99 (0.87, 1.12)	0.82	1.04 (0.95, 1.14)	0.42
Media use			1.09 (0.97, 1.22)	0.14	**1.11 (1.01, 1.20)**	**0.02**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	**0.76 (0.40, 1.47)**	**0.41**	0.62 (0.33, 1.16)	0.13	0.70 (0.45, 1.08)	0.11
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.16 (0.80, 1.69)	0.44

Supplemental Table 30. Association, by age, between odds of communicating with provider about family planning and sources of exposure[††] to family planning campaigns, Tanzania

	≤24 years (n=1,323)		>24 years (n=2,854)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	4.28 (0.53, 34.89)	0.17	1.26 (0.52, 3.08)	0.61	1.62 (0.72, 3.63)	0.24
Medium/High (≥2)	**9.71 (1.28, 73.74)**	**0.03**	**3.02 (1.34, 6.79)**	**0.01**	**3.86 (1.83, 8.15)**	**<0.001**
Community health worker (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Any	1.20 (0.34, 4.30)	0.78	**2.18 (1.26, 3.76)**	**0.01**	**1.96 (1.19, 3.22)**	**0.01**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	1.24 (0.49, 3.13)	0.65	**1.82 (1.08, 3.07)**	**0.03**	**1.65 (1.05, 2.60)**	**0.03**
Medium/High	**2.77 (1.21, 6.31)**	**0.02**	**3.32 (2.01, 5.49)**	**<0.001**	**3.15 (2.05, 4.84)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.25 (0.60, 2.60)	0.56	1.12 (0.72, 1.73)	0.63	1.16 (0.80, 1.69)	0.44
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.97 (0.80, 4.86)	0.14	0.85 (0.55, 1.33)	0.49	1.01 (0.68, 1.50)	0.95
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.09 (0.52, 2.29)	0.81	0.92 (0.58, 1.45)	0.71	0.97 (0.66, 1.43)	0.88
Muslim	0.39 (0.15, 1.01)	0.05	**0.59 (0.36, 0.98)**	**0.04**	**0.54 (0.35, 0.84)**	**0.01**
Other religion	--	--	1.01 (0.23, 4.50)	0.99	0.92 (0.21, 4.00)	0.91
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.19 (0.55, 2.55)	0.66	1.24 (0.67, 2.32)	0.49	1.25 (0.77, 2.02)	0.36
Ownership of goods and assets[‡‡]	1.06 (0.88, 1.27)	0.53	1.03 (0.93, 1.15)	0.56	1.04 (0.95, 1.14)	0.42
Media use	1.14 (0.96, 1.35)	0.12	1.09 (0.99, 1.21)	0.08	**1.11 (1.01, 1.20)**	**0.02**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.86 (0.40, 1.88)	0.71	0.63 (0.36, 1.08)	0.09	0.70 (0.45, 1.08)	0.11
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.23 (0.83, 1.82)**	**0.31**

Supplemental Table 31. Association, by gender, between odds of communicating with spouse about family planning and dose of exposure to family planning campaigns†, Tanzania

	Men (n=1,113)		Women (n=3,072)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	**3.39 (1.77, 6.48)**	**<0.001**	**3.41 (1.49, 7.81)**	**<0.01**	**3.26 (1.97, 5.40)**	**<0.001**
High (6-8)	**4.13 (2.16, 7.89)**	**<0.001**	**6.20 (2.77, 13.84)**	**<0.001**	**4.88 (2.97, 8.01)**	**<0.001**
Very high (≥9)	**12.81 (6.73, 24.39)**	**<0.001**	**17.63 (7.98, 38.98)**	**<0.001**	**14.14 (8.68, 23.05)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.12 (0.76, 1.64)	0.57	0.87 (0.63, 1.21)	0.41	1.01 (0.79, 1.30)	0.91
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.23 (0.86, 1.78)	0.26	0.90 (0.65, 1.24)	0.53	1.04 (0.82, 1.32)	0.74
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.96 (0.66, 1.41)	0.84	**1.80 (1.25, 2.60)**	**<0.01**	**1.33 (1.02, 1.72)**	**0.03**
Muslim	0.92 (0.62, 1.36)	0.67	0.97 (0.65, 1.44)	0.88	0.94 (0.71, 1.23)	0.65
Other religion	0.86 (0.28, 2.67)	0.80	0.73 (0.09, 6.03)	0.77	0.94 (0.36, 2.46)	0.90
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**8.71 (4.41, 17.18)**	**<0.001**	**5.53 (3.01, 10.17)**	**<0.001**	**7.06 (4.47, 11.15)**	**<0.001**
Ownership of goods and assets‡‡	0.95 (0.87, 1.03)	0.21	0.93 (0.86, 1.02)	0.11	0.95 (0.89, 1.01)	0.08
Media use	1.08 (1.00, 1.18)	0.06	1.20 (1.11, 1.29)	**<0.001**	**1.15 (1.08, 1.21)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.76 (0.51, 1.13)	0.17	1.03 (0.72, 1.49)	0.86	0.86 (0.65, 1.12)	0.26
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**0.30 (0.24, 0.38)**	**<0.001**

Supplemental Table 32. Association, by geographic location, between odds of communicating with spouse about family planning and dose of exposure to family planning campaigns†, Tanzania

	Urban (n=1,526)		Rural (n=2,667)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	2.26 (0.82, 6.21)	0.11	**3.83 (2.13, 6.89)**	**<0.001**	**3.26 (1.97, 5.40)**	**<0.001**
High (6-8)	**5.36 (2.07, 13.85)**	**<0.01**	**4.54 (2.51, 8.20)**	**<0.001**	**4.88 (2.97, 8.01)**	**<0.001**
Very high (≥9)	**14.85 (5.82, 37.85)**	**<0.001**	**13.81 (7.70, 24.78)**	**<0.001**	**14.14 (8.68, 23.05)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.06 (0.73, 1.54)	0.74	**0.94 (0.67, 1.30)**	**0.70**	1.01 (0.79, 1.30)	0.91
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.43 (0.30, 61)**	**<0.001**	**0.24 (0.18, 0.32)**	**<0.001**	**0.30 (0.24, 0.38)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.11 (0.73, 1.69)	0.62	1.47 (1.05, 2.06)	0.03	**1.33 (1.02, 1.72)**	**0.03**
Muslim	0.77 (0.51, 1.15)	0.20	1.16 (0.80, 1.68)	0.45	0.94 (0.71, 1.23)	0.65
Other religion	1.52 (0.26, 9.02)	0.64	0.80 (0.25, 2.59)	0.72	0.94 (0.36, 2.46)	0.90
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**5.70 (3.11, 10.44)**	**<0.001**	**9.18 (4.55, 18.55)**	**<0.001**	**7.06 (4.47, 11.15)**	**<0.001**
Ownership of goods and assets‡‡	0.99 (0.91, 1.08)	0.77	**0.89 (0.82, 0.97)**	**0.01**	0.95 (0.89, 1.01)	0.08
Media use	**1.10 (1.02, 1.20)**	**0.02**	1.19 (1.10, 1.28)	**<0.001**	**1.15 (1.08, 1.21)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.92 (0.62, 1.37)	0.69	0.83 (0.57, 1.21)	0.32	0.86 (0.65, 1.12)	0.26
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.04 (0.82, 1.32)	0.74

Supplemental Table 33. Association, by age, between odds of communicating with spouse about family planning and dose of exposure to family planning campaigns†, Tanzania

	≤24 years (n=1,323)		>24 years (n=2,854)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Dose of exposure†						
Low (0-2)	Ref	Ref	Ref	Ref	Ref	Ref
Medium (3-5)	2.53 (1.01, 6.35)	0.05	**3.55 (1.94, 6.50)**	**<0.001**	**3.26 (1.97, 5.40)**	**<0.001**
High (6-8)	**3.12 (1.25, 7.83)**	**0.02**	**5.70 (3.16, 10.28)**	**<0.001**	**4.88 (2.97, 8.01)**	**<0.001**
Very high (≥9)	**10.49 (4.28, 25.72)**	**<0.001**	**15.80 (8.81, 28.32)**	**<0.001**	**14.14 (8.68, 23.05)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.15 (0.74, 1.78)	0.54	0.98 (0.73, 1.30)	0.88	1.04 (0.82, 1.32)	0.74
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.40 (0.26, 0.62)**	**<0.001**	**0.27 (0.21, 0.35)**	**<0.001**	**0.30 (0.24, 0.38)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.34 (0.82, 2.18)	0.24	1.32 (0.97, 1.80))	0.08	**1.33 (1.02, 1.72)**	**0.03**
Muslim	1.27 (0.77, 2.11)	0.35	0.82 (0.59, 1.14)	0.24	0.94 (0.71, 1.23)	0.65
Other religion	--	--	1.11 (0.41, 3.01)	0.84	0.94 (0.36, 2.46)	0.90
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**6.66 (3.60, 12.32)**	**<0.001**	**7.34 (3.67, 14.68)**	**<0.001**	**7.06 (4.47, 11.15)**	**<0.001**
Ownership of goods and assets‡‡	1.02 (0.92, 1.14)	0.72	**0.92 (0.85, 0.98)**	**0.02**	0.95 (0.89, 1.01)	0.08
Media use	**1.13 (1.02, 1.25)**	**0.02**	1.16 (1.08, 1.24)	**<0.001**	**1.15 (1.08, 1.21)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.71 (0.45, 1.14)	0.16	0.93 (0.67, 1.30)	0.69	0.86 (0.65, 1.12)	0.26
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	1.01 (0.79, 1.30)	0.91

Supplemental Table 34. Association, by gender, between odds of communicating with spouse about family planning and sources of exposure[††] to family planning campaigns, Tanzania

	Men (n=1,113)		Women (n=3,080)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	0.99 (0.67, 1.45)	0.95	1.28 (0.67, 2.46)	0.47	1.30 (0.89, 1.89)	0.18
Medium/High (≥2)	**1.61 (1.04 2.50)**	**0.03**	1.60 (0.87, 2.96)	0.13	**1.49 (1.03, 2.15)**	**0.03**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	**3.23 (2.13, 4.91)**	**<0.001**	**2.01 (1.31, 3.07)**	**<0.01**	**2.49 (1.86, 3.33)**	**<0.001**
Medium/High	**4.94 (3.21, 7.59)**	**<0.001**	**6.09 (4.12, 8.98)**	**<0.001**	**5.60 (4.20, 7.47)**	**<0.001**
Television (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.50 (0.97, 2.33)	0.07	1.32 (0.88, 1.99)	0.18	**1.39 (1.03, 1.87)**	**0.03**
Medium/High (≥2)	1.60 (0.90, 2.84)	0.11	**1.73 (1.04, 2.88)**	**0.03**	**1.68 (1.15, 2.47)**	**0.01**
Radio (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	**1.10 (0.72, 1.67)**	**0.66**	1.38 (0.93, 2.04)	0.11	1.27 (0.95, 1.68)	0.10
Medium/High (≥2)	**1.88 (1.21, 2.93)**	**0.01**	**2.12 (1.42, 3.17)**	**<0.001**	**2.03 (1.52, 2.73)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.19 (0.80, 1.77)	0.39	0.92 (0.66, 1.27)	0.61	1.05 (0.82, 1.35)	0.69
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.28 (0.87, 1.89)	0.21	0.89 (0.63, 1.25)	0.50	1.06 (0.82, 1.36)	0.65
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.92 (0.62, 1.35)	0.65	1.72 (1.18, 2.50)	<0.01	1.28 (0.99, 1.67)	0.06
Muslim	0.77 (0.52, 1.16)	0.21	0.82 (0.55, 1.23)	0.35	0.79 (0.60, 1.05)	0.10
Other religion	0.78 (0.25, 2.43)	0.66	0.65 (0.08, 5.27)	0.68	0.83 (0.32, 2.19)	0.71
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**8.19 (4.14, 16.21)**	**<0.001**	**5.97 (3.23, 11.00)**	**<0.001**	**7.26 (4.59, 11.49)**	**<0.001**
Ownership of goods and assets[‡‡]	0.95 (0.87, 1.04)	0.28	**0.91 (0.84, 1.00)**	**0.04**	**0.94 (0.88, 1.00)**	**0.04**
Media use	1.07 (0.98, 1.16)	0.12	**1.18 (1.09, 1.28)**	**<0.001**	**1.13 (1.06, 1.19)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.72 (0.48, 1.08)	0.11	0.98 (0.67, 1.43)	0.92	0.82 (0.62, 1.08)	0.16
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**0.32 (0.25, 0.40)**	**<0.001**

Supplemental Table 35. Association, by geographic location, between odds of communicating with spouse about family planning and sources of exposure[††] to family planning campaigns, Tanzania

	Urban (n=1,526)		Rural (n=2,667)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.00 (0.52, 1.90)	1.00	1.50 (0.94, 2.42)	0.09	1.30 (0.89, 1.89)	0.18
Medium/High (≥2)	1.42 (0.76, 2.65)	0.27	1.49 (0.93, 2.37)	0.10	**1.49 (1.03, 2.15)**	**0.03**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	**1.91 (1.19, 3.08)**	**<0.01**	**2.88 (1.98, 4.19)**	**<0.001**	**2.49 (1.86, 3.33)**	**<0.001**
Medium/High	**4.92 (3.20, 7.57)**	**<0.001**	**6.12 (4.14, 9.04)**	**<0.001**	**5.60 (4.20, 7.47)**	**<0.001**
Television (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	**1.63 (1.06, 2.50)**	**0.03**	1.27 (0.83, 1.95)	0.27	**1.39 (1.03, 1.87)**	**0.03**
Medium/High (≥2)	**2.22 (1.37, 3.57)**	**<0.01**	0.95 (0.43, 2.07)	0.89	**1.68 (1.15, 2.47)**	**0.01**
Radio (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.11 (0.70, 1.76)	0.66	1.36 (0.94, 1.96)	0.10	1.27 (0.95, 1.68)	0.10
Medium/High (≥2)	**1.91 (1.20, 3.03)**	**0.01**	**2.15 (1.46, 3.16)**	**<0.001**	**2.03 (1.52, 2.73)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.08 (0.74, 1.57)	0.71	0.99 (0.71, 1.38)	0.94	1.05 (0.82, 1.35)	0.69
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.44 (0.30, 0.63)**	**<0.001**	**0.26 (0.19, 0.35)**	**<0.001**	**0.32 (0.25, 0.40)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.07 (0.70, 1.64)	0.75	**1.44 (1.02, 2.03)**	**0.04**	1.28 (0.99, 1.67)	0.06
Muslim	**0.60 (0.39, 0.91)**	**0.02**	1.03 (0.71, 1.51)	0.87	0.79 (0.60, 1.05)	0.10
Other religion	1.49 (0.27, 8.17)	0.65	0.68 (0.21, 2.24)	0.53	0.83 (0.32, 2.19)	0.71
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**6.50 (3.51, 12.01)**	**<0.001**	**9.06 (4.47, 18.36)**	**<0.001**	**7.26 (4.59, 11.49)**	**<0.001**
Ownership of goods and assets[‡‡]	0.96 (0.87, 1.04)	0.31	**0.89 (0.82, 0.98)**	**0.01**	**0.94 (0.88, 1.00)**	**0.04**
Media use	1.08 (0.99, 1.17)	0.10	**1.18 (1.09, 1.28)**	**<0.001**	**1.13 (1.06, 1.19)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.92 (0.61, 1.37)	0.68	0.79 (0.54, 1.16)	0.24	0.82 (0.62, 1.08)	0.16
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.06 (0.82, 1.36)	0.65

Supplemental Table 36. Association, by age, between odds of communicating with spouse about family planning and sources of exposure[††] to family planning campaigns, Tanzania

	≤24 years (n=1,323)		>24 years (n=2,854)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Health facility (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.43 (0.73, 2.84)	0.30	1.29 (0.82, 2.04)	0.28	1.30 (0.89, 1.89)	0.18
Medium/High (≥2)	1.55 (0.80, 3.02)	0.20	1.46 (0.93, 2.27)	0.10	**1.49 (1.03, 2.15)**	**0.03**
Family/friends (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low	**2.50 (1.42, 4.40)**	**<0.01**	**2.49 (1.76, 3.51)**	**<0.001**	**2.49 (1.86, 3.33)**	**<0.001**
Medium/High	**5.42 (3.15, 9.34)**	**<0.001**	**5.79 (4.10, 8.16)**	**<0.001**	**5.60 (4.20, 7.47)**	**<0.001**
Television (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	0.73 (0.42, 1.28)	0.28	**1.85 (1.29, 2.64)**	**<0.01**	**1.39 (1.03, 1.87)**	**0.03**
Medium/High (≥2)	1.46 (0.73, 2.93)	0.28	**1.70 (1.07, 2.70)**	**0.03**	**1.68 (1.15, 2.47)**	**0.01**
Radio (exposure)						
None	Ref	Ref	Ref	Ref	Ref	Ref
Low (1)	1.11 (0.65, 1.88)	0.71	1.31 (0.93, 1.83)	0.12	1.27 (0.95, 1.68)	0.10
Medium/High (≥2)	**2.38 (1.39, 4.08)**	**<0.01**	**1.93 (1.35, 2.75)**	**<0.001**	**2.03 (1.52, 2.73)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.08 (0.69, 1.71)	0.73	1.01 (0.75, 1.37)	0.93	1.06 (0.82, 1.36)	0.65
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.42 (0.26, 0.66)**	**<0.001**	**0.28 (0.21, 0.37)**	**<0.001**	**0.32 (0.25, 0.40)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.25 (0.76, 2.05)	0.38	1.30 (0.95, 1.78)	0.11	1.28 (0.99, 1.67)	0.06
Muslim	1.04 (0.62, 1.74)	0.87	**0.68 (0.49, 0.95)**	**0.03**	0.79 (0.60, 1.05)	0.10
Other religion	--	--	1.01 (0.37, 2.78)	0.98	0.83 (0.32, 2.19)	0.71
Marital status[‡]						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**7.13 (3.81, 13.36)**	**<0.001**	**7.84 (3.90, 15.73)**	**<0.001**	**7.26 (4.59, 11.49)**	**<0.001**
Ownership of goods and assets[‡‡]	1.02 (0.91, 1.15)	0.68	**0.90 (0.84, 0.97)**	**0.01**	**0.94 (0.88, 1.00)**	**0.04**
Media use	**1.13 (1.01, 1.25)**	**0.03**	**1.13 (1.05, 1.21)**	**<0.01**	**1.13 (1.06, 1.19)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.73 (0.46, 1.18)	0.20	0.89 (0.63, 1.25)	0.50	0.82 (0.62, 1.08)	0.16
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	1.05 (0.82, 1.35)	0.69

Supplemental Table 37. Association, by gender, between odds of positive family planning health beliefs* and number of sources of exposure to family planning campaigns, Tanzania

	Men (n=1,107)		Women (n=3,072)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	0.70 (0.41, 1.17)	0.172	**1.51 (1.14, 2.01)**	**0.005**	1.28 (1.00, 1.63)	0.053
2 sources	0.90 (0.55, 1.47)	0.672	**1.46 (1.10, 1.93)**	**0.009**	**1.29 (1.01, 1.64)**	**0.039**
3 sources	0.88 (0.54, 1.43)	0.595	**1.42 (1.06, 1.91)**	**0.020**	1.24 (0.97, 1.60)	0.090
4 sources	0.92 (0.54, 1.58)	0.769	**1.52 (1.07, 2.16)**	**0.018**	**1.34 (1.01, 1.79)**	**0.045**
5 sources	0.80 (0.38, 1.69)	0.564	1.45 (0.92, 2.30)	0.112	1.25 (0.85, 1.85)	0.260
6 sources	Dropped**	--	2.51 (0.76, 8.35)	0.133	1.71 (0.57, 5.17)	0.339
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	0.80 (0.60, 1.07)	0.133	**0.75 (0.64, 0.88)**	**<0.001**	**0.77 (0.67, 0.88)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.08 (0.81, 1.44)	0.588	**0.82 (0.70, 0.97)**	**0.021**	0.87 (0.75, 1.00)	0.052
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.86 (0.64, 1.17)	0.338	1.05 (0.88, 1.26)	0.598	1.01 (0.86, 1.18)	0.919
Muslim	1.22 (0.90, 1.64)	0.207	1.02 (0.85, 1.23)	0.808	1.06 (0.91, 1.24)	0.463
Other religion	1.36 (0.56, 3.28)	0.492	1.14 (0.63, 2.06)	0.672	1.14 (0.70, 1.85)	0.612
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.02 (0.74, 1.40)	0.904	1.01 (0.84, 1.20)	0.946	1.01 (0.87, 1.18)	0.858
Ownership of goods and assets‡‡	0.95 (0.89, 1.02)	0.149	1.00 (0.96, 1.05)	0.921	0.99 (0.95, 1.02)	0.474
Media use	**1.12 (1.05, 1.20)**	**0.001**	**1.04 (1.00, 1.08)**	**0.044**	**1.06 (1.02, 1.10)**	**0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.12 (0.83, 1.53)	0.459	**0.78 (0.64, 0.95)**	**0.012**	0.87 (0.74, 1.03)	0.105
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.12 (0.97, 1.29)	0.134

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

** Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 38. Association, by geographic location, between odds of positive family planning health beliefs* and number of sources of exposure to family planning campaigns, Tanzania

	Urban (n=1,524)		Rural (n=2,656)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	0.92 (0.55, 1.54)	0.763	**1.44 (1.08, 1.91)**	**0.013**	1.28 (1.00, 1.63)	0.053
2 sources	0.78 (0.48, 1.26)	0.308	**1.58 (1.19, 2.10)**	**0.002**	**1.29 (1.01, 1.64)**	**0.039**
3 sources	0.78 (0.48, 1.28)	0.326	**1.48 (1.10, 2.00)**	**0.010**	1.24 (0.97, 1.60)	0.090
4 sources	0.97 (0.58, 1.63)	0.922	1.36 (0.93, 2.00)	0.115	**1.34 (1.01, 1.79)**	**0.045**
5 sources	0.63 (0.33, 1.17)	0.141	**2.00 (1.15, 3.47)**	**0.014**	1.25 (0.85, 1.85)	0.260
6 sources	1.18 (0.28, 4.96)	0.824	1.96 (0.32, 12.19)	0.468	1.71 (0.57, 5.17)	0.339
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	0.93 (0.74, 1.28)	0.819	**0.70 (0.58, 0.83)**	**<0.001**	**0.77 (0.67, 0.88)**	**<0.001**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.22 (0.96, 1.57)	0.109	1.06 (0.88, 1.30)	0.510	1.12 (0.97, 1.29)	0.134
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.97 (0.73, 1.28)	0.819	1.03 (0.85, 1.24)	0.760	1.01 (0.86, 1.18)	0.919
Muslim	1.06 (0.82, 1.38)	0.637	1.04 (0.86, 1.27)	0.666	1.06 (0.91, 1.24)	0.463
Other religion	1.00 (0.33, 3.10)	0.994	1.21 (0.70, 2.10)	0.494	1.14 (0.70, 1.85)	0.612
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**0.76 (0.59, 0.98)**	**0.034**	1.22 (1.00, 1.48)	0.54	1.01 (0.87, 1.18)	0.858
Ownership of goods and assets‡ ‡	0.98 (0.93, 1.04)	0.478	0.99 (0.94, 1.04)	0.625	0.99 (0.95, 1.02)	0.474
Media use	**1.10 (1.05, 1.16)**	**<0.001**	1.03 (0.99, 1.08)	0.136	**1.06 (1.02, 1.10)**	**0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	**0.72 (0.55, 0.93)**	**0.011**	1.03 (0.83, 1.28)	0.800	0.87 (0.74, 1.03)	0.105
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	0.87 (0.75, 1.00)	0.052

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 39. Association, by age, between odds of positive family planning health beliefs* and number of sources of exposure to family planning campaigns, Tanzania

	≤24 years (n=1,332)		>24 years (n=2,848)		Overall (N=4,180)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	0.83 (0.53, 1.31)	0.433	**1.53 (1.14, 2.06)**	**0.005**	1.28 (1.00, 1.63)	0.053
2 sources	1.05 (0.67, 1.62)	0.843	**1.42 (1.06, 1.91)**	**0.019**	**1.29 (1.01, 1.64)**	**0.039**
3 sources	1.22 (0.78, 1.93)	0.388	1.27 (0.94, 1.72)	0.121	1.24 (0.97, 1.60)	0.090
4 sources	0.93 (0.55, 1.58)	0.790	**1.60 (1.13, 2.27)**	**0.008**	**1.34 (1.01, 1.79)**	**0.045**
5 sources	0.66 (0.33, 1.32)	0.240	**1.74 (1.07, 2.81)**	**0.025**	1.25 (0.85, 1.85)	0.260
6 sources	3.67 (0.41, 33.05)	0.246	1.32 (0.34, 5.12)	0.690	1.71 (0.57, 5.17)	0.339
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.09 (0.84, 1.42)	0.504	1.12 (0.93, 1.33)	0.226	1.12 (0.97, 1.29)	0.134
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.03 (0.80, 1.33)	0.818	**0.82 (0.69, 0.98)**	**0.025**	0.87 (0.75, 1.00)	0.052
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.01 (0.76, 1.34)	0.943	1.04 (0.86, 1.26)	0.685	1.01 (0.86, 1.18)	0.919
Muslim	0.82 (0.62, 1.08)	0.158	1.20 (1.00, 1.45)	0.055	1.06 (0.91, 1.24)	0.463
Other religion	2.40 (0.75, 7.69)	0.140	0.99 (0.56, 1.74)	0.977	1.14 (0.70, 1.85)	0.612
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	0.95 (0.75, 1.20)	0.669	1.04 (0.85, 1.28)	0.702	1.01 (0.87, 1.18)	0.858
Ownership of goods and assets‡‡	0.97 (0.91, 1.04)	0.413	0.99 (0.95, 1.03)	0.576	0.99 (0.95, 1.02)	0.474
Media use	**1.09 (1.03, 1.16)**	**0.004**	**1.04 (1.00, 1.09)**	**0.036**	**1.06 (1.02, 1.10)**	**0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	**0.72 (0.56, 0.93)**	**0.012**	1.01 (0.81, 1.26)	0.918	0.87 (0.74, 1.03)	0.105
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**0.77 (0.67, 0.88)**	**<0.001**

* Positive health beliefs = Composite of seven questions about the health consequences of using modern contraceptive methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 40. Association, by gender, between odds of pro-family planning self-efficacy beliefs* and number of sources of exposure to family planning campaigns, Tanzania

	Men (n=1,108)		Women (n=3,074)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	1.38 (0.82, 2.33)	0.226	**1.79 (1.32, 2.43)**	**<0.001**	**1.67 (1.29, 2.17)**	**<0.001**
2 sources	1.64 (1.00, 2.69)	0.050	**2.44 (1.81, 3.30)**	**<0.001**	**2.18 (1.69, 2.81)**	**<0.001**
3 sources	1.41 (0.86, 2.31)	0.173	**2.64 (1.93, 3.61)**	**<0.001**	**2.19 (1.69, 2.85)**	**<0.001**
4 sources	**2.27 (1.31, 3.93)**	**0.004**	**2.82 (1.96, 4.07)**	**<0.001**	**2.60 (1.93, 3.52)**	**<0.001**
5 sources	**2.99 (1.35, 6.63)**	**0.007**	**2.73 (1.69, 4.43)**	**<0.001**	**2.76 (1.83, 4.15)**	**<0.001**
6 sources	Dropped**	--	**6.77 (1.80, 25.39)**	**0.005**	**6.48 (1.77, 23.77)**	**0.005**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	**1.85 (1.37, 2.49)**	**<0.001**	1.12 (0.95, 1.32)	0.166	**1.26 (1.10, 1.46)**	**0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	**1.46 (1.09, 1.96)**	**0.011**	1.04 (0.88, 1.23)	0.670	1.12 (0.97, 1.29)	0.254
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.90 (0.66, 1.22)	0.507	1.12 (0.93, 1.35)	0.219	1.06 (0.91, 1.24)	0.462
Muslim	**1.42 (1.04, 1.93)**	**0.026**	1.00 (0.83, 1.20)	0.982	1.11 (0.95, 1.30)	0.190
Other religion	1.30 (0.53, 3.16)	0.564	0.51 (0.26, 1.02)	0.056	0.68 (0.40, 1.15)	0.154
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	0.87 (0.63, 1.20)	0.405	**1.54 (1.28, 1.84)**	**<0.001**	**1.36 (1.16, 1.58)**	**<0.001**
Ownership of goods and assets‡‡	1.05 (0.98, 1.13)	0.170	**1.07 (1.02, 1.11)**	**0.003**	**1.06 (1.03, 1.10)**	**0.001**
Media use	1.05 (0.98, 1.12)	0.135	1.03 (0.99, 1.07)	0.134	1.03 (1.00, 1.07)	0.050
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.18 (0.87, 1.62)	0.291	1.15 (0.94, 1.41)	0.164	1.14 (0.97, 1.35)	0.114
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.09 (0.94, 1.27)	0.254

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

** Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 41. Association, by geographic location, between odds of pro-family planning self-efficacy beliefs* and number of sources of exposure to family planning campaigns, Tanzania

	Urban (n=1,521)		Rural (n=2,662)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	1.48 (0.88, 2.48)	0.137	**1.73 (1.28, 2.35)**	**<0.001**	**1.67 (1.29, 2.17)**	**<0.001**
2 sources	**1.67 (1.02, 2.75)**	**0.041**	**2.38 (1.76, 3.21)**	**<0.001**	**2.18 (1.69, 2.81)**	**<0.001**
3 sources	**1.95 (1.19, 3.20)**	**0.008**	**2.18 (1.59, 2.99)**	**<0.001**	**2.19 (1.69, 2.85)**	**<0.001**
4 sources	**2.44 (1.46, 4.09)**	**0.001**	**2.43 (1.63, 3.62)**	**<0.001**	**2.60 (1.93, 3.52)**	**<0.001**
5 sources	**2.03 (1.08, 3.83)**	**0.029**	**3.63 (2.02, 6.55)**	**<0.001**	**2.76 (1.83, 4.15)**	**<0.001**
6 sources	**5.73 (1.12, 29.23)**	**0.036**	5.20 (0.56, 48.77)	0.149	**6.48 (1.77, 23.77)**	**0.005**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.26 (0.99, 1.59)	0.059	**1.28 (1.07, 1.53)**	**0.007**	**1.26 (1.10, 1.46)**	**0.001**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	1.23 (0.96, 1.58)	0.098	1.02 (0.85, 1.23)	0.826	1.09 (0.94, 1.27)	0.254
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.93 (0.70, 1.23)	0.612	1.14 (0.94, 1.38)	0.183	1.06 (0.91, 1.24)	0.462
Muslim	0.99 (0.76, 1.28)	0.910	1.17 (0.96, 1.43)	0.119	1.11 (0.95, 1.30)	0.190
Other religion	0.68 (0.21, 2.20)	0.518	0.74 (0.41, 1.33)	0.314	0.68 (0.40, 1.15)	0.154
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.39 (1.09, 1.78)**	**0.009**	**1.34 (1.10, 1.64)**	**0.004**	**1.36 (1.16, 1.58)**	**<0.001**
Ownership of goods and assets‡ ‡	1.05 (0.99, 1.11)	0.085	**1.08 (1.02, 1.13)**	**0.004**	**1.06 (1.03, 1.10)**	**0.001**
Media use	1.04 (0.99, 1.10)	0.117	1.04 (.99, 1.08)	0.122	1.03 (1.00, 1.07)	0.050
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.92 (0.71, 1.19)	0.536	**1.39 (1.12, 1.74)**	**0.004**	1.14 (0.97, 1.35)	0.114
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.12 (0.97, 1.29)	0.254

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

Supplemental Table 42. Association, by age, between odds of pro-family planning self-efficacy beliefs* and number of sources of exposure to family planning campaigns, Tanzania

	≤24 years (n=1,335)		>24 years (n=2,848)		Overall (N=4,183)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	1.17 (0.73, 1.87)	0.503	**1.96 (1.43, 2.68)**	**<0.001**	**1.67 (1.29, 2.17)**	**<0.001**
2 sources	**1.57 (1.01, 2.46)**	**0.047**	**2.54 (1.86, 3.47)**	**<0.001**	**2.18 (1.69, 2.81)**	**<0.001**
3 sources	**1.94 (1.22, 3.07)**	**0.005**	**2.32 (1.68, 3.19)**	**<0.001**	**2.19 (1.69, 2.85)**	**<0.001**
4 sources	**1.80 (1.05, 3.07)**	**0.032**	**3.14 (2.18, 4.53)**	**<0.001**	**2.60 (1.93, 3.52)**	**<0.001**
5 sources	**2.48 (1.22, 5.02)**	**0.012**	**2.85 (1.72, 4.71)**	**<0.001**	**2.76 (1.83, 4.15)**	**<0.001**
6 sources	3.46 (0.59, 20.16)	0.167	**12.03 (1.46, 99.26)**	**0.021**	**6.48 (1.77, 23.77)**	**0.005**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**1.46 (1.12, 1.90)**	**0.006**	0.95 (0.79, 1.14)	0.572	1.09 (0.94, 1.27)	0.254
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.13 (0.88, 1.46)	0.346	1.10 (0.92, 1.31)	0.295	1.12 (0.97, 1.29)	0.254
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.01 (0.77, 1.33)	0.937	1.10 (0.91, 1.34)	0.311	1.06 (0.91, 1.24)	0.462
Muslim	0.89 (0.68, 1.17)	0.411	**1.23 (1.01, 1.49)**	**0.039**	1.11 (0.95, 1.30)	0.190
Other religion	0.65 (0.22, 1.93)	0.434	0.72 (0.39, 1.31)	0.281	0.68 (0.40, 1.15)	0.154
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.25 (0.99, 1.58)	0.066	**1.39 (1.12, 1.71)**	**0.002**	**1.36 (1.16, 1.58)**	**<0.001**
Ownership of goods and assets‡‡	1.03 (0.97, 1.10)	0.312	**1.08 (1.03, 1.13)**	**0.001**	**1.06 (1.03, 1.10)**	**0.001**
Media use	1.05 (0.99, 1.11)	0.144	1.03 (0.98, 1.07)	0.221	1.03 (1.00, 1.07)	0.050
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.18 (0.91, 1.52)	0.210	1.14 (0.91, 1.42)	0.258	1.14 (0.97, 1.35)	0.114
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.26 (1.10, 1.46)**	**0.001**

* Self-efficacy beliefs = Composite of five survey questions about respondents' confidence in their ability to perform several modern family planning behaviors successfully.

Supplemental Table 43. Association, by gender, between odds of pro-family planning perceived norms* and number of sources of exposure to family planning campaigns, Tanzania

	Men (n=1,112)		Women (n=3,081)		Overall (N=4,194)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	1.79 (0.97, 3.29)	0.063	**1.56 (1.17, 2.08)**	**0.002**	**1.62 (1.26, 2.10)**	**<0.001**
2 sources	**2.21 (1.23, 3.95)**	**0.008**	**1.45 (1.09, 1.93)**	**0.010**	**1.57 (1.22, 2.02)**	**0.001**
3 sources	**2.45 (1.38, 4.37)**	**0.002**	**2.07 (1.53, 2.79)**	**<0.001**	**2.09 (1.61, 2.71)**	**<0.001**
4 sources	**3.66 (1.96, 6.81)**	**<0.001**	**3.10 (2.16, 4.44)**	**<0.001**	**3.13 (2.31, 4.23)**	**<0.001**
5 sources	**3.15 (1.41, 7.06)**	**0.005**	**2.69 (1.67, 4.33)**	**<0.001**	**2.79 (1.86, 4.18)**	**<0.001**
6 sources	Dropped**	--	**3.57 (1.08, 11.82)**	**0.037**	2.88 (0.95, 8.73)	0.061
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	**1.59 (1.16, 2.16)**	**0.004**	1.12 (0.95, 1.32)	0.173	**1.21 (1.05, 1.40)**	**0.007**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.06 (0.79, 1.43)	0.684	1.12 (0.94, 1.32)	0.194	1.10 (0.95, 1.27)	0.209
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	**1.48 (1.07, 2.04)**	**0.019**	0.99 (0.83, 1.19)	0.938	1.10 (0.94, 1.29)	0.241
Muslim	**2.24 (1.62, 3.08)**	**<0.001**	1.06 (0.88, 1.27)	0.539	**1.28 (1.09, 1.50)**	**0.002**
Other religion	1.52 (0.60, 3.81)	0.375	**0.26 (0.13, 0.54)**	**<0.001**	**0.45 (0.26, 0.79)**	**0.006**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.11 (0.79, 1.55)	0.542	**1.26 (1.05, 1.51)**	**0.011**	**1.24 (1.06, 1.45)**	**0.006**
Ownership of goods and assets‡‡	0.98 (0.92, 1.06)	0.678	**1.07 (1.02, 1.12)**	**0.002**	**1.04 (1.01, 1.08)**	**0.021**
Media use	1.03 (0.97, 1.11)	0.320	0.98 (0.94, 1.02)	0.243	0.99 (0.96, 1.03)	0.738
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.03 (0.75, 1.43)	0.840	0.87 (0.71, 1.06)	0.156	0.90 (0.76, 1.07)	0.231
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**2.20 (1.89, 2.56)**	**<0.001**

*Pro-family planning normative beliefs = Composite of five survey questions about respondents' perceptions of partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods. Higher values = Positive beliefs. Dichotomized at the median split.

** Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 44. Association, by geographic location, between odds of pro-family planning perceived norms* and number of sources of exposure to family planning campaigns, Tanzania

	Urban (n=1,526)		Rural (n=2,668)		Overall (N=4,194)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	1.69 (0.99, 2.87)	0.053	**1.60 (1.19, 2.15)**	**0.002**	**1.62 (1.26, 2.10)**	**<0.001**
2 sources	1.48 (0.89, 2.46)	0.131	**1.59 (1.19, 2.14)**	**0.002**	**1.57 (1.22, 2.02)**	**0.001**
3 sources	**2.26 (1.36, 3.75)**	**0.002**	**2.01 (1.47, 2.38)**	**<0.001**	**2.09 (1.61, 2.71)**	**<0.001**
4 sources	**3.18 (1.87, 5.41)**	**<0.001**	**3.08 (2.07, 4.61)**	**<0.001**	**3.13 (2.31, 4.23)**	**<0.001**
5 sources	**2.83 (1.48, 5.40)**	**0.002**	**2.81 (1.60, 4.96)**	**<0.001**	**2.79 (1.86, 4.18)**	**<0.001**
6 sources	2.50 (0.64, 9.76)	0.188	4.83 (0.52, 44.59)	0.165	2.88 (0.95, 8.73)	0.061
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.22 (0.96, 1.54)	0.104	**1.22 (1.02, 1.46)**	**0.030**	**1.21 (1.05, 1.40)**	**0.007**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.00 (1.56, 2.57)**	**<0.001**	**2.31 (1.91, 2.81)**	**<0.001**	**2.20 (1.89, 2.56)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.05 (0.79, 1.39)	0.728	1.24 (0.93, 1.36)	0.232	1.10 (0.94, 1.29)	0.241
Muslim	1.09 (0.84, 1.41)	0.527	**1.41 (1.16, 1.73)**	**0.001**	**1.28 (1.09, 1.50)**	**0.002**
Other religion	0.42 (0.11, 1.59)	0.201	**0.47 (0.25, 0.88)**	**0.018**	**0.45 (0.26, 0.79)**	**0.006**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.34 (1.05, 1.72)**	**0.020**	1.19 (0.97, 1.45)	0.097	**1.24 (1.06, 1.45)**	**0.006**
Ownership of goods and assets‡‡	1.05 (0.99, 1.10)	0.112	1.04 (0.99, 1.10)	0.096	**1.04 (1.01, 1.08)**	**0.021**
Media use	0.98 (0.93, 1.03)	0.451	1.00 (0.96, 1.05)	0.868	0.99 (0.96, 1.03)	0.738
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.92 (0.71, 1.19)	0.535	0.88 (0.71, 1.11)	0.282	0.90 (0.76, 1.07)	0.231
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.10 (0.95, 1.27)	0.209

*Pro-family planning normative beliefs = Composite of five survey questions about respondents' perceptions of partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 45. Association, by age, between odds of pro-family planning perceived norms* and number of sources of exposure to family planning campaigns, Tanzania

	≤24 years (n=1,340)		>24 years (n=2,854)		Overall (N=4,194)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	1.25 (0.78, 2.01)	0.360	**1.84 (1.35, 2.50)**	**<0.001**	**1.62 (1.26, 2.10)**	**<0.001**
2 sources	1.43 (0.90, 2.26)	0.128	**1.64 (1.21, 2.22)**	**0.001**	**1.57 (1.22, 2.02)**	**0.001**
3 sources	**1.91 (1.19, 3.06)**	**0.008**	**2.21 (1.62, 3.03)**	**<0.001**	**2.09 (1.61, 2.71)**	**<0.001**
4 sources	**3.63 (2.08, 6.36)**	**<0.001**	**2.93 (2.04, 4.20)**	**<0.001**	**3.13 (2.31, 4.23)**	**<0.001**
5 sources	**4.39 (2.11, 9.14)**	**<0.001**	**2.20 (1.35, 3.59)**	**0.002**	**2.79 (1.86, 4.18)**	**<0.001**
6 sources	6.90 (0.76, 62.45)	0.085	1.71 (0.44, 6.66)	0.440	2.88 (0.95, 8.73)	0.061
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.56 (1.93, 3.39)**	**<0.001**	**2.04 (1.70, 2.45)**	**<0.001**	**2.20 (1.89, 2.56)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.06 (0.82, 1.38)	0.658	1.12 (0.94, 1.33)	0.224	1.10 (0.95, 1.27)	0.209
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.06 (0.80, 1.41)	0.682	1.12 (0.93, 1.36)	0.242	1.10 (0.94, 1.29)	0.241
Muslim	1.22 (0.92, 1.62)	0.162	**1.31 (1.08, 1.58)**	**0.006**	**1.28 (1.09, 1.50)**	**0.002**
Other religion	**0.18 (0.04, 0.84)**	**0.028**	0.56 (0.30, 1.04)	0.067	**0.45 (0.26, 0.79)**	**0.006**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**1.35 (1.06, 1.73)**	**0.014**	1.11 (0.90, 1.37)	0.328	**1.24 (1.06, 1.45)**	**0.006**
Ownership of goods and assets‡‡	1.02 (0.96, 1.10)	0.387	**1.05 (1.01, 1.10)**	**0.022**	**1.04 (1.01, 1.08)**	**0.021**
Media use	0.98 (0.92, 1.04)	0.489	1.00 (0.96, 1.04)	0.975	0.99 (0.96, 1.03)	0.738
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.78(0.60, 1.01)	0.059	1.03 (0.82, 1.28)	0.809	0.90 (0.76, 1.07)	0.231
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.21 (1.05, 1.40)**	**0.007**

*Pro-family planning normative beliefs = Composite of five survey questions about respondents' perceptions of partners' approval or disapproval of couples who use modern contraceptive methods as well as how many people they know approve of and use modern family planning methods. Higher values = Positive beliefs. Dichotomized at the median split.

Supplemental Table 46. Association, by gender, between odds of current modern contraceptive use* and number of sources of exposure to family planning campaigns, Tanzania

	Men (n=1,022)		Women (n=2,738)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	0.79 (0.44, 1.41)	0.424	**1.67 (1.20, 2.33)**	**0.002**	**1.41 (1.07, 1.88)**	**0.017**
2 sources	1.44 (0.84, 2.46)	0.182	**2.27 (1.64, 3.15)**	**<0.001**	**2.01 (1.53, 2.66)**	**<0.001**
3 sources	**1.90 (1.11, 3.24)**	**0.019**	**2.34 (1.66, 3.29)**	**<0.001**	**2.20 (1.65, 2.92)**	**<0.001**
4 sources	**2.65 (1.45, 4.84)**	**0.002**	**2.98 (2.02, 4.41)**	**<0.001**	**2.96 (2.14, 4.09)**	**<0.001**
5 sources	**2.59 (1.12, 6.02)**	**0.026**	**3.76 (2.25, 6.28)**	**<0.001**	**3.51 (2.28, 5.43)**	**<0.001**
6 sources	Dropped*	--	Dropped*	--	**35.45 (4.43, 283.53)**	**0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.22 (0.88, 1.68)	0.229	**1.39 (1.17, 1.67)**	**<0.001**	**1.37 (1.18, 1.60)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.26 (0.92, 1.73)	0.146	**1.21 (1.01, 1.45)**	**0.035**	**1.21 (1.04, 1.41)**	**0.015**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.02 (0.73, 1.42)	0.905	0.91 (0.74, 1.10)	0.324	0.96 (0.81, 1.13)	0.595
Muslim	1.22 (0.88, 1.70)	0.229	**0.77 (0.63, 0.94)**	**0.010**	0.86 (0.73, 1.02)	0.085
Other religion	0.68 (0.27, 1.67)	0.395	**0.43 (0.20, 0.89)**	**0.024**	**0.49 (0.28, 0.85)**	**0.012**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**3.33 (2.37, 4.69)**	**<0.001**	**1.86 (1.53, 2.26)**	**<0.001**	**2.17 (1.83, 2.56)**	**<0.001**
Ownership of goods and assets‡‡	0.97 (0.90, 1.05)	0.429	**1.05 (1.00, 1.10)**	**0.040**	1.02 (0.98, 1.06)	0.237
Media use	1.04 (0.96, 1.11)	0.337	1.00 (0.95, 1.04)	0.859	1.01 (0.97, 1.04)	0.786
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.33 (0.94, 1.87)	0.104	0.91 (0.73, 1.12)	0.372	1.02 (0.86, 1.23)	0.796
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**0.63 (0.54, 0.73)**	**<0.001**

* Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 47. Association, by geographic location, between odds of current modern contraceptive use* and number of sources of exposure to family planning campaigns, Tanzania

	Urban (n=1,393)		Rural (n=2,376)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	0.89 (0.50, 1.58)	0.684	**1.58 (1.14, 2.19)**	**0.007**	**1.41 (1.07, 1.88)**	**0.017**
2 sources	1.47 (0.85, 2.53)	0.165	**2.11 (1.52, 2.91)**	**<0.001**	**2.01 (1.53, 2.66)**	**<0.001**
3 sources	1.55 (0.90, 2.66)	0.113	**2.40 (1.71, 3.37)**	**<0.001**	**2.20 (1.65, 2.92)**	**<0.001**
4 sources	**2.66 (1.51, 4.69)**	**0.001**	**2.38 (1.56, 3.65)**	**<0.001**	**2.96 (2.14, 4.09)**	**<0.001**
5 sources	**2.82 (1.42, 5.63)**	**0.003**	**3.71 (2.01, 6.84)**	**<0.001**	**3.51 (2.28, 5.43)**	**<0.001**
6 sources	**20.48 (2.33, 180.21)**	**0.007**	Dropped*	--	**35.45 (4.43, 283.53)**	**0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.21 (0.93, 1.57)	0.148	**1.48 (1.22, 1.80)**	**<0.001**	**1.37 (1.18, 1.60)**	**<0.001**
Sex						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.60 (0.46, 0.78)**	**<0.001**	**0.66 (0.54, 0.81)**	**<0.001**	**0.63 (0.54, 0.73)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.03 (0.76, 1.38)	0.861	0.92 (0.75, 1.13)	0.426	0.96 (0.81, 1.13)	0.595
Muslim	0.79 (0.60, 1.04)	0.092	0.91 (0.74, 1.13)	0.409	0.86 (0.73, 1.02)	0.085
Other religion	1.27 (0.36, 4.40)	0.710	**0.41 (0.21, 0.78)**	**0.006**	**0.49 (0.28, 0.85)**	**0.012**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**2.48 (1.89, 3.25)**	**<0.001**	**2.00 (1.61, 2.49)**	**<0.001**	**2.17 (1.83, 2.56)**	**<0.001**
Ownership of goods and assets‡‡	0.97 (0.92, 1.03)	0.336	**1.07 (1.01, 1.12)**	**0.015**	1.02 (0.98, 1.06)	0.237
Media use	0.99 (0.94, 1.05)	0.733	1.01 (0.97, 1.06)	0.557	1.01 (0.97, 1.04)	0.786
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	1.06 (0.80, 1.40)	0.671	1.01 (0.79, 1.28)	0.961	1.02 (0.86, 1.23)	0.796
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	**1.21 (1.04, 1.41)**	**0.015**

* Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 48. Association, by age, between odds of current modern contraceptive use* and number of sources of exposure to family planning campaigns, Tanzania

	≤24 years (n=1,182)		>24 years (n=2,586)		Overall (N=3,773)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	0.94 (0.54, 1.63)	0.820	**1.63 (1.17, 2.27)**	**0.004**	**1.41 (1.07, 1.88)**	**0.017**
2 sources	**1.76 (1.05, 2.97)**	**0.033**	**2.09 (1.51, 2.89)**	**<0.001**	**2.01 (1.53, 2.66)**	**<0.001**
3 sources	**1.79 (1.05, 3.05)**	**0.034**	**2.38 (1.70, 3.34)**	**<0.001**	**2.20 (1.65, 2.92)**	**<0.001**
4 sources	**2.22 (1.20, 4.08)**	**0.011**	**3.25 (2.21, 4.77)**	**<0.001**	**2.96 (2.14, 4.09)**	**<0.001**
5 sources	**2.64 (1.21, 5.77)**	**0.015**	**3.84 (2.26, 6.50)**	**<0.001**	**3.51 (2.28, 5.43)**	**<0.001**
6 sources	Dropped*	--	**16.64 (1.97, 140.64)**	**0.010**	**35.45 (4.43, 283.53)**	**0.001**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.56 (0.42, 0.74)**	**<0.001**	**0.63 (0.52, 0.77)**	**<0.001**	**0.63 (0.54, 0.73)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.03 (0.77, 1.37)	0.843	**1.30 (1.08, 1.56)**	**0.006**	**1.21 (1.04, 1.41)**	**0.015**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.19 (0.87, 1.63)	0.264	0.88 (0.72, 1.08)	0.223	0.96 (0.81, 1.13)	0.595
Muslim	1.09 (0.80, 1.49)	0.576	**0.80 (0.65, 0.97)**	**0.026**	0.86 (0.73, 1.02)	0.085
Other religion	0.67 (0.20, 2.25)	0.516	**0.44 (0.23, 0.83)**	**0.011**	**0.49 (0.28, 0.85)**	**0.012**
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**3.00 (2.28, 3.93)**	**<0.001**	**1.72 (1.38, 2.14)**	**<0.001**	**2.17 (1.83, 2.56)**	**<0.001**
Ownership of goods and assets‡‡	0.97 (0.90, 1.04)	0.336	**1.05 (1.00, 1.10)**	**0.037**	1.02 (0.98, 1.06)	0.237
Media use	1.04 (0.97, 1.11)	0.230	0.99 (0.95, 1.03)	0.590	1.01 (0.97, 1.04)	0.786
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.92 (0.69, 1.23)	0.581	1.11 (0.88, 1.40)	0.378	1.02 (0.86, 1.23)	0.796
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	**1.37 (1.18, 1.60)**	**<0.001**

* Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 49. Association, by gender, between odds of communicating with provider about family planning and number of sources of exposure to family planning campaigns, Tanzania

	Men (n=1,020)*		Women (n=3,032)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	Ref	Ref	1.60 (0.34, 7.48)	0.550	2.50 (0.56, 11.18)	0.231
2 sources	0.76 (0.18, 313)	0.701	3.57 (0.83, 15.28)	0.086	**4.29 (1.01, 18.25)**	**0.048**
3 sources	2.39 (0.76, 7.48)	0.134	**5.75 (1.35, 24.52)**	**0.018**	**8.06 (1.92, 33.79)**	**0.004**
4 sources	3.13(0.91, 10.72)	0.069	**8.35 (1.88, 36.98)**	**0.005**	**11.41 (2.65, 49.15)**	**0.001**
5 sources	**8.64 (2.03, 36.71)**	**0.003**	**11.48 (2.40, 54.96)**	**0.002**	**17.96 (3.95, 81.70)**	**<0.001**
6 sources	Dropped**		**17.73 (2.18, 144.44)**	**0.007**	**23.85 (2.92, 194.35)**	**0.003**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.90 (0.77, 4.73)	0.165	1.13 (0.73, 1.75)	0.593	1.28 (0.86, 1.89)	0.223
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	2.03 (0.89, 4.63)	0.093	1.07 (0.70, 1.65)	0.749	1.28 (0.88, 1.86)	0.203
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.46 (0.71, 3.00)	0.308	0.84 (0.53, 1.34)	0.469	1.02 (0.69, 1.50)	0.918
Muslim	**0.23 (0.07, 0.75)**	**0.014**	**0.62 (0.38, 1.00)**	**0.049**	**0.54 (0.35, 0.84)**	**0.006**
Other religion	2.69 (0.53, 13.53)	0.230	Dropped**		1.08 (0.25, 4.68)	0.915
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	3.19 (0.72, 14.19)	0.127	1.18 (0.71, 1.97)	0.518	1.40 (0.87, 2.26)	0.162
Ownership of goods and assets‡‡	1.13 (0.94, 1.36)	0.171	0.99 (0.89, 1.11)	0.900	1.02 (0.93, 1.12)	0.626
Media use	1.12 (0.93, 1.34)	0.221	1.09 (0.98, 1.20)	0.113	1.09 (1.00, 1.19)	0.050
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.54 (0.22, 1.29)	0.165	0.78 (0.47, 1.29)	0.327	0.69 (0.45, 1.06)	0.092
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	1.21 (0.82, 1.77)	0.336

* No men with 0 sources of exposure to family planning campaigns experienced the outcome of communicating with a provider about family planning. Therefore, the reference group for men for the stratified analysis is 0 or 1 source of exposure.

** Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 50. Association, by geographic location, between odds of communicating with provider about family planning and number of sources of exposure to family planning campaigns, Tanzania

	Urban (n=1,513)		Rural (n=2,667)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	1.31 (0.14, 12.02)	0.814	3.78 (0.47, 30.10)	0.209	2.50 (0.56, 11.18)	0.231
2 sources	1.29 (0.15, 10.85)	0.813	**7.79 (1.03, 58.70)**	**0.046**	**4.29 (1.01, 18.25)**	**0.048**
3 sources	1.58 (0.20, 12.70)	0.666	**17.26 (2.32, 128.54)**	**0.005**	**8.06 (1.92, 33.79)**	**0.004**
4 sources	4.13 (0.53, 32.33)	0.177	**15.07 (1.89, 120.51)**	**0.011**	**11.41 (2.65, 49.15)**	**0.001**
5 sources	4.83 (0.56, 41.22)	0.150	**34.21 (4.03, 290.26)**	**0.001**	**17.96 (3.95, 81.70)**	**<0.001**
6 sources	6.67 (0.36, 124.04)	0.203	**56.43 (2.68, 1186.20)**	**0.009**	**23.85 (2.92, 194.35)**	**0.003**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.19 (0.64, 2.19)	0.582	1.28 (0.76, 2.14)	0.350	1.28 (0.86, 1.89)	0.223
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.05 (1.03, 4.07)**	**0.040**	0.93 (0.58, 1.48)	0.750	1.21 (0.82, 1.77)	0.336
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.93 (0.50, 1.74)	0.816	1.05 (0.64, 1.72)	0.838	1.02 (0.69, 1.50)	0.918
Muslim	**0.47 (0.24, 0.91)**	**0.026**	0.64 (0.36, 1.13)	0.125	**0.54 (0.35, 0.84)**	**0.006**
Other religion	Dropped*		1.30 (0.29, 5.84)	0.728	1.08 (0.25, 4.68)	0.915
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.49 (0.74, 3.00)	0.266	1.44 (0.75, 2.77)	0.280	1.40 (0.87, 2.26)	0.162
Ownership of goods and assets‡‡	1.09 (0.94, 1.25)	0.249	0.97 (0.85, 1.10)	0.614	1.02 (0.93, 1.12)	0.626
Media use	1.12 (0.98, 1.29)	0.098	1.08 (0.00, 0.02)	0.216	1.09 (1.00, 1.19)	0.050
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.73 (0.38, 1.41)	0.350	0.63 (0.34, 1.16)	0.140	0.69 (0.45, 1.06)	0.092
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.28 (0.88, 1.86)	0.203

** Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 51. Association, by age, between odds of communicating with provider about family planning* and number of sources of exposure to family planning campaigns, Tanzania

	≤24 years (n=1,208)*		>24 years (n=2,854)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Number of sources						
0 sources	--	--	Ref	Ref	Ref	Ref
1 source	Ref	Ref	1.75 (0.37, 8.19)	0.48	2.50 (0.56, 11.18)	0.231
2 sources	1.28 (0.35, 4.62)	0.710	3.67 (0.85, 15.87)	0.082	**4.29 (1.01, 18.25)**	**0.048**
3 sources	**3.51 (1.10, 11.22)**	**0.035**	**6.08 (1.42, 25.98)**	**0.015**	**8.06 (1.92, 33.79)**	**0.004**
4 sources	**4.20 (1.13, 15.67)**	**0.032**	**9.18 (2.08, 40.46)**	**0.003**	**11.41 (2.65, 49.15)**	**0.001**
5 sources	**6.53 (1.53, 27.84)**	**0.011**	**14.52 (3.03, 69.56)**	**0.001**	**17.96 (3.95, 81.70)**	**<0.001**
6 sources	Dropped**	--	**28.16 (3.19, 248.83)**	**0.003**	**23.85 (2.92, 194.35)**	**0.003**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**2.50 (1.05, 5.99)**	**0.039**	0.99 (0.64, 1.52)	0.96	1.21 (0.82, 1.77)	0.336
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.28 (0.61, 2.68)	0.521	1.24 (0.80, 1.92)	0.340	1.28 (0.88, 1.86)	0.203
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.14 (0.55, 2.37)	0.732	0.98 (0.62, 1.55)	0.938	1.02 (0.69, 1.50)	0.918
Muslim	**0.39 (0.15, 0.99)**	**0.049**	**0.59 (0.36, 0.97)**	**0.037**	**0.54 (0.35, 0.84)**	**0.006**
Other religion	Dropped**		1.25 (0.28, 5.50)	0.772	1.08 (0.25, 4.68)	0.915
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	1.46 (0.69, 3.11)	0.326	1.38 (0.74, 2.56)	0.31	1.40 (0.87, 2.26)	0.162
Ownership of goods and assets‡‡	1.05 (0.88, 1.25)	0.607	1.02 (0.91, 1.13)	0.761	1.02 (0.93, 1.12)	0.626
Media use	1.11 (0.94, 1.32)	0.213	1.08 (0.97, 1.20)	0.145	1.09 (1.00, 1.19)	0.050
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.85 (0.40, 1.85)	0.690	0.63 (0.37, 1.07)	0.089	0.69 (0.45, 1.06)	0.092
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	1.28 (0.86, 1.89)	0.223

* No younger respondents with 0 sources of exposure to family planning campaigns experienced the outcome of communicating with a provider about family planning. Therefore, the reference group for younger respondents for the stratified analysis is 0 or 1 source of exposure.

** Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 52. Association, by gender, between odds of communicating with spouse about family planning and number of sources of exposure to family planning campaigns, Tanzania

	Men (n=1,112)		Women (n=3,080)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	1.30 (0.44, 3.84)	0.63	1.01 (0.28, 3.74)	0.98	1.11 (0.49, 2.54)	0.80
2 sources	**3.41 (1.29, 9.04)**	**0.01**	**3.87 (1.18, 12.67)**	**0.03**	**3.49 (1.65, 7.35)**	**<0.01**
3 sources	**6.09 (2.33, 15.89)**	**<0.001**	**5.84 (1.79, 19.06)**	**<0.01**	**5.86 (2.80, 12.27)**	**<0.001**
4 sources	**10.47 (3.87, 28.30)**	**<0.001**	**8.96 (2.68, 29.97)**	**<0.001**	**9.01 (4.22, 19.25)**	**<0.001**
5 sources	**10.75 (3.48, 33.28)**	**<0.001**	**20.07 (5.77, 69.75)**	**<0.001**	**15.72 (6.95, 35.54)**	**<0.001**
6 sources	Dropped**	--	**29.27 (5.56, 154.19)**	**<0.001**	**22.86 (5.81, 90.04)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.17 (0.80, 1.71)	0.41	0.89 (0.64, 1.22)	0.46	1.04 (0.82, 1.33)	0.75
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.30 (0.90, 1.87)	0.16	0.89 (0.64, 1.23)	0.49	1.07 (0.84, 1.36)	0.60
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	0.96 (0.66, 1.40)	0.84	**1.78 (1.24, 2.55)**	**<0.01**	**1.32 (1.02, 1.70)**	**0.04**
Muslim	0.89 (0.60, 1.31)	0.54	0.79 (0.53, 1.16)	0.23	0.81 (0.62, 1.07)	0.14
Other religion	1.01 (0.33, 3.05)	0.99	0.85 (0.11, 6.65)	0.87	1.10 (0.43, 2.81)	0.84
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**7.99 (4.08, 15.67)**	**<0.001**	**6.37 (3.47, 11.70)**	**<0.001**	**7.01 (4.46, 11.02)**	**<0.001**
Ownership of goods and assets‡‡	0.96 (0.88, 1.04)	0.31	**0.91 (0.83, 0.99)**	**0.02**	**0.94 (0.88, 0.99)**	**0.03**
Media use	**1.09 (1.01, 1.18)**	**0.04**	**1.20 (1.11, 1.30)**	**<0.001**	**1.15 (1.08, 1.21)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.73 (0.49, 1.08)	0.12	1.08 (0.75, 1.54)	0.69	0.87 (0.67, 1.14)	0.31
Gender						
Men	--	--	--	--	Ref	Ref
Women	--	--	--	--	**0.31 (0.25, 0.39)**	**<0.001**

* Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.

Supplemental Table 53. Association, by geographic location, between odds of communicating with spouse about family planning* and number of sources of exposure to family planning campaigns, Tanzania

	Urban (n=1,526)		Rural (n=2,667)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	0.48 (0.08, 2.95)	0.43	1.32 (0.52, 3.40)	0.56	1.11 (0.49, 2.54)	0.80
2 sources	3.95 (0.91, 17.07)	0.07	**3.04 (1.27, 7.28)**	**0.01**	**3.49 (1.65, 7.35)**	**<0.01**
3 sources	3.34 (0.77, 14.48)	0.11	**7.04 (2.98, 16.64)**	**<0.001**	**5.86 (2.80, 12.27)**	**<0.001**
4 sources	**10.09 (2.35, 43.35)**	**<0.01**	**5.95 (2.36, 15.00)**	**<0.001**	**9.01 (4.22, 19.25)**	**<0.001**
5 sources	**13.00 (2.84, 59.48)**	**<0.01**	**16.99 (6.20, 46.56)**	**<0.001**	**15.72 (6.95, 35.54)**	**<0.001**
6 sources	**31.95 (4.45, 229.23)**	**<0.01**	7.70 (0.64, 92.27)	0.11	**22.86 (5.81, 90.04)**	**<0.001**
Age						
≤24 years	Ref	Ref	Ref	Ref	Ref	Ref
>24 years	1.07 (0.74, 1.56)	0.70	0.99 (0.71, 1.38)	0.96	1.04 (0.82, 1.33)	0.75
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.44 (0.31, 0.63)**	**<0.001**	**0.25 (0.19, 0.34)**	**<0.001**	**0.31 (0.25, 0.39)**	**<0.001**
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.10 (0.73, 1.67)	0.64	**1.47 (1.05, 2.05)**	**0.03**	**1.32 (1.02, 1.70)**	**0.04**
Muslim	**0.64 (0.42, 0.96)**	**0.03**		0.88	0.81 (0.62, 1.07)	0.14
Other religion	2.11 (0.39, 11.34)	0.39		0.85	1.10 (0.43, 2.81)	0.84
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**6.19 (3.38, 11.33)**	**<0.001**	**8.40 (4.19, 16.82)**	**<0.001**	**7.01 (4.46, 11.02)**	**<0.001**
Ownership of goods and assets‡‡	0.97 (0.89, 1.06)	0.52	**0.89 (0.81, 0.97)**	**0.01**	**0.94 (0.88, 0.99)**	**0.03**
Media use	**1.10 (1.01, 1.19)**	**0.03**	**1.21 (1.12, 1.31)**	**<0.001**	**1.15 (1.08, 1.21)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.95 (0.64, 1.41)	0.80	0.83 (0.57, 1.20)	0.32	0.87 (0.67, 1.14)	0.31
Area						
Urban	--	--	--	--	Ref	Ref
Rural	--	--	--	--	1.07 (0.84, 1.36)	0.60

Supplemental Table 54. Association, by age, between odds of communicating with spouse about family planning* and number of sources of exposure to family planning campaigns, Tanzania

	≤24 years (n=1,323)		>24 years (n=2,854)		Overall (N=4,193)	
	Adjusted Odds Ratio (95% CI)	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**	**Adjusted Odds Ratio (95% CI)**	**p-value**
Number of sources						
0 sources	Ref	Ref	Ref	Ref	Ref	Ref
1 source	3.00 (0.37, 24.61)	0.31	0.88 (0.35, 2.21)	0.78	1.11 (0.49, 2.54)	0.80
2 sources	7.25 (0.97, 54.27)	0.05	**2.93 (1.30, 6.62)**	**0.01**	**3.49 (1.65, 7.35)**	**<0.01**
3 sources	7.71 (1.02, 58.15)	0.05	**5.92 (2.66, 13.18)**	**<0.001**	**5.86 (2.80, 12.27)**	**<0.001**
4 sources	**12.98 (1.68, 100.39)**	**0.01**	**8.76 (3.83, 20.02)**	**<0.001**	**9.01 (4.22, 19.25)**	**<0.001**
5 sources	**27.68 (3.41, 224.33)**	**<0.01**	**14.50 (5.82, 36.15)**	**<0.001**	**15.72 (6.95, 35.54)**	**<0.001**
6 sources	**56.72 (3.88, 828.73)**	**<0.01**	**15.69 (2.94, 83.72)**	**<0.01**	**22.86 (5.81, 90.04)**	**<0.001**
Gender						
Men	Ref	Ref	Ref	Ref	Ref	Ref
Women	**0.42 (0.28, 0.65)**	**<0.001**	**0.28 (0.21, 0.36)**	**<0.001**	**0.31 (0.25, 0.39)**	**<0.001**
Area						
Urban	Ref	Ref	Ref	Ref	Ref	Ref
Rural	1.14 (0.73, 1.78)	0.57	1.01 (0.76, 1.35)	0.93	1.07 (0.84, 1.36)	0.60
Religion						
Catholic	Ref	Ref	Ref	Ref	Ref	Ref
Other Christian	1.28 (0.79, 2.08)	0.31	1.33 (0.98, 1.80)	0.07	**1.32 (1.02, 1.70)**	**0.04**
Muslim	1.06 (0.64, 1.75)	0.83	0.74 (0.53, 1.02)	0.07	0.81 (0.62, 1.07)	0.14
Other religion	Dropped**	--	1.32 (0.49, 3.54)	0.58	1.10 (0.43, 2.81)	0.84
Marital status‡						
Single	Ref	Ref	Ref	Ref	Ref	Ref
Partnered	**6.44 (3.51, 11.83)**	**<0.001**	**7.41 (3.73, 14.74)**	**<0.001**	**7.01 (4.46, 11.02)**	**<0.001**
Ownership of goods and assets‡‡	1.00 (0.90, 1.11)	0.97	**0.91 (0.84, 0.98)**	**0.01**	**0.94 (0.88, 0.99)**	**0.03**
Media use	**1.15 (1.04, 1.27)**	**<0.01**	**1.15 (1.08, 1.23)**	**<0.001**	**1.15 (1.08, 1.21)**	**<0.001**
Education						
≤ Primary school	Ref	Ref	Ref	Ref	Ref	Ref
> Primary school	0.76 (0.48, 1.21)	0.25	0.94 (0.68, 1.31)	0.72	0.87 (0.67, 1.14)	0.31
Age						
≤24 years	--	--	--	--	Ref	Ref
>24 years	--	--	--	--	1.04 (0.82, 1.33)	0.75

* Dropped because the category perfectly predicted the outcome, and so an odds ratio could not be calculated. Often this is because the sample size in this group was too small.