

Influence of mass media on family planning methods use among couples in Gashenyi Sector Rwanda

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Abstract

Background: Rwandan population density has grown for over 70% for the last decade despite the introduction of population control program in the early 1980s, making it among the most densely populated countries in the world. Although family planning programs have been supported by the government by making them available and affordable, the contraceptive prevalence among women has remained on average. This study was conducted to explore the influence of mass media on family planning methods use among couples in Gashenyi Sector.

Methods: The study was conducted in two health centres in Gashenyi Sector using 351 couples, heads of health centers and the Executive Secretary of the sector. A self-administered questionnaire was used as the main tool of data collection, while an interview guide was used to the Executive Secretary and the heads of the health centres to compliment the main instrument. Data was analysed using description statistics and Pearson Product Correlation to determine the usage of family planning methods and influence of mass media strategy on the adherence to the methods, respectively. The information from key informants was analysed using thematic analysis.

Results: The findings revealed the level of listening to radio to be very high, whereas that of reading on posters, watching TV and reading newspapers were very low. Although lactational amenorrhea (natural method), pills, condom and emergency contraceptive (modern methods) scored high to moderate mean, the usage of family planning methods were generally low. Further, there existed low positive relationship between mass media strategies and the use of family planning methods (3.8%).

Conclusion: There is a clear evidence that mass media has not influenced the use of family planning methods among Gashenyi residents. However, radio stands to be the most accessible and affordable media in rural setting, thus, it must be extensively used to promote the use of family planning methods. On average, usage of natural family planning methods was low, while that of modern methods was even lower. Concerted effort by the government is needed to reinforce the availability of media, especially in rural areas.

Keywords: family planning, gashenyi, mass media, contraceptives, couples

Introduction

The world population has been growing rapidly since the 1960s to reach close to 7 billion today, and future projections show that the world will exceed 8, 9 and 10 billion by 2023, 2041 and 2083, respectively ^[1]. This remarkable development in population is a product of increasing fertility and the unprecedented decline in death rates among the developing countries due to improved medical and health care facilities ^[2]. In 2009, fertility rate was reported to be 2.5 worldwide, 2.2 in America and Asia, 1.6 in Europe, 4.6 in Africa, 6.4 in DRC, 4.6 in Kenya, and 5.25 in Rwanda. Rwandan population density grew from 321 people per square kilometer in 2002 to 416 in 2012, the highest in Africa. This makes Rwanda the second most densely populated country in the world, after South Korea, which has about 490 people per square kilometer ^[3].

The rate at which the world population is growing creates a great concern to the international community. It is this reason that the United Nations held a number of conferences to discuss measures to control world population growth. The most influential conference was the 1994 International Conference on Population and Development (ICPD) held in Cairo; the conference reached an agreement on the urgent

need to control global population growth. Among others, the 20 year ICPD Program of Action declared Family Planning Methods use as one of the critical approaches to be initiated by United Nations member states as a way of regulating world population. In 2009, contraceptive level was 62 in the world, 75 in America, 66 in Asia, 70 in Europe, 82 in Oceania, 29 in Africa, and 21 in Sub-Saharan Africa ^[3].

Concerns about high fertility and low contraceptive prevalence in sub-Saharan Africa have stimulated policy and program efforts aimed at promoting Family Planning in the region. Substantial money and time are currently being expended for the purpose of educating people about the advantages of fewer children and motivating them to adopt family limitation. The use of mass media to achieve these objectives has recently increased and both government and private agencies are in developing and implementing programs through the use of media facilities. The proponents of this approach have argued that the increasing availability of radio, television and print media in developing countries can be effectively used to influence people's behavior ^[4].

Mass media is a key strategy for increasing demand for use in health services. It is a process that helps communities to identify their own needs and to respond to and address these

needs. Gaining the participation of community members can help providers raise awareness both of health issues at the community level and of social and cultural issues that may promote or inhibit use of information and services, as well as improve clients' understanding of the methods or services being offered. Specific barriers to service access and use can be addressed and service utilization increased^[5].

Community mobilization promotes consideration of the needs of specific populations and localities. In particular, underserved populations, such as youth and men, can be reached more effectively through community mobilization. Mobilization also leads to greater sustainability, as communities are empowered and capable of addressing their own needs. A number of studies show that a sense of ownership is crucial in building sustainability^[5].

There is social legitimization of reality as depicted in the media. Regarding the use of contraceptive methods, the study done in Tanzania has shown that current use of modern methods was far greater among women who recalled Family Planning messages on mass media (18%) than among those who did not (3%)^[6]. There is a high dependency on media for information in an urban industrial society, which increases significantly in times of social upheaval or change. The greater the need society has for the information provided by the media and the more functions the media serve, the greater dependence individuals in that society will have on the media and the greater the media's influence will be on that society. Mass media have cognitive, affective and behavioral effects on the society it serves.

Effective effects of mass media, according to DeFleur and Ball-Rokeach^[7], involve the feelings and emotions of individual members of society. As images of violence routinely appear in the media, for example, people may become desensitized to scenes of violence encountered in reality. They may experience different levels of fear, anxiety, hostility, frustration and related emotions as events are processed through media channels. Ultimately, the behavioral effects of mass media, according to the dependency theory, are described in terms of individuals doing something that they otherwise might not do if it were not for the influence of the media on which they are dependent^[7]. Media field is widely appreciated to promote Family Planning Programs in various areas.

Television is a powerful medium for appealing to mass audience. It reaches people regardless of age, sex, income, or educational level. In addition, television offers sight and sound, and it makes dramatic and lifelike representations of people and products. Studies revealed that women exposed to television regarding messages about Family Planning used the methods more (2.44 times) than those who are not exposed to television in India^[8].

Radio is the oldest form of electronic media than television, and is far better adapted to abstract thought and also reaches mass and diverse audiences. The specialization of radio stations by listener age, taste, and even gender permits more selectivity in reaching audience segments. Since placement and production costs are less for radio than for TV, radio is able to convey public health messages in greater detail. Thus, radio is sometimes considered to be more efficient. Radio health message campaigns have been effective in developing countries, especially when combined with posters and other mass media^[9].

Unlike radios and TV, posters and newspapers are a direct way of communicating with people. They are used to spread a message, to promote an event and to support a great cause. Choosing the location of posters is very important. The message and the place should be changed occasionally. If a poster is left in one place too long, they become part of the environment and no one looks at them, they should be easy to read and have an attractive image^[10]. Newspapers are read daily in 70 percent of U.S. households, and in as many as 90 percent of high-income households^[11]. Newspapers permit a higher level of detail in health reporting what is not feasible with other broadcast media. Whereas, one can miss a television broadcast about breast cancer, and thus, lose its entire message, one can read the same (and more detailed) message in a newspaper at one's choice of time and venue. Although newspapers permit consumers flexibility concerning what is read and when, they do have a brief shelf life. In many households, newspapers seldom survive more than one or two days. Newspapers are available in daily and weekly formats, and local, regional, and national publications exist. In addition, there are numerous special audience for newspapers (e.g. various ethnic groups, women and feminist related, gay and lesbian, geography-specific, neighborhood). Consequently, health messages contained in newspapers can reach many people and diverse groups^[12]. Reading newspapers about Family Planning Program can influence positively the adherence to this program. Stories have power to shape personalities, to change beliefs, behaviors, and lives^[13].

A sample of 871 currently married urban Bangladeshi women was used to assess the impact of mass media programs on current contraceptive use. The analyses suggested that radio had been playing a significant role in spreading Family Planning messages among eligible clients; 38% of women with access to a radio had heard of messages while the figures for TV and newspaper were 18.5% and 8.5%, respectively^[14]. In Egypt, television contributed decisively to the rise in contraceptive prevalence from 37.8% in 1988 to 47.1% in 1992. The 1992 Egyptian Demographic and Health Survey (EDHS) quoted by El-bakly and Hess showed that 73% and 71% of men and women, respectively, cited television as their first source of information about Family Planning^[15].

In Tanzania, the more types of media that women are exposed to, the more likely they are to practice contraception. Women who recalled six media sources of Family Planning messages were 11 times as likely as women who recalled no media sources to be using modern contraceptives. Even women who recalled only one media source with a Family Planning message were twice as likely as women who recalled no media source to be using a modern method. Women who recalled Family Planning messages in the media were also more likely to have discussed with their spouse and to have visited a health facility than were women who could not remember any such intervention. After introduction of controls for other variables, women who recalled radio messages about Family Planning were 1.7 times as likely as women who reported no exposure through radio programs to have discussed with their spouse and were 1.9 times as likely to have been currently using Family Planning Methods^[6].

In Kenya, analyses of data from the 1989 Kenya Demographic and Health Survey, demonstrate a strong statistical association between women's reports of having heard or seen messages

about Family Planning through various media outlets and their use of contraceptives and their reproductive preferences. While 15% of women who say they have neither seen nor heard media messages on Family Planning are currently using a contraceptive method, this proportion rises to 25% among those who have heard radio messages, to 40% among those exposed to both radio and print messages and to 50% among those exposed to radio, print and television messages. These associations persist even when a variety of life-cycle, residential and socioeconomic controls are imposed, so that women exposed to no Family Planning messages report an average of 5.5 children as their ideal family size, while those exposed to three types of messages report 4.7 children as ideal. Given the persistence of these strong relationships, the results suggest that the mass media can have an important effect on reproductive behavior [16].

Rwanda initiated its first population program that included Family Planning in the early 1980s. As Family Planning has become an increasingly important priority for the country, the government has supported and encouraged contraceptive use by making contraception more widely available and affordable [17]. The contraceptive prevalence (percentile of women ranging between 15-49) was last reported at 51.60 % in 2010 [3].

Rwanda Demographic Health Survey Report (RDHS) of 2010 indicated that 33 percent of women did not see or hear a Family Planning message in newspapers/magazines or on radio or television. However, 66 percent of women heard a Family Planning message on the radio, and 5 percent saw one on television. Only 4 percent of women had seen a Family Planning message in a newspaper or magazine in the past 12 months [18]. The same demographic health survey (DHS), showed that exposure to Family Planning messages in the media varied by background characteristics. Women age 15 to 19 were least likely to see Family Planning messages in the media during the 12 months preceding the survey (40%). The results also showed disparities by residence, with women in rural areas having higher rates of non-exposure than women in urban areas (34% and 30%, respectively). Similarly, women with no education were less exposed (43% with no exposure) than those with a secondary education or higher (21% with no exposure), and women in the poorest households were less exposed (50% with no exposure than women in the wealthiest households (24% with no exposure). In Gakenke District, statistics shows that contraceptive prevalence is 44%, and 36% in Gashenyi Sector [19].

This study therefore sought to explore the influence of mass media on Family Planning Methods use among couples in Gashenyi Sector, Gakenke district, thus wanted to answer the following questions: What is the level of the mass media use among couples in Gashenyi Sector? What is the level of Family Planning methods use among couples in Gashenyi Sector? How has mass media influenced the use of Family Planning methods among couples in Gashenyi Sector?

The objectives of the study were:

- To find out the level of mass media use in Gashenyi Sector;
- To assess the level of Family Planning methods use among couples in Gashenyi sector;
- To establish the influence of mass media on Family Planning Methods use among couples in Gashenyi Sector.

The study was guided by the following null hypothesis which

states that, “There is no significant influence of mass media on Family Planning Methods use among couples in Gashenyi Sector”.

Methodology

This study was based on two theories: ‘Population Growth’ theory of Neo-Malthusian which asserts that overpopulation should be controlled by introducing and implementing policies and strategies that shall act to regulate population growth and consequently eliminate the negative effects and the unintended consequences of population growth. It contradicts the Malthusian theory stipulated in 1798 that overpopulation should be controlled by nature. In this line, International community, in the International Conference on Population and Development (ICPD) held in Cairo in 1994, agreed that there must be an effective strategy to control the population growth. The variables in this study include mass media (independent), namely; radio, TV, posters and newspaper; and Family Planning methods (FP) (dependent) which include the use of natural and modern methods.

According to Merriam-Webster Online Dictionary [20], mass media is a way of communication (as newspapers, radio, or television) that is designed to reach the mass of the people or a large audience. In this study mass media refers to the ways of reaching the couples such as, radio, television, posters and newspaper.

Family Planning Methods are the birth control measures used to determine the number of children there will be in a family and when those children will be born In this study FPM is divided into *natural methods* (continuous abstinence, the control of fertility through symptoms-based, calendar-based or lactational amenorrhea and the coitus interruptus also called withdrawal), and *modern methods* (barrier methods - contraceptive sponge; diaphragm, cervical cap, and cervical shield, condoms; hormonal methods - oral contraceptives or pills; the patch methods – shot or injection; vaginal ring; implantable devices - implantable rods and intrauterine devices; permanent birth control – sterilization: vasectomy and tubal sterilization; implant; and emergency contraception method. To measure the level of use of these methods, couples were asked how many times they have used one or another method in last six months. These were rated as follows: (1)0=Never (very low); (2)1-5 times, Rarely (low); (3)6-20 times, Sometimes (average); (4)21-60 times, often (high); and (5)61 and above, Always (very high).

Design, locale and sample size

The study employed cross-sectional descriptive and correlational designs with both quantitative and qualitative approaches of data analysis. With descriptive design situations were described as they were using frequencies, percentages, and means. The correlation design used multi regression analysis to determine influence of predictor variables on adherence to the family planning methods.

The study was conducted in Gashenyi Sector, Gakenke District, Northern Province in Rwanda. Gakenke is one of five districts that compose Northern Province. It has 338,586 people, 19 sectors, 19 health centres and 10 health posts established in order to facilitate access of medical services among local communities. The study took place in Gashenyi Sector which has two health centers, namely; Rukura and Rutenderi. A sample of 351 couples was drawn from 3805

couples in Gashenyi Sector as recommended by Krejcie and Morgan [21]. The sample size in each cell (Table 1) was calculated based on proportionate allocation sampling technique by Kothari [22]. Also all the two heads of health centers and the Executive Secretary were considered.

Table 1: Sample size of respondents [1]

Number	Cells	Population	Sample
1.	Taba	981	91
2.	Nyacyina	807	74
3.	Rutenderi	716	66
4.	Rutabo	698	64
5.	Rukura	603	56
Total		3805	351

Table 2a: Operationalized rating of access to media

Medium	Frequency				
	(1)0-5	(2)6-15	(3)16-20	(4)21-40	(5)41+
Radio & Posters:	Very Low	Low	Average	High	Very High
Posters:	Very Low	Low	Average	High	Very High
TV & Newspapers:	(1)0-1	(2)2-4	(3)5-10	(4)11-15	(5)16+
TV:	Very Low	Low	Average	High	Very High
Newspapers:	Very Low	Low	Average	High	Very High

Table 2b: Level of family planning methods usage

Scale	FPM use	Frequency	Interpretation
	Never	1.00-1.80	Very low
	1-5 times	1.80-2.60	Low
	6-20 times	2.60-3.40	Average
	21-60 times	3.40-4.20	High
	60 and above	4.20-5.00	Very high

The interview guide was used to collect data from the Executive Secretary of the Sector and two Heads of the health centres. The purpose of using key informants interview was to compliment the main instrument, the semi-structured questionnaire.

Validity and reliability of the instrument

The items in the questionnaire were scrutinized several times for clarity and meaningfulness to ensure the validity of the instrument. The Content Valid Index (CVI) was later determined to be 0.77 which is greater than the recommended 0.6 [23].

A pre-test was given to 22 respondents from Muhoza Sector in Musanze District in order to detect any major challenge likely to result from the instrument before it is applied. Then it was subjected to the Statistical Package for Social Sciences (SPSS) version 19, where Cronbach’s alpha coefficient of 0.85 was obtained; and since it was greater than the recommended value of 0.7, the instrument was considered reliable.

Data Collection and Analysis

Data was collected following the written permission from the Executive Secretary of Gashenyi sector. The participation in this study was strictly voluntary. Measures were taken to ensure respect, dignity, freedom of expression and confidentiality for each respondent. Objectives 1 and 2 were analysed using description statistics (percentages and mean), while objective 3 and the hypothesis were tested using Pearson’s Product Correlation coefficient to determine the influence of mass media strategy on the adherence to the

Research Instruments

The study used a self-administered questionnaire as the main tool to collect primary data from couples. For respondents who could not read and write it was administered as interview. The questionnaire had closed ended questions which were intended to establish the extent of mass media usage and semi-structured questions intended for FPM usage. Couples were asked how many times in the last six months they have listened, watched or read in mass media about Family Planning and the frequency were rated as shown on table 2a; while those related to FPM usage were measured using a different scale (table 2b).

methods. The information from key informants was analysed using thematic analysis.

Results and discussion

Demographic characteristics of the respondents

The study looked into the demographic characteristics to establish nature of the respondents and how they influenced the results. The findings indicate that females were dominant, 238(67.8%), thus they greatly influenced the findings. The possible explanation can be that while distributing questionnaires, female were most found at home. Males normally stay out of the household for different activities such as business, travels, jobs, and so on. Young couples between 26-35 years were the majority as they constituted 159(45.3%), followed by 36-45 years, 105(29.9%), above 45(16%) and below 25 years only 31(8.8%).

Furthermore, the majority of the respondents had no education, 170(48.4%); while 129 (36.8%) had primary education, 39(11.1%) secondary, and 13(3.7%) had tertiary education. This shows that a big number of the respondents had no education, which is normal since in Rwanda, as one of developing countries, the majority of the population never attend school. These findings are in agreement with Aliko who said that the current statistics paint a gloomy picture. Over 10 million school-aged children are not attending primary school in Nigeria– and this number has increased over the past three years. The number of out-of-school children in Nigeria is approaching 20 percent of the world’s total population and makes up to over one-third of the 30 million children in sub-Saharan Africa who receive no education whatsoever [24].

In regard to religion, it was noted that, 120(34.2%) of respondents were Catholics, 114(32.5%) of respondents were Adventists, 113(32.2%) were protestants and 4(1.1%) were Muslims. As observed, Christians dominated the study, a feature that was expected as the study was conducted in rural areas where usually Christianity dominates in sub-Saharan Africa.

Level of the use of mass media

The first objective was to determine the level of mass media use in Gashenyi Sector. Descriptive statistics parameters, such as mean (μ) and standard deviation (SD) were used to analyze this variable.

Finding (Table 3) reveals that the level of listening to radio was very high ($\mu=4.53$; $SD=0.78$); where 106(30.2 %) and 226(64.4%) respondents listened to radio 21-40 and above 41 times, respectively. This was followed by using posters ($\mu=1.23$; $SD=0.69$); reading newspapers ($\mu=1.21$; $SD=0.8$), and finally watching TV ($\mu=1.20$; $SD=0.55$) (table 3 and appendix 1). All media except listening to radio translate to very low (mean range, 1.23–1.20) and are far below the grand mean value ($\mu=2.04$, $SD=0.71$). This shows that using the radio is a good strategy of mass media, because more than 50% of the populations use it as source of information for FP. This finding is in line with Rwanda Health Demographic Survey Report [18], which shows that 66 percent of women heard an FP message over the radio, 5 percent watched television and only 4 percent had seen a family planning message on a newspaper or magazine in the past 12 months.

Also the findings in this study agree with the study of 871 currently married urban Bangladeshi women on the impact of mass media on programs and current contraceptive methods use. The analyses suggested that radio had been playing a significant role in spreading FP messages among eligible clients than TV at 38% and 18.5%, respectively [14]. However, this finding contradicts El-bakly and Hess, who said that in Egypt, television contributed decisively to the rise in contraceptive prevalence from 37.8% in 1988 to 47.1% in 1992. The 1992 Egyptian Demographic and Health Survey showed that 73% and 71% of men and women, respectively, cited television as their first source of information about family planning [15].

Several factors can be attributed to the low scoring of other media such as TV, posters and newspapers. According to Witkowski [10], choosing the location of posters is very important. Witkowski proposes that, the message and the place of posters should be changed occasionally if they are to be effective. If the posters are left in one place for too long they become part of the environment and no one looks at them anymore. They should be easy to read and have attractive images. Posters, newspapers and TVs are very rare in rural and homes of people in villages. The interview with the key informants, especially the Executive Secretary of the sector revealed that there are no posters relating to FP in Gashenyi. In fact, posters were not mentioned by the head of health facilities among strategies they use to promote FPM in the sector. Furthermore, the Rwanda Health Demographic Survey Report [18], reports only 4% of women to have had seen an FP message in a newspaper or magazine in the past 12 months. This calls for a need to increase the level of use of these less represented variables because it has been demonstrated that reading newspaper can influence positively the adherence to

FP program. According to Weinschenk [19], stories have power to shape personalities, to change beliefs, behaviors, and lives.

Table 3: Level of the use of Mass media

Mass media strategy	Mean (μ)	SD	Interpretation
Radio	4.54	0.78	Very high
Posters	1.23	0.69	Very low
TV	1.20	0.55	Very low
Newspaper	1.21	0.80	Very Low
Grand mean	2.04	0.71	Low level

Level of family planning methods Use

The second objective was to assess the level of Family Planning methods use among couples in Gashenyi Sector, in terms of natural methods, and modern methods. These findings are presented in Table 4.

Natural Methods

Natural methods that were studied include; continuous abstinence, calendar-based, symptoms-based, lactation amenorrhea and withdrawal. The finding revealed a low level of overall usage of natural methods at grand mean, $\mu=1.92$ (Table 4). This finding contradicts the answers from the Executive Secretary of Gashenyi Sector and center officers from Rukura and Rutenderi health centers who stated that couples do not use natural contraceptive methods. However, the finding is congruent with the study carried out in Kenya in 2007, where the use of natural methods had declined from 43% in 1989 to 28% in 1998. The same is reiterated by Rogow, [25]. Who said that worldwide, only 3% of women of childbearing age rely on withdrawal as their primary method of contraception. Worldwide usage of natural methods varies widely, from 1% in the African continent to 16% in Western Asia. In the United States, it is indicated that 56% of reproductive women have had a partner using withdrawal and by 2002, only 2.5% were using withdrawal as their primary method of contraception. In Rwanda, only 6% of married women use traditional methods [26].

Considering individual natural methods, lactational amenorrhea revealed a high level of usage ($\mu=4.96$; $SD=0.75$). This is because, naturally, mothers breastfeed their children, especially in the rural areas, where mothers have plenty of time for their babies. The rest of the methods under this study recorded a very low mean ranging from $\mu=1.00$ to 1.23.

What is surprising is the mean score of calendar-based method ($\mu=1.19$, $SD=0.58$) in a place where the big number of respondents is Catholics. In the early 20th century, the calendar-based method known as the "the rhythm method" was promoted by members of the Roman Catholic Church as the only morally acceptable form of family planning [27]. Methods accepted by this church are referred to as natural (NFP), and so at one time, the term "rhythm method" was synonymous with NFP. Today, NFP is an umbrella term that includes symptoms-based fertility awareness methods and the lactational amenorrhea method as well as calendar-based methods such as rhythm method [28].

Modern Methods

Thirteen modern methods were included in this study, namely; contraceptive sponge, diaphragm, female condoms, male condoms, pills, patch, short injection, vaginal ring, implantable rod, intrauterine device, sterilization implant,

surgical sterilization, and emergence contraception. The finding (Table 4) reveals an overall very low level of usage of modern methods ($\mu=1.52$; $SD=0.45$). In addition, some modern methods are not used in Gashenyi Sector at all, such as contraceptive sponge, diaphragm, patch, vaginal ring, cervical cap, cervical shield, female condom and sterilization implant. The statistics obtained from the Executive Secretary of Gashenyi sector showed that couples rely only on injections (15%), pill (10.5%), male condoms (4.9%), implant (4.2%), intrauterine device (0.4%), surgical sterilization (0.2%). This is only 35.2% adherence to modern contraceptive methods. It implies that the greater percentage either use natural methods or not at all. Some cultures and religious entities deliberately limit access to contraception because they consider it to be morally or spiritually undesirable. Harvey, Bird, Maher *et al.* [29]. support this finding by propounding that in UK, only 2% of women between 17-49

years use diaphragm, sponge, and condoms, while in South Africa, of the 554 subjects participated in baseline interviews, only 16% had used both condoms and another form of contraception. In addition, in Kenya the use of barrier methods and intra-uterine devices (IUDs) or implants has remained low among all types of users. Although an appreciable proportion of younger married couples (21%) were using IUDs or implants in 1989, this proportion dropped significantly to 6% by 1998. The use of barrier methods is rapidly gaining popularity among the unmarried women, though the level is still relatively low at about 11% [30]. On considering individual modern methods, pills scored high ($\mu=3.59$; $SD=1.36$), whereas male condom and emergency contraceptive scored moderate, with $\mu=2$ and 2.61, respectively. This is evident that the three methods are commonly known among the couples in Gashenyi Sector.

Table 4: Level of family planning methods use

Methods of FP	Mean (μ)	SD	Interpretation
Natural methods			
Continuous abstinence	1.00	0.00	Very low
Calendar-based	1.19	0.58	Very low
Symptoms-based	1.21	0.70	Very low
Lactation amenorrhea	4.96	0.75	Very high
Withdrawal	1.23	0.68	Very low
Aggregate μ and SD	1.92	0.54	Low
Modern methods			
Contraceptive sponge	1.00	0.00	Very low
Diaphragm	1.00	0.00	Very low
Female condoms	1.00	0.00	Very low
Male condoms	2.99	1.25	Moderate
Pills	3.59	1.36	High level
Patch	1.00	0.00	Very low
Short injections	1.12	0.33	Very low
Vaginal ring	1.00	0.00	Very low
Implantable rods	1.44	0.55	Very low
Intrauterine device	1.08	0.27	Very low
Sterilization implant	1.00	0.00	Very low
Surgical sterilization	1.03	0.18	Very low
Emergency contraception	2.62	1.64	Moderate
Aggregate μ and SD	1.53	0.45	Very low
Grand mean	1.73	0.50	Very low

Influence of mass media on family planning methods use

The third objective aimed at establishing the influence of mass media on family planning methods usage, using Pearson Correlation Coefficient Moment.

Overall influence of mass media

As shown in Table 5, there is a low positive relationship between mass media and Family Planning Methods use in Gashenyi Sector ($p=0.000$, $r=0.195$ at $\alpha=0.05$). Such relationship is observed in the Kenya Demographic and Health Survey report of 1989 [31]. which showed a statistical association between women's reports of having heard or seen messages about family planning through various media outlets, their use of contraceptives and their reproductive preferences. While 15% of women who report to have neither seen nor heard media messages on family planning are currently using a contraceptive method. This proportion rises to 25%, 40% and 50% among those who heard radio messages, those exposed to both radio and print messages, and

those exposed to radio, print and television messages, respectively. These associations are reported to persist even when a variety of life-cycle, residential and socioeconomic controls are imposed. Such relationships suggest that proper use of mass media can highly influence on reproductive behavior.

Further analysis of the results of this study shows that the mass media have influence family planning methods usage to an extent of 3.8%; that is, based on the coefficient determination ($r^2 =0.038$). That means usage of family planning is influenced to a greater extent by other factors not considered in this study. The result of Rwanda Demographic and Health Services report [18]. asserts that exposure to family planning messages in media varied depending on the background characteristics. Women between 15 and 19 were least likely to be exposed to messages in the media (40%) than older ones. Similarly, women in rural areas were reported with higher rates of non-exposure (34%) than women in urban areas (30%); those with no education were less exposed (43%)

than those with at least secondary education (21%), and those in the poorest households were less exposed (50%) than those in the wealthy households (24%).

Hypothesis Test

The Pearson Correlation Coefficient Moment results (Table 5) provide Pearson’s correlation, $r=0.195$ and $p=0.000$, which is less than 0.05 (level of significance) indicates that there is significant relationship between mass media and family planning methods usage. Therefore, the null hypothesis is rejected. This influence is supported by DeFleur and Ball-Rokeach [7], who said that mass media have cognitive, affective and behavioral effects on the society it serves.

Table 5: Influence of mass media on family planning methods use

Description	Measure
Pearson Correlation (r)	0.195*
p-value	0.000
Coefficient of Determination (r^2)	0.038

*Correlation is significant at the 0.05 level (2-tailed)
 n = 351

Strength of contribution of each mass medium

The four predictors (independent variables, namely; radio, TV, newspapers and posters) were subjected to standard multiple regression to determine how strong each medium influences the usage of family planning methods. The results (table 6) indicate that all variables under the study, except posters have significantly influenced the use of FP methods. The extent of strength is such that radio ($\beta=0.402$, $p=0.000$) more effective than TV ($\beta=0.326$, $p=0.000$) and newspapers ($\beta=0.203$, $p=0.027$). This is in agreement with the findings in Bangladesh where radio had been playing a significant role in spreading messages among eligible clients; 38% of women with access to a radio had heard of messages, while TV and newspaper stand at the levels of 18.5% and 8.5%, respectively [14]. Radio also reaches mass and diverse audiences. The specialization of radio stations by listeners’ age, taste, and even gender permits more selectivity in reaching audience segments. In addition, since placement and production costs are less for radio than for TV, radio is able to convey public health messages in greater detail. Thus, radio is always considered to be more convenient and efficient. It is good to note that, although Television is a powerful medium for appealing to mass audience and it can reach people regardless of age, sex, educational level [9], still not all families can afford to buy and operate it as it requires electricity. TV, newspapers and posters alike are readily available in urban than in rural areas.

Table 6: Contribution of each of the mass media on the use of family planning methods

Mass media	Regression Coefficients		Sig. (p)
	Unstandardized Coefficients B	Standardized Coefficients β (Beta)	
(Constant)	10.401		0.000
Radio	0.245	0.402*	0.000
Posters	-0.010	- 0.026*	0.655
TV	0.036	0.326*	0.000
Newspaper	0.034	0.203*	0.027

*The level of significance is 0.05

Conclusion and Recommendations

The use of mass media in promotion and sensitization of the society on the use of family planning methods is very crucial. Many families are unaware of the existence of the methods and this leads to unplanned pregnancies, large number of children which cannot go hand in hand with the escalating costs of living. This results to increased cases of abortion and separations, especially when fathers find it hard to cater for the family’s needs. As it has been revealed in this study, radio stands to be the most accessible and affordable media in rural setting. It must be extensively to promote the use of family planning methods. The average usage of natural family planning methods was low, whereas the level of modern methods was even lower. There is a need for concerted effort by the government to reinforce and sponsor the availability of media, especially in rural areas. This will boost the accessibility of the family planning messages and consequently increase the use of family planning methods, thus controlling the increased population. The government has to sensitize community to try the use of the different methods of family planning instead of relying on the three methods observed in this study.

It is recommended that such study be extended to other sectors and districts to ascertain whether the same results will hold. Since the use of mass media strategies has contributed to only 3.8% adherence to family planning methods, there are other factors which play the bigger role. Further study should be done to identify and establish the extent of influence of those hidden factors to usage of family planning methods. Also there is a need to determine why some methods are more used than others in Gashenyi Sector.

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Competing Interests

The authors declare that they have no competing interests.

Authors Contributions

SC participated in the design of the study, coordinated the study and proofread the manuscript. LM participated in the design of the study, refining of literature review and drafted the manuscript. PK participated in the design of the study, did the statistical analysis and proofread the manuscript. An conceived the idea, did literature preamble supervised fieldwork and data collection. All authors participated on data analysis and organization.

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