



Research article

Exposure to mass media family planning messages and associated factors among youth men in Ethiopia

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ABSTRACT

Background: Family planning programs usually focus information and messaging on women and girls. However, they may not be the primary decision-makers about their own contraceptive choice and utilization. Hence, this study aimed to assess youth men's exposure to family planning messages and associated factors in Ethiopia.

Method: The study used data for analysis from the 2016 Ethiopian demographic and health survey data set. A total of 7,639 youth men have been included in this analysis. Statistical package for social science version 20 has been used for data analysis. We have used multivariable logistic regression analysis to identify the association of independent variables with the outcome variable. Adjusted odds ratio with 95 % confidence interval was used to declare significant statistical association.

Result: The mean age of participants was 19.02 years with a standard deviation of ± 2.83 . The proportion of youths who have exposure to family planning messages was 34.7 % (33.7%, 35.7%). Owning mobile phone (AOR = 1.49, 95% CI: 1.12–1.97, using internet (AOR = 1.90, 95% CI: 1.33–2.73), knowing where to obtain family planning (AOR = 4.28, 95% CI: 3.08–5.95), educational status of primary (AOR = 1.98, 95% CI: 1.36–2.86) secondary (AOR = 3.01, 95% CI: 1.94–4.67) and higher (AOR = 6.01, 95% CI: 3.24–11.16) were the factors associated with the outcome variable. Also, the odds of exposure of youths who agree contraception is women's business was lower (AOR = 0.55, 95% CI: 0.35–0.85).

Conclusion: Only one-third of youths have exposure to family planning messages. Educational status, owning a mobile phone, knowing where to obtain family planning methods, use of the internet, and considering family planning as a women's business were the factors that have an association with the outcome variable. So it is important to improve the education level of youths, to inform youths about different outlets through which family planning messages will be transmitted, and avert youth's misconception towards contraception.

1. Introduction

Family planning messages disseminated through various ways can influence individuals' behavior by providing relevant information, building self-efficacy, and promoting constructive attitudes and social norms that enhance healthy reproductive behaviors. Mass media programming of family planning can overcome a lack of awareness on fertility and contraception and ease concerns about it [1]. Men are equally responsible for the poor reproductive health outcome experienced by their female partners and are also agents for positive change by disrupting profound social norms that have negative impacts [2, 3].

Approximately one-fourth of the world's population is found in the age group of 10–24 years [4]. Structural and sociocultural barriers often

prevent young people from satisfying their reproductive desires, which can lead to unexpected results [5]. Although greater emphasis is being given for the role of social differences on outcomes of health, more work and effort remains to be accomplished in figuring out the systematic ways of interaction in between. The structural influence model (SIM) concludes that health communication factors are intermediates that enable socio-demographic determinants to impact health behavior and outcomes. The model indicates that social inequalities and variations in social patterning in norms, cultures and beliefs among different communities limit access to and utilization of some sources of health information and enable others to do so [6].

Studies have found that women in sub-Saharan Africa face many socio-cultural barriers in the utilization of contraceptive methods [7, 8] A

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commonly reported reason for the non-use of such contraceptive methods is partner opposition to family planning. Different studies show that men's reproductive intentions and behavior affect the contraceptive utilization behavior of their spouses [9, 10] In 42 sub-Saharan Africa countries, nearly half of the estimated 42 million unintended births were from youths [11].

Ethiopia is a country in which 41% of women aged 20–24 got married at age of 18 and 16% married at age 15. Early age at marriage followed by high rates of adolescent childbearing make Ethiopian young girls more vulnerable to complications of pregnancy and childbirth [12, 13] The 2016 EDHS data indicate that 46% of women and 40% of men age 15–49 have no exposure to family planning messages and youths particularly have very limited exposure, with 56.2 % of men aged 15–19 having no exposure to main media sources of family planning messages [14].

By analyzing the national context and communication gaps at individual, community, social, and environmental levels, the Ethiopian federal ministry of health has drafted a framework for the national health communication system. The pathway is aimed primarily to simplify the comprehension of the general context and the intercorrelation of factors affecting health [15].

Experts on health communication argued that media is a prominent instrument to create awareness and mobilizing people towards positive change in health behavior [16]. Mass media influence the attitude and behavior of the people at four levels; Individual, Network, Organizational and Societal levels [17]. Despite its crucial role in making the youth be successful husbands and to have healthy reproduction in their future, family planning messages are not well reached for the young population. Previous studies [8, 18] in Ethiopia focused only on women and no single study to date conducted to identify what impedes youth men's exposure to family planning messages promoted through mass media. Hence, this study was aimed to assess exposure status of youth men to massmedia family planning messages and associated factors in Ethiopia.

2. Method

2.1. Study area and data source

Ethiopia is one of the highly populated countries in Africa with an estimated 115 million people in 2020. This number is about 1.5% of the total global population. Ethiopia has been divided administratively into ten geographical regions and two administrative cities. The secondary data we have used for our analysis was obtained from the 2106 EDHS data set. It was a population-based cross-sectional survey conducted from January 18, 2016, to June 27, 2016, nationally. A two-stage stratified cluster sampling technique was used by separating each structural division into urban and rural areas, except Addis Ababa (entirely urban). Therefore, a complete of 23 sampling strata are created. Each stratum was again further divided into enumeration areas which were prepared by the 2007 Population and Housing Census as a sampling frame. In the initial stage, a total of 645 clusters (202 from urban and 443 from rural) were randomly selected from the sampling strata, and in the second stage, 28 households per cluster were selected randomly taking the list of the household as a frame of sampling. For the individual interview, 14,795 eligible men were identified from the selected households and a total of 12,688 men aged 15–59 were interviewed which makes the response rate 86%. A detailed description of this national survey and the method used can be found elsewhere [14]. For purpose of our analysis, we have included a total of 7,639 youth men aged 15–24 year as they are the most vulnerable groups but less served groups due to lack of unfriendly services for youths and unmarried men and deeply rooted socio-cultural barriers. However, it is also a period of preparation for marriage and parenthood. We have excluded those with incomplete records on important variables.

2.2. Study variables

In this study, the main outcome variable was exposure to family planning messages through radio, television, newspaper/magazines, and mobile phone text messages. Participants were asked about how often they read a newspaper, listened to the radio, or watched television and received text messages through their mobile phones. Youths were considered as having exposure and coded "1" if they have heard/read/received family planning messages on at least one of the four media outlets in the last few months before the survey and, if not they were considered as have no exposure and given "0".

The independent variables were socio-demographic and socio-economic (age, occupation, educational level, residence, wealth index, partner's occupation, partner's educational level, region, religion), media utilization (owning mobile, television, radio, using the internet, access to electricity, interest to use mass media, Land-line telephone access) and, sexual and reproductive related behaviors of participants.

2.3. Operational definition

2.3.1. Exposure to family planning message

Youths were considered exposed if they have heard family planning messages either on radio, television, print media (e.g., magazines and newspapers), or through mobile text messages in the last few months [14].

2.3.2. Wealth index

Was computed from household assets and utilities and categorized into five categories (poorest, poorer, middle, richer and richest) [14].

2.4. Data analysis

In our analysis weighted data were used which was done by complex survey sampling analysis technique using SPSS software version 24. Frequency distribution and descriptive statistics (mean and standard deviation (SD)) were used to summarize the characteristics of respondents. The Chi-square test was also used to describe the relationship between predictor variables and the outcome variable. Bivariate logistic regression analysis was first done to identify candidate (with p-value < 0.2) predictor variables for multivariable logistic regression. At multivariable logistic regression, variables with a p-value < 0.05 were declared as significantly associated with the outcome variable. Multicollinearity was checked by a variance inflation factor (it was < 10) before multivariable analysis. The final model fitness was also tested by Hosmer–Lemeshow goodness of fit (P-value > 0.05).

2.5. Ethics consideration

A data access authorization letter was obtained from the DHS program. The 2016 EDHS protocol has been reviewed and approved by the National Ethics Review Board of the Democratic Federal Republic of Ethiopia, the Ministry of Science and Technology and the Institutional Review Board of ICF International. All men participated in EDHS gave written informed consent and assent accordingly.

3. Result

3.1. Socio-demographic characteristics

A total of 7639 study participants were included in our study. The mean age of overall respondents was 19.02 with SD \pm 2.83 and about four thousand three hundred sixty-three (57.1 %) of youths were aged 15–19 years. Six thousand two hundred seventy-four (82.1%) of the participants were rural residents and more than forty were followers of orthodox religion. Almost 30 % of participants were from the two largest regions, 1132 from Oromia and 1109 from Amhara (14.8 % & 14.5%

respectively). Among the total youths, 6609 (86.5%) responded as they are unmarried and only 1% of participants were divorced. Out of the total participants, 4524 (59.2%) had a primary level of education. Regarding the occupation of participants, 3737 (48.9%) of them were agricultural employees and 1950 (25%) of participants were in the poorest wealth category (Table1).

3.2. Sexual and reproductive characteristics of respondents

More than 70% of study participants didn't debut sexual intercourse and regarding marital history, 6609 (86.5%) were never married. Among those who were involved in marriage, the mean age at first cohabitation was 19.16 with SD ± 1.9. Six thousand seven hundred and two (87.7%) of study participants didn't have a wife/partner currently during survey time. One thousand four hundred seventy-five (19.3%) of participants didn't know contraceptive methods and only 84 (1.4%) were using contraceptive methods. Around 1830 (24%) of participants didn't know whether or not pregnancy could occur following childbirth before period returns. Only 664 (8.7%) of study participants agree on contraception is women's business and men should not worry. Three thousand five hundred sixty-one (79.1%) of participants responded that a wife's refusal to have sex following a husband has other women as justifiable (Table2).

Table 1. Socio-demographic and socio-economic characteristics of respondents in Ethiopia, EDHS 2016.

| Variable | Categories | Frequency (n) | Percentage (%) |
|--------------------|---------------------|---------------|----------------|
| Age in years | 15–19 | 4363 | 57.1 |
| | 20–24 | 3276 | 42.9 |
| Residence | Urban | 1365 | 17.9 |
| | Rural | 6274 | 82.1 |
| Educational status | No education | 987 | 12.9 |
| | Primary | 4524 | 59.2 |
| | Secondary | 1637 | 21.4 |
| | Higher | 491 | 6.4 |
| Region | Tigray | 906 | 11.9 |
| | Afar | 453 | 5.9 |
| | Amhara | 1109 | 14.5 |
| | Oromia | 1132 | 14.8 |
| | Somali | 630 | 8.2 |
| | Benishangul | 615 | 8.1 |
| | SNNPR | 1090 | 14.3 |
| | Gambela | 566 | 7.4 |
| | Harari | 322 | 4.2 |
| | Addis Ababa | 391 | 5.1 |
| | Dire Dawa | 425 | 5.6 |
| Religion | Orthodox | 3153 | 41.3 |
| | Catholic | 74 | 1.0 |
| | Protestant | 1399 | 18.3 |
| | Muslim | 2928 | 38.3 |
| | Traditional | 17 | 0.2 |
| | Other | 68 | 0.9 |
| Wealth index | Poorest | 1950 | 25.5 |
| | Poorer | 1201 | 15.7 |
| | Middle | 1238 | 16.2 |
| | Richer | 1478 | 19.3 |
| | Richest | 1772 | 23.2 |
| Marital status | Never in union | 6609 | 86.5 |
| | Married | 906 | 11.9 |
| | Living with partner | 31 | .4 |
| | Widowed | 2 | .0 |
| | Divorced | 76 | 1.0 |
| | Separated | 15 | .2 |

Table 2. Sexual and reproductive characteristics of participants in Ethiopia, EDHS 2016.

| Variable | Category | Frequency | Percentage (%) |
|--|-------------------|-----------|----------------|
| Number of wives/partners | No wives/partners | 6702 | 87.7 |
| | One | 920 | 12.0 |
| | Two | 17 | .2 |
| Knows contraceptive methods | No | 1475 | 19.3 |
| | Yes | 6164 | 80.7 |
| Used Contraceptive method | No | 6080 | 98.6 |
| | Yes | 84 | 1.4 |
| Could women get pregnant after birth before period return | No | 4532 | 59.3 |
| | Yes | 1276 | 16.7 |
| Contraception is a woman's business, man should not worry | Disagree | 6268 | 82.1 |
| | Agree | 664 | 8.7 |
| | Don't know | 707 | 9.3 |
| Women who use contraception become promiscuous | Disagree | 6067 | 79.4 |
| | Agree | 826 | 10.8 |
| | Don't know | 746 | 9.8 |
| Beating justified when a wife goes out without telling her husband | No | 3639 | 80.8 |
| | Yes | 698 | 15.5 |
| | Don't know | 165 | 3.7 |
| Ever been tested for HIV | No | 2950 | 65.5 |
| | Yes | 1552 | 34.5 |
| Wife justified refusing sex when husband has other women | No | 709 | 15.7 |
| | Yes | 3561 | 79.1 |
| | Don't know | 232 | 5.2 |

3.3. Exposures to mass media family planning messages

Among the total respondents, 2649 (34.7% (95% CI:33.7, 35.7)) have exposure to mass media family planning messages and among this 16.1% were exposed to more than one media. Most of the study participants, 5679 (74.3%) didn't hear family planning messages on the radio a few months before the survey and 6175 (80.8%) didn't see the message on TV. Only 676 (8.8%) of participants read in newspaper/magazines about family planning and 7451 (97.5%) didn't hear family planning messages through their mobile phones (Table3).

3.4. Factors associated with exposure to mass media family planning messages

In the bi-variable binary logistic regression, place of residency, wealth index, educational status, owning a mobile, use of the internet, knowing a place to obtain family planning methods, marital status, perceiving

Table 3. Respondents exposure to mass media family planning messages in Ethiopia, EDHS 2016.

| Variables | Categories | Frequency | Percentage (%) |
|--|------------|-----------|----------------|
| On radio heard about Family Planning | No | 5679 | 74.3 |
| | Yes | 1960 | 25.7 |
| On TV saw about Family Planning | No | 6175 | 80.8 |
| | Yes | 1464 | 19.2 |
| In newspaper read about Family Planning | No | 6963 | 91.2 |
| | Yes | 676 | 8.8 |
| Heard family planning by text messages on mobile phone | No | 7451 | 97.5 |
| | Yes | 188 | 2.5 |
| Exposure to family planning messages via at least one type of mass media | Unexposed | 4990 | 65.3 |
| | Exposed | 2649 | 34.7 |

contraception as women's business were the factors found to be associated with exposure to mass media family planning messages.

In the multivariable logistic regression analysis, educational status, owning mobile, use of the internet, knowing a place to obtain family planning methods, perceiving contraception as a women's business was persistently found to be significant predictors of exposure to family planning messages. Youth men with primary education were 98 % more likely to be exposed to family planning messages compared to those who have no primary education (AOR = 1.98, 95% CI:1.36–2.86) and those with secondary and higher were 3.01 and 6.01 times likely respectively to be exposed. Youth men who own mobile phones were 49 % more likely to be exposed to family planning messages than women without mobile access (AOR = 1.49, 95% CI: 1.12–1.97). Youth who used the internet were 90% more likely to be exposed to mass media family planning messages compared with those who never used (AOR = 1.90, 95% CI: 1.33–2.73). Youths who know where family planning methods can be obtained were 4.28 times more likely to have exposure to family planning messages than those who didn't know (AOR = 4.28, 95% CI:3.08–5.95). The odd of exposure to family planning messages were 45% less likely among youths who agree contraception is women's business compared to those who disagree (AOR = 0.55, 95% CI: 0.35–0.85). (Table4).

4. Discussion

In Ethiopia, many studies have generated shreds of evidence for the association of exposure to family planning messages and contraceptive utilization [18, 19, 20]. And our study is primarily focused on assessing mass media exposure of youth men for family planning messages and the associated factors in such neglected segment a population. Having exposure to media like TV, radio, or newspaper/magazine is considered as one route of accessing health information disseminated to the community.

This study found that the proportion of youth men who have been exposed to family planning messages transmitted through mass media is

34.7 %. This is lower compared to the finding from Ghana [22]. The variation might be because our study considers mass media only as a means of exposure to family planning messages but the previous study has considered any means of exposure to family planning messages. There might be also a socio-cultural difference between these two countries. Here the implication is mass media might not be the major source of family planning for men and other information communications could effectively deliver messages for them [23]. So it is important to consider a variety of ways of information communication to reach different target groups when designing programs.

The study pointed out that youths with educational status from primary to higher education are more likely to be exposed to family planning messages than those who have no education. This is in line with other studies conducted in Africa [21, 22]. The possible explanation might be that educated youths are at a higher chance of accessing media as most of them are usually live in the urban area in Ethiopia and can read family planning messages potentially transmitted through magazines/newspapers [24].The finding indicates that education is a versatile tool to involve men in family planning and to achieve desired demographic impact. It is crucial for stakeholders and responsible bodies to both improve youth education and design audience specific family planning message delivery strategies.

The finding from this study also revealed that owning a mobile phone has a significant association with exposure to family planning messages. This is in agreement with another study done in Ethiopia [18]. The possible reason could be having a mobile phone offers an opportunity at least to receive family planning messages that could be sent regularly to mobile phones and may also have a higher probability of getting it on internet through a variety of social media [25].Therefore it is crucial for program designers and government and non-governmental responsible bodies in the area to emphasize delivering FP messages through mobile phones as one effective means to reach the young population.

Our study also found that those who use the internet are more likely to have exposure to mass media family planning messages. This could

Table 4. Factors associated with youth men's exposure to family planning messages in Ethiopia, EDHS 2016.

| Variable | Exposure | | COR (95%CI) | AOR (95%CI) | |
|-----------------------------------|------------------|---------------|-------------|---------------------------|--------------------------|
| | Exposed (%) | Unexposed (%) | | | |
| Residency | Urban | 819 (60) | 546 (40) | 3.64 (3.23,4.12) | 1.16 (0.64,2.11) |
| | Rural | 1830 (29.2) | 4444 (70.8) | 1 | 1 |
| Wealth index | Poorest | 373 (19.1) | 1577 (80.9) | 1 | 1 |
| | Poorer | 311 (25.9) | 890 (74.1) | 1.48 (1.25,1.75) | 0.71 (0.49,1.02) |
| | Middle | 389 (31.4) | 849 (68.6) | 1.94 (1.64,2.28) | 0.53 (0.34,0.81) |
| | Richer | 523 (35.4) | 955 (64.6) | 2.32 (1.98, 2.70) | 0.85 (0.59,1.24) |
| | Richest | 1053 (59.4) | 719 (40.6) | 6.20 (5.34, 716) | 1.23 (0.80,1.90) |
| Educational status | No education | 149 (15.1) | 838 (84.9) | 1 | 1 |
| | Primary | 1296 (28.6) | 3228 (71.4) | 2.26(1.88, 2.72) | 1.98(1.37,2.89)* |
| | Secondary | 839 (51.3) | 798 (48.7) | 5.91(4.84,7.22) | 3.01(1.94,4.67)* |
| | Higher | 365 (74.3) | 126 (23.6) | 16.29(12.47,21.28) | 6.01(3.24,11.16)* |
| Own mobile | No | 804 (22.8) | 2717 (77.2) | 1 | 1 |
| | Yes | 1845 (44.8) | 2273 (55.2) | 2.74(2.48,3.03) | 1.49(1.12 -1.97)* |
| Ever used internet | No | 1725 (27.5) | 4539 (72.5) | 1 | 1 |
| | Yes | 924 (67.2) | 451 (32.8) | 5.39(4.76,6.11) | 1.90 (1.33-2.73)* |
| know a place to obtain FP methods | No | 55 (13.3) | 357 (86.7) | 1 | 1 |
| | Yes | 509 (46.7) | 581 (53.3) | 5.69(4.18,7.34) | 4.28(3.08-5.95)* |
| contraception is women's business | Disagree | 2422 (38.5) | 3856 (61.5) | 1 | 1 |
| | Agree | 190 (28.6) | 474 (71.4) | 0.64(0.54,0.76) | 0.55(0.35-0.85)* |
| | Don't know | 47 (6.6) | 660 (93.4) | 0.11(0.08,0.15) | 0.22(0.07,0.65)* |
| Marital status | Never in union | 2260 (34.2) | 4349 (65.8) | 1 | 1 |
| | Married | 362 (38.6) | 575 (61.4) | 1.21 (1.05,1.40) | 0.91 (0.71,1.18) |
| | Divorced/widowed | 27 (29.0) | 66 (71.0) | 0.79 (0.50,1.24) | 1.05 (0.52,2.12) |

* Statistically significant at P-value <0.05.

be the intrinsic power of internet technology that creates an information network among people. It is also confirming that the internet is assuming an important role in the lives of the youths that its use is not only limited to purely academic and leisure purposes, but also being used for life-supporting purposes including searching for health information [26]. So it is important to promote e-health as a viable platform for health interventions and healthcare for the neglected and less served youths. In Ethiopia, currently, mobile subscription is increasing and it could be used as complements of audio-visual and printed mass media for health information dissemination in health care [27].

The study also found that considering family planning as women's only business is the other factor that influences youth men's exposure to family planning messages. The possible explanation for such association could be men might be neglectful and uninterested in information about family planning as they have already perceived it as women's responsibility [28]. The perception that only women should use family planning is derived from a variety of interacting factors such as lack of knowledge, refusal of wives for men condom, and misconception that vasectomy may terminate the husband's manly nature [25, 26]. Here, the finding is indicative of awareness creation and disproving misperceptions on family planning among men particularly youths remains important, and more should be done to avert them.

Knowing where to obtain family planning methods is the other positively associated factor. This is in agreement with a study conducted in Nigeria [29] in which those who know where to get family planning services are more likely to be exposed to family planning messages. This might be because knowing service delivery sites can also motivate them to learn more about the services that have been provided there and they are also more likely to have information about FP concurrently. Moreover, the role of male involvement in family planning especially in patriarchal societies worths a significant impact in achieving planned and healthy family size [30, 31]. Hence it is valuable to provide a full package of family planning information for youth men including where to obtain family planning services, what services are there for them, and their role as an individual or as a couple. By doing so it is possible to increase their interest and motivation towards family planning.

Although the EDHS is a nationally representative survey, it has its limitations. One of the possible limitations of this study is unable to build temporal relationships because cross-sectional nature of the survey from which we draw our data. And due to its retrospective nature and fear of recall bias, exposure was asked only in the previous few months which may lead to under-reporting. Despite these limitations, we have tried to contribute nationwide evidence in the area in such groups of the population for the first time.

5. Conclusion and recommendation

The study revealed that the majority of youth men have no exposure to family planning messages disseminated through mass media. Factors that were found to be associated with exposure to such information were educational level, owning a mobile phone, knowing where to obtain family planning methods, use of the internet, and considering family planning as a women's business. Therefore, it is important to increase the education level of youths, to inform youths about different outlets through which FP messages will be transmitted, and make easy accessibility of them. It is also crucial to change youths' understanding that family planning is not women's only issue and instead it needs both parties' cooperation.

Declarations

Author contribution statement

Zinie Abita: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data.

Desalegn Girma: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data.

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Data availability statement

Data will be made available on request.

Declaration of interest's statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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