

MEDIA MIX AND CONTRACEPTIVE BEHAVIOR OF SEXUALLY ACTIVE NIGERIANS*

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Data from a Nigerian study of 892 sexually active Nigerians out of a total sample size of 1,500 were used to assess the impact of media mix on the knowledge of, attitudes about and practice of family planning. Bivariate and multivariate analyses were conducted to examine the relationships between specific media, program interventions and contraceptive use. The findings show that the greater the exposure to mass media, irrespective of the socioeconomic status of the respondents, the more likely they are to be using contraceptives, and to have taken some steps towards contraceptive behavior change, such as discussions of family planning with partner and visits to a family planning clinic. It is also shown that specific media such as newspapers, family planning logos, television and posters are likely to influence contraceptive use. A media mix creates a more conducive environment that tends to make family planning a social norm. Reproductive health care may be promoted by using a mix of media sources, while taking specific cultural milieu into consideration.

INTRODUCTION

There is widespread interest in the use of the mass media to inform and motivate people about family planning. Studies of communication efforts in developing countries have indicated that there is a positive relationship between mass media campaigns and family planning behaviour. For example, Piotrow et al. (1990) have demonstrated that television promotion of family planning in the Nigerian cities of Ilorin, Ibadan and Enugu helped to increase the number of new and continuing contraceptive users. Similarly

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Kiragu and Omotara (1992) have shown that a mass media campaign involving radio, television, print materials and an advocacy forum with religious leaders contributed to a 24 percent increase in the number of first time family planning users in sentinel clinics, while the number of continuing users increased to 37 percent.

Large-scale national studies have found similar results. In their analysis of the Nigerian Demographic and Health Survey, Bankole et al (1993) found that ever-use of contraceptives was 8.2 percent points higher among women who were exposed to family planning messages than among unexposed individuals. As for non-users, 37 percent of those exposed to family planning messages said that they intended to use contraceptives, compared with 19 percent of non-users who had not seen or heard the messages. Studies have documented increased use of family planning methods and other behavioral changes following specific communication interventions using one or more media channels (Witwer, 1997; Retherford and Mishira, 1997; Niroula and Ban, 1997; Mahmood ad Ringheim, 1996; Hindin et al., 1994; Olaleye and Bankole, 1994; Westoff and Rodriquez, 1993; Pradekso, 1992; Adamchak and Mbizvo, 1991).

However, the question remains whether there is an added advantage when reproductive health and family planning messages are disseminated through a number of media channels. A study in Tanzania has shown a positive impact of full multimedia family planning promotion on contraceptive behavior. (Jato et al., 1999). The logic behind this finding is that the intensity of exposure to family planning information will lead to family planning acceptance. This study was based on ever married or currently married women.

In this paper, we test Nigerian data to assess whether the number of media messages sexually active men and women in Nigeria are exposed to affect their contraceptive behavior, measured by contraceptive use status, spousal discussions of family planning and visits to a family planning clinic. The effects of two family planning program interventions on contraceptive behavior in Nigeria are also examined.

BACKGROUND

Nigeria is the most populous nation on the African continent, with an estimated population of 120 million. It has an annual population growth rate of 2.5 percent. With the promulgation of the National Population Policy in 1989 and initiation of the **primary health** care system, the integration of family planning into maternal-child health care programs began. Prior to

this, family planning issues were not of major concern. The National Population Policy called for increased dissemination of family planning information (FMOH, 1989), and the Family Health Services, funded by USAID, began a private sector condom marketing program.

Between 1988 and 1992, family planning messages were disseminated through the mass media, print materials and various other promotional activities. It specifically launched two main initiatives: The Music and Logo Projects. The Music Project executed by the Planned Parenthood Federation of Nigeria used the enter-educate approach to promote family planning and sexual responsibility through popular music. Two family planning songs, "Choices" and "Wait for Me," and accompanying music videos were produced in 1988 during the first phase of the project. King Sunny Ade and Onyeka Onwenu, popular Nigerian musicians, performed the songs. The lyrics encouraged adults to make wise choices about family planning and encouraged youths to be sexually responsible. Within weeks of their release, both songs reached the top ten on local lists of popular music hits.

A second phase of the Music Project used television and radio public service announcements to re-enforce the link between the songs and the need to take action regarding family planning. This became the public service announcement (PSA) campaign. The PSAs were based on concepts such as economic well-being, maternal-child health, and early marriage. The PSAs were broadcast twice daily on television, and about four times a day on radio, over a six month period from June to November, 1992.

The Logo Project was designed to identify government and private family planning initiatives and to mark locations where family planning services and/or advice are available (Kiragu et al., 1995). The first phase of the project was implemented between January 1993 and August 1993; it introduced the Logo and linked it to family planning services. Radio and television spots, billboards, posters and other print materials promoted the new logo and explained its meaning. The Logo is a picture of a couple with their baby. More than 1 million pieces of material were produced and placed in strategic public places, including posters, billboards, crown posters, bumper stickers, indoor stickers and novelty items. The project was designed to educate men and women of reproductive age about the health benefits of modern contraception. Supporting messages encouraged Nigerians to visit family planning services sites, to discuss family planning with partners, to space their children, to only have the number of children they could afford to care for adequately, and to avoid sexually transmitted diseases and infections. The messages provided information on available contraceptive methods and sources, stressing that the modern methods are effective and safe, and

have health and economic implications.

METHODS

Data Sources

The Public Service Announcement (PSA) was conducted to examine the effect of the various intervention programs on knowledge of, attitudes about and practice of family planning by Nigerians who are sexually exposed and active. Data collection was completed between 1992 and 1993. Data was collected from a representative sample of Nigerian respondents of reproductive age and different marital statuses in three states (Kano, Enugu, and Lagos). The states' capitals and three villages from each state were sampled. In Kano state, Kano, the state capital was chosen as the urban area, and Rimin Gado was selected as the rural area. Enugu and Nike were chosen as urban and rural areas in Enugu State, and Lagos and Ayobo were chosen in Lagos State. These three areas represent the three primary ethnic groups in Nigeria, i.e., Hausa-Fulani for Kano State, Yoruba in Lagos State, and Igbo in Enugu State.

Each area was divided into four distinct residential zones replacing the settlement patterns, and through a random sample, one zone from each area was selected. Each zone selected was divided into blocks, and two blocks from each zone were randomly selected. The households in each block were then listed. Five hundred respondents were selected from each state, for a total of 1,500 respondents from the three states.

A systematic sampling procedure was used in the selection of households. In each household, an equal number of eligible men and women were interviewed. Because of the homogeneity of the villages, there was no demarcation, only that the expected sample size was selected from the villages randomly. Interviews were completed in the local dialects of the states. Specific questions on exposure to the music and logo projects and exposure to other media sources such as radio, television, and print media were asked.

Variables

In this analysis, we are restricted to the number of respondents who are sexually exposed and active, irrespective of their marital status, and were also exposed to the mass media messages. Three sets of variables are used. Social and demographic variables are controls, exposure to media channels and programs are independent variables, contraceptive use, spousal com-

munication and visits to family planning (FP) clinics are dependent variables.

The social-demographic variables selected are age, education, religion, place of residence, ethnicity, marital status, occupation, and radio and television ownership. The respondents were asked whether they had heard, seen or read any family planning/child spacing messages in the last 6 months in such media channels as radio, television, posters, pamphlets, and newspapers. They were also asked if they had heard the music projects “*Choices*” and “*Wait for Me*,” or had seen the national family planning/child-spacing logo.

Contraceptive behavior was measured as current use of any contraceptive method, modern or traditional. Three variables related to contraceptive use and specific outcomes from the program activities (spousal approval of family planning, discussion of family planning with one’s spouse/partner and visits to family planning clinics) were included in the analysis.

Statistical Methods

Univariate, bivariate and multivariate analyses were used to examine the characteristics of the respondents, and differences in media exposure and contraceptive behavior. For the multivariate analysis, we used a logistic regression model to estimate the effects of exposure to any of the media sources of family planning and program messages, while controlling for the background variables. The log odds obtained from this analysis estimate the relationships of the independent variables with the dependent variables, while simultaneously controlling for other variables.

Respondents Profile

Table 1 illustrates that those in the 25-34 and 35+ age groups account for over one-third of the respondents, while those in the 15-24 group account for about one-fourth. In terms of educational background, about 67 percent has completed primary or secondary school, 12 percent has tertiary education, and 21 percent has no education. Religious affiliation is distributed about evenly to three different religions in Nigeria namely islamic, catholic and protestant religions including Pentecostal groups. Respondents are predominantly urban residents.

Exposure to Multi-Media and Program Messages on Family Planning

The subsets of the data were those exposed to mass media. Thus 59.2 per-

TABLE 1. DISTRIBUTION OF SOCIO-ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Characteristic	Male (n=463)	Female (n=427)	Total (n=892)
Age			
15-24	29.3	30.4	25.3
25-34	39.4	42.2	37.0
35+	31.3	27.4	37.7
Education			
None	15.3	27.5	21.1
Primary	32.2	37.3	38.3
Secondary	13.1	25.1	28.9
Tertiary	10.9	10.1	11.7
Religion			
Islam	34.2	33.3	32.3
Catholic	30.8	35.2	31.0
Pentecostal	35.9	31.5	36.7
Place of residence			
Urban	76.8	65.8	71.3
Rural	23.2	34.2	28.7
Ethnic group			
Hausa	16.4	8.9	12.8
Igbo	36.7	42.4	39.3
Yoruba	40.4	41.2	40.9
Minority tribes	6.5	7.5	7.0
Marital status			
Married	93.3	96.1	95.1
Divorced/Separated/Widowed	5.7	4.0	4.2
Occupation			
Professional	28.5	16.9	22.9
Sales/Clerical	25.9	35.4	30.4
Artisan/Trading	29.4	28.8	29.3

cent of the 1,500 respondents were exposed to different channels of mass media campaign; radio, television and posters were the common sources. Twenty-two percent saw the FP pamphlet, 39 percent saw FP in newspapers and 50 percent saw the family planning symbol. There is little variation by gender. Also, about 28 percent have been exposed to the program messages. More than 40 percent of men and women have heard of "Wait for Me," while one-third of both sexes have heard of "Choices."

TABLE 2. PERCENTAGE DISTRIBUTION OF RESPONDENTS WHO REPORTED MEDIA AND PROGRAM EXPOSURE TO FP IN PRECEDING SIX METHODS BY MEDIA TYPE

Media exposure	Male	Female	Total
Any media exposure	61.7	56.9	59.5
Type of media			
Radio	52.3	70.9	61.1
Television	53.4	64.1	58.5
FP poster	45.1	56.7	50.7
FP pamphlet	21.6	23.2	22.3
FP on newspapers	42.1	35.7	39.2
FP symbol	43.4	57.1	49.9
National child spacing symbol	52.3	41.9	47.3
Any program exposure	24.8	30.9	27.8
Heard of "Wait for me"	45.6	48.7	47.3
Heard of "Choice"	32.1	32.8	32.9

MEDIA EXPOSURE AND CONTRACEPTIVE USE

Media and program exposures varied significantly according to a variety of social and demographic characteristics. Exposure to media and the FP program was positively related to age, education, residence, approval of FP, intention to use FP, spousal discussions of FP, and media ownership. Marital status and religion had no specific effect on exposure to the multi-media and the FP program.

Table 3 shows the relationship between contraceptive knowledge and use and exposure to media messages on family planning and family planning program interventions. Of those sexually active Nigerians who recalled family planning messages in the media, 87 percent have heard of at least one family planning method; whereas of those who recalled the program interventions, 86 percent have heard of FP.

Also 81percent have heard of modern family planning methods. The finding that a smaller percentage of respondents who reported knowledge of traditional family planning, had ever used or are currently using family planning is understandable, as traditional methods are not promoted. Personal and spousal approval of family planning also relate to media and program exposure.

TABLE 3. PERCENTAGE DISTRIBUTION OF SEXUALLY ACTIVE NIGERIANS WHO KNOW OF, HAVE EVER USED AND ARE CURRENTLY USING A METHOD OF FP BY TYPE OF METHOD, ACCORDING TO THE EXPOSURE TO MEDIA AND PROGRAM MESSAGES CONTROLLING FOR SEX

Knowledge, attitude and use of family planning	Male		Female		Total	
	Media Exposure	Program Exposure	Media Exposure	Program Exposure	Media Exposure	Program Exposure
percent heard of any FP	91	92	84	81	86.8	86.3
percent heard of modern family planning	88	88	75.4	74	80.2	80.6
percent heard of traditional family planning	62	67	56	55	58.2	60.5
Percent ever used any family planning method	82	74	50	66	68.1	69.4
percent ever used traditional family planning	59	55	40	38	47.3	45.6
percent ever used modern family planning	74	68	49	55	58.2	60.5
Percent current use of any method	62	46	40	39	48.4	42.3
Percent current use of traditional family planning	16.4	38	18	34	17.1	36.3
percent current use of modern family planning	18.1	46	23	44	13.3	19.4
Family planning approval	91	89	95	94	93.5	91.4
Spousal approval of family planning	97	88	85	88	89.5	88.2

MULTIVARIATE ANALYSIS

To determine the impact of the number of media sources on family planning practices, while simultaneously controlling for selected key social and background characteristics, three logistic models were constructed and tested. The models were used to assess the use of any method of family planning and the current use of modern and traditional methods. We controlled for the social and demographic variables defined in the methodology section.

From Table 4, the first model examines the factors that affect the use of any method of family planning, while controlling for media and intervention program exposure, and social and demographic variables. It is shown

TABLE 4. ODDS RATIOS OF THE LIKELIHOOD OF CURRENT CONTRACEPTIVE USE AMONG SEXUALLY EXPOSED AND ACTIVE NIGERIANS, BY EXPOSURE TO MEDIA AND PROGRAM MESSAGES AND SELECTED SOCIO-DEMOGRAPHIC CHARACTERISTIC ACCORDING TO TYPE OF METHOD IN USE

Characteristic	Current use of any method of family planning	Current use of traditional method of family planning	Current use of modern method of family planning
Age			
15-34	RC	RC	RC
35+	1.31	1.72*	1.32
Education			
No education	RC	RC	RC
Secondary+	1.11	1.26	1.09
Place of Residence			
Urban	1.36	0.87	1.29
Rural	RC	RC	RC
Marital status			
Married	0.83	0.80	0.70
Single	RC	RC	RC
Family planning approval ^a	2.09*	2.25*	3.16*
Spousal approval of FP ^b	1.66*	1.68*	1.65*
Spousal communication ^c	3.73*	2.11*	4.68*
Number of media exposure ^d	1.15*	1.25*	1.02*
Ownership of radio ^e	0.82	1.29	1.43*
Ownership of television ^f	1.39	0.75	1.94
Intervention program exposure ^g	1.36	0.68	1.49*
Constant	-3.4146	-3.8044	-4.4581
-2 Log-likelihood	784.997	595.845	700.867
χ^2	190.971	74.364	201.742
d. f.	11	11	11

*significant at $p < 0.01$.

a-g: Their reference categories are their negatives, e.g., the RC for ownership of radio is non-ownership of radio. Number of media exposure is a continuous variable.

that the greater the exposure to different media, the more likely the person will be to use any method of contraception. Those who are exposed to more than one mass media are 1.1 times more likely to practice family planning than those who are exposed to one medium. Program exposure has a positive effect, as those who have seen the programs are 1.4 times more likely to practice family planning.

Model 2 shows that as the number of media messages one receives increases, the higher the probability of the use of any traditional method. Those who have heard of family planning in more than one media are 1.25

times more likely to use any traditional method. For Model 3, media and program exposures have the expected impact. For example, those exposed to the intervention programs are 1.4 times more likely to use modern family planning than those not exposed to these programs.

We also measured the effect of mass media and program intervention on three behavioral patterns expected to be exhibited by those exposed to the media and program campaign, namely discussing family planning with one's spouse, visiting a family planning clinic and currently practicing family planning (Table 6). We found the expected relationship between the number of media exposure, and visiting family planning clinics and discussing family planning with partners. Partner's approval of family planning is the strongest predictor of spousal discussion, while urban residence is the strongest predictor of visiting a family planning clinic.

We also examined the effect of the types of media on the three behavioral patterns. We attempt to answer the question: what is the effect of each media source on family planning behavioral patterns?

The odds ratios in Table 5 show that exposure to the eight sources of family planning media publicity was related to whether the respondents had discussed family planning with their sexual partners. Controlling for the multivariate effects, the media sources with expected positive effects on spousal communication and on family planning are newspapers, the National Child Spacing Logo, television and poster. Other factors are partner approval of and personal approval of family planning, and marital status. Exposure to radio, television, posters, pamphlets, and other family planning symbols also showed positive associations with visiting a family clinic. Nigerians exposed to family planning messages on the radio were about 2.8 times more likely to visit family planning clinics than those who lack this exposure. Other factors with significant effects on visiting family planning clinics are level of education, place of residence, and personal and spousal approval of family planning.

The national family planning logo campaign positively affected the discussion of family planning with spouses and the eventual use of family planning. Those exposed to the National Child Spacing Logo are 1.24 times more likely to discuss family planning with their partner, and 1.33 times more likely to be current contraceptors, as compared with those not exposed to the logo campaign.

Table 5 also shows the low effect of family planning program exposure on the three family planning behavioral patterns, contrary to what we obtained in Table 3. We suspect the problem of multi-collinearity because it is more likely that education and the other socio-demographic variables could be

TABLE 5. LOGISTIC REGRESSION SHOWING LIKELIHOOD THAT SEXUALLY ACTIVE NIGERIANS HAVE EVER DISCUSSED FAMILY PLANNING WITH THEIR SPOUSES, VISITED A FAMILY CLINIC AS THE RESULT OF MEDIA EXPOSURE TO FAMILY AND ARE CURRENTLY USING ANY MODERN CONTRACEPTIVE, BY MEDIA SOURCE OF FAMILY PLANNING INFORMATION AND SOCIO-DEMOGRAPHIC CHARACTERISTIC.

Characteristic and source	Discussed family planning with spouse/Sex partner	Visited family planning clinic	Currently using family planning
CHARACTERISTIC			
Current age			
15-34	RC	RC	RC
35+	113	1.53	1.36
Education			
Low education	RC	RC	RC
Secondary+	1.11	1.22*	1.07
Place of residence			
Urban	1.04	6.90*	1.36
Rural	RC	RC	RC
Marital status			
Married	1.61*	0.99	0.79
Single/Others	RC	RC	RC
Family panning approval	1.86*	1.44**	2.09
Spousal approval	9.62**	1.56**	1.73
MEDIA SOURCE			
Number of media exposure	1.14	1.24	1.02
Program exposure	0.94	0.72	1.42
Newspaper	1.45*	0.77	0.94
National child spacing logo	1.24	0.90	1.33
Radio	0.96	2.80	0.92
Television	1.25	1.14	1.60
Posters	1.24	1.36	1.24
Pamphlets	0.99	1.94	1.02
Other FP symbols	0.77	1.01	1.26
Ownership of radio	0.69	1.39	0.84
Ownership of television	1.58*	1.91	1.21
Visited FP clinic	2.56*	n.a.	n.a.
Constant	-3.47	-13.335	-3.5348
-2 Log-likelihood	811.284	811.284	777.187
χ^2	11	18	18
d.f.	297.128	84.407	198.780

*significant at $p < 0.01$; ** significant at $p < 0.05$

correlating with the media variables. Some of the media sources effects are not significant. This led us to ask: will exposure to mass media sources alone affect the three family planning behavioral patterns irrespective of the

TABLE 6. LOGISTIC REGRESSION SHOWING LIKELIHOOD THAT SEXUALLY ACTIVE NIGERIANS HAVE EVER DISCUSSED FAMILY PLANNING WITH THEIR SPOUSES, VISITED A FAMILY CLINIC AND ARE CURRENTLY USING ANY MODERN CONTRACEPTIVE, BY MEDIA SOURCE OF FAMILY PLANNING INFORMATION ALONE

Media source	Family planning discussion	Visited family planning clinic	Currently using a modern method of family planning
Newspaper	1.56***	1.25	1.33
Logo	1.38*	0.90	1.47*
Radio	1.17	3.10**	1.18
Television	1.75**	2.53**	2.19**
Poster	1.41***	2.24	1.42*
Pamphlets	1.09	2.40**	1.09
Other FP symbols	1.17	1.23	1.41***
Constant	-1.7754	-5.4742	-2.398
-2 Log-likelihood	1026.691	278.102	886.701
χ^2	81.721	54	89.266
d.f.	7	7	7

*significant at $p < 0.01$; ** significant at $p < 0.001$; *** significant at $p < 0.05$

socio-demographic characteristics of the exposed respondents? The answer is provided in Table 6, which shows that exposure to family planning messages on any of the media sources have positive associations with the family planning behaviors. This means that irrespective of the respondents' socio-economic status, the effect of mass media exposure is positive.

Nigerians who were exposed to family planning messages on the seven media were 1.56, 1.38, 1.17, 1.75, 1.41, 1.09 and 1.17 times more likely to discuss family planning with their partners than otherwise (the significant media sources are asterisked). Similarly, exposure to family planning practice via the media of newspaper, radio, television, posters, pamphlets and other materials are positively related to visiting family planning sites.

Respondents who were exposed to radio messages about family planning are 3.10 times more likely to have visited family planning clinics. The National Child Spacing logo campaign was also consistently associated with the three family planning behaviors. In terms of current use of any family planning methods, Table 6 also shows that exposure to media messages was significantly associated with the current use of family planning. The campaign in the various media contributed to the use of family planning methods. This shows that consistent campaign for the promotion of family planning in the media can induce change in people's behaviors and attitudes.

CONCLUSION

This analysis shows that the exposure of Nigerians to media sources of family planning messages was associated with increased family planning knowledge, more positive attitudes and increased practices. It shows that the more the sources of family media messages, the higher the likelihood of positive family planning behavior. In terms of behavioral patterns associated with family planning, the analysis shows that those exposed to family planning messages in the media were more likely than others to discuss family planning with their partners and to visit family planning clinics. These effects are noticeable when other socio-demographic variables are included in the equation.

A more intriguing aspect of this analysis is that exposure to media messages on family planning *alone* can affect family planning behavior irrespective of socioeconomic and demographic factors. Exposure to family planning music program intervention affects the current use of any method and the use of modern methods. As can be seen from Table 6, those respondents who have seen or heard of family planning messages through any of the channels of communication are more likely to have discussed family planning with their spouses, visited family planning clinics and are also more likely to be current users of a modern contraceptive method.

Becoming a regular user of family planning is a gradual and complex process. It is not expected that all the respondents, upon exposure to family planning information, would begin to use contraception. Yet continued exposure to similar messages through different channels of media changes family planning knowledge and attitudes. This exposure also helps to create a more conducive climate in which family planning will be viewed as a social norm, especially with the ravaging effects of HIV/AIDS. Exposure to more media sources had an incremental effect on family planning use. Higher exposure of respondents to multiple media sources increases the likelihood of family planning use.

The implication of these findings is that multiple media channels should continue to be used to promote reproductive health/family planning issues. Priority should be given to media channels with the widest coverage (in this case, radio) while supporting channels such as print and interpersonal communication. The effect of the program intervention calls for the need for specially produced material/programs to impact reproductive health/family planning practices. Family planning logo promotion activities should be intensified, especially in the rural areas and predominantly Moslem areas of

Nigeria.

The need to determine how to meet the population information needs most effectively and how to provide a continuous flow of information that is lively and interesting to the general public emerges from this analysis. Although it is shown that media exposure influences family planning behavior, this is not a substitute for formal education and other self-development initiatives which can have multiple effects on the population.

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