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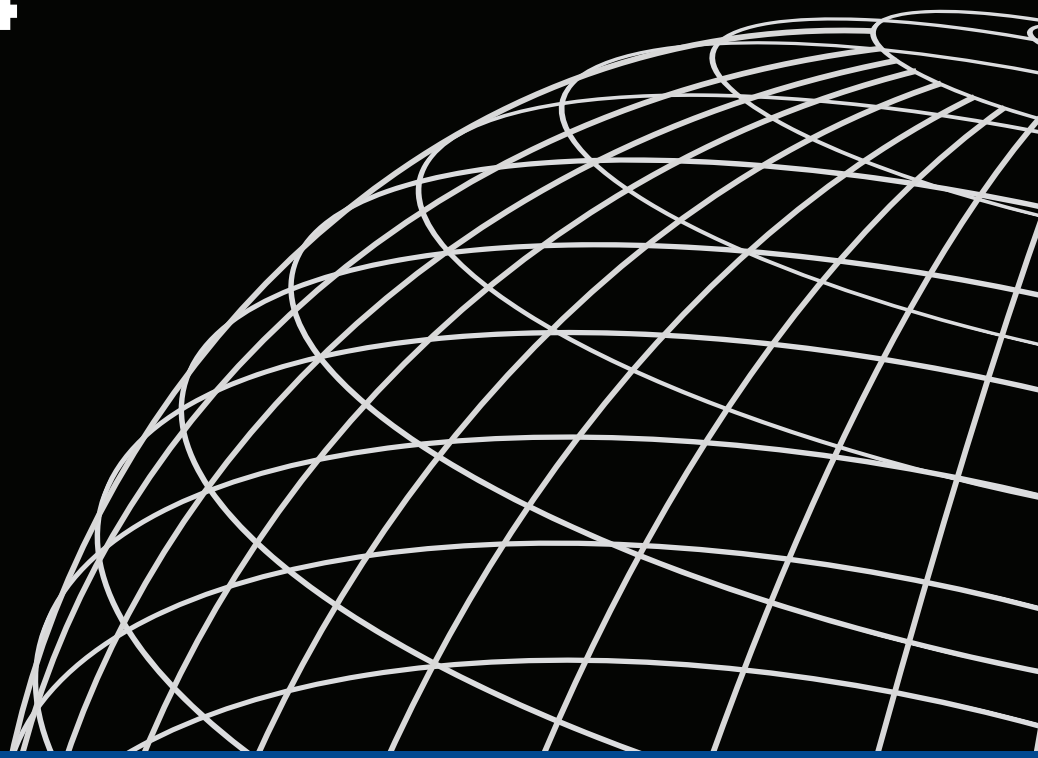
THE IMPACT OF TELEVISION AND RADIO ON REPRODUCTIVE BEHAVIOR AND ON HIV/AIDS KNOWLEDGE AND BEHAVIOR

DHS ANALYTICAL STUDIES 24



NOVEMBER 2011

This publication was produced for review by the United States Agency for International Development. It was prepared by Charles F. Westoff, Dawn A. Koffman, and Caroline Moreau of the Office of Population Research, Princeton University.

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The main objectives of the MEASURE DHS project are:

- to provide decisionmakers in survey countries with information useful for informed policy choices;
- to expand the international population and health database;
- to advance survey methodology; and
- to develop in participating countries the skills and resources necessary to conduct high-quality demographic and health surveys.

DHS Analytical Studies No. 24

The Impact of Television and Radio on Reproductive Behavior and on HIV/AIDS Knowledge and Behavior

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December 2011

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Editor: Bryant Robey
Document Production: Yuan Gu

This study was carried out with support provided by the United States Agency for International Development (USAID) through the MEASURE DHS project (#GPO-C-00-08-00008-00). The views expressed are those of the authors and do not necessarily reflect the views of USAID or the United States Government.

Recommended citation:

Westoff, Charles F., Dawn A. Koffman and Caroline Moreau. 2011. *The Impact of Television and Radio on Reproductive Behavior and on HIV/AIDS Knowledge and Behavior*. DHS Analytical Studies No. 24. Calverton, Maryland, USA: ICF International.

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Preface

One of the most significant contributions of the MEASURE DHS program is the creation of an internationally comparable body of data on the demographic and health characteristics of populations in developing countries.

The *DHS Comparative Reports* series examines these data across countries in a comparative framework. The *DHS Analytical Studies* series focuses on analysis of specific topics. The principal objectives of both series are to provide information for policy formulation at the international level and to examine individual country results in an international context.

While *Comparative Reports* are primarily descriptive, *Analytical Studies* comprise in-depth, focused studies on a variety of substantive topics. The studies are based on a variable number of data sets, depending on the topic being examined. A range of methodologies is used in these studies including multivariate statistical techniques.

The topics covered in *Analytical Studies* are selected by MEASURE DHS staff in conjunction with the U.S. Agency for International Development.

It is anticipated that the *DHS Analytical Studies* will enhance the understanding of analysts and policymakers regarding significant issues in the fields of international population and health.

Ann Way
Project Director

Executive Summary

This is a study of the association of radio and television exposure with different aspects of reproductive behavior and with knowledge, attitudes, and behavior in connection with HIV/AIDS. The measures of mass media are limited to the frequency that women and men report listening to the radio and watching television, which are standard questions in the Demographic and Health Surveys (DHS). Only the frequency is assessed; the DHS does not obtain information on programmatic content.

The first part of the report focuses on contraceptive behavior, the number of children desired, and the number of births in the preceding three years. The guiding rationale is that the media open windows to the outside world, presenting aspects of modern life that can compete with traditional values about marriage and childbearing. The analysis is based on DHS data from 48 developing countries. Television viewing in particular is found to be strongly associated with the use of modern contraception and with a smaller number of children desired and fewer births in the recent past. These associations generally persist after adjustment for the amount of schooling, wealth, urban residence, and other covariates.

The second part of the study focuses on 27 countries in sub-Saharan Africa and explores the implications of radio and television exposure for HIV/AIDS knowledge, attitudes, and risk behavior. Similar to the analysis of reproductive behavior, the conclusion is that exposure to television and radio is an important covariate for knowledge of the causes of HIV/AIDS and how to prevent infection. In this part of the study, the main assumption is that the media provide valuable information on the sources of infection, how to avoid it, where to get tested, the importance of condom use, and various other related subjects. In general, radio exposure appears to be more important than television as a conduit of such information.

Part 1. Mass Media and Reproduction

1.1 Introduction

In developing countries, exposure to television has increased rapidly in recent years. In Asia, one estimate in 2003 indicated a six-fold increase, to 650 million sets since the 1980s (Thomas, 2003). In China alone, access to satellite cable television increased from 270,000 households in 1991 to 14 million by 2005 (Jensen and Oster, 2009). Data collected in the Demographic and Health Surveys (DHS) over the past two decades also show steady increases in television exposure.

In light of the dramatic increases in access to television, it is timely to revisit earlier studies of the association of mass media exposure with reproductive behavior. The first part of our study examines data on the frequency of watching television and of listening to radio, in connection with the use of modern methods of contraception, the number of children desired, and the number of children recently born. A 1997 study by Westoff and Bankole found that in Africa exposure to radio, television, and print media was "significantly and often strongly associated with reproductive behavior even with all of the many controls imposed" (Westoff and Bankole, 1997). Two years later the authors reported similar results for Pakistan, India, and Bangladesh (Westoff and Bankole, 1999).

Although the present study has no information about the content of what is viewed, the soap opera is thought to have the greatest influence on values associated with fertility. A recent study in South Korea concluded that: "the perceived prevalence of having fewer children in married life was significantly affected by exposure to dramas which positively feature single life and having fewer children in married life on television" (Jin and Jeong, 2010). In general, "television programs often portray urban rather than rural ways of living that glamorize consumerism and paint a picture of social mobility and achievement, which have influenced many villagers, especially the young, into rejecting rural and agricultural life for modern ways of living" (Johnson, 2001).

A recent study in India by Jensen and Oster (2009) concluded that the introduction of cable television lowered fertility. The authors noted that: "television may affect fertility by providing information on family planning services or changing the value of women's time" and that "television exposes rural households to urban lifestyles, values and behaviors that are radically different than their own." In an earlier study of mass media effects in India, an increase of 16 percentage points in the use of contraception (with relevant controls) was associated with media exposure (Retherford and Mishra, 1997).

Similar results have been reported for Nepal (Barber and Axinn, 2004), along with a useful catalogue of hypotheses about the mechanisms connecting media exposure and reproductive behavior. They concluded that: "Both premarital and lifetime exposure to mass media are associated with higher rates of permanent contraceptive use" as well as with a preference for smaller families and contraceptive use in general. A description of alternative mechanisms by which television exposure can affect fertility is included in an essay by Hornik and Mcanany (2001). Some of the early work on this subject was summarized by Bogue (2004).

1.2 Data

The analysis in this report is based on interview data collected from over a half-million women conducted over the past decade in the DHS surveys in 48 developing countries. The national surveys included here are confined to those conducted from 2000 to 2008 and include only the most recent survey in any country. The samples are mostly restricted to currently married women age 15-49, with supplementary

analyses of young, never-married women and men. When aggregated by region, the countries (listed in later tables) are weighted equally in order to avoid the dominance of countries with large populations and/or large samples. This means, for example, that Armenia, with a population of 3 million, is weighted the same as India, with a population of 1.2 billion. The total number of currently married women in the sample is 512,260, divided into four regions (Table 1.1).

In recent years, the DHS has also included surveys of men, mostly in sub-Saharan Africa. These surveys routinely have included questions on the frequency of watching television and listening to the radio, as well as many measures of reproductive behavior, so that at least some of the same questions can be addressed as are addressed for women. Since the coverage of men is concentrated in sub-Saharan Africa, we will focus exclusively on men in that region (Table 1.1). The analyses of men examine use of modern contraception and number of children desired.

Table 1.1. Data

	Married Women		Married Men	
Region	Countries	Observations	Countries	Observations
Asia and North Africa	13	226,844	0	0
Latin American and Caribbean	7	83,189	0	0
Western and Middle Africa	15	123,467	14	38,571
Southern and Eastern Africa	13	78,760	13	30,658
Total	48	512,260	27	69,229

These numbers vary in the following analyses because certain variables in particular countries are omitted because of missing data.

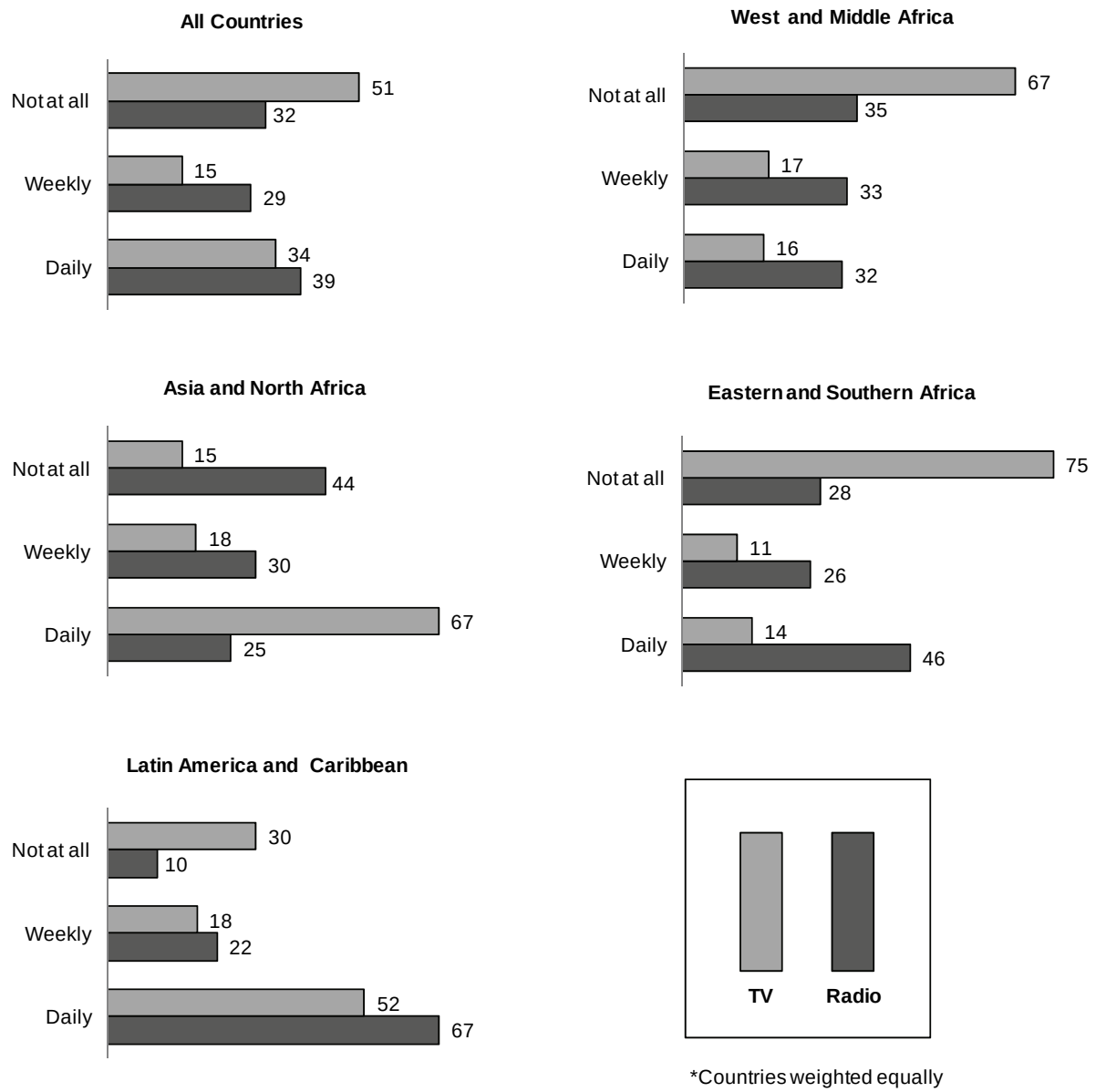
1.3 Media Exposure

The main measure of television exposure is the standard question in the DHS: “Do you watch television almost every day, at least once a week, less than once a week, or not at all?” A few countries omitted the question, and in some of the analyses ownership of a television set was substituted. A similar question on the frequency of listening to the radio has also been routinely included in the DHS.

There is a clear difference between sub-Saharan Africa and the other regions in the amount of television exposure, but not radio exposure (see Table 1.2, Figure 1.1).

It is important to determine the characteristics of television viewers and radio listeners, who are obviously not randomly represented. In Table 1.3, a multivariate logistic regression of factors associated with watching television indicates that such audiences are much more educated, wealthier, predominantly urban, and older. Since these characteristics are also associated with reproductive behavior, they will be included in later analyses as well. Compared with watching television, listening to radio is much less associated with schooling, but is directly associated with wealth and is connected with rural rather than urban residence (Table 1.4). Women who watch television daily have fewer children than other women, while radio listening shows little association with past fertility. There is a positive association between watching television and listening to radio.

Figure 1.1. Frequency of television and radio exposure of currently married women, by region*



*Countries weighted equally

Table 1.2. Frequency of currently married women who watch television and listen to radio

	All Countries	Asia / North Africa	Latin America / Caribbean	Western / Middle Africa	Eastern / Southern Africa
Frequency of Watching Television					
Not at all	51	15	30	67	75
Weekly or monthly	15	18	18	17	10
Daily	34	67	52	16	15
Total	100	100	100	100	100
Frequency of Listening to Radio					
Not at all	32	44	10	35	28
Weekly or monthly	29	30	23	33	26
Daily	39	25	67	32	46
Total	100	100	100	100	100

Table 1.3. Multivariate logistic regression (odds ratios) of factors affecting watching television daily for married women, by region

Daily Television	All Countries	Asia / North Africa	Latin America / Caribbean	Western / Middle Africa	Eastern / Southern Africa
Listen to Radio					
Less than daily	1.00	1.00	1.00	1.00	1.00
Daily	1.35	1.52	1.86	3.64	2.25
Education					
No schooling	0.46	0.49	0.28	0.59	0.40
Elementary	1.00	1.00	1.00	1.00	1.00
More	3.90	3.42	2.43	1.85	3.28
Wealth					
Lowest quintile	1.00	1.00	1.00	1.00	1.00
Next-to-lowest	1.39	1.69	2.31	1.76	2.11
Middle	1.44	2.08	3.92	3.42	4.99
Next-to-highest	1.44	2.43	3.98	6.47	15.54
Highest quintile	2.12	3.20	4.57	17.71	44.58
Residence					
Urban	1.00	1.00	1.00	1.00	1.00
Rural	0.35	0.48	0.41	0.55	0.38
Number of Children	0.85	0.95	0.96	0.94	0.91
Age	1.05	1.03	1.01	0.99	1.03
Number of Women	451,294	203,888	51,315	117,521	78,570

Table 1.4. Multivariate logistic regression (odds ratios) of factors affecting daily radio listening for married women, by region

Daily Radio	All Countries	Asia / North Africa	Latin America / Caribbean	Western / Middle Africa	Eastern / Southern Africa
Watch Television					
Less than daily	1.00	1.00	1.00	1.00	1.00
Daily	1.34	1.49	1.85	3.58	2.17
Education					
No schooling	0.53	0.80	0.52	0.90	0.54
Elementary	1.00	1.00	1.00	1.00	1.00
More	0.92	1.10	0.94	1.31	1.28
Wealth					
Lowest quintile	1.00	1.00	1.00	1.00	1.00
Next-to-lowest	1.69	1.44	1.40	1.62	2.61
Middle	2.10	1.67	1.64	1.83	3.82
Next-to-highest	2.82	2.06	1.90	2.21	5.21
Highest quintile	3.95	2.47	2.20	2.81	5.93
Residence					
Urban	1.00	1.00	1.00	1.00	1.00
Rural	1.12	1.31	1.54	0.83	1.09
Number of Children	1.02	0.92	1.01	0.98	(0.99)
Age	1.00	1.01	(0.99)	1.01	1.01
Number of Women	451,294	203,888	51,315	117,521	78,570

( ) not significant at the .05 level

1.4 The Reproductive Behavior of Currently Married Women

The frequency of watching television is clearly and fairly strongly associated with use of a modern method of contraception, as well as with the number of children desired and the percent with no births in the past five years (Table 1.5, Figure 1.2). The association of television viewing with modern contraceptive use is greater in the least developed regions and is least dramatic in the Asia/North Africa region, where television has been available for a longer period of time. In contrast, the association of the frequency of radio listening with contraceptive behavior is weaker.

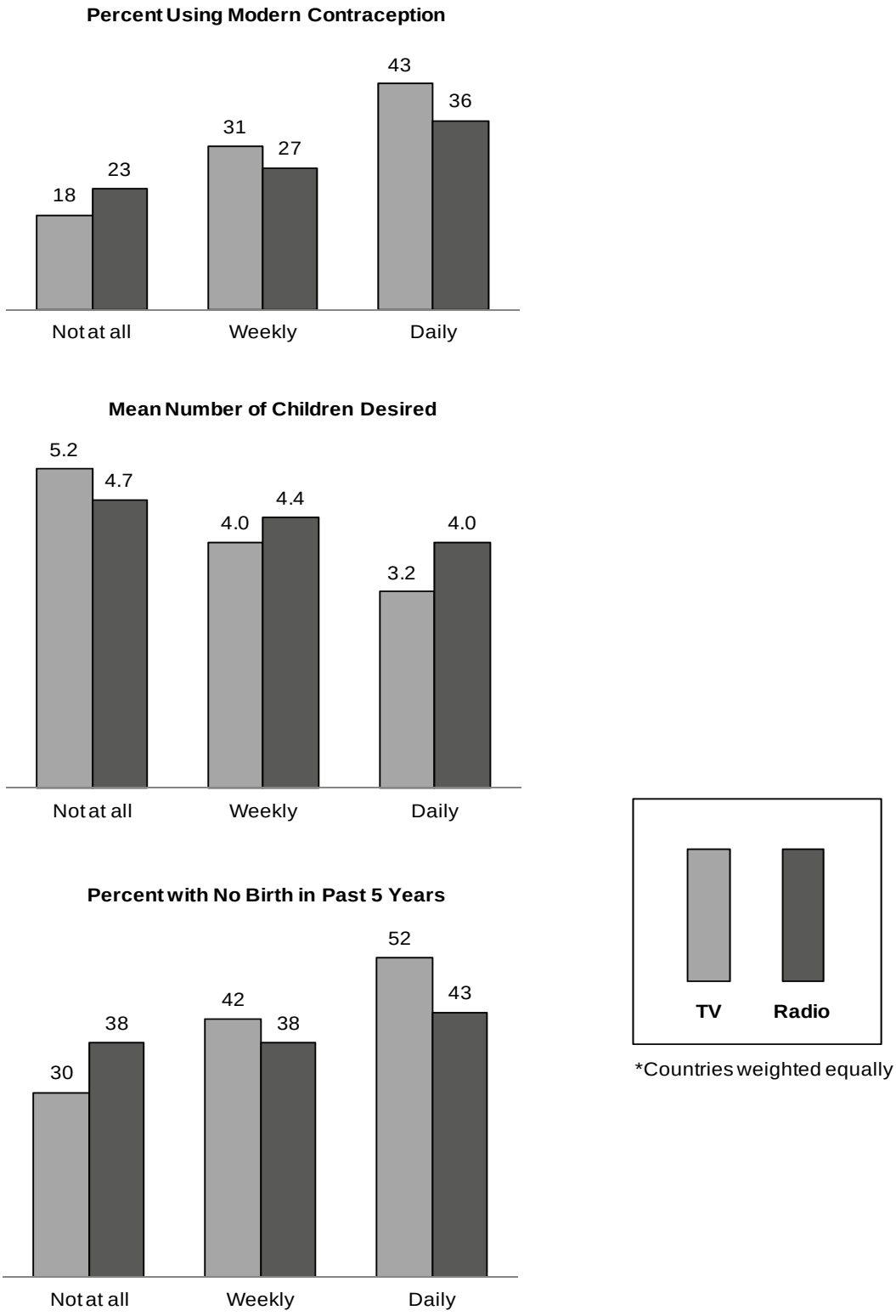
Table 1.5. Television and radio exposure and reproductive behavior for married women

	% Using Modern Method		Mean Number of Children Desired		% No Births in 5 Years	
Media Exposure	TV	Radio	TV	Radio	TV	Radio
ALL COUNTRIES						
Not at all	19	23	5.2	4.7	30	38
Sometimes	31	27	4.0	4.4	42	38
Daily	43	36	3.2	4.0	52	42
ASIA / NORTH AFRICA						
Not at all	36	37	3.1	3.0	46	55
Sometimes	39	42	3.0	3.0	51	52
Daily	50	44	2.9	2.8	58	59
LATIN AMERICA / CARIBBEAN						
Not at all	38	48	3.6	3.3	37	40
Sometimes	43	45	3.0	3.1	49	47
Daily	58	51	2.9	3.1	55	50
WEST / MIDDLE AFRICA						
Not at all	5	5	6.3	6.6	28	28
Sometimes	13	9	5.3	5.7	34	30
Daily	19	13	4.9	5.5	38	34
SOUTHERN / EAST AFRICA						
Not at all	25	23	4.8	5.0	28	28
Sometimes	38	27	4.1	4.7	37	30
Daily	54	38	3.4	4.2	45	35

Note: Pakistan and Colombia are not included.

The next task is to determine whether these bivariate associations persist in the context of other predictors, such as schooling, wealth, urban residence and other socioeconomic measures. Multivariate analyses are presented below at this same regional level, while summaries for the 48 individual countries are addressed subsequently.

Figure 1.2. Television and radio exposure and reproductive behavior for married women (all countries combined)*



1.5 Contraceptive Use

Two measures of modern contraceptive use are analyzed in Table 1.6: current use and use in the past. The measure of past use is included in order to represent women who are currently not using any modern method, for reasons including being pregnant or trying to become pregnant, sterility, infrequent exposure, or risking an unintended pregnancy.

The multivariate analysis in Table 1.6 includes schooling, wealth, urban-rural residence, number of children, child mortality, and age, all simultaneously considered with the use of modern methods of contraception. Our main focus is on the top rows labeled "Watch Television" and "Listen to Radio." For all countries combined, women who watch television sometimes are 1.6 times more likely to use modern contraception than are women who watch no television at all. For women who report daily exposure to television, this ratio increases to 2.4 times more. Overall, the odds of using modern contraception are roughly 2 to 1 for women who watch television. A similar picture appears with past use of modern contraception. Also relevant to the use of modern contraception are schooling particularly and wealth to a lesser extent, with odds ratios showing greater use by women with higher socioeconomic status.

Although the frequency of listening to the radio is significantly related to contraceptive use, the magnitude of the association is weaker than that for television. In the Latin America/Caribbean region, there is no association between radio listening and the use of modern contraception.

The same covariates are shown for each of the four regions, and mostly show similar results.

A question arises about the extent to which general media exposure influences contraceptive behavior beyond the effects of targeted messages advertising the benefits of family planning. Among all countries in this analysis, such messages had been seen on television in the past month by 27 percent of the women and heard on radio by 40 percent. When this information is included in the multivariate analysis in Table 1.6 (not shown here), its effect on current use of modern contraception is to lower the odds ratio of daily television from 2.4 to 2.1 and of daily radio exposure from 1.3 to 1.2. Of course, there are regional and country variations but the basic conclusion is that the importance of general media exposure for contraceptive behavior is not significantly diminished by these targeted messages.

Table 1.6. Multivariate logistic regression (odds ratios) of factors related to (1) currently using a modern method, and (2) ever used a modern method among those not currently using a modern method, for married women

	All Countries		Asia/North Africa		Latin America/ Caribbean		Western/Middle Africa		Southern/ Eastern Africa	
Modern Method	Using	Used	Using	Used	Using	Used	Using	Used	Using	Used
Watch Television										
Never	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sometimes	1.64	1.51	1.16	1.37	1.37	1.38	1.44	1.52	1.26	1.46
Everyday	2.39	1.64	1.32	1.54	2.41	1.75	1.65	1.62	1.72	1.99
Listen to Radio										
Never	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sometimes	1.09	1.29	1.16	1.19	0.89	(1.02)	1.39	1.44	0.94	1.12
Everyday	1.31	1.57	1.29	1.43	0.92	(0.95)	1.57	1.44	1.15	1.44
Schooling										
No schooling	0.48	0.33	1.40	(1.04)	0.57	0.64	0.45	0.27	0.40	0.37
Elementary	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
More	1.18	1.31	(0.97)	(1.03)	1.17	1.52	1.33	1.80	2.00	2.12
Wealth										
Lowest quintile	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Next-to-lowest	1.10	1.11	1.28	1.20	(1.05)	1.28	(1.07)	1.18	1.29	1.21
Middle	1.13	1.20	1.41	1.35	(1.02)	1.54	1.34	1.30	1.40	1.28
Next-to-highest	1.18	1.26	1.66	1.52	(0.98)	1.60	1.55	1.36	1.49	1.23
Highest quintile	1.16	1.35	2.06	1.95	0.90	1.72	1.71	1.28	1.43	1.18
Residence										
Urban	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Rural	(0.99)	0.83	(0.99)	0.90	0.92	0.78	0.74	0.65	0.78	0.71
Age	0.99	(1.00)	0.98	0.99	0.99	0.97	0.98	(1.00)	0.98	(1.00)
Number of Children	1.15	1.14	1.24	1.33	1.14	1.17	1.17	1.07	1.17	1.14
Child Deaths	0.69	0.92	0.78	0.93	0.71	(0.99)	0.88	0.98	0.77	(1.00)
Number of Women	451,294	298,842	203,888	109,059	51,315	25,320	117,521	107,646	78,570	56,817

( ) not significant at the .05 level

1.6 Number of Children Desired and Recent Fertility

Visualizing television and radio as windows to the outside world with many of its activities and implied values antithetical to traditional behavior, it is easy to imagine some effect on the ideal number of children. Table 1.5 shows a negative association between watching television and the number of children desired: the average number of children desired ranges from 5.2 children for women who do not watch television to 3.2 children for those who are daily viewers. The largest differences are in sub-Saharan Africa and the smallest in Asia/North Africa. The influence of television on the number of children desired is greater than that of radio.

A similar though stronger result is evident particularly for television in the association with the proportion of women who have not had any births in the five years preceding the survey (Table 1.5). For all countries combined, 52 percent of women who watch television every day report no births compared with 30 percent of women who do not watch television. A similar though weaker "effect" appears in each of the four regions. The overall effect is much stronger for television than for radio.

In the "all countries" column in the multivariate analysis in Table 1.7, the association between the number of children desired and television exposure is quite strong compared with the other covariates with the exception of the actual number of children, which obviously would be highly associated with the total number desired. The magnitude of the television coefficient is approximately the same as that for one year of schooling.

In the Asia/North Africa region, unlike in any other region, watching television is directly rather than inversely associated with the number of children desired. The television variable is negative initially but becomes positive with the inclusion of schooling. In all of the other three regions, both television watching and schooling remain negatively correlated with the number of children desired with all of the covariates included. The pattern of the associations in these three regions in general is similar. The influence of listening to the radio is generally weaker than that of watching television, except in sub-Saharan Africa.

Table 1.7. Multivariate analysis of factors associated with the number of children desired by married women (standardized partial regression coefficients)

Number of Children Desired*	All Countries	Asia/ North Africa	Latin America/ Caribbean	Western / Middle Africa	Southern/ Eastern Africa
Watch television	–.185	.041	–.028	–.066	–.018
Listen to radio	–.034	–.006	.015	–.067	–.034
Years of school	–.170	(.000)	–.038	–.106	–.226
Wealth	.043	–.096	–.041	(–.003)	–.072
Urban-rural	–.010	–.010	.039	–.024	(–.000)
Number of children	.282	.485	.212	.297	.251
Age	–.084	–.043	.092	–.087	(.007)
Child deaths	.130	.077	.024	.117	.071
Number of women	451,294	203,888	51,315	117,521	78,570

* For women who provide a non-numeric response, number of living children was substituted. That number was reduced by 1 if last child was not wanted. Very similar results are obtained when women who provide a non-numeric response are excluded.

( ) not significant at the .05 level

Ultimately, the fertility rate is connected with the number of children desired and with contraceptive behavior. At first, we focused on the relationship of television exposure with the number of children ever born. However, in this sample of women age 15-49, this is too long a time period in connection with exposure to television. The number of children recently born (in the preceding five years) is a preferable period to examine. It also shows a consistent decrease with television exposure (Table 1.5). It is reviewed in the multivariate context in Table 1.8. Television exposure is significantly associated with the number of children born in the past five years in all of the regions, with greater exposure linked with fewer births, while radio listening in contrast is weakly related. The television "effect" is quite strong compared with all the other covariates except age.

Table 1.8. Multivariate analysis of factors associated with the number of children born in the past 5 years, currently married women (standardized partial regression coefficients)

Number of Children Born in the Past 5 Years	All Countries	Asia / North Africa	Latin America/ Caribbean	Western / Middle Africa	Eastern / Southern Africa
Watch television	–.153	–.038	–.117	–.040	–.069
Listen to radio	.006	–.012	–.045	–.010	(.006)
Years of schooling	–.066	(.015)	–.049	–.060	–.075
Wealth	–.039	–.118	–.095	–.038	–.067
Rural residence	.013	–.031	.011	.021	.046
Age	–.315	–.413	–.367	–.242	–.281
Number of women	451,294	203,888	51,315	117,521	78,570

( ) not significant at the .05 level

1.7 Country-Specific Associations

The association of media exposure with reproductive behavior has been reviewed thus far only at the regional level. With all 48 countries included individually, it would be cumbersome to present the same level of detail for each country. Instead, two tables (1.9 and 1.10) have been constructed to summarize the main results for the influence of television on the three indices of reproductive behavior. In Table 1.9, descriptive statistics on television and radio exposure and on the use of modern contraception are shown for each country, along with the odds ratios connecting the two that are derived from an application of the multivariate analyses described earlier. Two sets of odds ratios for both television and radio are included: the unadjusted with no other covariates and the adjusted odds ratios, which include the simultaneous associations with the seven other covariates, including schooling and wealth. Because of the lower proportions of women in sub-Saharan Africa reporting frequent television exposure, the measure there is any vs. no exposure while in the other regions it is daily vs. other exposure.

The countries with the highest (adjusted) odds ratios in Table 1.9 for television exposure on the use of modern contraception (with all of the seven other covariates controlled) are: Mali (2.0) and Niger (2.7). All of the 48 country analyses show a positive connection between television exposure and contraceptive use, 30 of which are statistically significant. The difference between the unadjusted and the adjusted odds ratios is quite large, especially in sub-Saharan African countries, which means that the covariates (particularly schooling and wealth) play an important role in the connection between using contraception and watching television. An extreme example is Niger, where the odds of using modern contraception are 8.5 times greater if the women report television viewing compared with no such exposure. With all of the controls added, the odds ratio drops to 2.7, but this is still a considerable "effect." In Ethiopia, the unadjusted odds are 5.8 compared with the adjusted estimate of 1.4. Such large differences are not seen in the Asia/North Africa region.

Table 1.9. Percentage of married women who are using a modern method of contraception, the percentage who watch television and/or listen to radio, and the odds of using a method if they watch television or listen to radio, unadjusted and adjusted for other covariates[1]

		Percent Currently Using Modern Method	Percent Watch TV Daily	Percent Listen to Radio Daily	Unadjusted Odds Ratios		Adjusted Odds Ratios	
					Daily TV	Daily Radio	Daily TV	Daily Radio
Asia / North Africa								
Armenia	2005	19	94	20	(1.34)	1.40	(1.23)	1.25
Azerbaijan	2006	14	84	13	1.42	1.48	(1.25)	(1.17)
Bangladesh	2007	47	30	10	1.41	(1.03)	1.46	(1.03)
Cambodia	2005	27	48	28	1.27	(1.02)	(1.08)	(0.92)
Egypt	2008	58	94	37	1.42	1.19	1.28	1.14
India	2005	49	40	15	1.71	1.09	1.63	(0.98)
Indonesia	2007	54	73	20	1.61	(1.03)	1.49	(0.97)
Jordan	2007	42	88	17	1.17	1.71	1.23	(1.11)
Morocco	2004	55	70	26	1.20	(1.02)	1.15	(1.04)
Nepal	2006	44	24	32	1.71	1.23	1.38	1.22
Pakistan[2]	2007	22	55	32	2.26	(1.06)	1.38	(1.02)
Philippines	2008	34	68	40	1.46	1.14	1.21	1.11
Ukraine	2007	48	92	51	(1.07)	(1.03)	(1.02)	(1.01)
Latin America / Caribbean								
Bolivia	2004	35	71	74	1.76	(1.00)	1.35	(0.95)
Colombia[2]	2005	68	87	70	1.79	1.26	1.49	1.12
Dominican Rep.	2007	70	82	60	1.28	1.12	1.29	1.10
Haiti	2006	25	14	53	1.29	1.39	(0.91)	1.09
Honduras	2006	56	59	80	1.88	(1.00)	1.22	(1.08)
Nicaragua[3]	2001	66	57	71	1.69	1.33	1.33	1.25
Peru	2005	47	59	65	2.05	1.26	1.30	(1.03)

(Continued…)

Table 1.9. – *Continued*

		Percent Currently Using Modern Method	Percent Watch Any TV	Percent Listen to Radio Daily	Unadjusted Odds Ratios		Adjusted Odds Ratios	
					Any TV	Daily Radio	Any TV	Daily Radio
Western / Middle Africa								
Benin	2006	6	31	30	2.37	1.78	(1.09)	(1.17)
Burkina Faso	2003	9	21	21	5.30	2.98	1.45	1.58
Cameroon	2004	13	41	27	3.33	2.26	1.25	(1.08)
Chad	2004	2	6	22	5.75	7.99	(1.11)	1.71
Congo, B	2005	13	41	29	2.05	1.24	1.45	(1.01)
Congo, DR	2007	6	19	19	3.55	2.40	1.39	1.29
Ghana	2008	16	56	53	1.25	1.29	(0.94)	(1.20)
Guinea	2005	6	23	21	3.58	2.13	1.43	1.36
Liberia	2007	10	31	25	1.96	2.06	1.31	1.34
Mali	2006	7	50	49	4.42	2.35	2.00	1.35
Niger	2006	5	10	24	8.51	2.59	2.66	(1.13)
Nigeria	2008	10	43	30	4.08	2.17	(1.13)	1.14
Senegal	2005	10	68	61	3.59	1.68	1.54	(1.15)
Sierra Leone	2008	7	11	22	3.20	3.13	(1.26)	1.85
Southern / Eastern Africa								
Ethiopia	2005	14	11	10	5.79	3.94	1.44	1.22
Kenya	2009	39	42	62	2.44	2.20	1.30	(1.14)
Lesotho	2004	35	16	41	2.62	2.30	(1.16)	1.30
Madagascar	2009	29	22	42	1.53	1.53	(1.09)	1.15
Malawi	2004	28	10	55	1.85	1.37	1.30	1.17
Mozambique	2003	21	23	45	2.06	1.52	(1.09)	(1.08)
Namibia	2006	53	50	62	2.23	1.66	(1.05)	1.23
Rwanda	2005	10	8	33	3.93	2.39	1.33	1.53
Swaziland	2006	48	41	64	1.66	1.19	(1.08)	(1.07)
Tanzania	2004	20	22	43	2.18	1.53	1.34	(1.09)
Uganda	2006	18	11	55	3.52	2.44	1.27	1.27
Zambia	2007	33	31	44	2.04	1.74	(1.16)	1.42
Zimbabwe	2006	58	35	36	1.85	1.67	(1.14)	(1.05)

[1] Regression includes television and radio exposure, schooling, wealth, residence, number of children, child mortality, and age.

[2] Ownership of television/radio substituted for frequency of watching/listening.

[3] Missing information on wealth.

( ) Not significant at .05 level

Table 1.10. Association of television and radio exposure with number of children desired and with births in the past 5 years for currently married women, with various controls* (standardized partial regression coefficients)

		Number of Children			
		Desired		Born in Past 5 Years	
		Radio	TV	Radio	TV
Asia / North Africa					
Armenia	2005	(.010)	(–.028)	(–.016)	–.031
Azerbaijan	2006	(.006)	–.034	–.041	–.049
Bangladesh	2007	–.019	–.106	–.049	.–.044
Cambodia	2005	(–.005)	–.036	–.017	–.058
Egypt	2008	–.015	(–.018)	–.014	(–.011)
India	2005	0.02	–.091	–.015	–.073
Indonesia	2007	–.010	–.064	–.035	–.042
Jordan	2007	(–.008)	(.005)	–.030	–.025
Morocco	2004	(–.000)	–.060	–.046	–.036
Nepal	2006	–.096	–.076	–.064	–.039
Pakistan[1]	2007	0.08	–.067	–.021	(.009)
Philippines	2008	–.054	–.059	–0.34	–.034
Ukraine	2007	(–.010)	–.080	–.048	(–.034)
Latin America / Caribbean					
Bolivia	2004	(–.018)	(.012)	–.037	–.094
Colombia[1]	2005	–.025	–.026	–.021	–.071
Dominican Rep.	2007	(.013)	–.035	–.049	–.039
Haiti	2006	(.002)	–.073	–.072	–.033
Honduras	2006	(.013)	–.047	–.034	–.117
Nicaragua[2]	2001	(.006)	–.090	–.062	–.133
Peru	2005	(.004)	(.009)	–.055	–.057
Western / Middle Africa					
Benin	2006	0.02	(–.033)	(–.016)	(–.009)
Burkina Faso	2003	–.090	–.049	0.03	–.046
Cameroon	2004	(.013)	(–.009)	–.037	(–.008)
Chad	2004	–.056	(.009)	(.008)	(–.016)
Congo, B	2005	(–.005)	(–.031)	(–.002)	–.034
Congo, DR	2007	(–.028)	–.043	(.004)	–.041
Gabon[1]	2000	(.026)	–.061	–.046	(.006)
Ghana	2008	(–.019)	(.038)	(–.006)	(–.024)
Guinea	2005	–.038	–.033	(–.001)	–.032
Liberia	2007	(–.004)	(.016)	–.033	–.074
Mali	2006	–.025	–.050	(.004)	(.015)
Niger	2006	(–.020)	(–.019)	(.009)	–.029
Nigeria	2008	(.002)	–.024	(.002)	–.029
Senegal	2005	0.03	–.047	–.021	(–.011)
Sierra Leone	2008	(.001)	(–.008)	(–.010)	(–.016)

(Continued...)

Table 1.10. – *Continued*

		Number of Children			
		Desired		Born in Past 5 Years	
		Radio	TV	Radio	TV
Southern / Eastern Africa					
Ethiopia	2005	–.029	(.002)	–0.36	–.057
Kenya	2009	–.091	(.001)	–.027	–.050
Lesotho	2004	(–.014)	(–.008)	(–.031)	(–.006)
Madagascar	2009	–.083	(.009)	(–.017)	–.052
Malawi	2004	(.014)	–.028	(–.006)	–.039
Mozambique	2003	0.04	–.050	(.018)	–.050
Namibia	2006	(.007)	(–.012)	(–.004)	(–.013)
Rwanda	2005	(.012)	(–.018)	(–.009)	–.096
Swaziland	2006	(–.009)	(–.002)	–.041	(–.036)
Tanzania	2004	(–.015)	–032	–.048	–.059
Uganda	2006	–.039	–.022	(–.005)	–.026
Zambia	2007	–.028	–.054	(–.011)	–.052
Zimbabwe	2006	(.002)	–.034	(–.003)	(.018)

* For the number of children desired, the controls are: schooling, wealth, residence, number of children, child mortality, and age. For births in the past 5 years, these same controls without number of children and child deaths are included.

[1] Ownership of radio and television substituted for exposure

[2] Wealth not available

( ) Not significant at .05 level

For the most part, with only a few exceptions in sub-Saharan Africa, television exposure shows a stronger association with the use of modern contraception than does radio exposure.

Following the same logic as in Table 1.9, the adjusted regression coefficients for the association of radio and television exposure with both the number of children desired and the number born in the preceding five years are shown for each country in Table 1.10. These are standardized partial regression coefficients, which permit comparisons of the effects of the media exposure on the two measures of fertility. The two show some similarity of pattern, which might be expected since the number of children recently born is positively associated with the number desired. In the Asia/North Africa and in the Latin American regions significant adjusted coefficients for the association of television exposure with number desired are twice as frequent as that for radio, but in sub-Saharan Africa both types of media exposure show effects in only about one fourth of the countries. The strongest “effects” are for television in Bangladesh and India.

Both television and radio exposure in the Latin American/Caribbean countries show similar and strong associations with births in the past five years. In general, throughout this whole analysis it is clear that the adjustments, which include the effects of schooling and wealth (as well as five other covariates), significantly diminish but do not eliminate the association between recent births and television exposure.

1.8 Never-Married Young Women and Fertility Preferences

The preceding analysis has focused exclusively on currently married women age 15-49. The reason for introducing some analyses of never-married women age 15-24 (who have never had any children) is to explore whether television or radio influence the desired number of children prior to marriage and childbearing.

The frequency with which young never-married women watch television and listen to radio is summarized in Table 1.11. Overall, 42 percent report daily television viewing, which increases to 72 percent for women in the Asia/North Africa region. In contrast, in sub-Saharan Africa only one-quarter to one-third of women are in this category. Listening to the radio every day is more common in sub-Saharan Africa and Latin America, while daily television exposure is more common in Asia and North Africa.

Table 1.11. Frequency of watching television and listening to radio, percentage by region: never-married women age 15-24 with no children

Frequency of Media Exposure	All Countries		Asia / North Africa		Latin America / Caribbean		Western / Middle Africa		Eastern / Southern Africa	
	TV	Radio	TV	Radio	TV	Radio	TV	Radio	TV	Radio
Not at all	37	23	9	30	19	5	42	28	57	21
Weekly	21	30	20	32	21	19	27	35	17	30
Daily	42	47	72	38	60	76	31	37	25	49
Total	100	100	100	100	100	100	100	100	100	100
Number of women	123,824	123,777	46,391	46,386	22,473	22,472	28,655	28,643	26,112	26,276

The mean number of children desired by the frequency of watching television and listening to radio is shown in Table 1.12. For all countries combined (weighted equally), the range is from 2.8 children among daily viewers to 4.0 for women who do not watch television at all. The differences are greater in sub-Saharan Africa than in the other regions. Radio exposure is similarly associated but only in sub-Saharan Africa.

Table 1.12. Mean number of children desired by frequency of watching television and listening to the radio, by region: never-married women age 15-24 with no children

Frequency of Media Exposure	All Countries		Asia / North Africa		Latin America / Caribbean		Western / Middle Africa		Eastern / Southern Africa	
	TV	Radio	TV	Radio	TV	Radio	TV	Radio	TV	Radio
Not at all	4.0	3.8	2.4	2.2	2.6	2.4	5.0	5.0	3.5	3.5
Weekly	3.3	3.4	2.3	2.3	2.4	2.4	4.2	4.3	3.2	3.4
Daily	2.8	3.0	2.2	2.2	2.3	2.3	4.0	4.2	2.8	3.1
All	3.3		2.2		2.3		4.4		3.3	

For all regions, the association of television exposure with the number of children desired is statistically significant with frequent media exposure, mainly television, associated with a desire for fewer children (Table 1.13). Except in the Latin American/Caribbean region, the amount of schooling shows a stronger association than television. Rural residence shows a positive association with the number of children desired in each region. The negative association for rural residence for All Countries is a statistical anomaly.

Table 1.13. Association of desired number of children with watching television and listening to radio for never-married, childless women under age 25 (standardized partial regression coefficients)

	All Countries	Asia / North Africa	Latin America / Caribbean	Western / Middle Africa	Eastern / Southern Africa
Watch television	–.157	–.027	–.077	–.072	–.056
Listen to radio	–.044	(–.006)	(–.010)	–.047	(.000)
Schooling	–.289	–.156	–.044	–.234	–.227
Rural residence	–.045	.044	.053	.076	.068
Number of women	118,720	44,762	22,173	26,277	25,508

( ) Not significant at .05 level

This analysis is repeated in Table 1.14 disaggregated by individual country. Exposure to television is significantly associated with fewer children desired by young women in 27 of the 40 countries, while listening to radio shows significant coefficients in only 13 countries, one of which is positive, that is, with more children desired by women who listen to radio. Typically, schooling is more influential than television and living in rural areas shows a direct association with the desired number of children.

Table 1.14. Association of television and radio exposure with number of children desired* by never–married, childless women under age 25, by country (standardized partial regression coefficients)

		Watch TV	Listen to Radio	Schooling	Rural	Number of Women
Asia / North Africa						
Armenia	2005	(–.057)	(–.010)	.076	(–.005)	1,597
Azerbaijan	2006	(–.040)	(.011)	(.035)	(–.027)	1,914
Cambodia	2005	(–.010)	(.016)	–.089	.067	4,209
India	2005	–.115	(.000)	–.211	.050	25,846
Morocco	2004	–.122	–.032	–.101	.126	4,724
Nepal	2006	–.099	(–.013)	–.283	(.032)	2,004
Philippines	2008	–.054	(–.019)	(.015)	.075	3,350
Ukraine	2007	(.001)	(.039)	(–.063)	(.025)	1,118

(Continued...)

Table 1.14. – *Continued*

		Watch TV	Listen to Radio	Schooling	Rural	Number of Women
Latin America / Caribbean						
Bolivia	2004	.070	(.010)	.134	(–.001)	3,858
Dominican Rep.	2007	–.033	(–.014)	(–.006)	(.018)	5,195
Haiti	2006	–.153	(–.009)	–.092	.072	2,921
Honduras	2006	–.052	(.026)	(–.004)	.099	4,325
Nicaragua	2001	–.122	(.006)	(–.011)	.102	2,574
Peru	2005	(.013)	(.026)	.066	(.001)	2,936
Western / Middle Africa						
Benin	2006	–.116	(–.002)	–.266	.115	2,888
Burkina Faso	2003	–.099	–.049	–.243	.159	2,112
Cameroon	2004	–.103	(–.047)	–.260	.104	1,871
Chad	2004	–.092	(–.017)	–.145	.142	894
Congo, B	2005	(–.055)	–.057	–.091	.120	1,269
Congo, DR	2007	–.116	(.034)	–.129	.105	1,939
Ghana	2008	–.071	–.064	–.163	.118	1,220
Guinea	2005	(–.016)	(.001)	–.178	.115	1,047
Liberia	2007	(.023)	.109	–.205	(.009)	1,071
Mali	2006	–.118	(–.046)	–.186	(.044)	1,357
Niger	2006	(–.028)	(–.034)	–.186	.234	1,106
Nigeria	2008	–.112	(–.001)	–.198	(.031)	5,896
Senegal	2005	–.135	(.013)	.180	.105	2,621
Sierra Leone	2008	–.080	–.074	–.912	(.036)	1,012
Southern / Eastern Africa						
Ethiopia	2005	(–.010)	–.054	–.133	(.064)	3,102
Kenya	2009	–.071	–.132	–.364	(–.039)	1,772
Lesotho	2004	–.056	(.013)	(.007)	(.036)	1,753
Madagascar	2009	–.116	–.135	–.191	.170	1,279
Malawi	2004	(–.043)	(–.004)	(.002)	.137	1,610
Mozambique	2003	–.129	(.039)	–.124	.106	1,680
Namibia	2006	–.075	(–.012)	.090	(.039)	2,538
Rwanda	2005	–.042	–.036	–.178	.068	3,480
Swaziland	2006	(–.002)	(–.047)	–.084	.099	1,273
Tanzania	2004	–.074	(.044)	–.105	.199	1,989
Uganda	2006	–.078	–.142	–.152	.094	1,678
Zambia	2007	(–.056)	(–.024)	–.125	.176	1,299
Zimbabwe	2006	–.072	(–.023)	–.061	.145	2,055

* Excludes women (approximately 4%) who gave a non-numeric response to the survey question on the number of children desired.

( ) Not significant at .05 level.

1.9 Male Media Exposure

The analyses above are confined entirely to women. For married men ages 15-59, exposure to television and to radio is summarized in Table 1.15 for each country. The range of watching any television is from a low of 15 percent in Sierra Leone to a high of 70 percent in both Ghana and Kenya. For daily radio listening, the lowest is 27 percent in Ethiopia and the highest at 80 percent in Kenya.

Table 1.15. Media exposure for married men in sub-Saharan African countries

		Percent Watch Any TV	Percent Listen to Radio Daily
Western/Middle Africa			
Benin	2006	54	66
Burkina Faso	2003	34	59
Cameroon	2004	65	59
Chad	2004	16	58
Congo, B	2005	57	54
Congo, DR	2007	24	38
Ghana	2008	70	78
Guinea	2005	34	51
Liberia	2007	41	53
Mali	2006	67	69
Niger	2006	20	49
Nigeria	2008	57	61
Senegal	2005	44	43
Sierra Leone	2008	15	42
Southern/Eastern Africa			
Ethiopia	2005	28	27
Kenya	2009	70	80
Lesotho	2004	24	42
Madagascar	2009	22	44
Malawi	2004	31	72
Mozambique	2003	25	70
Namibia	2006	68	72
Rwanda	2005	19	53
Swaziland	2006	54	73
Tanzania	2004	47	59
Uganda	2006	25	68
Zambia	2007	41	58
Zimbabwe	2006	55	48

1.10 Male Contraceptive Use

The analysis of contraceptive use is complicated in the male surveys, which in about half of these countries only collected information about male methods. The analysis in Table 1.16 is limited to the 13 countries with the standard data on the current use of modern methods in general. This table shows the odds ratios of using modern contraception in reference to the frequency of watching television and of listening to the radio both unadjusted and adjusted for all of the covariates listed in earlier tables.

Table 1.16. The percentage of married men currently using a modern method and the unadjusted and adjusted[1] odds of using a modern method if they watch any television and listen to the radio daily

Country		Percent Currently Using Modern Method	Unadjusted Odds Ratio		Adjusted Odds Ratio	
			Any TV	Daily Radio	Any TV	Daily Radio
Burkina Faso	2003	23	3.58	3.33	1.66	2.16
Chad	2004	8	5.73	5.42	(1.49)	(1.37)
Ghana	2008	18	1.40	1.44	(0.91)	(1.17)
Kenya	2009	32	1.71	1.63	1.25	1.32
Liberia	2007	12	2.24	2.07	1.34	1.30
Madagascar	2009	21	1.54	1.46	(1.00)	(1.12)
Namibia	2006	48	2.10	1.45	(1.27)	(1.11)
Nigeria	2008	10	4.07	2.39	1.45	1.35
Sierra Leone	2008	8	3.76	5.68	(1.19)	(1.49)
Swaziland	2006	61	2.52	1.47	1.80	1.36
Uganda	2006	20	3.12	2.27	1.47	1.41
Zambia	2007	32	2.30	1.62	1.33	1.21
Zimbabwe	2006	68	1.64	1.36	1.39	(1.05)

( ) Not significant at the .05 level

[1] Adjusted for television and radio and schooling, wealth, residence, number of children, child mortality and age.

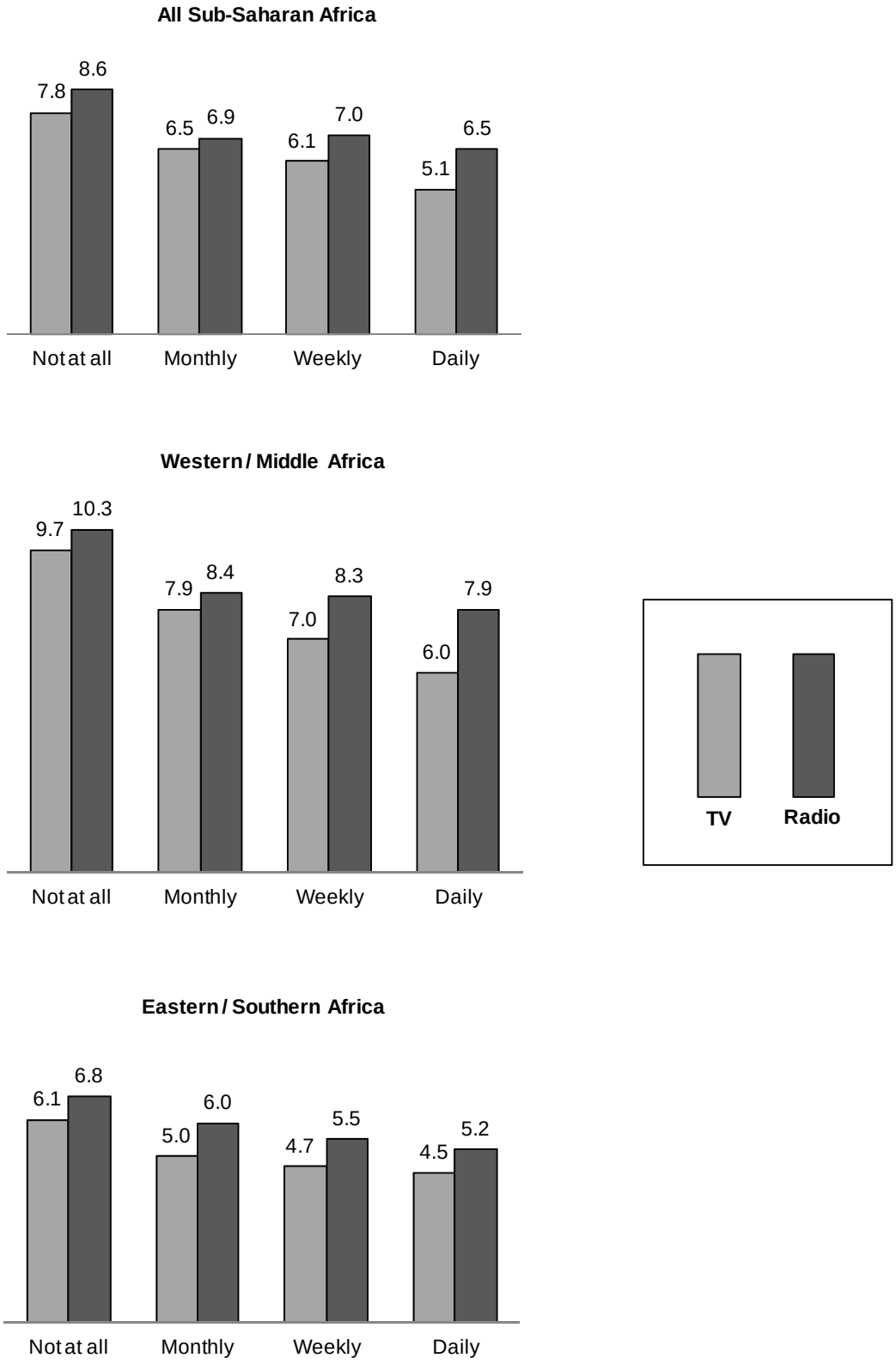
The unadjusted odds ratios are all statistically significant for the association of both television and radio with the use of modern contraception. The magnitude of the adjusted odds ratios for contraceptive practice is roughly the same for television viewing as for radio listening and shows statistically significant results for about half of the countries. The other covariates (not shown in Table 1.16) show that more education in particular and greater wealth to a lesser extent are associated with modern method use, as is urban residence.

Considering that there is a non-trivial proportion (close to 15 percent) of married men in Africa who have more than one wife, the analysis was repeated for polygamous men separately, but no particular differences were observed in these results.

1.11 Men's Desired Number of Children

Figure 1.3 depicts the average number of children desired, by the frequency of watching television and listening to radio, for married men. The figure makes evident the persistent decline in the number of children desired with increases in media exposure. The question arises about how robust this association remains when the different covariates are added. For each individual country, although the correlation of television exposure with the number of children desired is statistically significant in the absence of any controls, the *p* value for this coefficient falls below the .05 level in half of the countries with the full array of covariates added (not shown). In general, radio listening yields weaker associations.

Figure 1.3. Mean number of children desired by frequency of watching television and listening to the radio by African married men



Because it is difficult to separate the influence of existing children on the number of children desired, the focus below is on never-married childless young men (under age 25) to explore the possible effect of media exposure on reproductive preferences. The coefficients in Column 1 of Table 1.17 indicate that television exposure is negatively associated with the number of children desired even with radio exposure included, in all but one of the 23 sub-Saharan African countries. In most but not all of the countries, the magnitude of the television effect is greater than that of radio. In Columns 3 and 4, the coefficients reflect the effects after adjusting for the amount of schooling and residence. Since the category under consideration here is confined to young, never married men, many of whom would still be living with their parents, the age, wealth, and fertility covariates are excluded. The coefficients in these columns are lower but the greater influence of television compared to radio persists. Both city residence and especially schooling are more important determinants of reproductive preferences in this group.

Table 1.17. Association of television and radio exposure with the number of children desired for never married men under age 25 in sub-Saharan African countries (standardized partial regression coefficients)

		Col. 1	Col. 2	Col. 3	Col. 4
		Together		With Schooling and Residence Controlled	
		TV	Radio	TV	Radio
Benin	2006	–.214	(–.029)	–.081	(–.016)
Burkina Faso	2003	–.220	–.117	(–.039)	(–.057)
Chad	2004	–.101	–.109	(–.043)	(–.049)
Congo, DR	2007	–.123	(–.037)	(–.031)	(.020)
Congo, B	2005	–.226	(.004)	–.131	(.030)
Ethiopia	2005	–.177	–.124	–.051	–.073
Ghana	2008	–.165	–.064	–.062	(.042)
Guinea	2005	–.180	–.113	–.091	–.065
Kenya	2009	–.150	–.185	–.086	–.149
Liberia	2007	–.111	–.058	–.064	(–.001)
Madagascar	2009	–.204	–.256	(–.035)	–.172
Mali	2006	–.115	(–.032)	(.015)	(–.027)
Malawi	2004	–.127	(–.023)	–.071	(.012)
Mozambique	2006	–.166	–.132	–.064	–.115
Nigeria	2008	–.167	–.080	–.071	(–.025)
Niger	2006	–.281	(.035)	–.119	.(062)
Namibia	2006	–.111	–.109	–.073	–.103
Rwanda	2005	(–.044)	–.051	(.040)	(–.025)
Senegal	2005	–.119	(.009)	(–.069)	(.030)
Swaziland	2006	–.109	(.022)	–.051	(.013)
Tanzania	2004	–.083	(–.012)	(.008)	.(036)
Uganda	2006	–.105	(–.118)	(.003)	(–.098)
Zambia	2007	–.203	–.045	–.078	(–.027)

( ) Not significant at .05 level.

1.12 Summary of Media Exposure and Reproductive Behavior

This analysis has sought to determine the association of reproductive behavior with exposure to television and radio. Such exposure has increased markedly in the developing world over the past few decades, which have also brought important changes in contraceptive prevalence and fertility rates. This study focuses on the use of modern methods of contraception, the number of children desired, and the number of children recently born. The data are from 48 developing countries with DHS surveys conducted since 2000.

The main shortcoming of the study is that we can only measure the frequency of media exposure but have no information about the content or which programs are relevant to reproductive behavior. The literature suggests that soap operas are likely to be the most influential in altering values and changing behavior. The basic rationale is that television especially can expose viewers to various aspects of modern life that can compete with traditional attitudes toward marriage and the family and lead to new attitudes and behavior, including those about fertility.

We looked first at which groups watch television, finding a clear picture of more educated women, with greater wealth, who live in cities, while radio listening is more common among women who live in rural areas. The results of the central analysis are striking. Television viewing in particular is strongly associated with reproductive behavior: the more that women watch television, the fewer children they want (including young never-married women as well as married women), the more they use modern contraceptives, and the fewer children they have. These findings persist after making adjustments for schooling, wealth, urban residence, age, and other covariates, although they are affected to some extent by these covariates. The multivariate analysis shows that, across all 48 countries, the odds are 2 to 1 that married women who watch television are using modern contraception (the odds are over 3 to 1 with no controls). By and large, the magnitude of the association with the frequency of exposure to television is greater than with the more conventional choice of covariates. A short version of this analysis is also being published elsewhere (Westoff and Koffman, 2011).

A similar analysis for men in sub-Saharan African countries shows similar results. Among married men the association of both television and radio exposure with contraceptive use, controlled for other covariates, is significant in half of the countries. An analysis of young, never-married men shows stronger associations of television than radio with the number of children desired.

Part 2. Mass Media and HIV/AIDS

The second part of this report extends our analysis of the effects of exposure to radio and television to examine knowledge, attitudes, and behavior related to HIV/AIDS in sub-Saharan Africa. Table 2.1 provides estimates of media exposure for each of the 27 countries in this part of the study. Tables 2.2 through 2.23 present data on HIV/AIDS knowledge, attitudes, and behavior for all of the countries combined (weighted equally). Finally, we summarize findings on the associations between media exposure and various measures related to HIV/AIDS for the individual countries. Our approach is first to determine whether the extent of radio and television exposure is associated with knowledge, attitudes, and behaviors relating to HIV/AIDS, and second to examine such connections in the context of other covariates such as schooling, wealth, urban-rural residence, and geographic region, as well as age. These analyses are conducted separately for women and for men.

Table 2.1. Percentage of women and men who watch any television or listen to radio daily

		Women		Men	
		Watch Any TV	Listen to Radio Daily	Watch Any TV	Listen to Radio Daily
Benin	2006	38	31	59	61
Burkina Faso	2003	27	23	42	55
Cameroon	2004	49	29	71	55
Chad	2004	7	22	19	56
Congo, DR	2007	25	20	30	36
Congo, B	2005	47	26	64	46
Ethiopia	2005	18	12	33	27
Ghana	2005	63	52	75	73
Guinea	2008	28	22	43	43
Kenya	2009	46	61	68	76
Liberia	2007	40	27	51	52
Lesotho	2004	18	41	27	40
Madagascar	2009	23	42	23	44
Mali	2006	54	50	70	62
Malawi	2004	13	52	38	72
Mozambique	2003	30	45	36	72
Namibia	2006	52	61	64	65
Niger	2006	15	25	28	46
Nigeria	2008	52	31	66	61
Rwanda	2005	11	31	26	55
Senegal	2005	75	62	52	82
Sierra Leone	2008	16	25	22	42
Swaziland	2006	43	60	54	68
Tanzania	2004	28	41	50	58
Uganda	2006	16	55	28	66
Zambia	2007	37	43	48	55
Zimbabwe	2006	41	38	56	47

Table 2.2. Percentage of women (15-49) and men (15-59) who hold particular beliefs about the causes of HIV/AIDS, by media exposure

	Healthy Person Can Have HIV		HIV Not Caused by Supernatural Forces		HIV Not Caused by Sharing Food		Comprehensive Knowledge*	
	Women	Men	Women	Men	Women	Men	Women	Men
Watch Television								
Not at all	67.4	74.6	70.3	75.0	66.4	68.4	42.8	48.2
Less than once a week	77.6	84.4	71.3	77.6	74.7	79.0	50.2	59.3
Weekly	78.6	86.0	71.9	78.2	78.2	80.3	51.3	60.3
Daily	85.2	89.9	77.2	82.4	85.0	86.9	61.3	68.9
Listen to Radio								
Not at all	61.6	65.5	65.7	69.7	62.1	61.6	35.9	38.4
Less than once a week	69.5	75.1	66.5	73.1	67.0	70.6	41.6	48.4
Weekly	74.1	80.2	70.7	75.1	72.1	72.9	47.5	52.5
Daily	80.7	86.3	78.3	81.1	79.7	80.9	58.2	63.3

* Comprehensive knowledge questions defined as the sum of the responses to the three specific attitudes.

Data not available for Mozambique and for females in Burkina Faso.

2.1 Data and Variables

The data are based on the latest DHS (waves 4 and 5) since the year 2000 in 27 sub-Saharan African countries, which include some with high HIV/AIDS prevalence. There is considerable variation in HIV prevalence among these countries, from around one percent to one-third of adults, with the highest rates in southern Africa (ICF Macro, 2010; Asamoah-Odei *et al.*, 2004; Mishra, 2009; UNAIDS, 2010). With few exceptions, the rates are higher for women than for men. All women age 15-49 and men age 15-59 are included in this analysis, unlike the first section of this report, where the main focus is on the married population.

The knowledge indicators related to HIV/AIDS include understanding of some of the causes of the disease, knowing where to go for an HIV test, whether HIV can be transmitted through breastfeeding, whether certain drugs can reduce the risk of mother-to-child transmission, whether condoms can reduce risk, and where condoms can be obtained. The attitude indicators include willingness to care for family members with AIDS, whether shopkeepers and schoolteachers with the disease should be avoided, and whether the presence of an HIV-positive family member should be kept secret. In addition, the surveys asked both women and men about their attitudes toward condom use and having sex with their spouse if he was infected with HIV. The behavior indicators include condom use, having had an HIV test, and having received counseling on HIV/AIDS.

Just as television and radio can communicate new ideas about later marriage, birth spacing and having fewer children, and can expose audiences to modern values that often clash with traditional beliefs and behavior about reproduction, in the context of the HIV/AIDS epidemic they also can communicate awareness and concern about illness and the risks of promiscuity. The mass media can play an important role in spreading information about the causes of the disease, how it spreads, how it can be avoided, including the importance of condom use, and where to go for HIV testing.

2.2 Media Exposure

Table 2.1 provides estimates of television and radio exposure among women and men for each of the 27 countries in our study. The summary measure for television is the percentage with any exposure, while for radio it is daily exposure. This difference reflects the fact of greater radio ownership and longer access to radio in these countries. Among women, the mean percentage with any television exposure is 34 percent, while among men it is 46 percent. Daily radio listening is also greater for men, at an average of 56 percent compared with 38 percent for women. In almost all of the sub-Saharan countries studied, men both watch television and listen to radio more frequently than women (Senegal is the only major exception, for television). Among women, exposure to television varies widely by country, from 7 percent in Chad to 75 percent in Senegal. However, given the rapid rise in television access in most developing countries, it is important to remember that many of the surveys included here were conducted more than five years ago and therefore no doubt underestimate current overall exposure to television.

2.3 Knowledge of HIV/AIDS and Media Exposure

Tables 2.2 and 2.3 show the accuracy of the knowledge that women and men have about HIV/AIDS in relation to their exposure to television and radio. Each of the three beliefs surveyed—that a healthy person can have HIV, that HIV is not caused by a supernatural force, and that HIV is not caused by sharing food—shows a positive association with both television and radio exposure.

The magnitude of this association, with simultaneous controls for schooling, wealth, urban-rural residence, geographic region, and age, is stronger with radio exposure than with television exposure (Table 2.3). Among men, the odds of having correct information about all three of these questions is almost twice as great for men who listen to radio daily as for men who do not listen at all. For women, daily radio exposure increases the odds of having accurate information by half. Television exposure shows statistically significant associations, but at much lower levels than radio exposure. Among the other covariates, schooling is especially significant, while wealth and urban residence also show important effects. The effects are greater in southern and eastern African countries than in the other sub-Saharan countries, presumably because of the much higher prevalence of the disease in southern and eastern Africa.

Table 2.3. Odds ratios that women and men have knowledge about HIV/AIDS based on three questions about healthy appearance, supernatural means, and sharing food

	Women	Men
Watch Television		
Not at all	1.00	1.00
Sometimes	1.15	1.13
Daily	1.19	1.19
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.22	1.42
Daily	1.52	1.93
Schooling		
None	1.00	1.00
1 - 8 years	1.63	1.43
More than 8 years	3.01	2.91
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	1.13	1.11
Middle	1.26	1.21
Next-to-highest	1.43	1.36
Highest quintile	1.77	1.79
Residence		
Urban	1.00	1.00
Rural	0.94	0.95
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	3.34	2.65
Age	(1.00)	(1.00)
Number of Women	239,097	115,227

Tables 2.4 and 2.5 show the association of television and radio exposure with two additional items of information—whether HIV can be transmitted by breastfeeding and whether certain drugs can reduce mother-to-child transmission. Again, there is a direct association with media exposure, particularly for knowledge about drugs, and the influence of radio is stronger than television, especially for men. In the multivariate analysis (Table 2.5) the odds of knowing both pieces of information is twice as high for men and two-thirds higher for women who listen to radio daily compared with those who do not listen at all. Among women, daily exposure to television increases knowledge of these two pieces of information by 50 percent, but among men television exposure is slightly less important.

Table 2.4. Percentage of women (15-49) and men (15-59) who know that HIV can be transmitted by breastfeeding and the percentage who know that the risk of mother-to-child transmission of HIV can be reduced by certain drugs, by media exposure.

	HIV Can be Transmitted by Breastfeeding		Risk of Mother to Child Transmission Can be Reduced by Certain Drugs		Know about Both	
	Women	Men	Women	Men	Women	Men
Watch Television						
Not at all	66.8	65.6	46.6	42.7	41.4	35.7
Less than once a week	71.5	68.2	52.2	50.2	46.7	41.2
Weekly	72.4	68.1	51.2	50.4	45.3	41.2
Daily	74.4	66.8	63.7	58.4	55.5	45.9
Listen to Radio						
Not at all	60.9	59.1	39.0	33.0	34.5	27.4
Less than once a week	66.3	63.8	43.8	39.2	38.5	32.1
Weekly	71.1	66.9	49.2	43.2	43.5	34.9
Daily	74.8	71.7	60.5	55.1	53.6	45.1

Data not available for Burkina Faso, Cameroon, and Chad

Table 2.5. Odds ratios that women and men know both that HIV can be transmitted by breastfeeding and know that the risk of mother-to-child transmission of HIV can be reduced by drugs

	Women	Men
Watch Television		
Not at all	1.00	1.00
Sometimes	1.26	1.21
Daily	1.50	1.35
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.33	1.38
Daily	1.67	1.99
Schooling		
None	1.00	1.00
1 - 8 years	1.31	1.10
More than 8 years	2.09	1.49
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	1.05	(1.05)
Middle	(1.01)	(1.00)
Next-to-highest	(0.97)	(0.98)
Highest quintile	0.95	(0.99)
Residence		
Urban	1.00	1.00
Rural	0.87	(1.01)
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	3.43	2.76
Age	1.01	1.00
Number of Women	188,462	93,485

( ) not significant at .05 level

For both women and men, knowledge of where to obtain an HIV test increases with both radio and television exposure (Table 2.6). The multivariate analyses also show this positive correlation, although the effect of schooling is much stronger, particularly for women with more than eight years of schooling (Table 2.7). In the southern and eastern parts of sub-Saharan Africa people are more knowledgeable about places for testing than in western and middle Africa, no doubt because the disease is much more widespread.

Table 2.6. Percentage of women and men who know where to get an HIV test, by media exposure

	Women	Men
Watch Television		
Not at all	51.6	51.4
Less than weekly	61.7	68.4
Weekly	62.3	69.4
Daily	75.2	79.2
Listen to Radio		
Not at all	42.3	39.8
Less than weekly	50.6	53.0
Weekly	59.1	59.6
Daily	69.9	70.7

Data not available for Cameroon and for females in Burkina Faso

Table 2.7. Odds ratios of knowing where to get an HIV test for women (15-49) and men (15-59)

	Women	Men
Watch Television		
Not at all	1.00	1.00
Sometimes	1.31	1.50
Daily	1.60	1.71
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.40	1.62
Daily	1.77	2.22
Schooling		
None	1.00	1.00
1 - 8 years	2.65	2.00
More than 8 years	8.11	5.84
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	1.04	(1.02)
Middle	1.12	1.08
Next-to-highest	1.12	1.23
Highest quintile	1.09	1.37
Residence		
Urban	1.00	1.00
Rural	0.72	0.79
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	5.01	3.55
Age	1.02	1.02
Number of Women	238,945	113,519

( ) not significant at the .05 level

Knowledge that correct and consistent condom use reduces the risk of infection has been widely promoted in recent years, no doubt contributing strongly to the positive covariation of media exposure with knowledge about condoms for preventing HIV infection (Table 2.8). The range of knowledge extends from about 60 percent with no media exposure to over 80 percent with daily exposure. This association persists in the presence of other covariates (Table 2.9) and shows a somewhat stronger influence of radio compared with television.

Table 2.8. Percentage of women (15-49) and men (15-59) who know that regular use of condoms can reduce the risk of HIV, by media exposure

	Women	Men
Watch Television		
Not at all	64.9	72.9
Less than weekly	74.7	80.9
Weekly	75.4	82.1
Daily	80.6	84.6
Listen to Radio		
Not at all	57.2	65.1
Less than weekly	67.7	73.2
Weekly	72.2	78.7
Daily	76.4	81.7

Table 2.9. Odds ratios of knowing that regular use of condoms can reduce the risk of HIV for women (15-49) and for men (15-59)

	Women	Men
Watch Television		
Not at all	1.00	1.00
Sometimes	1.28	1.21
Daily	1.46	1.29
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.51	1.49
Daily	1.69	1.80
Schooling		
None	1.00	1.00
1 - 8 years	1.84	1.60
More than 8 years	2.61	2.27
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	1.11	1.13
Middle	1.13	1.15
Next-to-highest	1.12	1.17
Highest quintile	(1.02)	1.11
Residence		
Urban	1.00	1.00
Rural	0.92	(0.99)
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	1.20	1.09
Age	1.00	0.99
Number of Women	264,198	118,626

( ) not significant at the .05 level

Knowledge of where to obtain condoms is much more common among men, between 80 and 90 percent depending on the degree of exposure to the media, while among women it is about two-thirds regardless of the amount of media exposure (Table 2.10). The association between knowledge of where to obtain condoms and media exposure is generally weaker than with other measures of HIV/AIDS knowledge (Table 2.11).

Table 2.10. Percentage of women (15-49) and men (15-59) who know where to get a condom, by media exposure

	Women	Men
Watch Television		
Not at all	63.8	84.4
Less than weekly	66.4	87.5
Weekly	64.8	89.6
Daily	68.6	90.3
Listen to Radio		
Not at all	59.4	80.8
Less than weekly	64.2	84.7
Weekly	62.6	85.6
Daily	69.3	88.9

Data not available for females in Mozambique and for males in Cameroon, Chad, Kenya, Rwanda, and Senegal.

Table 2.11. Odds ratios of knowing where to get a condom for women (15-49) and men (15-59)

	Women	Men
Watch Television		
Not at all	1.00	1.00
Sometimes	1.19	1.25
Daily	1.19	1.22
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.19	1.26
Daily	1.32	1.51
Schooling		
None	1.00	1.00
1 - 8 years	1.03	(1.04)
More than 8 years	1.47	1.53
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	(1.04)	(1.03)
Middle	1.07	1.17
Next-to-highest	1.05	1.23
Highest quintile	(1.01)	1.41
Residence		
Urban	1.00	1.00
Rural	0.92	1.06
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	2.48	1.69
Age	1.01	(1.00)
Number of Women	142,984	76,735

( ) not significant at the .05 level

In general, results of the multiple logistic regression models with knowledge show that media exposure has a stronger effect for men than for women, with only few exceptions (the magnitude of the association between television exposure and knowledge of mother-to-child transmission and of the perceived protective effect for condoms is greater for women than for men). After adjusting for levels of media exposure and other social and demographic factors, the multivariate analysis shows that men generally know more than women about HIV transmission routes and the ways to prevent infection. An exception is that women appear to be better informed about mother-to-child transmission of HIV.

2.4 Attitudes

The DHS has also assessed several attitudes toward HIV/AIDS, including whether women and men regard a husband with a sexually transmitted disease as a reason for the wife to refuse sex, and/or to ask that he use a condom. The modest positive relationship between both of these attitudes and media exposure is shown in Table 2.12. The pattern continues in the context of other covariates, shown in Table 2.13.

Table 2.12. Percentage of women (15-49) and men (15 - 59) who believe that if a husband has an STD, his wife is justified in refusing sex and/or asking that he use a condom, by media exposure

	Reason to Refuse Sex		Ask to Use a Condom		Both	
	Women	Men	Women	Men	Women	Men
Watch Television						
Not at all	75.7	84.0	67.9	78.6	58.4	69.9
Less than once a week	82.1	88.3	78.9	85.9	69.9	77.9
Weekly	79.1	87.4	80.3	88.8	69.9	79.9
Daily	82.3	89.0	85.4	91.2	74.4	84.0
Listen to Radio						
Not at all	72.6	79.0	61.0	70.8	52.3	61.9
Less than once a week	79.8	85.4	71.8	79.4	63.7	71.6
Weekly	78.7	85.6	75.6	85.0	65.8	75.8
Daily	80.6	88.1	81.2	88.1	69.9	79.7

For females: Data not available on refusing sex in Congo B and Kenya and on demanding sex in Burkina Faso, Congo B, Ethiopia, Kenya, Senegal, and Uganda

For males: Data not available on refusing sex in Congo B, Congo DR, Guinea, Kenya, Mali, Niger, and Senegal and on demanding sex in Benin, Burkina Faso, Congo B, Congo DR, Guinea, Kenya, Mali, Niger, Rwanda, Senegal, and Uganda

Table 2.13. Odds ratios of believing that if husband has an STD, his wife has the right to refuse sex and to insist he use a condom

	Refuse Sex		Demand Condom		Both	
	Women	Men	Women	Men	Women	Men
Watch Television						
Not at all	1.00	1.00	1.00	1.00	1.00	1.00
Sometimes	1.20	1.14	1.40	1.20	1.32	1.13
Daily	1.20	1.09	1.49	1.53	1.31	1.32
Listen to Radio						
Not at all	1.00	1.00	1.00	1.00	1.00	1.00
Sometimes	1.31	1.48	1.45	1.49	1.41	1.45
Daily	1.27	1.64	1.60	1.84	1.40	1.67
Schooling						
None	1.00	1.00	1.00	1.00	1.00	1.00
1 - 8 years	1.24	1.23	1.75	1.90	1.60	1.66
More than 8 years	1.51	1.41	3.11	3.80	2.32	2.51
Wealth						
Lowest quintile	1.00	1.00	1.00	1.00	1.00	1.00
Next-to-lowest	(1.01)	(1.02)	1.10	(1.07)	1.07	(1.05)
Middle	(0.99)	(1.00)	1.14	1.12	1.11	(1.06)
Next-to-highest	(1.01)	(1.03)	1.21	1.12	1.16	(1.05)
Highest quintile	(1.01)	1.17	1.16	(0.98)	1.11	(1.00)
Residence						
Urban	1.00	1.00	1.00	1.00	1.00	1.00
Rural	0.93	0.91	0.92	0.83	0.92	0.85
Region of Africa						
Western, Middle	1.00	1.00	1.00	1.00	1.00	1.00
Southern, Eastern	1.32	0.78	2.22	(1.08)	1.63	0.75
Age	1.02	1.02	1.01	1.00	1.01	1.01
Number of Women	267,112	98,572	216,947	82,378	216,869	82,362

( ) not significant at the .05 level

Tables 2.14 and 2.15 show the analysis of attitudes, including whether women and men would be willing to care for a member of their family with HIV or AIDS, whether they would buy vegetables from a shopkeeper with HIV, whether a teacher with HIV should be allowed to continue to teach children, and how they feel about keeping secret that a family member is HIV-positive. Table 2.14 also includes the percentage with accepting views about all four attitudes.

In general, there is a direct association between media exposure and positive attitudes toward people with HIV/AIDS. The two strongest associations are between media exposure and buying vegetables from a shopkeeper with HIV, and permitting an infected teacher to continue teaching. In Table 2.15 the summary index of all four items shows odds about 50 percent greater for women and 70 percent greater for men. Having more than eight years of schooling increases the odds of having a favorable attitude even further.

Table 2.14. Percentage of women (15-49) and men (15-59) who hold specific accepting attitudes towards people with HIV/AIDS

	Willing to Care for Family Member with HIV or AIDS		Would Buy Vegetables from a Shopkeeper with HIV		A Female Teacher with HIV Should be Allowed to Teach		Would Not Want to Keep Secret that a Family Member Is HIV Positive		Accepts All Four Attitudes	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Watch Television										
Not at all	74.5	80.5	38.3	44.9	51.3	53.0	55.8	60.7	14.6	19.1
Less than weekly	77.6	84.9	45.7	56.2	59.8	63.3	50.1	61.4	17.6	25.6
Weekly	78.2	84.9	47.8	57.4	61.4	65.6	48.1	58.3	17.6	24.4
Daily	85.0	88.2	59.8	66.4	73.4	75.3	45.6	55.3	23.4	29.7
Listen to Radio										
Not at all	69.7	74.1	32.8	37.0	46.4	47.3	53.2	59.3	10.7	13.8
Less than weekly	73.7	79.8	37.3	45.1	50.5	53.6	52.5	59.5	13.9	18.0
Weekly	76.8	82.8	44.4	50.4	56.0	57.4	52.2	59.2	17.4	20.6
Daily	83.5	86.6	53.4	59.9	67.4	67.6	50.9	59.9	22.1	27.5

Data not available for Burkina Faso, for Lesotho, and for females in Malawi

Table 2.15. Odds ratios that women (15-49) and men (15-59) are willing to care for family members with HIV/AIDS, that they would buy vegetables from a shopkeeper with HIV/AIDS, that a female teacher with HIV should be allowed to continue to teach, and that they would not want to keep it secret that a family member is HIV positive

	Women	Men
Watch Television		
Not at all	(1.00)	1.00
Sometimes	(1.03)	1.09
Daily	(1.02)	1.07
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.33	1.32
Daily	1.48	1.70
Schooling		
None	1.00	1.00
1 - 8 years	1.94	1.69
More than 8 years	3.27	2.88
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	1.07	1.06
Middle	1.08	1.11
Next-to-highest	1.11	1.21
Highest quintile	1.38	1.33
Residence		
Urban	1.00	1.00
Rural	0.95	(0.99)
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	3.59	2.25
Age	1.01	1.01
Number of Women	234,260	111,947

( ) not significant at the .05 level

2.5 Risk Behavior

One important piece of survey information about risk behavior with respect to HIV/AIDS is the association between media exposure and being tested for HIV. In Table 2.16 the bivariate associations show that, among those with no radio or television exposure (both women and men), between 8 and 16 percent have been tested compared with 21 to 36 percent of those with daily exposure. When combined with other covariates (Table 2.17), the odds of being tested are greater with radio exposure than with television exposure, reaching as high as 1.8 for men who listen to radio on a daily basis, and 1.5 for women. The amount of schooling is clearly the best predictor of being tested for HIV/AIDS, showing odds for those with more than eight years of schooling that are four to five times the odds for those with no formal schooling (for both women and men).

Table 2.16. Percentage of women (15-49) and men (15-59) who have ever been tested for HIV (among those who have ever had sex), by media exposure

	Women	Men
Watch Television		
Not at all	16.1	10.6
Less than weekly	23.0	17.5
Weekly	25.3	21.1
Daily	35.7	28.4
Listen to Radio		
Not at all	12.3	7.7
Less than weekly	16.4	11.0
Weekly	21.4	14.2
Daily	28.6	20.6

Data not available for females in Burkina Faso

Table 2.17. Odds ratios of having had an HIV test for women (15-49) and men (15-59) who have ever had sex, by media exposure

	Women	Men
Watch Television		
Not at all	1.00	1.00
Sometimes	1.25	1.38
Daily	1.48	1.58
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.32	1.35
Daily	1.51	1.72
Schooling		
None	1.00	1.00
1 - 8 years	2.26	1.96
More than 8 years	4.48	4.04
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	(1.01)	(1.03)
Middle	(1.04)	1.19
Next-to-highest	(1.03)	1.34
Highest quintile	(1.01)	1.57
Residence		
Urban	1.00	1.00
Rural	0.68	0.88
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	3.00	2.37
Age	0.99	1.03
Number of Women	231,367	98,380

( ) not significant at the .05 level

Women who have given birth in the preceding two years were asked about their use of HIV counseling during antenatal care. In Table 2.18, the percentages of these women are assessed by their media exposure and the specific counseling received. On the subject of AIDS being transmitted from mother to child, there is a clear association with both television and radio exposure. Similar patterns are seen for the ways of preventing AIDS, as well as for advice about getting tested for the infection. In the last column of Table 2.18, these three counseling subjects combined show an increase of 20 percentage points between no media exposure and exposure every day, with ranges from 39 to 60 percent for television and 33 to 54 percent for radio.

Table 2.18. Among all women age 15 - 49 who gave birth in past 2 years, the percentage who received HIV counseling during antenatal care, by media exposure

	AIDS Can be Transmitted Mother-to-Child	Ways of Preventing AIDS	Getting Tested for AIDS	All Three
Watch Television				
Not at all	53.4	49.6	46.5	39.4
Less than weekly	61.0	55.7	56.9	47.1
Weekly	60.0	57.5	56.0	46.4
Daily	71.3	68.6	68.7	59.9
Listen to Radio				
Not at all	48.3	43.9	40.2	33.1
Less than weekly	51.4	47.1	46.4	38.6
Weekly	56.9	52.8	50.6	42.8
Daily	66.0	63.4	62.2	53.8

Data not available for females in: Burkina Faso, Cameroon, Chad, Ethiopia, Guinea, Lesotho, Liberia, Malawi, Mozambique, Rwanda, Senegal, and Tanzania

In Table 2.19, which presents these relationships in the multivariate context, all three of the counseling topics show a similar pattern. The association with radio is somewhat stronger than with television, reaching a high odds ratio of 1.59 for daily radio listening.

Table 2.19. Odds ratios for women who gave birth in the past two years of receiving HIV counseling during antenatal care, by media exposure

	AIDS Can be Transmitted Mother-to-Child	Ways of Preventing AIDS	Being Tested for AIDS	All Three
Watch Television				
Not at all	1.00	1.00	1.00	1.00
Sometimes	1.11	1.16	1.36	1.18
Daily	1.20	1.29	1.43	1.31
Listen to Radio				
Not at all	1.00	1.00	1.00	1.00
Sometimes	1.24	1.27	1.40	1.39
Daily	1.45	1.52	1.58	1.59
Schooling				
None	1.00	1.00	1.00	1.00
1 - 8 years	1.43	1.49	1.40	1.36
More than 8 years	2.49	2.55	2.52	2.34
Wealth				
Lowest quintile	1.00	1.00	1.00	1.00
Next-to-lowest	(1.02)	1.08	(1.00)	(1.06)
Middle	1.16	1.16	1.20	1.23
Next-to-highest	1.16	1.19	1.22	1.19
Highest quintile	1.19	1.25	1.48	1.32
Residence				
Urban	1.00	1.00	1.00	1.00
Rural	0.59	0.64	0.62	0.60
Region of Africa				
Western, Middle	1.00	1.00	1.00	1.00
Southern, Eastern	2.51	2.95	4.40	3.52
Age	1.02	1.02	1.01	1.02
Number of Women	39,023	39,016	39,002	38,993

( ) not significant at the .05 level

The two remaining measures of risk behavior relate to condom use at last sex and at first sex. The analysis of condom use at last sex is confined to unmarried persons who have had sex in the past year. In Tables 2.22 and 2.23 the basis is all persons under age 25 regardless of marital status. The bivariate relationships are moderately strong and show for both last and first sex a direct association of condom use with media exposure (Tables 2.20 and 2.22). By and large, these associations persist in the multivariate analyses shown in Tables 2.21 and 2.23. Young men who report daily television viewing are nearly twice as likely as those with no television exposure to have used a condom at first sex (Table 2.23). The effect of schooling is particularly strong for women, with odds of nearly 10 to 1 of having used a condom at first sex for those with more than eight years of schooling compared with those with no schooling. It should be noted that there may be a time problem in this analysis, since first sex may have occurred before the acquisition of a radio or television.

The effect of media exposure on HIV testing and on condom use is greater among men than women. The multivariate analysis also indicates wide variation in behavior between men and women, independent of media exposure or other demographic and social measures. Women are twice as likely to have been tested for HIV. Conversely, unmarried women under age 25 are nearly a third less likely than unmarried men to have used a condom at first sex.

In general, it should be noted that causal connections between media exposure and various behavioral measures included here cannot be interpreted unambiguously. For example, there are many possible reasons for having an HIV test, with the role of media exposure being very indirect.

Table 2.20. The percentage who used a condom at last intercourse, by media exposure for unmarried women and men who had sex in the past 12 months

	Women	Men
Watch Television		
Not at all	22.9	32.5
Less than weekly	30.9	48.4
Weekly	34.2	50.3
Daily	44.8	61.0
Listen to Radio		
Not at all	18.2	26.6
Less than weekly	24.3	37.1
Weekly	31.1	41.1
Daily	39.8	52.9

Data not available for males in Lesotho

Table 2.21. Odds ratios of unmarried women and men who had sex in the past 12 months, of using a condom at last intercourse, by media exposure

	Women	Men
Watch Television		
Not at all	1.00	1.00
Sometimes	1.24	1.59
Daily	1.46	1.25
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.29	1.41
Daily	1.51	1.80
Schooling		
None	1.00	1.00
1 - 8 years	2.08	1.29
More than 8 years	4.93	2.53
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	1.28	1.19
Middle	1.33	1.38
Next-to-highest	1.45	1.41
Highest quintile	1.47	1.51
Residence		
Urban	1.00	1.00
Rural	0.78	0.86
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	2.50	2.17
Age	0.98	0.99
Number of Women	34,083	23,809

Table 2.22. Among women and men under age 25, who ever had sex, percent who used a condom at first sex

	Women	Men
Watch Television		
Not at all	11.0	15.5
Less than once a week	17.7	22.5
Weekly	21.8	25.0
Daily	27.7	32.6
Listen to Radio		
Not at all	8.9	14.2
Less than once a week	11.4	16.2
Weekly	16.8	21.0
Daily	21.8	26.0

Data not available for Burkina Faso

Table 2.23. Odds of having used a condom at first sex for women and men under age 25 who ever had sex

	Women	Men
Watch Television		
Not at all	1.00	1.00
Sometimes	1.45	1.44
Daily	1.62	1.90
Listen to Radio		
Not at all	1.00	1.00
Sometimes	1.19	1.13
Daily	1.39	1.25
Schooling		
None	1.00	1.00
1 - 8 years	3.00	1.92
More than 8 years	9.37	3.83
Wealth		
Lowest quintile	1.00	1.00
Next-to-lowest	(1.07)	1.24
Middle	1.21	1.32
Next-to-highest	1.14	1.37
Highest quintile	1.10	1.36
Residence		
Urban	1.00	1.00
Rural	0.76	(0.95)
Region of Africa		
Western, Middle	1.00	1.00
Southern, Eastern	2.56	2.16
Age	0.89	(0.99)
Number of Women	73,855	24,624

2.6 Country-Specific Associations

This analysis of the association of knowledge, behavior, and attitudes about HIV/AIDS with exposure to television and radio has focused on sub-Saharan African nations collectively. To describe all of these relationships for both women and men for each of the 27 individual countries separately would be a challenge, and we have elected instead to summarize the results in the following manner: For each country, we examine the association of media exposure with the particular HIV/AIDS measures for men and women separately in the multivariate context. For example, in Figure 2.1, the odds ratios of the association of media exposure with knowledge of HIV/AIDS is graphed for television and for radio exposure for men and for women separately for each country, controlling for but not showing the simultaneous interrelations with education, wealth, rural-urban residence, and age.

Figure 2.1 focuses on a summary index of six measures of knowledge: that HIV is not caused by supernatural forces, that it is not caused by sharing food, that people appearing healthy may have AIDS, that condom use can reduce risk, that the disease can be transmitted through breastfeeding, and where to get an HIV test. The responses to these individual items have been dichotomized and then added. The odds ratios indicate the likelihood of knowing the correct answers to all six items.

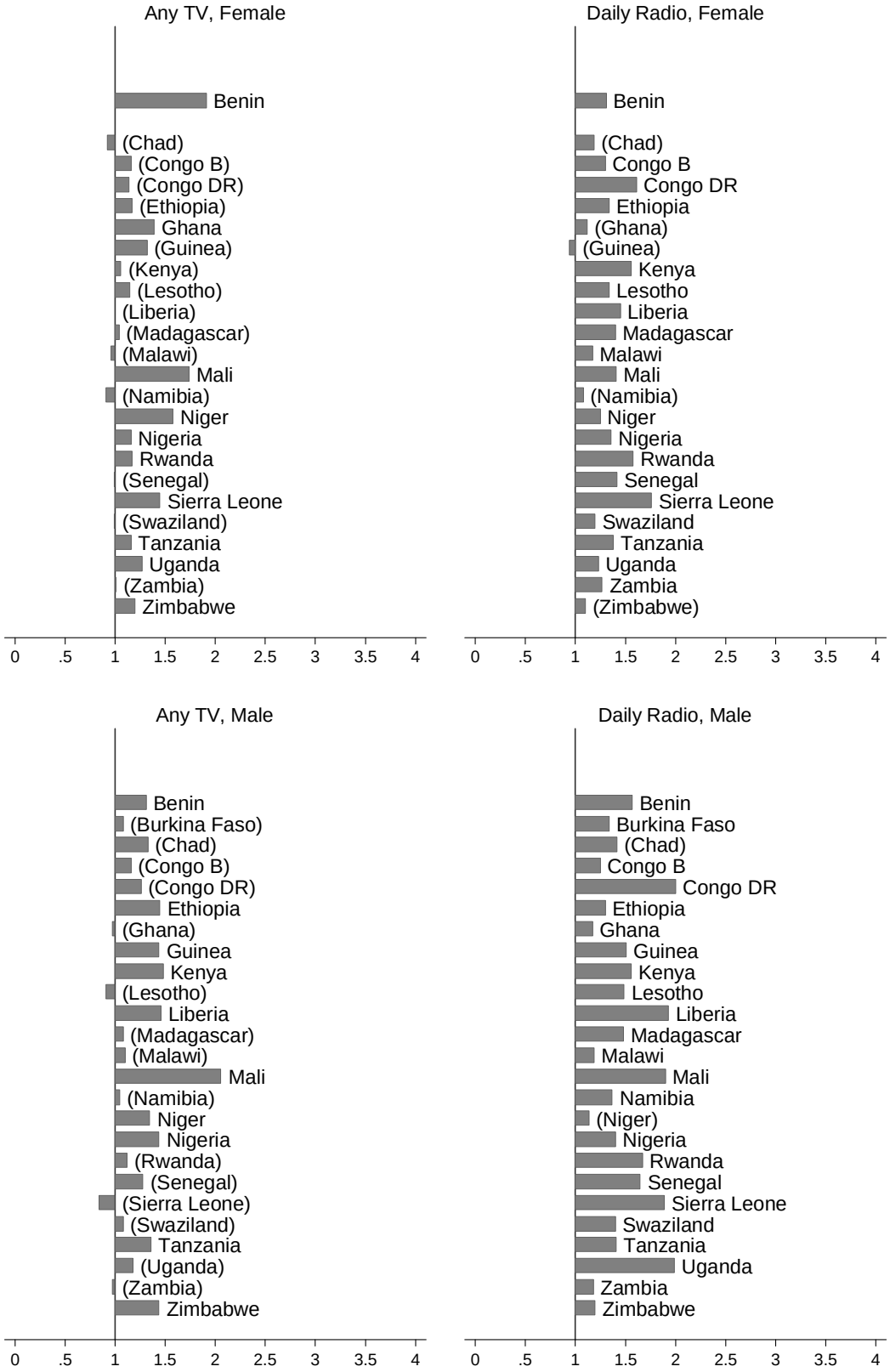
Several patterns can be seen in Figure 2.1. One is that radio is more consistently related to HIV/AIDS knowledge than is television. (In the table, parentheses around the name of the country signify that the odds ratio is not statistically significant at the .05 level.) Many more countries in the television panel fail to meet the significance level than in the radio panels. Among men, in five countries the knowledge score is about twice what it would be with no radio exposure (Congo DR, Liberia, Mali, Sierra Leone and Uganda), and another large group of countries have odds ratios around 1.5. Whereas for women the magnitude of the odds ratios for the impact on knowledge of radio exposure is somewhat greater than for television, it is less impressive than for men. As is evident from the earlier tables for all countries combined, the effect of the level of education in relation to these knowledge questions is almost universally stronger than is the effect of media exposure.

Figure 2.2 shows results of the individual country analyses for condom use at last sex, for unmarried men and women. Some countries are missing in this presentation because of small numbers of unmarried sexually active persons. The dominant picture here is that for men exposure to both television and radio shows more significant associations with condom use than for women. Among men, high odds ratios are particularly evident for Niger, for both media.

Figure 2.3 summarizes the odds ratios for individual countries of women and men having had an HIV test. The association with television exposure is stronger for men than for women. The effect of radio seems particularly strong in Chad, for both women and men, while television exposure of men is equally strong in Mali. In general, significant odds ratios appear in most of the countries, except for exposure to television among women.

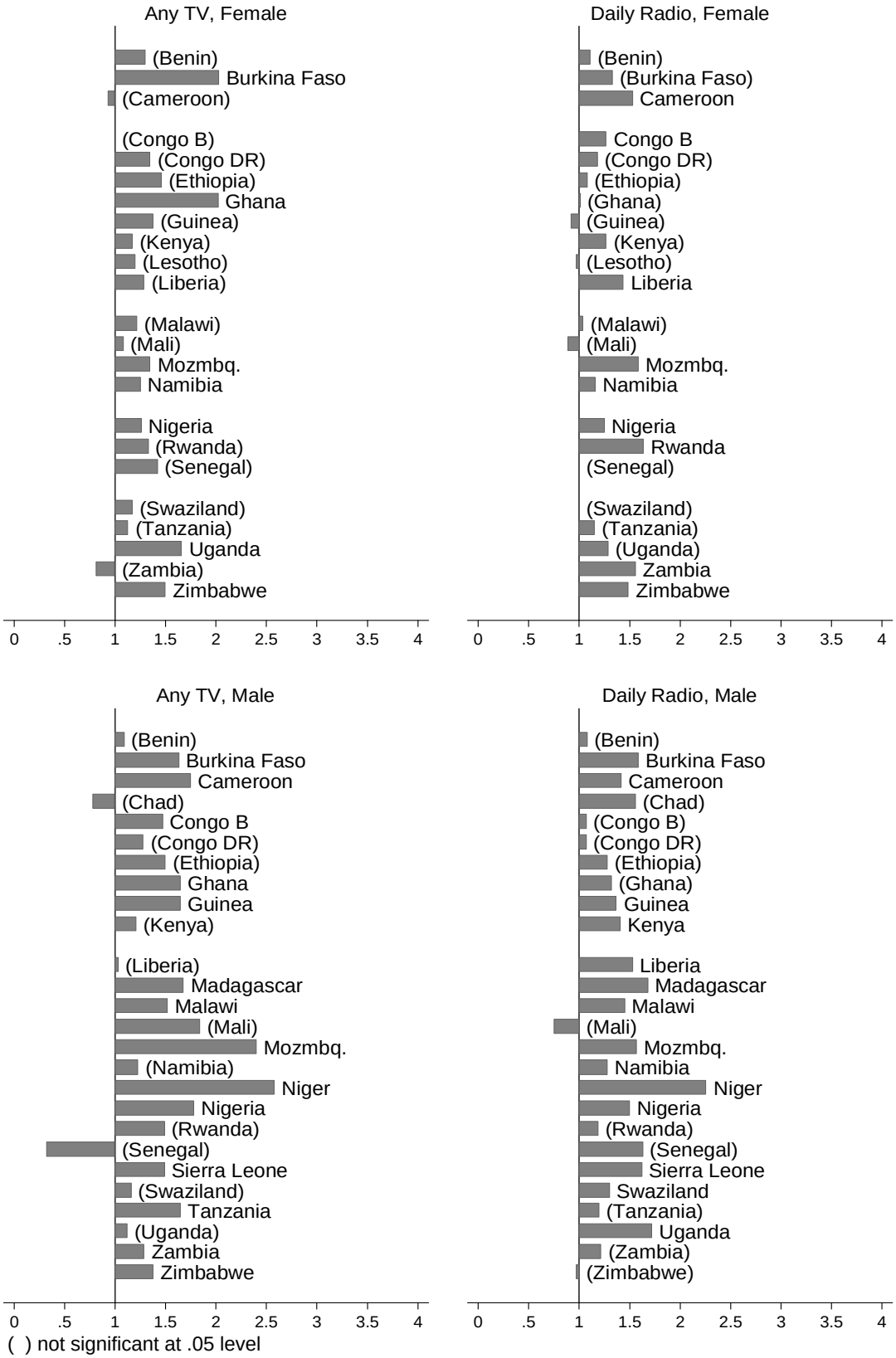
Figure 2.4 summarizes the individual country odds ratios for the four attitudes toward people with the disease. These attitudes include being willing to care for a family member with AIDS, buying vegetables from a shopkeeper infected with HIV, permitting an infected teacher to continue to teach, and not wanting to keep secret that a family member in HIV-positive. We combined these four attitudes into a summary index, which was then dichotomized and the odds ratios shown in connection with television and radio for each country. In general, the associations are fairly weak, with few exceptions, and stand out mainly for men with daily radio exposure.

Figure 2.1. Odds ratios of HIV knowledge for any TV and daily radio exposure, by sex



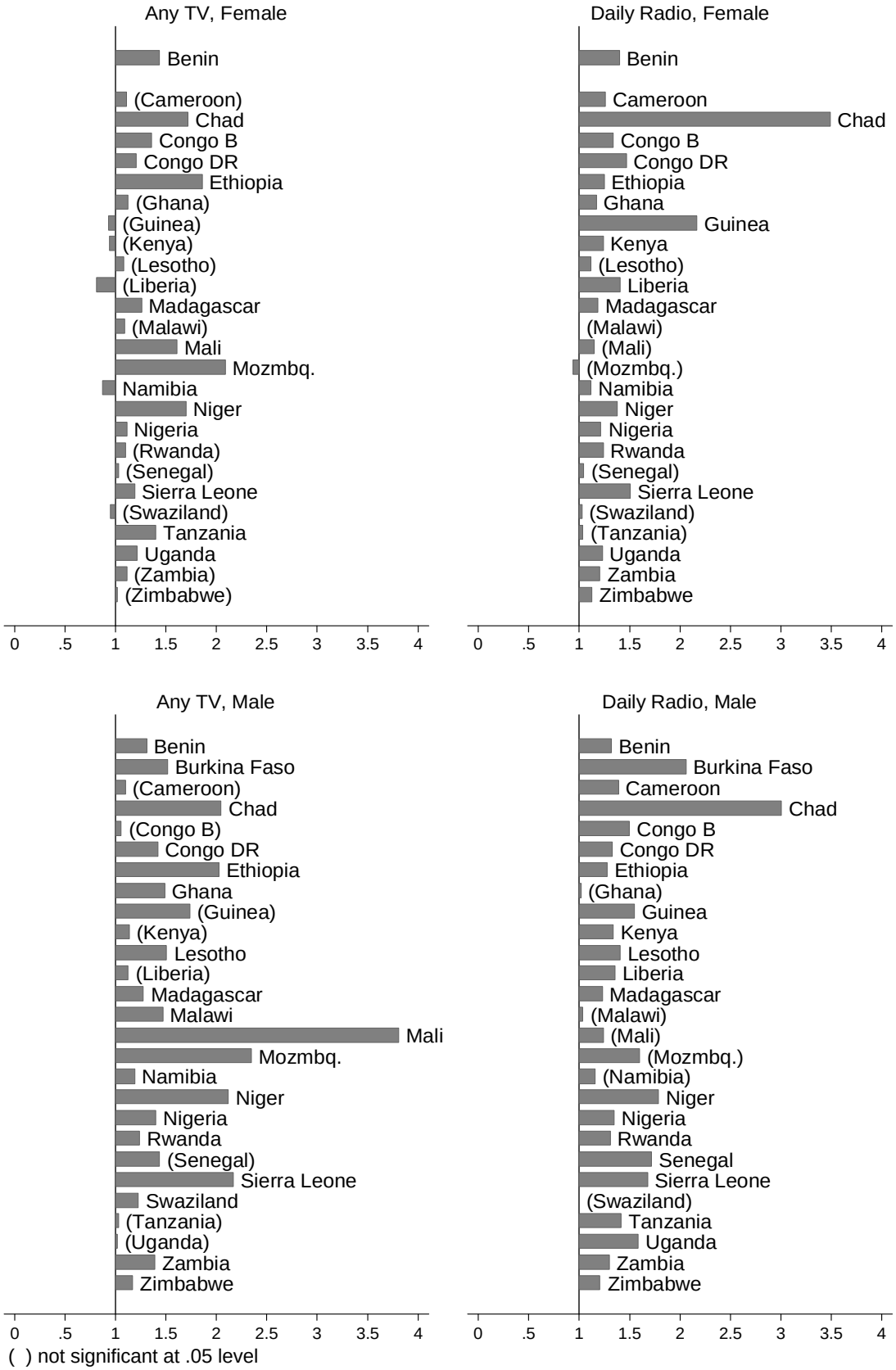
( ) not significant at .05 level

Figure 2.2. Odds ratios of having used a condom at last sex by exposure to any TV and to daily radio for unmarried women and men who had sex in the past year



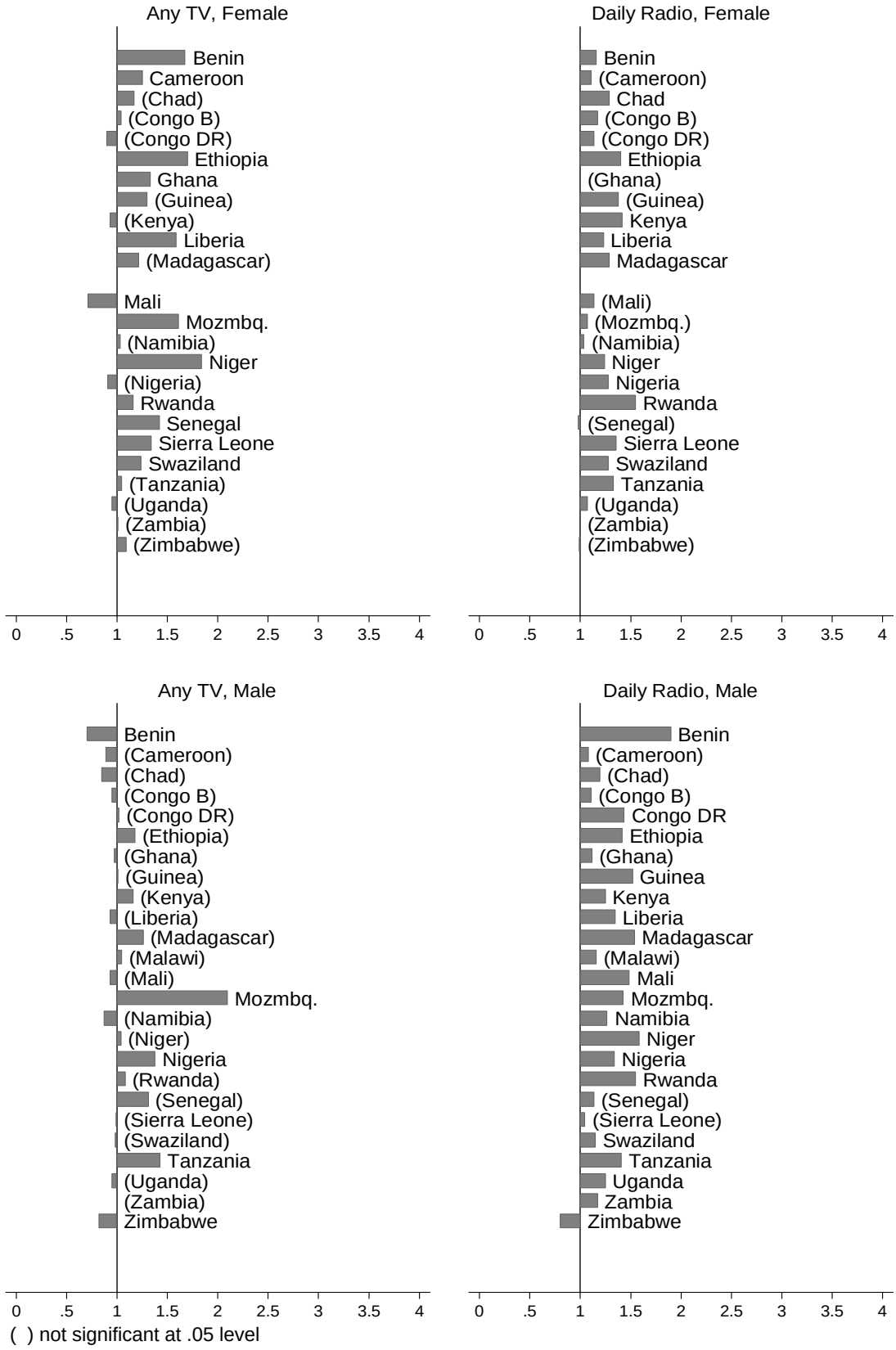
( ) not significant at .05 level

Figure 2.3. Odds ratios of ever having had an HIV test for any TV and daily radio exposure, by sex



( ) not significant at .05 level

Figure 2.4. Odds ratios of having accepted four HIV/AIDS attitudes for any TV and daily radio exposure, by sex



( ) not significant at .05 level

To understand the variations in the magnitude of these associations, we examined their connections with HIV prevalence rates. Further analysis using linear regression generally does not show an association between the magnitude of the different odds ratios with HIV prevalence across the 27 countries. In other words, countries with high HIV prevalence do not show either a stronger or weaker relationship between media exposure and knowledge of HIV.

Likewise, the analysis does not show a relationship between the magnitude of the odds ratios and the level of media exposure across the 27 countries. In countries where media exposure is high, the association between media exposure and knowledge of HIV is no stronger than in countries where media exposure is low. While we have documented a relatively consistent, positive relationship between television and radio exposure and outcomes related to HIV prevention, we do not see evidence from the data that this relationship will strengthen as media exposure increases over time.

2.7 Summary of Media Exposure and HIV/AIDS

The analysis across the 27 sub-Saharan African countries shows that with the exception of Senegal men are more exposed than women to both television and radio. Media exposure varies widely by country. For both women and men the frequency of watching any television ranges from 7 percent in Chad to 75 percent in Ghana and Senegal, while for daily radio listening the range is from 12 percent in Ethiopia to 82 percent in Senegal.

Results from the multivariate logistic regressions indicate a significant association of media exposure with HIV/AIDS in the direction of increasing knowledge, preventive behavior, and more accepting attitudes toward persons with HIV/AIDS. In general, radio exposure seems to have a greater impact than television exposure, particularly among men.

The analysis of individual countries reveals extensive variation in the association of media exposure with the different measures of HIV/AIDS knowledge, attitudes, and behavior. The variations relate not only to the different countries but also to women and men and to the different measures studied. While such variations complicate a summary, the four figures presented in this report show, for each country and for women and men and for television and radio separately, the adjusted odds of knowing or behaving in the direction of the likelihood of preventing HIV/AIDS.

2.8 General Conclusions

This research study has focused on the impact of radio and television exposure on reproductive attitudes and behavior, and on knowledge, attitudes, and behavior with respect to HIV/AIDS. The data used in the analysis are from recent DHS surveys in developing countries, with a focus on sub-Saharan Africa in the part of the study examining the relationship between media exposure and HIV/AIDS awareness and prevention.

The general conclusion is that media exposure is significantly related to most of the dimensions involved, although there are distinctions between television and radio exposure in different parts of the world, and sometimes between women and men. Greater media exposure is associated with a desire for fewer children, higher rates of contraceptive use, and fewer births. Greater media exposure also is associated with more knowledge about causes and prevention of HIV/AIDS, as well as with supportive attitudes toward people who are HIV-positive.

The strength of these associations with reproductive behavior and HIV/AIDS is remarkable, even with adjustments for education, wealth, urban-rural residence and age, particularly considering that media exposure is measured only by the frequency of watching television and of listening to the radio, without

any information available about program content. The variation across countries in the strength of these associations could serve as guides for further research to help determine the kinds of television and radio programs that are particularly influential in relation to reproductive health.

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