Example 1: Exposure to Mass Media
A Question Asked of All Survey Respondents

Background characteristic **3**	**2** Reads a newspaper at least once a week	Watches television at least once a week	Listens to the radio at least once a week	Accesses all three media at least once a week	Accesses none of the three media at least once a week	Number of women
Age						
15-19	9.6	21.3	67.4	3.4	29.1	2,768
20-24	6.5	19.9	66.3	3.0	31.3	2,457
25-29	4.9	14.6	61.1	2.1	36.7	2,300
30-34	4.4	14.9	59.2	2.1	38.9	2,151
35-39	5.1	12.6	57.4	2.3	41.3	1,575
40-44	4.7	10.9	56.0	1.3	42.3	1,269
45-49	4.1	8.8	53.5	1.7	44.9	977
Residence						
Urban	10.4	51.0	76.9	7.6	17.8	2,626
Rural	5.0	7.5	57.9	1.2	40.6	10,871
Province						
Kigali City	9.8	52.1	80.6	7.1	14.4	1,799
South	6.1	10.8	63.5	2.0	35.2	3,214
West	4.6	9.5	52.3	1.2	45.3	2,965
North	5.6	12.0	62.9	2.2	35.5	2,211
East	5.4	9.9	56.8	1.6	41.2	3,308
Education						
No education	0.3	3.0	40.9	0.0	58.3	1,665
Primary	3.6	10.8	58.5	0.6	39.5	8,678
Secondary and higher	15.6	37.1	81.1	8.8 **5**	15.2	3,154
Wealth quintile						
Lowest	2.8	3.4	28.5	0.4	69.4	2,561
Second	3.2	3.2	50.1	0.3	48.6	2,631
Middle	4.3	3.9	62.9	0.5	35.5	2,597
Fourth	6.5	8.7	78.0	1.2	21.1	2,634
Highest	12.2	53.9	83.7	8.8	11.3	3,073
Total **4**	6.0	16.0	61.6	2.4	36.2	13,497

Table 3.4.1 Exposure to mass media: Women **1**

Percentage of women age 15-49 who are exposed to specific media on a weekly basis, by background characteristics, Rwanda 2014-15

Step 1: Read the title and subtitle. They tell you the topic and the specific population group being described. In this case, the table is about women age 15-49 and their access to different types of media. All eligible female respondents age 15-49 were asked these questions.

Step 2: Scan the column headings—highlighted in green in the table above. They describe how the information is categorized. In this table, the first three columns of data show different types of media that women access at least once a week. The fourth column shows women who access all three media, while the fifth column is women who do not access any of the three types of media at least once a week. The last column lists the number of women interviewed in the survey.

Step 3: Scan the row headings—the first vertical column highlighted in blue in the table above. These show the different ways the data are divided into categories based on population characteristics. In this case, the table presents women's access to media by age, urban-rural residence, province, educational level, and wealth quintile. Most of the tables in the RDHS report will be divided into these same categories.

Step 4: Look at the row at the bottom of the table highlighted in red. These percentages represent the totals of all women age 15-49 and their access to different types of media. In this case, 6.0% of women age 15-49 read a newspaper at least once a week, 16.0% watch television weekly, and 61.6% listen to the radio weekly.

Step 5: To find out what percentage of women with secondary and higher education access all three media weekly, draw two imaginary lines, as shown on the table. This shows that 8.8% of women age 15-49 with secondary and higher education access all three types of media weekly.

Practice: Use the table to above to answer the following questions (answers are upside down, below):

   a) What percentage of women in Rwanda do not access any of the three media at least once a week?

   b) What age group of women are most likely to listen to the radio weekly?

   c) Compare women in urban areas to women in rural areas—which group is more likely to watch television weekly?

a) 36.2% of women do not access any of the three media weekly.
b) Women age 15-19—67.4%
c) Women in urban areas—51.0% watch television weekly, compared to 7.5% of women in rural areas.

Step 1: Read the title and subtitle. In this case, the table presents diarrhea among children under five in the two weeks before the survey.

Step 2: Identify the information presented in the table—highlighted in green in the table to the right. In this table there is only one indicator—diarrhea, but it is divided into two categories: all diarrhea and diarrhea with blood.

Step 3: Look at the row headings to identify the background characteristics. In this table, diarrhea is presented by age in months, sex, source of drinking water, toilet facility, urban-rural residence, province, mother's educational level, and wealth quintile.

Step 4: Look at the row in the bottom of the table to determine the total proportion of children under five with diarrhea in the two weeks before the survey. This shows that 12.1% of children under five in Rwanda had diarrhea in the two weeks before the survey.

Interpretation: In Rwanda, 12% of children under five had diarrhea in the two weeks before the survey, but a closer look at the table shows how diarrhea varies throughout Rwanda. To gain a better understanding of differences in the prevalence of diarrhea, consider the following questions:

- Is diarrhea more common in urban or rural areas? Diarrhea is slightly more common in rural areas (12.6%) than in urban areas (9.8%).
- Now, compare diarrhea among girls and boys. Diarrhea is slightly higher among boys (12.5%) than among girls (11.7%). However, the difference between these two groups is small.
- What are the lowest and the highest percentages (range) of diarrhea by province? Just 8.1% of children under five in Kigali City had diarrhea, compared to a high of 14.8% in West province.
- Look for patterns: Does diarrhea vary by other background characteristics? For example, is there a clear pattern of diarrhea by age in months? By source of drinking water? By toilet facility? By mother's education? By wealth quintile? Answers:
    - Diarrhea is highest among children age 12-23 months (21.7%), while diarrhea is lowest among children age 48-59 months (4.5%).
    - Children who have access to an improved water source are slightly less likely to have experienced diarrhea (11.9%) than children who lack an improved source (12.5%). However, the difference between these two groups is small, there is almost no difference.
    - Children who have access to an improved, not shared toilet facility are less likely to have experienced diarrhea (10.3%) than children who use a shared or non-improved toilet facility (12.4% and 15.2%, respectively).
    - Diarrhea is higher among children whose mothers have no education (13.9%) than among children whose mother's have secondary and higher education (8.7%).
    - Diarrhea decreases as household wealth increases; 14.8% of children living in households in the lowest wealth quintile had diarrhea in the last two weeks, compared to 8.0% of children living in households in the highest wealth quintile.
- You can also look for patterns by diarrhea with blood. The patterns seen in all diarrhea can be different that the patterns by diarrhea with blood. For example, only 1.7% of children under five had diarrhea with blood, compared to 12.1% of children with all diarrhea.
- By looking at patterns by background characteristics, we can see which groups are more in need of interventions to address diarrhea. Resources are often limited; looking for patterns can help program planners and policymakers determine how to most effectively use resources.

Table 10.7 Prevalence of diarrhea **1**

Percentage of children under age 5 who had diarrhea in the two weeks preceding the survey, by background characteristics, Rwanda 2014-15

3 **2** Diarrhea in the two weeks preceding the survey

Background characteristic	All diarrhea	Diarrhea with blood	Number of children
Age in months			
<6	5.1	0.8	725
6-11	17.9	1.6	916
12-23	21.7	2.9	1,581
24-35	12.2	2.2	1,555
36-47	8.5	1.1	1,602
48-59	4.5	0.9	1,314
Sex			
Male	12.5	1.7	3,857
Female	11.7	1.7	3,837
Source of drinking water[1]			
Improved	11.9	1.6	5,455
Not improved	12.5	1.9	2,236
Toilet facility[2]			
Improved, not shared	10.3	1.1	4,151
Shared[3]	12.4	2.1	1,266
Non-improved	15.2	2.5	2,269
Residence			
Urban	9.8	1.4	1,303
Rural	12.6	1.7	6,391
Province			
Kigali City	8.1	1.8	921
South	12.3	2.0	1,756
West	14.8	1.7	1,842
North	11.0	1.6	1,071
East	11.9	1.4	2,103
Mother's education			
No education	13.9	2.0	1,125
Primary	12.3	1.8	5,583
Secondary and higher	8.7	0.5	985
Wealth quintile			
Lowest	14.8	2.5	1,834
Second	14.3	2.3	1,670
Middle	11.6	1.3	1,524
Fourth	10.4	0.8	1,331
Highest	8.0	1.0	1,335
Total **4**	12.1	1.7	7,694

Note: Total includes cases for which information on sources of drinking water (3) and toilet facility (8) is missing.
[1] See Table 2.5 for definition of categories.
[2] See Table 2.6 for definition of categories.
[3] Facilities that would be considered improved if they were not shared by two or more households

Example 3: Payment for Sexual Intercourse and Condom Use at Last Sexual Intercourse
A Question Asked of a Subgroup of Survey Respondents

Table 13.10 Payment for sexual intercourse and condom use at last paid sexual intercourse   **1**

Among men age 15-49 who had sexual intercourse in the 12 months before the survey, the percentage who ever paid for sexual intercourse and the percentage reporting payment for sexual intercourse in the past 12 months, and among them, the percentage reporting that a condom was used the last time they paid for sexual intercourse, by background characteristics, Rwanda 2014-15

3 Background characteristic	**2** Among men who had sex in the past 12 months:			Among men who paid for sex in the past 12 months:	
	Percentage who ever paid for sexual intercourse	Percentage who paid for sexual intercourse in the past 12 months	Number of men	Percentage reporting condom use at last paid sexual intercourse	Number of men
Age					
15-24	7.7	4.4	453	*	20
15-19	4.5	3.3	102	*	3
20-24	8.6	4.7	352	*	17
25-29	7.2	3.2	665	*	21
30-39	6.3	1.5	1370	*	21
40-49	8.4	1.5	823	*	12
Marital status					
Never married	13.2	8.4	468	(66.4)	39
Married/living together	5.9	1.0	2785	(63.0)	28
Divorced/separated/widowed	24.1	11.0	58	*	6
Residence					
Urban	12.1	4.6	692	(80.4)	32
Rural	5.9	1.6	2619	(53.8)	42
Province					
Kigali City	12.5	4.9	486	*	24
South	5.8	1.6	714	*	11
West	6.3	2.4	712	*	17
North	5.2	1.7	527	*	9
East	7.4	1.5	872	*	13
Education					
No education	2.2	0.3	415	*	1
Primary	7.5	2.4	2333	69.9	57
Secondary and higher	9.6	2.8	562	*	16
Wealth quintile					
Lowest	5.2	2.6	540	*	14
Second	5.5	1.4	639	*	9
Middle	4.6	1.2	668	*	8
Fourth	7.8	0.8	655	*	5
Highest	11.6	4.7	808	(73.9)	38
Total 15-49	7.2	2.2 **4**	3,310	65.2	74 **4**
50-59	7.4	0.0	591	*	0
Total 15-59	7.2	1.9	3,901	65.2	74

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Step 1: Read the title and subtitle. In this case, the table is about two separate groups of men: (a) all men age 15-49 and (b) men age 15-49 who paid for sexual intercourse in the past 12 months.

Step 2: Identify the two panels. First, identify the columns that refer to men age 15-49 who had sex in the past 12 months (a), and then isolate the columns that refer only to those men who paid for sexual intercourse in the past 12 months (b).

Step 3: Look at the row headings to identify the background characteristics. In this case, the table presents payment for sexual intercourse and condom use at last paid sexual intercourse by age, marital status, urban-rural residence, province, educational level, and wealth quintile.

Step 4: Look at the first panel. What percentage of men age 15-49 paid for sexual intercourse in the past 12 months? It's 2.2%. Now look at the second panel. How many men are there who paid for sexual intercourse in the past 12 months? It's 74 men or 2.2% of the 3,310 men age 15-49 (with rounding). The second panel is a subset of the first panel. Once these men are further divided into the background characteristic categories, there may be too few cases for the percentages to be reliable.

- What percentage of men in urban areas who paid for sex in the past 12 months reported using a condom at last paid sexual intercourse? 80.4%. This percentage is in parentheses because there are fewer than 50 men (unweighted) in this category. Readers should use this number with caution—it may not be accurate. (For more information on weighted and unweighted numbers, see Example 4.)
- What percentage of men with no education who paid for sex in the past 12 months reported using a condom at last paid sexual intercourse? There is no number in this cell—only an asterisk. This is because fewer than 25 men with no education (unweighted) paid for sex in the past 12 months. Results for this group are not reported. The subgroup is too small, and therefore the data are not reliable.

Note: When parentheses or asterisks are used in a table, the explanation will be noted under the table. If there are no parentheses or asterisks on a table, you can proceed with confidence that enough cases were included in all categories that the data are reliable.

Example 4: Understanding Sampling Weights in RDHS Tables

A sample is a group of people who have been selected for a survey. In RDHS surveys, the sample is designed to represent the national population age 15-49. In addition to national data, most countries want to collect and report data on smaller geographical or administrative areas. However, doing so requires a minimum sample size per area (e.g., about 800 women per area). For the 2014-15 RDHS, the survey sample is representative at the national and provincial levels, for urban and rural areas, and for some, but not all indicators, at the district level.

To generate statistics that are representative of the country as a whole and the 5 provinces, the number of women surveyed in each province should contribute to the size of the total (national) sample in proportion to size of the province. However, if some provinces have small populations, then a sample allocated in proportion to each province's population may not include sufficient women from each province for analysis. To solve this problem, provinces with small populations are oversampled. For example, let's say that you have enough money to interview 13,497 women and want to produce results that are representative of Rwanda as a whole and its provinces (as in Table 3.1). However, the total population of Rwanda is not evenly distributed among the provinces: some provinces, such as East, are heavily populated while others, such as Kigali City are not. Thus, Kigali City must be oversampled.

A sampling statistician determines how many women should be interviewed in each province in order to get reliable statistics. The blue column (1) in the table at the right shows the actual number of women interviewed in each province. Within the provinces, the number of women interviewed ranges from 1,876 in Kigali City to 3,435 in South province. The number of interviews is sufficient to get reliable results in each province.

With this distribution of interviews, some provinces are overrepresented and some provinces are underrepresented. For example, the population in Kigali City is about 13% of the

Table 3.1 Background characteristics of respondents			
Percent distribution of women age 15-49 by selected background characteristics, Rwanda 2014-15			
	Women		
Background characteristic	**3** Weighted percent	**2** Weighted number	**1** Unweighted number
Province			
Kigali City	13.3	1,799	1,876
South	23.8	3,214	3,435
West	22.0	2,965	3,060
North	16.4	2,211	2,170
East	24.5	3,308	2,956
Total 15-49	100.0	13,497	13,497

population in Rwanda, while East province is about 25% of the population in Rwanda. But as the blue column shows, the number of women interviewed in Kigali City accounts for about 14% of the total sample of women interviewed (1,876/13,497) and the number of women interviewed in East province accounts for 22% of the total sample of women interviewed (2,956/13,497). This unweighted distribution of Rwandan women does not accurately represent the population.

In order to get statistics that are representative of Rwanda, the distribution of the women in the sample needs to be weighted (or mathematically adjusted) such that it resembles the true distribution in the country. Women from a small province, like Kigali City, should only contribute a small amount to the national total. Women from a large province, like East, should contribute much more. Therefore, DHS statisticians mathematically calculate a "weight" which is used to adjust the number of women from each province so that each province's contribution to the total is proportional to the actual population of the province. The numbers in the purple column (2) represent the "weighted" values. The weighted values can be smaller or larger than the unweighted values at provincal level. The total national sample size of 13,497 women has not changed after weighting, but the distribution of the women in the provinces has been changed to represent their contribution to the total population size.

How do statisticians weight each category? They take into account the probability that a woman was selected in the sample. If you were to compare the red column (3) to the actual population distribution of Rwanda, you would see that women in each province are contributing to the total sample with the same weight that they contribute to the population of Rwanda. The weighted number of women in the survey now accurately represents the proportion of women who live in Kigali City and the proportion of women who live in East province.

With sampling and weighting, it is possible to interview enough women to provide reliable statistics at national and provincial levels. In general, only the weighted numbers are shown in each of the RDHS tables, so don't be surprised if these numbers seem low: they may actually represent a larger number of women interviewed.