

Reading and Understanding Tables from the 2014 Kenya Demographic and Health Survey (KDHS)

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

Table 3.4.1 Exposure to mass media: Women

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

Background characteristic	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	21.7	33.2	66.0	9.5	25.2	5,820
20-24	19.4	44.2	73.5	12.2	18.6	5,735
25-29	18.2	45.2	71.6	11.8	20.3	6,100
30-34	16.8	41.1	70.5	10.9	22.5	4,510
35-39	14.9	36.8	68.1	9.5	25.2	3,773
40-44	15.0	31.4	67.4	9.5	28.1	2,885
45-49	15.1	32.0	68.5	9.3	25.7	2,257
Residence						
Urban	24.9	66.4	75.6	17.9	11.2	12,690
Rural	13.2	19.9	65.6	5.7	31.0	18,389
Region						
Coast	13.6	38.2	50.2	9.0	37.8	3,076
North Eastern	4.0	11.4	20.9	1.5	72.4	648
Eastern	17.4	24.7	67.0	8.1	29.0	4,375
Central	25.5	57.1	84.1	18.1	9.0	3,994
Rift Valley	19.1	34.6	70.3	10.9	23.4	7,953
Western	14.1	21.2	73.3	5.9	22.8	3,225
Nyanza	14.9	25.3	68.6	6.7	25.7	4,038
Nairobi	20.7	80.3	78.7	16.5	6.1	3,770
Education						
No education	0.3	9.7	28.0	0.2	68.1	2,176
Primary incomplete	5.8	17.1	61.9	1.9	34.4	7,989
Primary complete	10.3	36.6	73.0	5.0	20.5	7,637
Secondary +	32.6	58.1	79.3	20.9	10.1	13,277
Wealth quintile						
Lowest	4.1	3.2	37.6	0.7	61.1	4,838
Second	9.9	7.5	63.3	2.2	34.2	5,457
Middle	14.6	16.5	74.6	4.3	21.5	6,032
Fourth	19.6	48.3	80.9	11.0	12.1	6,550
Highest	32.7	89.8	80.4	26.5	2.7	8,203
Total	17.9	38.9	69.7	10.7	22.9	31,079

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, region, educational level, and wealth quintile. Most of the tables in the KDHS 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, 17.9% of women age 15-49 read a newspaper at least once a week, 38.9% watch television weekly, and 69.7% listen to the radio weekly.

Step 5: To find out what percentage of women with secondary+ education access all three media weekly, draw two imaginary lines, as shown on the table. This shows that 20.9% of women age 15-49 with secondary+ education access all three types of media weekly.

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

- What percentage of women in Kenya do not access any of the three media at least once a week?
- What age group of women are most likely to listen to the radio weekly?
- Compare women in urban areas to women in rural areas—which group is more likely to watch television weekly?

a) 22.9% of women do not access any of the three media weekly. b) Women age 20-24—73.5%
c) Women in urban areas—66.4% watch television weekly, compared to 19.9% of women in rural areas.

Example 2: Prevalence of Diarrhoea Comparing and Understanding Patterns

Step 1: Read the title and subtitle. In this case, the table presents diarrhoea 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—diarrhoea, but it is divided into two categories: all diarrhoea and diarrhoea with blood.

Step 3: Look at the row headings to identify the background characteristics. In this table, diarrhoea is presented by age in months, sex, source of drinking water, toilet facility, urban-rural residence, region, 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 diarrhoea in the two weeks before the survey. This shows that 15.2% of children under five in Kenya had diarrhoea in the two weeks before the survey.

Step 5: In Kenya, 15% of children under five had diarrhoea in the two weeks before the survey, but a closer look at the table shows how diarrhoea varies throughout Kenya. To gain a better understanding of differences in the prevalence of diarrhoea, consider the following questions:

- Is diarrhoea more common in urban or rural areas? Diarrhoea is slightly more common in rural areas (15.7%) than in urban areas (14.3%). However, the difference between these two groups is small.
- Now, compare diarrhoea among girls and boys. Diarrhoea is slightly higher among boys (15.9%) than among girls (14.4%). However, the difference between these two groups is small.
- What are the lowest and the highest percentages (range) of diarrhoea by region? Just 7.8% of children under 5 in North Eastern had diarrhoea, compared to a high of 20.1% in Western region.
- Look for patterns: Does diarrhoea vary by background characteristics? For example, is there a clear pattern of diarrhoea by age in months? By source of drinking water? By toilet facility? By mother's education? By wealth quintile?
- Answers: Diarrhoea is highest among children age 6-11 months (26.6%), while diarrhoea is lowest among children age 48-59 months (6.7%). Children who have access to an improved water source are less likely to have experienced diarrhoea (14.8%) than children who lack an improved source (16.1%). Children who have access to an improved, not shared toilet facility are less likely to have experienced diarrhoea (11.2%) than children who use a shared or non-improved toilet facility (16.2% and 16.4%, respectively). Diarrhoea is slightly higher among children whose mothers have no education (14.1%) than among children whose mother's have secondary+ education (13.7%). However, the difference between these two groups is very small, there is almost no difference in diarrhoea between children whose mothers have no education and children whose mothers have secondary+ education. Finally, there is also a clear pattern in diarrhoea by household wealth quintile. Diarrhoea decreases as household wealth increases; 17.2% of children living in households in the lowest wealth quintile had diarrhoea in the last two weeks, compared to 10.5% of children living in households in the highest wealth quintile.

Children who have access to an improved water source are less likely to have experienced diarrhoea (14.8%) than children who lack an improved source (16.1%). Children who have access to an improved, not shared toilet facility are less likely to have experienced diarrhoea (11.2%) than children who use a shared or non-improved toilet facility (16.2% and 16.4%, respectively). Diarrhoea is slightly higher among children whose mothers have no education (14.1%) than among children whose mother's have secondary+ education (13.7%). However, the difference between these two groups is very small, there is almost no difference in diarrhoea between children whose mothers have no education and children whose mothers have secondary+ education. Finally, there is also a clear pattern in diarrhoea by household wealth quintile. Diarrhoea decreases as household wealth increases; 17.2% of children living in households in the lowest wealth quintile had diarrhoea in the last two weeks, compared to 10.5% of children living in households in the highest wealth quintile.

You can also look for patterns by diarrhoea with blood. The patterns seen in all diarrhoea can be different that the patterns by diarrhoea with blood. For example, only 1.2% of children under five had diarrhoea with blood, compared to 15.2% of children with all diarrhoea.

By looking at patterns by background characteristics, we can see which groups are more in need of interventions to address diarrhoea. Resources are often limited; looking for patterns can help programme planners and policymakers determine how to most effectively use resources.

3 Background characteristic	2 Diarrhoea in the two weeks preceding the survey		Number of children
	All diarrhoea	Diarrhoea with blood	
Age in months			
<6	12.9	1.3	1,694
6-11	26.6	2.2	1,909
12-23	24.2	1.9	3,777
24-35	15.8	2.3	3,760
36-47	9.2	1.5	3,889
48-59	6.7	1.0	3,672
Sex			
Male	15.9	1.6	9,477
Female	14.4	1.8	9,225
Source of drinking water¹			
Improved	14.8	1.5	12,024
Not improved	16.1	2.2	6,496
Other/missing	7.1	0.0	182
Toilet facility²			
Improved, not shared	11.2	1.0	3,983
Shared ³	16.2	1.2	4,854
Non-improved	16.4	2.2	9,855
Residence			
Urban	14.3	1.2	6,677
Rural	15.7	2.0	12,025
Region			
Coast	17.6	2.6	1,936
North Eastern	7.8	1.3	625
Eastern	14.3	0.7	2,235
Central	10.4	0.4	1,725
Rift Valley	13.2	1.8	5,457
Western	20.1	2.7	2,166
Nyanza	18.9	2.7	2,638
Nairobi	15.6	0.7	1,920
Mother's education			
No education	14.1	2.8	2,218
Primary incomplete	18.4	2.4	5,304
Primary complete	14.2	1.1	5,164
Secondary+	13.7	1.2	6,016
Wealth quintile			
Lowest	17.2	2.7	4,457
Second	17.1	2.3	3,803
Middle	15.5	1.7	3,375
Fourth	15.4	1.1	3,285
Highest	10.5	0.4	3,782
Total	4 15.2	1.7	18,702

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

Percentage of men age 15-49 who ever paid for sexual intercourse and 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, Kenya 2014

Background characteristic	2 Among all men:			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	4.0	1.9	4,666	63.5	88
..15-19	2.2	1.4	2,540	(67.7)	36
..20-24	6.1	2.5	2,125	60.5	52
25-29	10.3	2.5	2,104	69.3	53
30-39	12.8	3.4	3,268	83.3	112
40-49	10.9	2.4	2,024	(77.9)	48
Marital status					
Never married	5.6	2.2	5,350	73.0	117
Married or living together	10.1	2.2	6,095	72.3	136
Divorced/separated/widowed	20.7	7.8	618	82.5	48
Residence					
Urban	10.6	2.3	5,300	79.8	121
Rural	7.1	2.6	6,762	70.4	179
Region					
Coast	13.6	2.8	1,260	(59.0)	35
North Eastern	1.1	0.7	227	*	2
Eastern	11.0	1.2	1,825	(81.4)	22
Central	5.3	1.8	1,564	*	29
Rift Valley	5.6	2.5	3,050	84.2	75
Western	10.0	3.6	1,164	(59.2)	42
Nyanza	9.1	4.3	1,405	72.2	60
Nairobi	10.7	2.3	1,568	*	36
Education					
No education	7.5	2.2	345	*	8
Primary incomplete	9.9	3.5	3,071	65.0	108
Primary complete	9.9	2.6	2,734	82.0	70
Secondary+	7.4	1.9	5,913	79.2	115
Wealth quintile					
Lowest	8.0	2.9	1,691	65.6	49
Second	7.5	2.4	2,145	68.2	52
Middle	8.1	3.3	2,370	71.8	78
Fourth	9.3	2.1	2,959	83.2	61
Highest	9.6	2.1	2,897	(80.5)	60
Total 15-49	8.6	2.5	12,063	74.2	300
50-54	12.9	2.6	756	*	20
Total 15-54	8.9	2.5	12,819	72.8	320

Note: Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed

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

Step 2: Identify the two panels. First identify the columns that refer to all men age 15-49 (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 first panel. What percentage of men age 15-49 paid for sexual intercourse in the past 12 months? It's 2.5%. Now look at the second panel. How many men are there who paid for sexual intercourse in the past 12 months? It's 300 men or 2.5% of the 12,063 men age 15-49 (with rounding). The second panel is a subset of the first panel.

Step 4: Only 2.5% of men in the survey paid for sexual intercourse in the past 12 months. 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 age 40-49 who paid for sex in the past 12 months reported using a condom at last paid sexual intercourse? 77.9%. 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 KDHS Tables

A sample is a group of people who have been selected for a survey. In KDHS surveys, the sample is designed to represent the national population of 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 KDHS, the survey sample is representative of the country as a whole, for urban and rural areas, for each of Kenya's 8 regions, and for each of Kenya's 47 counties.

To generate statistics that are representative of the country as a whole and the 8 regions, the number of women surveyed in each region should contribute to the size of the total (national) sample in proportion to size of the region. However, if some regions have small populations, then a sample allocated in proportion to each region's population may not include sufficient women from each region for analysis. To solve this problem, regions with small populations are oversampled. For example, let's say that you have enough money to interview 31,079 women and want to produce results that are representative of Kenya as a whole and its regions (as in Table 3.1). However, the total population of Kenya is not evenly distributed among the regions: some regions, such as Rift Valley, are heavily populated while others, such as North Eastern are not. Thus, North Eastern must be oversampled.

A sampling statistician determines how many women should be interviewed in each region 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 region. Within the regions, the number of women interviewed ranges from 999 in Nairobi region to 9,059 in Rift Valley region. The number of interviews is sufficient to get reliable results in each region.

With this distribution of interviews, some regions are overrepresented and some regions are underrepresented. For example, the population in the North Eastern region is about 2% of the population in Kenya, while Rift Valley is about 26% of the population in Kenya. But as the blue column shows, the number of women interviewed in North Eastern region accounts for about 5% of the total sample of women interviewed (1,664/31,079) and the number of women interviewed in Rift Valley accounts for 29% of the total sample of women interviewed (9,059/31,079). This unweighted distribution of Kenyan women does not accurately represent the population.

Table 3.1 Background characteristics of respondents

Percent distribution of women age 15-49 by selected background characteristics, Kenya 2014

Background characteristic	Weighted percent	Weighted number	Unweighted number
Region	3	2	1
Coast	9.9	3,076	3,902
North Eastern	2.1	648	1,664
Eastern	14.1	4,375	5,247
Central	12.9	3,994	3,114
Rift Valley	25.6	7,953	9,059
Western	10.4	3,225	2,840
Nyanza	13.0	4,038	4,254
Nairobi	12.1	3,770	999
Total 15-49	100.0	31,079	31,079

In order to get statistics that are representative of Kenya, 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 region, like North Eastern, should only contribute a small amount to the national total. Women from a large region, like Rift Valley should contribute much more. Therefore, DHS statisticians mathematically calculate a "weight" which is used to adjust the number of women from each region so that each region's contribution to the total is proportional to the actual population of the region. The numbers in the purple column (2) represent the "weighted" values. The weighted values can be smaller or larger than the unweighted values at regional level. The total national sample size of 31,079 women has not changed after weighting, but the distribution of the women in the regions 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 Kenya, you would see that women in each region are contributing to the total sample with the same weight that they contribute to the population of Kenya. The weighted number of women in the survey now accurately represents the proportion of women who live in North Eastern and the proportion of women who live in Rift Valley.

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

