



**USAID**  
FROM THE AMERICAN PEOPLE

# **TOBACCO USE BY MEN AND WOMEN IN 49 COUNTRIES WITH DEMOGRAPHIC AND HEALTH SURVEYS**

## **DHS COMPARATIVE REPORTS 31**



**JULY 2013**

This publication was produced for review by the United States Agency for International Development (USAID). The report was prepared by Donna L. Ansara of John Hopkins University, Fred Arnold and Sunita Kishor of ICF International, and Jason Hsia and Rachel Kaufmann of the Centers for Disease Control and Prevention.

MEASURE DHS assists countries worldwide in the collection and use of data to monitor and evaluate population, health, and nutrition programs. Additional information about the MEASURE DHS project can be obtained by contacting MEASURE DHS, ICF International, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705 (telephone: 301-572-0200; fax: 301-572-0999; e-mail: [reports@measuredhs.com](mailto:reports@measuredhs.com); internet: [www.measuredhs.com](http://www.measuredhs.com)).

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 Comparative Reports No. 31

# **Tobacco Use by Men and Women in 49 Countries with Demographic and Health Surveys**

Donna L. Ansara<sup>1</sup>  
Fred Arnold<sup>2</sup>  
Sunita Kishor<sup>2</sup>  
Jason Hsia<sup>3</sup>  
Rachel Kaufmann<sup>3</sup>

ICF International  
Calverton, Maryland, USA

Centers for Disease Control and Prevention  
Atlanta, Georgia, USA

July 2013

*Corresponding authors:* Sunita Kishor and Fred Arnold, Demographic and Health Surveys, ICF International, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705; Phone: 301-572-0200; Email: [sunita.kishor@icfi.com](mailto:sunita.kishor@icfi.com)

<sup>1</sup>Johns Hopkins University

<sup>2</sup>ICF International

<sup>3</sup>Centers for Disease Control and Prevention

Document Production: Yuan Cheng

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) and by the U.S. Centers for Disease Control and Prevention (CDC) through the contract on Communications and Integrated Marketing Strategies, Media Services, and Database Support to the Office on Smoking and Health, Health Communications Branch (#200-2008-F-26188). The views expressed are those of the authors and do not necessarily reflect the views of USAID or the United States Government. The authors gratefully acknowledge input from Samira Asma, Office on Smoking and Health, CDC, on this project.

Recommended citation:

Ansara, Donna L., Fred Arnold, Sunita Kishor, Jason Hsia, and Rachel Kaufmann. 2013. *Tobacco Use by Men and Women in 49 Countries with Demographic and Health Surveys*. DHS Comparative Reports No. 31. Calverton, Maryland, USA: ICF International.

## Contents

Tables .....	v
Appendix Tables .....	v
Figures.....	vi
Preface.....	vii
Executive Summary .....	ix
1 Introduction.....	1
2 Data and Methods .....	4
2.1 Data .....	5
2.2 Definition of Variables .....	8
2.3 Analyses.....	17
3 Results: Prevalence of Tobacco Use among Women and Men .....	19
3.1 Prevalence of Any Tobacco Use.....	19
3.2 Prevalence of Manufactured Cigarette Smoking .....	27
3.3 Prevalence of the Use of Other Smoked Tobacco .....	31
3.4 Prevalence of the Use of Smokeless Tobacco .....	32
3.5 Differentials in Manufactured Cigarette Use by Sociodemographic Characteristics ....	32
4 Conclusions and Study Limitations .....	47
References.....	49
Appendix.....	53



## Tables

Table 1. Summary of Demographic and Health Surveys included in this report, 1999-2010.....	6
Table 2. DHS questions assessing current cigarette use.....	9
Table 3. DHS questions assessing current use of other types of smoked tobacco (excluding cigarettes).....	11
Table 4. DHS questions assessing current use of smokeless tobacco.....	13
Table 5. DHS questions assessing number of cigarettes smoked in the last 24 hours.....	15
Table 6a. Percentage of men age 15-49 who currently smoke cigarettes or use other tobacco products by country and region, 1999-2010.....	20
Table 6b. Percentage of women age 15-49 who currently smoke cigarettes or use other tobacco products by country and region, 1999-2010.....	22

## Appendix Tables

Appendix Table A1. Correlates of current cigarette smoking among men age 15-49 in countries with >10% prevalence of smoking, 2002-10.....	53
Appendix Table A2. Correlates of current cigarette smoking among women age 15-49 in countries with >5% prevalence of smoking, 1999-2009.....	59
Appendix Table A3a. Percent distribution of men age 15-49 who currently smoke cigarettes by number of cigarettes smoked in the past 24 hours, 2002-10.....	62
Appendix Table A3b. Percent distribution of women age 15-49 who currently smoke cigarettes by number of cigarettes smoked in the past 24 hours, 2001-10.....	63
Appendix Table A4. Percentage of men who currently smoke cigarettes or use other tobacco products by age group, according to country and region, 2002-10.....	64

## Figures

Figure 1. Percentage of men age 15-49 who currently use any type of tobacco .....	24
Figure 2. Percentage of women age 15-49 who currently use any type of tobacco .....	26
Figure 3. Percentage of men age 15-49 who currently smoke manufactured cigarettes .....	28
Figure 4. Percentage of women age 15-49 who currently smoke manufactured cigarettes .....	30

## 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 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. Whereas *Comparative Reports* are primarily descriptive, *Analytical Studies* have a more analytical approach.

The *Comparative Reports* series covers a variable number of countries, depending on the availability of data sets. Where possible, data from previous DHS surveys are used to evaluate trends over time. Each report provides detailed tables and graphs organized by region. Survey-related issues such as questionnaire comparability, survey procedures, data quality, and methodological approaches are addressed as needed.

It is anticipated that the availability of comparable information for a large number of developing countries will enhance the understanding of important issues in the fields of international population and health by analysts and policymakers.

Sunita Kishor  
Project Director



## Executive Summary

This report examines the prevalence of current cigarette smoking and tobacco use among women and men in 49 developing countries. Data for the analysis were obtained from Demographic and Health Surveys (DHS) conducted between 1999 and 2010. Data from the most recent DHS conducted in each of the countries with information on current tobacco use were used for this analysis. The report describes the proportion of women and men age 15-49 within the countries who report currently using manufactured cigarettes, other forms of smoked tobacco, and smokeless tobacco. The study also explores differentials in cigarette smoking by selected sociodemographic characteristics. While the questions used to assess tobacco use and the populations surveyed were generally similar across most of the countries that were examined, some differences in these characteristics are noted. Thus, attention should be paid to these differences and caution should be used in interpreting the findings.

The results reveal that the prevalence of any tobacco use varies substantially worldwide for women and men. For men, the prevalence of any tobacco use exceeds 40 percent in all the countries examined in North Africa/West Asia/Europe, Central Asia, and South and Southeast Asia. Timor-Leste has the highest prevalence of tobacco use for men, with 7 out of 10 men currently using at least one form of tobacco. Lower prevalence of tobacco use for men is generally found in countries in sub-Saharan Africa and Latin America/Caribbean. The countries in this report with the lowest prevalence of tobacco use for men are Ghana (7 percent), Ethiopia (11 percent), Nigeria (12 percent), and the Dominican Republic (12 percent).

Women are much less likely than men to report using tobacco in all the countries with available data. The highest prevalence of tobacco use for women is found in Madagascar (21 percent), Nepal (20 percent), and Ukraine (15 percent). In Turkey, where only ever-married women were interviewed, 28 percent are current cigarette smokers. The countries with the lowest prevalence of tobacco use for women are Egypt, Ghana, Nigeria, Senegal, and Zimbabwe, where less than 1 percent of women age 15-49 use any form of tobacco.

Manufactured cigarettes are the most common type of tobacco used worldwide and they are thus responsible for a substantial burden of death and disability among tobacco users. For men, the prevalence of cigarette smoking in North Africa/West Asia/Europe and South and Southeast Asia is consistently high, ranging from nearly one-third to two-thirds of men (median: 49 percent). The highest prevalence of cigarette smoking among men is found in Timor-Leste (66 percent) and Armenia (61 percent). Countries in sub-Saharan Africa generally have a lower prevalence of cigarette smoking for men than countries in other regions. The countries with the lowest prevalence of current cigarette smoking for men are Ghana (6 percent), Ethiopia (8 percent), Nigeria (9 percent), and the Dominican Republic (10 percent).

The prevalence of manufactured cigarette use among women is low in the majority of countries examined. In all but 3 of the 47 countries with available data, the prevalence of current cigarette smoking among women is less than 10 percent. The three countries with the highest prevalence of cigarette smoking for women are Turkey (28 percent), Nepal (15 percent), and Ukraine (15 percent).

The use of smokeless tobacco, which includes snuff and chewing tobacco, is low in the majority of the countries examined for both women and men. In general, the use of smokeless tobacco among men is more common in South and Southeast Asia than in any other region. The countries with the highest use of smokeless tobacco among men are India (37 percent), Nepal (36 percent), Uzbekistan (32 percent), Madagascar (23 percent), and Bangladesh (20 percent). Uzbekistan, India, and Nepal are the only countries where men are more likely to use smokeless tobacco than to smoke manufactured cigarettes. The countries with the highest use of smokeless tobacco among women are in South and Southeast Asia and sub-Saharan Africa (20 percent in Madagascar, 9 percent each in Lesotho and India, 8 percent in

Cambodia, 5 percent each in Sierra Leone and Nepal, and 4 percent in the Maldives). In all these countries except Sierra Leone and Nepal, women are more likely to use smokeless tobacco than to smoke manufactured cigarettes.

The prevalence of cigarette smoking is unevenly distributed in the population, with substantial variations in urban and rural areas and by the sociodemographic characteristics of the population. Understanding the patterns and predictors of cigarette smoking is important in developing effective programs and policies aimed at reducing and eliminating tobacco use. The results show significant variation in the prevalence of cigarette smoking for women and men by age, marital status, level of education, urban-rural area, employment and cash earnings (women only), occupation (men only), household wealth, maternity status, exposure to mass media, and migration status (men only). For women and men, the nature and the strength of these associations varies across the countries examined.

Finally, the report examined the number of cigarettes smoked in the last 24 hours by current smokers. This information is important in understanding the potential public health impact of tobacco use. Research examining the health consequences of smoking suggests a direct association between adverse health outcomes and the duration and level of exposure to tobacco smoke. The analysis shows that the number of cigarettes smoked by men who smoke varies across the countries examined, with fewer cigarettes generally smoked by men in sub-Saharan Africa. In contrast, in North Africa/West Asia/Europe, men who smoked reported smoking the greatest number of cigarettes, with over 80 percent of men reporting having smoked 10 or more cigarettes in the last 24 hours.

The results for women are generally consistent with those found for men. The frequency of smoking is generally lower for women in sub-Saharan Africa than for women in other regions. In contrast, the frequency of smoking for women who smoke is high in all countries in North Africa/West Asia/Europe and Central Asia, with at least 40 percent of smokers saying they smoked 10 or more cigarettes in the last 24 hours.

# 1 Introduction

Tobacco use is the leading preventable cause of death and disability worldwide (World Health Organization 2002, 2011a). Smoking and tobacco use cause 5.4 million deaths annually (Mathers and Loncar 2006) and have been linked to numerous cancers including lung cancer, pancreatic cancer, cancer of the larynx, and cervical cancer (U.S. Department of Health and Human Services 2010). Smoking is also associated with chronic diseases and other adverse health outcomes, including stroke, coronary heart disease, chronic obstructive pulmonary disease (COPD), periodontitis, hip fractures, pneumonia, and reduced fertility among women (U.S. Department of Health and Human Services 2010).

The negative health effects of smoking are not limited to smokers (U.S. Department of Health and Human Services 2006). Globally, it has been estimated that exposure to secondhand smoke is responsible for more than 600,000 deaths per year, including 166,000 deaths among children (Oberg, Jaakkola et al. 2011). Oberg, Jaakkola et al. (2011) also state that most deaths from secondhand smoke in adults are caused by ischemic heart disease, asthma, and lung cancer and in children most of these deaths are caused by lower respiratory infections. Secondhand smoke is also associated with sudden infant death syndrome (Fleming and Blair 2007) and lower birthweight (Jaddoe, Troe et al. 2008). As the prevalence of smoking among men often exceeds the prevalence among women, women account for a disproportionate number of deaths from secondhand smoke (Oberg, Jaakkola et al. 2011; U.S. Department of Health and Human Services 2006).

While manufactured cigarettes are the most common form of tobacco used worldwide, other types of smoked and smokeless tobacco are widely used in different regions of the world (Shafey et al. 2009). Other types of smoked tobacco include hand-rolled cigarettes (i.e., “roll-your-own” or RYO), pipes, cigars, *bidis* (small cigarettes hand-rolled in leaf wrappers, most common in India and other South Asian countries), *kreteks* (clove-flavored cigarettes most common in Indonesia), and water pipes (also known as *qalyan*, *hookah*, *narghila*, and *shisha*; most common in Northern Africa, the Mediterranean region and parts of Asia). Smokeless tobacco includes chewing tobacco, which is most prevalent in South and South East Asia, and snuff. Moist snuff is ground tobacco that is taken orally, while dry snuff is inhaled in the nose or taken by mouth.

Most research examining the adverse health effects of tobacco use has focused on manufactured cigarettes given their higher prevalence than other forms of tobacco. However, studies have also documented serious health consequences associated with the use of other types of smoked tobacco (Baker, Ainsworth et al. 2000; Boffetta, Hecht et al. 2008; Prignot, Sasco et al. 2008; Warnakulasuriya, Dietrich et al. 2010). Cigar smoking has been linked to an increased risk of oral cancer, esophageal cancer, laryngeal cancer, and lung cancer; and the risk of death from cigar smoking approaches that of cigarette smoking as the frequency of smoking and the degree of smoke inhalation increases (Baker, Ainsworth et al. 2000). *Bidi* cigarette smoke delivers significant levels of carbon monoxide, nicotine, and tar (Watson, Polzin et al. 2003). Numerous adverse health outcomes have been linked with *bidi* cigarette smoking, including oral cancer, pharyngeal cancer, laryngeal cancer, esophageal cancer, and lung cancer, as well as an increased risk of mortality (Prignot, Sasco et al. 2008). The use of *kreteks* is associated with lung cancer, tuberculosis, abnormal lung function, and acute lung injury (Prignot, Sasco et al. 2008). Use of the water pipe is associated with an increased risk of lung cancer, tuberculosis, and possibly lip cancer, oral cancer, pharyngeal cancer, and gastric cancer (Prignot, Sasco et al. 2008).

The use of smokeless tobacco has also been linked to deleterious health outcomes. The documented health effects of smokeless tobacco vary by region, possibly due to differences in the content of the tobacco as well as the quality and availability of studies (Boffetta, Hecht et al. 2008). Smokeless tobacco use is associated with an increased risk of oral cancer in studies from the United States and Asia and to esophageal cancer and pancreatic cancer in studies from Northern Europe (Boffetta, Hecht et al.

2008). The small number of studies examining the health consequences associated with the use of nasal snuff have shown an increased risk of oral cancer, esophageal cancer, and lung cancer among users (Boffetta, Hecht et al. 2008).

While tobacco use has been declining in many developed countries, it continues to rise in many developing countries, and the public health toll of tobacco use is expected to rise in these nations in the decades to come (Mathers and Loncar 2006). The World Health Organization (WHO) estimates that the estimated number of deaths attributable to tobacco in 2000 was more than one million more than it was in 1990, with the greatest increase occurring in developing countries (World Health Organization 2002). According to WHO estimates, the annual number of deaths globally attributable to tobacco is expected to rise from 5.4 million in 2005 to roughly 8.3 million in 2030 (Mathers and Loncar 2006). Moreover, while high income countries are expected to experience a decline of 9 percent of deaths attributable to tobacco over this period, low to middle-income countries are expected to experience a doubling of deaths attributable to tobacco from 3.4 million to 6.8 million (Mathers and Loncar 2006).

The prevalence of tobacco use varies substantially across regions and across countries. Some of the highest prevalence of cigarette smoking among men is found in East Asia, Southeast Asia, Eastern Europe, and Central Asia (Eriksen, Mackay and Ross 2012). According to data published in the WHO Global Status Report on Noncommunicable Diseases (2011b), countries with more than a 50 percent prevalence of tobacco smoking among men include Armenia, Belarus, the Democratic People's Republic of Korea, Greece, Indonesia, Kiribati, Papua New Guinea, the Republic of Korea, the Russian Federation, Samoa, Tunisia, and Ukraine.

For women, the regions with the highest prevalence of cigarette smoking are Europe and parts of the Pacific, Latin America and the Caribbean (Eriksen, Mackay and Ross 2012). In contrast to men, cigarette smoking among women in East Asia and South and Southeast Asia is relatively low (Eriksen, Mackay and Ross 2012). Countries with at least 30 percent prevalence of cigarette smoking among women include Austria, Chile, Greece, Kiribati, Lebanon, and Nauru (World Health Organization 2011b).

This report was prepared to provide recent, nationally representative estimates of tobacco use for women and men across a large number of developing countries in one document. Currently, there is a lack of comparable, high-quality data on tobacco use across countries. While the Global Adult Tobacco Survey (GATS) provides comprehensive data on tobacco use (Giovino, Mirza et al. 2012), it has thus far been conducted only in 14 countries. GATS is a component of the Global Tobacco Surveillance System (GTSS), which has been developed by the World Health Organization, CDC, and the Canadian Public Health Association (CPHA). The Demographic and Health Surveys (DHS) provide high-quality, nationally representative, population-based data, on selected key tobacco-use indicators in a much larger number of countries. Data from the DHS have been collected using similar sampling methods, populations surveyed, field procedures, quality control measures, and questions assessing tobacco use.

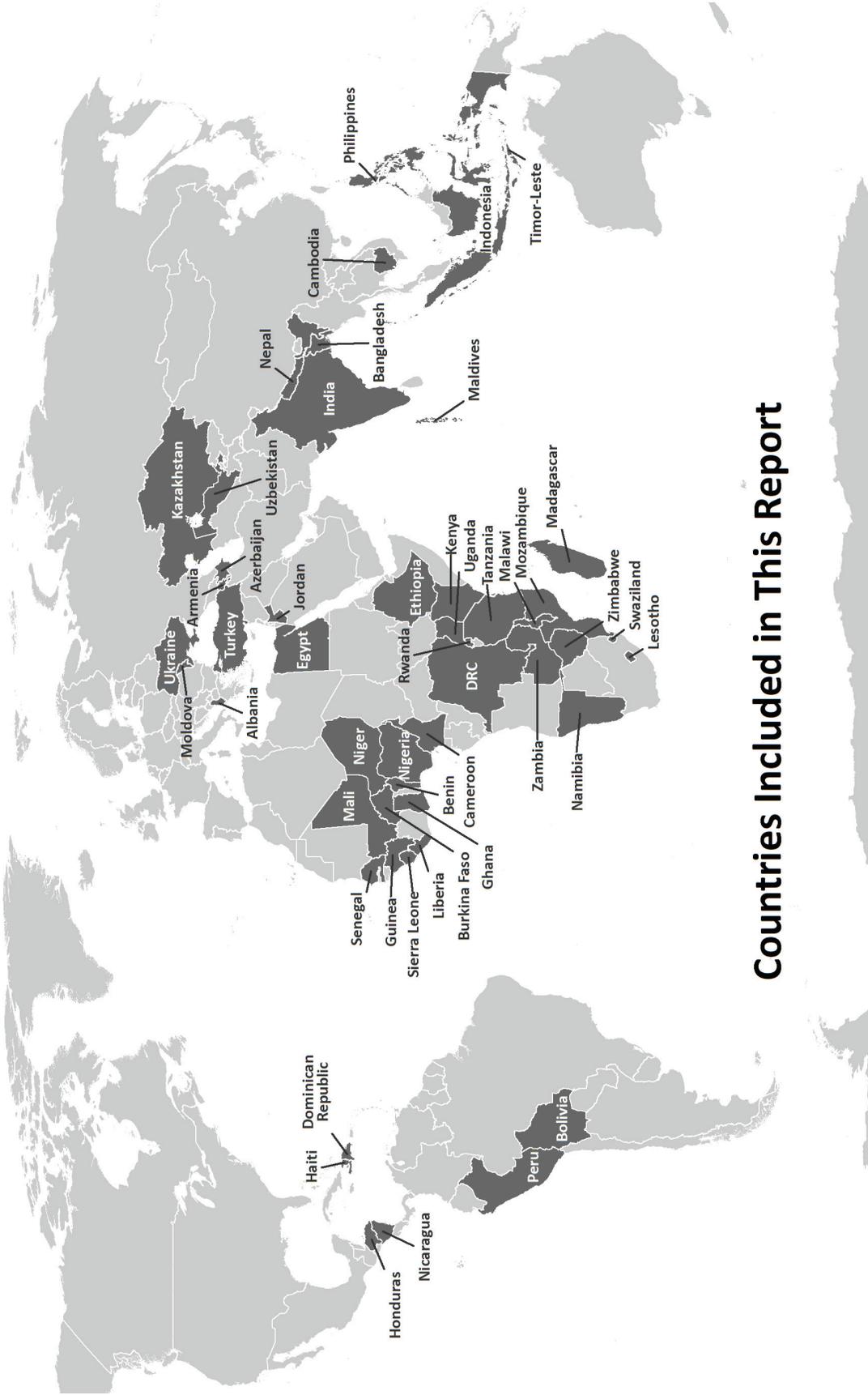
Specifically, this report provides nationally representative estimates of cigarette smoking and tobacco use in 49 countries in sub-Saharan Africa, North Africa/West Asia/Europe, Central Asia, South and Southeast Asia, and Latin America and the Caribbean (see Map). Data from the most recent DHS conducted in each of the countries with available data on current tobacco use are included in this analysis. The surveys included in this report cover a time span between 1999 and 2010; therefore, caution should be used when comparing the prevalence of tobacco use across the countries.

The first section of the report describes the use of manufactured cigarettes, other smoked tobacco products, and smokeless tobacco across the countries studied. While gender differences in tobacco use vary across regions, the World Health Organization estimates that on average, men are four times more likely to use tobacco than women (World Health Organization 2003a).

Therefore, to explore the role that gender plays in tobacco use, estimates are presented separately for women and men.

Within countries, the prevalence of tobacco use often varies geographically and across socio-demographic characteristics of the population. To develop effective programs and policies aimed at reducing and eliminating tobacco use, it is important to understand the profile of tobacco users (World Health Organization 2003b; World Health Organization 2011a, 2011b). The second section of the report examines the sociodemographic characteristics associated with use of manufactured cigarettes for women and men. The analysis focuses on manufactured cigarettes since this is the most prevalent form of tobacco used worldwide. The characteristics that were examined include age, marital status, education, urban-rural area, employment status in the last 12 months (women only), cash earnings (women only), occupational status (men only), household wealth, maternity status (women only), exposure to mass media, and migration status (men only).

The last section of this report describes the number of cigarettes smoked in the last 24 hours for men and women who reported currently smoking cigarettes. This information is important in understanding the potential public health impact of tobacco use. According to the Surgeon General's Report, although "there is no risk-free level of exposure to tobacco smoke...the risk and severity of many adverse health outcomes caused by smoking are directly related to the duration and level of exposure to tobacco smoke" (U.S. Department of Health and Human Services 2010). Information on duration of smoking was not available for this analysis; however the data presented on the number of cigarettes smoked in the last 24 hours before the interview by male and female cigarette smokers provide a measure of the level of exposure to tobacco smoke.



**Countries Included in This Report**

## 2 Data and Methods

Data for this report were obtained from DHS surveys, which are nationally representative household surveys conducted in developing countries. The DHS project, initiated in 1984, has a key mandate to collect information on demographic, health, and nutrition indicators. Mainly funded by the United States Agency for International Development (USAID), the DHS has been administered in more than 90 developing countries around the world. In conducting a survey within a country, DHS staff works with an implementing agency (e.g., a National Statistics Office, Ministry of Health, or university) and provide technical assistance for the implementation of the survey, analysis, report writing, and dissemination.

The DHS uses a multi-stage, stratified sampling design with households as the sampling unit. Within each sample household, all women and men meeting the eligibility criteria are eligible to be interviewed. Because the surveys are not self-weighting, survey weights are calculated to account for unequal selection probabilities as well as survey non-response. With weights applied, survey findings represent the full target populations.

The DHS surveys include a household questionnaire, a women's questionnaire, and in most countries, a men's questionnaire. The household questionnaire is used to identify all usual household members and visitors in the selected households and to determine the eligibility of all household members for the individual women's and men's surveys. All three DHS questionnaires are implemented across countries with similar interviewer training, supervision, and implementation protocols. While the respondent for the household questionnaire can be any responsible adult in the household, the respondents for the woman's and man's questionnaires are the eligible individuals themselves.

The DHS questionnaires include a number of different sections that collect information on a wide range of population, reproductive, nutrition, and health-related issues. While household socioeconomic status information is collected using the household questionnaire, topics covered in the individual questionnaires include fertility; family planning; infant and child mortality; maternal health; child health; HIV/AIDS knowledge, attitudes, and behavior; malaria; and women's empowerment. A number of countries also include questions in the woman's and man's questionnaires assessing tobacco use and exposure to secondhand smoke. The current analysis uses DHS data from countries with information on self-reported current tobacco use by women and men.

### 2.1 Data

Data from 49 countries that conducted DHS surveys between 1999 and 2010 and that included questions on self-reported tobacco use were used for this report. In countries with multiple DHS surveys, the most recent data were used to provide the most up-to-date estimates of tobacco use. For the Peru 2004/08 continuous survey, only data from the last two rounds of the survey (2007/08) were used in order to describe the most recent situation in that country. The countries that are included in this report are regionally diverse, including 25 countries from sub-Saharan Africa, eight countries from North Africa/West Asia/Europe, two countries from Central Asia, eight countries from South and Southeast Asia, and six countries from Latin America and the Caribbean. Table 1 describes the countries included in this report, the sample sizes for each country survey, the year(s) of fieldwork, and the eligibility criteria for the surveys for women and men.<sup>1</sup>

---

<sup>1</sup> For more information about the DHS, including the methods used and questions administered, please visit the following website: <http://www.measuredhs.com/>

**Table 1. Summary of Demographic and Health Surveys included in this report, 1999-2010**

<b>Region and country</b>	<b>Year of survey</b>	<b>Number of men interviewed</b>	<b>Eligibility criteria for men interviewed</b>	<b>Number of women interviewed</b>	<b>Eligibility criteria for women interviewed</b>
<b>Sub-Saharan Africa</b>					
Benin	2006	na	na	17,794	all women 15-49
Burkina Faso	2003	na	na	12,477	all women 15-49
Cameroon	2004	na	na	10,656	all women 15-49
Congo, Democratic Republic	2007	na	na	9,995	all women 15-49
Ethiopia	2005	6,033	all men 15-59	14,070	all women 15-49
Ghana	2008	4,568	all men 15-59	4,916	all women 15-49
Guinea	2005	na	na	7,954	all women 15-49
Kenya	2008/09	3,465	all men 15-54	8,444	all women 15-49
Lesotho	2009	3,317	all men 15-59	7,624	all women 15-49
Liberia	2007	6,009	all men 15-49	7,092	all women 15-49
Madagascar	2008/09	8,586	all men 15-59	17,375	all women 15-49
Malawi	2004	3,261	all men 15-54	11,698	all women 15-49
Mali	2006	na	na	14,583	all women 15-49
Mozambique	2003	2,900	all men 15-64	12,418	all women 15-49
Namibia	2006/07	3,915	all men 15-49	9,804	all women 15-49
Niger	2006	na	na	9,223	all women 15-49
Nigeria	2008	15,486	all men 15-59	33,385	all women 15-49
Rwanda	2005	4,820	all men 15-59	11,321	all women 15-49
Senegal	2005	na	na	14,602	all women 15-49
Sierra Leone	2008	3,280	all men 15-59	7,374	all women 15-49
Swaziland	2006/07	4,156	all men 15-49	4,987	all women 15-49
Tanzania	2004/05	2,635	all men 15-49	10,329	all women 15-49
Uganda	2006	2,503	all men 15-54	8,531	all women 15-49
Zambia	2007	6,500	all men 15-59	7,146	all women 15-49
Zimbabwe	2005/06	7,175	all men 15-54	8,907	all women 15-49
<b>North Africa/West Asia/Europe</b>					
Albania	2008/09	3,013	all men 15-49	7,584	all women 15-49
Armenia	2005	1,447	all men 15-49	6,566	all women 15-49
Azerbaijan	2006	2,558	all men 15-59	na	na
Egypt <sup>1</sup>	2008	5,430	all men 15-59	5,824	all women 15-49
Jordan	2009	na	na	10,109	ever-married women 15-49
Moldova	2005	2,508	all men 15-59	7,440	all women 15-49
Turkey	2003	na	na	8,075	ever-married women 15-49
Ukraine	2007	3,178	all men 15-49	6,841	all women 15-49
<b>Central Asia</b>					
Kazakhstan	1999	na	na	4,800	all women 15-49
Uzbekistan	2002	2,333	all men 15-59	5,463	all women 15-49

*Continued...*

**Table 1—Continued**

<b>Region and country</b>	<b>Year of survey</b>	<b>Number of men interviewed</b>	<b>Eligibility criteria for men interviewed</b>	<b>Number of women interviewed</b>	<b>Eligibility criteria for women interviewed</b>
<b>South and Southeast Asia</b>					
Bangladesh	2007	3,771	ever-married men 15-54	na	Na
Cambodia	2005	na	na	16,823	all women 15-49
India	2005/06	74,369	all men 15-54	124,385	all women 15-49
Indonesia	2007	na	na	32,895	ever-married women 15-49
Maldives <sup>2</sup>	2009	1,727	ever-married men 15-64	7,131	ever-married women 15-49
Nepal	2006	4,397	all men 15-59	10,793	all women 15-49
Philippines	2008	na	na	13,594	all women 15-49
Timor-Leste	2009/10	4,076	all men 15-49	13,137	all women 15-49
<b>Latin America/Caribbean</b>					
Bolivia	2008	6,054	all men 15-64	16,939	all women 15-49
Dominican Republic	2007	27,975	all men 15-59	27,195	all women 15-49
Haiti	2005/06	4,958	all men 15-59	10,757	all women 15-49
Honduras	2005/06	na	na	19,948	all women 15-49
Nicaragua	2001	na	na	13,060	all women 15-49
Peru	2007/08	na	na	22,558	all women 15-49

na: Not available

<sup>1</sup>While the Egypt DHS includes women age 15-59, this analysis was restricted to those age 15-49.

<sup>2</sup>The response rate for the men's survey in the 2009 Maldives DHS was inordinately low (interviews were completed with only 54 percent of the men who were eligible for interview).

With the exception of Jordan, which is an interim survey, all of the surveys that are included in this report are standard DHS surveys. Interim surveys are also nationally representative, but usually involve shorter questionnaires and smaller sample sizes than standard DHS surveys. For the analysis that examined the sociodemographic correlates of smoking, Jordan has missing information because some of the covariates were not assessed in its survey. For almost all of the countries, the estimates of tobacco use that are presented in this report are based on data collected from the individual women's and men's questionnaires. In Egypt, however, the estimates are based on data collected from women and men in the households selected for the Health Issues sub-sample, which was administered to one-quarter of the households selected for the DHS survey.

In most of the countries, all women age 15-49 in the selected households were eligible for the individual women's interview. Thus, in most of the countries, the tobacco use estimates for women describe the prevalence among all women age 15-49. In four countries included in this report, namely Jordan, Turkey, Indonesia, and the Maldives, only ever-married women age 15-49 were eligible for the interview. Since tobacco use is often higher for ever-married women than for never married women (see Appendix Table A.2), caution should be used when comparing estimates for these four countries with estimates for countries that did not restrict eligibility based on marital status. The Egypt survey subsample on health topics was the only survey for women that used different age eligibility criteria; women age 15-59 were interviewed. However, since this was the only country that differed on this characteristic, the

tobacco use estimates for Egyptian women are only presented for those age 15-49 to reflect the age criteria used in all other countries.

The eligibility criteria for the men's questionnaire varied across the countries. The lower age cutoff for men in all of the countries was 15 years of age, while the upper age cutoff varied from 49 to 64 years. To allow comparisons by sex, estimates of tobacco use for men are given for those age 15-49 to reflect the age range of the women's surveys. Estimates for men are also presented for the full age range within each of the countries. While most countries interviewed men of all marital status groups, Bangladesh and the Maldives only interviewed ever-married men. Again, caution should be used when comparing estimates of tobacco use in countries with different eligibility criteria given that tobacco use varies by age and by marital status in most of the countries.

Two countries that are examined in this report included the tobacco use questions in the men's questionnaire but did not include them in the women's questionnaire (Azerbaijan, Bangladesh). Therefore, no estimates of tobacco use are presented for women in these countries. A larger number of countries either did not include the tobacco use questions in the men's questionnaire (Benin, Burkina Faso, Cambodia, Cameroon, Democratic Republic of Congo, Guinea, Kazakhstan, Mali, Niger, Senegal) or did not interview men at all (Haiti, Honduras, Jordan, Nicaragua, Peru, Philippines, Turkey). Therefore, it was not possible to estimate tobacco use among men in these countries. Although tobacco use for men was assessed in the Indonesia DHS, these results were excluded from the report since the tobacco questions were only asked of men with young children.

## 2.2 Definition of Variables

### *Tobacco use*

In a large proportion of the countries, a standard set of tobacco use questions was included in the women's and men's questionnaires. However, depending on the version of the DHS<sup>2</sup> administered and the specific country, some of the questions were asked in slightly different ways. The specific questions that were used to assess current cigarette use, current use of other smoked tobacco, and current use of smokeless tobacco are described in the sections that follow.

***Currently smokes manufactured cigarettes.*** The specific DHS questions that were used to assess current manufactured (i.e., commercial) cigarette use in each of the countries are presented in Table 2. In over half of the countries studied, respondents were explicitly asked "Do you currently smoke cigarettes?" Those who responded 'yes' to this question were defined as current manufactured cigarette smokers, whereas those who responded 'no' were defined as current non-smokers.

In most of the remaining countries, respondents were first asked whether they currently smoked cigarettes or tobacco. There are some slight variations in the wording of this question across the countries. Those who responded in the affirmative to this question were then asked to report the type(s) of tobacco that they smoked or used. The interviewer did not specifically probe about the use of cigarettes. Those who spontaneously reported smoking cigarettes were identified as current cigarette smokers, whereas those who did not report smoking cigarettes were identified as current non-smokers.

The Turkey 2003 DHS included one question asking respondents whether they ever smoked or currently smoke cigarettes and a follow-up question for smokers on the frequency with which they smoke on average. Those who reported currently smoking were identified as current smokers, whereas those who

---

<sup>2</sup> DHS questionnaires typically undergo a review every five years or so. This review can result in some questions being changed or dropped, and others added.

reported either having never smoked or having smoked in the past but not currently were identified as non-smokers.

For the most part, the questions assessing current cigarette use are comparable across the countries. However, in three of the countries, the current cigarette use variable has a slightly different meaning. In India and Bangladesh, respondents were asked if they currently used ‘cigarettes or *bidis*’. It was not possible to disaggregate these forms of tobacco in these countries and therefore the estimates that are presented reflect the use of either or both of these types of cigarettes. In Uzbekistan, only those who smoked at least 100 cigarettes during their entire life were asked whether they currently smoked cigarettes. Therefore, it is possible that the prevalence of current cigarette use for Uzbekistan is a slight underestimate since it might exclude those who recently initiated cigarette use as well as those who smoke infrequently.

**Table 2. DHS questions assessing current cigarette use**

<b>Questions</b>	<b>Countries</b>
Do you currently smoke cigarettes?	Albania 2008/09
Do you smoke cigarettes? (Jordan)	Armenia 2005
	Azerbaijan 2006
	Bolivia 2008
	Cambodia 2005
	Dominican Republic 2007
	Egypt 2008
	Ethiopia 2005
	Ghana 2008
	Haiti 2005/06
	Honduras 2005/06
	Indonesia 2007
	Jordan 2009
	Kenya 2008/09
	Lesotho 2009
	Liberia 2007
	Madagascar 2008/09
	Maldives 2009
	Moldova 2005
	Nepal 2006
	Nigeria 2008
	Peru 2007/08
	Philippines 2008
	Sierra Leone 2008
	Swaziland 2006/07
	Timor-Leste 2009/10
	Uganda 2006
	Ukraine 2007
	Zambia 2007
	Zimbabwe 2005/06

*Continued...*

**Table 2—Continued**

Questions	Countries
Do you currently smoke cigarettes or tobacco?	Burkina Faso 2003
IF YES: What do you smoke?	Democratic Republic of Congo 2007
IF YES: What type of tobacco do you smoke? (Kazakhstan, Tanzania)	Guinea 2005
	Kazakhstan 1999
	Rwanda 2005
	Senegal 2005
	Tanzania 2004/05
Do you currently smoke cigarettes or consume tobacco?	Cameroon 2004
IF YES: What type of tobacco do you consume?	
Do you currently smoke cigarettes or use tobacco?	Malawi 2004
IF YES: What type of tobacco do you use?	
Currently do you chew or smoke or consume cigarettes or tobacco?	Benin 2006
IF YES: What do you chew, consume or smoke?	
Do you currently smoke cigarettes or chew tobacco?	Mali 2006
IF YES: What do you smoke or chew?	Niger 2006
Do you currently smoke cigarettes or consume another kind of tobacco?	Mozambique 2003
Do you currently smoke any type of tobacco?	Namibia 2006/07
Do you smoke cigarettes or <i>puro</i> (cigar) or pipe currently?	Nicaragua 2001
Have you ever smoked cigarettes or do you currently smoke? (IF YES) How frequent?	Turkey 2003
Have you smoked at least 100 cigarettes during your entire life? Do you smoke cigarettes now?	Uzbekistan 2002
Do you currently smoke cigarettes or <i>bidis</i> ?	Bangladesh 2007
	India 2005/06

***Currently using other types of smoked tobacco.*** Other types of smoked tobacco (excluding manufactured cigarettes) include pipes, cigars, hand-rolled cigarettes, *kreteks*, and water pipes (e.g., *qalyan*, *shisha*, *nargila*, *hookah*). The specific DHS questions that were used to assess these other types of smoked tobacco are presented in Table 3 and are described below. These other forms of smoked tobacco were not assessed in Bolivia, Honduras, Peru, Turkey, and Uzbekistan.

In about half of the countries studied, respondents were first asked whether they currently smoke cigarettes, after which they were asked about their use of other types of tobacco. Specifically, respondents were asked “Do you currently smoke or use any other type of tobacco?” Those who reported yes to this question were then asked to specify the type(s) of tobacco that they currently smoke or use. In the majority of the remaining countries, respondents were first asked whether they currently smoke or use

cigarettes or tobacco. There are some slight variations in the wording of this question across the countries. Those who responded yes were then asked to report the specific type(s) of tobacco that they smoke or use. In almost all of the countries, the interviewer did not probe respondents about their use of specific types of tobacco. Rather, they noted all types of smoked tobacco that were spontaneously reported by the respondent. Those who reported having used at least one type of smoked tobacco other than cigarettes (i.e., pipes, cigars, hand-rolled cigarettes, water pipes) were identified as current users of other types of smoked tobacco, whereas those who did not report using any type of smoked tobacco (not including cigarettes) were identified as current non-users.

In Jordan, respondents were asked whether they smoked *nargila* (i.e., water pipe), and therefore the prevalence of ‘other smoked tobacco’ for Jordan only reflects this one type of tobacco.

It should be noted that not all of the DHS datasets for the countries included the same set of variables for the various types of smoked tobacco. In most of the countries, a variable indicating the use of a pipe was present in the dataset. In countries where certain types of smoked tobacco were common (e.g., hand-rolled cigarettes, water pipes), variables for these types of tobacco may have been included in the dataset. However, in other countries, these forms of smoked tobacco may have been coded as ‘other’ tobacco. Similarly, some of the more recent surveys specifically included a variable indicating cigar use in the dataset, while for some of the older surveys, cigar use may have been coded as ‘other’ tobacco and therefore would not have been captured specifically as cigar use in this analysis.

**Table 3. DHS questions assessing current use of other types of smoked tobacco (excluding cigarettes)**

Questions	Countries
Do you currently smoke or use any other type of tobacco?	Albania 2008/09
What (other) type of tobacco do you currently smoke or use?	Armenia 2005
	Azerbaijan 2006
Do you currently smoke or use tobacco in any other form? (India)	Bangladesh 2007
In what other form do you currently smoke or use tobacco? (India)	Cambodia 2005
	Dominican Republic 2007
	Egypt 2008
	Ghana 2008
	Haiti 2005/06
	India 2005/06
	Kenya 2008/09
	Lesotho 2009
	Liberia 2007
	Madagascar 2008/09
	Maldives 2009
	Moldova 2005
	Nepal 2006
	Nigeria 2008
	Philippines 2008
	Sierra Leone 2008
	Swaziland 2006/07
	Timor-Leste 2009/10

*Continued...*

**Table 3—Continued**

Questions	Countries
	Uganda 2006 Ukraine 2007 Zambia 2007 Zimbabwe 2005/06
Do you currently smoke cigarettes or tobacco? IF YES: What do you smoke? IF YES: What type of tobacco do you smoke? (Kazakhstan, Tanzania)	Burkina Faso 2003 Democratic Republic of Congo 2007 Guinea 2005 Kazakhstan 1999 Rwanda 2005 Senegal 2005 Tanzania 2004/05
Do you currently smoke cigarettes or consume tobacco? IF YES: What type of tobacco do you consume?	Cameroon 2004
Do you currently smoke cigarettes or use tobacco? IF YES: What type of tobacco do you use?	Malawi 2004
Currently do you chew or smoke or consume cigarettes or tobacco. IF YES: What do you chew, consume or smoke?	Benin 2006
Do you currently smoke cigarettes or chew tobacco? IF YES: What do you smoke or chew?	Mali 2006 Niger 2006
Do you currently smoke cigarettes or consume another kind of tobacco?	Mozambique 2003
Do you currently smoke any type of tobacco?	Namibia 2006/07
Do you smoke cigarettes, or pure, or pipe currently?	Nicaragua 2001
Do you currently smoke cigarettes? IF YES: What type of cigarettes do you smoke?	Indonesia 2007
Do you currently smoke or use any other type of tobacco like <i>gaya</i> , <i>shisha</i> or <i>suret</i> ? What (other) type of tobacco do you currently smoke or use?	Ethiopia 2005
Do you smoke <i>nargila</i> ?	Jordan 2007

**Currently using smokeless tobacco.** Smokeless tobacco includes chewing tobacco and snuff. The specific DHS questions that were used to assess the use of smokeless tobacco are presented in Table 4. This information was either not collected or was not specifically coded in the following countries: Albania, Benin, Bolivia, Burkina Faso, Cameroon, Guinea, Honduras, Indonesia, Jordan, Kazakhstan, Mali, Mozambique, Nicaragua, Niger, Peru, Rwanda, Senegal, Tanzania, and Turkey.

In the majority of the countries studied, respondents were first asked whether they currently smoke cigarettes, after which they were asked about their use of other types of tobacco. Specifically,

respondents were asked “Do you currently smoke or use any other type of tobacco?” Those who reported yes to this question were then asked to specify the type(s) of tobacco that they currently smoke or use. In the majority of the remaining countries, respondents were first asked whether they currently smoke or use cigarettes or tobacco. There are some slight variations in the wording of this question across the countries. Those who responded yes to this question were then asked to report the specific type(s) of tobacco that they smoke or use. In almost all of the countries, the interviewer did not probe about their use of specific types of tobacco. Rather, they noted all types of smokeless tobacco that were spontaneously reported by the respondent. Those who reported having used snuff, chewing tobacco, or both were identified as current users, whereas those who did not report using any type of smokeless tobacco were identified as non-users.

In Uzbekistan, respondents were specifically asked whether they currently used *nas* (i.e., *naswhy*, a homemade chewing tobacco made of tobacco, butter, and chalk (slaked lime)), and therefore the prevalence of smokeless tobacco for Uzbekistan only reflects this one type of tobacco.

**Table 4. DHS questions assessing current use of smokeless tobacco**

<b>Questions</b>	<b>Countries</b>
Do you currently smoke or use any other type of tobacco?	Armenia 2005
What (other) type of tobacco do you currently smoke or use?	Azerbaijan 2006
	Bangladesh 2007
Do you currently smoke or use tobacco in any other form? (India)	Cambodia 2005
In what other form do you currently smoke or use tobacco? (India)	Dominican Republic 2007
	Egypt 2008
	Ghana 2008
	Haiti 2005/06
	India 2005/06
	Kenya 2008/09
	Lesotho 2009
	Liberia 2007
	Madagascar 2008/09
	Maldives 2009
	Moldova 2005
	Nepal 2006
	Nigeria 2008
	Philippines 2008
	Sierra Leone 2008
	Swaziland 2006/07
	Timor-Leste 2009/10
	Uganda 2006
	Ukraine 2007
	Zambia 2007
	Zimbabwe 2005/06
Do you currently smoke cigarettes or tobacco?	Democratic Republic of Congo 2007
IF YES: What do you smoke?	

*Continued...*

**Table 4—Continued**

<b>Questions</b>	<b>Countries</b>
Do you currently smoke cigarettes or use tobacco? IF YES: What type of tobacco do you use?	Malawi 2004
Do you currently smoke any type of tobacco?	Namibia 2006/07
Do you currently smoke or use any other type of tobacco like <i>gaya</i> , <i>shisha</i> or <i>suret</i> ? What (other) type of tobacco do you currently smoke or use?	Ethiopia 2005
Do you use <i>nas</i> now?	Uzbekistan 2002

***Currently using any tobacco.*** Respondents who reported currently using cigarettes, other types of smoked tobacco, smokeless tobacco, or any other type of tobacco were identified as current tobacco users. Those who did not report any type of tobacco use were identified as non-users. Countries that only assessed the use of cigarettes were not included in the analysis of any tobacco use.

***Number of cigarettes smoked in the last 24 hours.*** The questions assessing the number of cigarettes smoked in the last 24 hours are presented in Table 5. This question was excluded in Malawi and Jordan. In the vast majority of the countries, the same question was included in the survey. Respondents who reported currently smoking cigarettes were asked “In the last 24 hours, how many cigarettes did you smoke?”

In five of the countries, there were slight variations in the wording of this question. In Namibia, respondents were asked to report the number of cigarettes, including rolled cigarettes, that they smoked in the last 24 hours. It was not possible to disaggregate cigarettes and rolled cigarettes; therefore, the estimates that are presented include both types of cigarettes. Similarly, in India, respondents were asked about the number of cigarettes or *bidis* (i.e., hand-rolled cigarettes) that they smoked in the last 24 hours. Again, it was not possible to disaggregate these types of cigarettes in the analysis. Although Bangladesh also asked about the number of cigarettes and *bidis* smoked in the last 24 hours, they were coded separately in the dataset and therefore only data assessing the number of cigarettes smoked are presented. In Turkey and Uzbekistan, respondents were asked about the average number of cigarettes smoked per day, rather than the number smoked in the last 24 hours. Finally, data for Kazakhstan were excluded from this analysis since respondents were asked about the number of times they smoked in the last 24 hours, rather than the number of cigarettes they smoked.

For ease of presentation, the number of cigarettes smoked in the last 24 hours was recoded into a categorical variable with the following categories: 0, 1-2, 3-5, 6-9, 10 or more, and don’t know/missing. For all countries, non-smokers are excluded from this analysis.

**Table 5. DHS questions assessing number of cigarettes smoked in the last 24 hours**

<b>Questions</b>	<b>Countries</b>
In the last 24 hours, how many cigarettes did you smoke?	Albania 2008/09 Armenia 2005
In the last 24 hours, how many sticks of cigarettes did you smoke? (Ghana)	Azerbaijan 2006 Bangladesh 2007 Benin 2006 Bolivia 2008 Burkina Faso 2003 Cambodia 2005 Cameroon 2004 Democratic Republic of Congo 2007 Dominican Republic 2007 Egypt 2008 Ethiopia 2005 Ghana 2008 Guinea 2005 Haiti 2005/06 Honduras 2005/06 Indonesia 2007 Kenya 2008/09 Lesotho 2009 Liberia 2007 Madagascar 2008/09 Maldives 2009 Mali 2006 Moldova 2005 Mozambique 2003 Nepal 2006 Nicaragua 2001 Niger 2006 Nigeria 2008 Peru 2007/08 Philippines 2008 Rwanda 2005 Senegal 2005 Sierra Leone 2008 Swaziland 2006/07 Tanzania 2004/05 Timor-Leste 2009/10 Uganda 2006 Ukraine 2007 Zambia 2007 Zimbabwe 2005/06

*Continued...*

**Table 5—Continued**

<b>Questions</b>	<b>Countries</b>
In the last 24 hours, how many cigarettes, including rolled cigarettes, did you smoke?	Namibia 2006/07
In the last 24 hours, how many cigarettes or <i>bidis</i> did you smoke?	India 2005/06
How many cigarettes do you smoke per day on the average?	Turkey 2003
About how many cigarettes do you smoke per day?	Uzbekistan 2002
In the last 24 hours, how many times did you smoke?	Kazakhstan 1999

### ***Sociodemographic characteristics***

The sociodemographic characteristics that were examined in this analysis were selected based on previous research showing differences in cigarette use across these factors. These characteristics include age group of the respondent (15-24, 25-34, 35-49, 50 years and over), marital status (never married, currently married, formerly married), highest level of education (no education, primary, secondary, higher), urban-rural area, employment status in the last 12 months for women (yes vs. no), cash earnings for women (yes vs. no), occupational status for men (not working, professional/technical/managerial, clerical, sales and services, skilled manual, unskilled manual, agriculture), household wealth quintile (described below), maternity status for women (pregnant, breastfeeding, neither), exposure to mass media (described below), and migration status for men (described below).

The wealth status of the household was determined using a wealth index constructed separately for each country. Specifically, the wealth index was constructed using household asset data, including ownership of a number of consumer items such as a television, a bicycle or a car, as well as dwelling characteristics such as source of drinking water, sanitation facilities, and type of flooring material. Each asset was assigned a weight generated through principal components analysis. The resulting asset scores were standardized in relation to a normal distribution with a mean of zero and a standard deviation of one (Gwatkin, Rutstein et al. 2000). Each household was then assigned a score for each asset, and the scores were summed for each household. Individuals were ranked according to the score of the household in which they were interviewed. Within each country, the sample was then divided into quintiles from one (lowest) to five (highest). This wealth index is consistent with expenditure and income measures and has been used in a large number of countries (Rutstein and Johnson 2004).

A number of variables assessing exposure to mass media were examined, including whether or not the respondents read newspapers, watched television, and listened to the radio at least once a week. Two binary variables were also created to describe the amount or diversity of exposure to different types of media. The first binary variable differentiated those who used all three forms of media at least once a week from those who did not use all three forms of media at least once a week. The second binary variable differentiated those who used any form of media at least once a week from those who did not use any form of media at least once a week. Finally, migration status for men was assessed based on the number of times men reported that they slept away from home in the last 12 months (none, 1-4, 5 or more).

## 2.3 Analyses

The first analysis describes the proportion of the population within each of the countries that reported currently using manufactured cigarettes, other types of smoked tobacco, smokeless tobacco, and any type of tobacco. Analyses were conducted separately for women and men. To examine the association between the sociodemographic characteristics and current cigarette use, chi-square tests were conducted. Finally, the number of cigarettes smoked in the last 24 hours was examined for current cigarette smokers within each of the countries. All analyses were weighted to ensure that nationally representative estimates were obtained. The analyses also estimate the standard errors taking into account the clustered and stratified sampling design using Stata's svy commands. All analyses were conducted using Stata 11.2 (StataCorp 2009).<sup>3</sup>

---

<sup>3</sup> The use of trade names is for identification only and does not imply endorsement by the Public Health Service, U.S. Department of Health and Human Services.



### 3 Results: Prevalence of Tobacco Use among Women and Men

This section describes the proportion of women and men age 15-49 who report currently using manufactured cigarettes, other smoked tobacco products, and smokeless tobacco across the countries (Tables 6a for men and Table 6b for women). The results for the entire age range of men interviewed in each of the countries are shown in Appendix Table A4. These estimates are weighted and are nationally representative of the population within each country.

#### 3.1 Prevalence of Any Tobacco Use

Any type of tobacco includes manufactured cigarettes, other types of smoked tobacco (hand-rolled cigarettes or “roll-your-own” (RYO), pipe, cigars, *bidis*, *kreteks*, water pipe), smokeless tobacco (chewing tobacco or snuff), and any other type of tobacco reported by respondents. Countries that only assessed the use of cigarettes are not included in this section, but are included in the section on cigarette use.

##### *Prevalence of any tobacco use among men*

The prevalence of any tobacco use among men age 15-49 varies widely worldwide, from a low of 7 percent in Ghana to a high of 69 percent in Bangladesh and Timor-Leste (Table 6a). These results are also illustrated in Figure 1. In sub-Saharan Africa, tobacco use was lowest in Ghana (7 percent), Ethiopia (11 percent), and Nigeria (12 percent) and was highest in Madagascar (47 percent), Sierra Leone (37 percent), and Lesotho (34 percent). In fact, of all of the countries examined in this report, the countries with the lowest prevalence of tobacco use for men are found in sub-Saharan Africa. In no country in sub-Saharan Africa did the prevalence of tobacco use among men exceed 50 percent. Madagascar is the only country in sub-Saharan Africa where the prevalence exceeded 40 percent.

In contrast to countries in sub-Saharan Africa, which had more variable prevalence estimates of tobacco use for men, the countries examined in North Africa/West Asia/Europe had a consistently high prevalence of tobacco use. At least 40 percent of men in these countries reported using one or more forms of tobacco. The prevalence of tobacco use among men age 15-49 in these countries ranged from a low of 43 percent in Albania and Egypt to a high of 61 percent in Armenia.

Tobacco use for men was also high, exceeding 50 percent, in the one country examined in Central Asia (Uzbekistan, 51 percent), as well as in all countries examined in South and Southeast Asia, (ranging from 53 percent in the Maldives and Nepal to 69 percent in Bangladesh and Timor-Leste). Of all of the countries examined in this report, the highest prevalence of current tobacco use for men was found in Bangladesh and Timor-Leste, with about 7 out of 10 men age 15-49 reporting currently using at least one form of tobacco. Note that for Bangladesh and the Maldives, only ever-married men were interviewed. Given that the prevalence of smoking is usually higher for ever-married men than for never-married men (see Appendix Table A1), the estimates for these two countries are likely to be higher than would be the case if never-married men had also been included in the sample.

Finally, in Latin America and the Caribbean, the Dominican Republic was the only country in which ‘any tobacco’ use was estimated for men. Relatively few men in the Dominican Republic reported using any type of tobacco (12 percent). As will be discussed in the section on manufactured cigarette use, a larger proportion of men in Bolivia reported smoking manufactured cigarettes (41 percent).

**Table 6a. Percentage of men age 15-49 who currently smoke cigarettes or use other tobacco products by country and region, 1999-2010**

Region and Country	Year of survey	Percent using any tobacco	Percent using manufactured cigarettes (95% CI)	Percent using other smoked tobacco (95% CI)	Percent using smokeless tobacco (95% CI)				
<b>Sub-Saharan Africa</b>									
Ethiopia	2005	10.6	(9.3-11.9)	8.1	(7.0-9.3)	1.0	(0.5-1.5)	3.0	(2.3-3.7)
Ghana	2008	6.8	(5.9-7.6)	6.2	(5.4-7.0)	0.6	(0.3-0.8)	0.9	(0.6-1.3)
Kenya	2008/09	18.9	(16.5-21.2)	17.5	(15.2-19.8)	1.1	(0.4-1.8)	1.8	(1.2-2.4)
Lesotho	2009	34.5	(32.4-36.6)	34.5	(32.4-36.6)	5.7	(4.8-6.6)	1.3	(0.8-1.7)
Liberia	2007	16.2	(14.6-17.8)	15.2	(13.6-16.7)	0.8	(0.4-1.2)	2.3	(1.6-3.1)
Madagascar	2008/09	47.3	(45.6-49.0)	28.2	(26.7-29.7)	1.7	(1.3-2.1)	22.6	(20.9-24.3)
Malawi	2004	20.7	(18.6-22.7)	16.3	(14.5-18.1)	0.1	(0.0-0.2)	0.3	(0.2-0.5)
Mozambique	2003	24.3	(21.9-26.6)	14.2	(12.4-16.0)	0.2	(0.0-0.6)	na	na
Namibia	2006/07	23.7	(21.8-25.5)	20.9	(19.2-22.7)	0.9	(0.6-1.2)	1.8	(1.3-2.4)
Nigeria	2008	11.5	(10.7-12.3)	8.9	(8.2-9.6)	0.7	(0.5-0.9)	3.2	(2.7-3.6)
Rwanda	2005	19.4	(18.0-20.8)	13.9	(12.6-15.1)	3.4	(2.8-4.1)	na	na
Sierra Leone	2008	37.4	(35.1-39.7)	36.7	(34.5-38.9)	0.4	(0.1-0.7)	1.3	(0.8-1.9)
Swaziland	2006/07	16.7	(15.2-18.1)	13.8	(12.5-15.2)	1.4	(0.9-1.9)	2.8	(2.3-3.4)
Tanzania	2004/05	22.0	(19.8-24.3)	21.0	(18.8-23.3)	0.4	(0.1-0.6)	na	na
Uganda	2006	21.7	(19.4-24.0)	18.1	(15.9-20.2)	1.8	(1.1-2.6)	3.9	(3.1-4.8)
Zambia	2007	23.6	(22.0-25.1)	23.2	(21.7-24.7)	1.2	(0.8-1.6)	0.2	(0.1-0.4)
Zimbabwe	2005/06	22.8	(21.5-24.1)	21.3	(20.0-22.6)	3.0	(2.5-3.5)	1.9	(1.6-2.3)
<b>North Africa/West Asia/Europe</b>									
Albania	2008/09	42.5	(40.4-44.6)	42.5	(40.4-44.6)	2.1	(1.2-2.9)	na	na
Armenia	2005	60.6	(56.9-64.4)	60.6	(56.8-64.4)	0.9	(0.0-2.1)	1.8	(0.9-2.8)
Azerbaijan	2006	49.1	(46.5-51.7)	49.0	(46.4-51.6)	0.5	(0.1-0.9)	0.3	(0.1-0.5)
Egypt	2008	42.6	(40.7-44.5)	37.6	(35.7-39.4)	8.4	(7.4-9.4)	0.2	(0.1-0.4)
Moldova	2005	52.3	(49.7-55.0)	52.3	(49.7-55.0)	0.1	(0.0-0.2)	0.1	(0.0-0.3)
Ukraine	2007	52.2	(49.3-55.2)	51.6	(48.6-54.6)	3.6	(2.8-4.4)	0.3	(0.1-0.4)

Continued...

**Table 6a—Continued**

Region and Country	Year of survey	Percent using any tobacco (95% CI)	Percent using manufactured cigarettes (95% CI)	Percent using other smoked tobacco (95% CI)	Percent using smokeless tobacco (95% CI)
<b>Central Asia</b>					
Uzbekistan <sup>1</sup>	2002	51.2 (48.0-54.4)	23.8 (21.4-26.2)	na	31.8 (28.5-35.0)
<b>South and Southeast Asia</b>					
Bangladesh†	2007	69.3 (67.2-71.5)	60.1 (57.8-62.4)	0.0 (–)	19.8 (17.6-21.9)
India <sup>2</sup>	2005/06	57.0 (56.3-57.7)	32.7 (32.0-33.4)	0.6 (0.5-0.8)	36.9 (36.1-37.7)
Maldives <sup>3</sup>	2009	53.0 (49.2-56.9)	49.1 (45.5-52.8)	0.3 (0.0-0.6)	6.0 (4.6-7.4)
Nepal	2006	53.4 (51.2-55.6)	30.2 (27.4-33.0)	1.4 (0.8-2.0)	36.2 (34.3-38.2)
Timor-Leste	2009/10	69.5 (67.7-71.3)	65.7 (63.9-67.6)	23.2 (21.5-24.9)	2.5 (1.8-3.1)
<b>Latin America/Caribbean</b>					
Bolivia	2008	na	na	na	na
Dominican Republic	2007	11.7 (10.9-12.4)	10.2 (9.5-10.8)	0.1 (0.0-0.1)	1.9 (1.6-2.2)

(--) indicates that no respondents used that form of tobacco and therefore confidence intervals are not estimated.

na: Not available

<sup>1</sup> The Uzbekistan survey only assessed current smoking status if respondents ever smoked at least 100 cigarettes in their entire life.

<sup>2</sup> The Bangladesh and India surveys asked about smoking cigarettes or *bidis*.

<sup>3</sup> The response rate for the men's survey in the 2009 Maldives DHS was inordinately low (interviews were completed with only 54 percent of the men who were eligible for interview).

**Table 6b. Percentage of women age 15-49 who currently smoke cigarettes or use other tobacco products by country and region, 1999-2010**

Region and Country	Year of survey	Percent using any tobacco	Percent using manufactured cigarettes (95% CI)	Percent using other smoked tobacco (95% CI)	Percent using smokeless tobacco (95% CI)
<b>Sub-Saharan Africa</b>					
Benin	2006	2.3	(1.9-2.7)	0.1	(0.0-0.1)
Burkina Faso	2003	5.7	(5.0-6.4)	0.1	(0.0-0.1)
Cameroon	2004	1.9	(1.6-2.2)	0.7	(0.6-0.9)
Congo Democratic Republic	2007	3.0	(1.9-4.0)	0.6	(0.3-0.9)
Ethiopia	2005	1.4	(0.9-1.9)	0.2	(0.1-0.3)
Ghana	2008	0.3	(0.2-0.5)	0.2	(0.0-0.3)
Guinea	2005	1.4	(1.0-1.8)	0.8	(0.4-1.1)
Kenya	2008/09	1.6	(0.9-2.3)	0.3	(0.2-0.4)
Lesotho	2009	9.4	(8.7-10.2)	0.2	(0.1-0.3)
Liberia	2007	3.1	(2.5-3.8)	1.0	(0.7-1.3)
Madagascar	2008/09	21.0	(19.6-22.4)	1.5	(1.2-1.9)
Malawi	2004	1.8	(1.5-2.1)	0.3	(0.2-0.4)
Mali	2006	2.3	(1.5-3.1)	0.1	(0.0-0.2)
Mozambique	2003	7.1	(6.3-8.0)	1.6	(1.1-2.1)
Namibia	2006/07	8.2	(7.3-9.1)	5.3	(4.5-6.1)
Niger	2006	2.5	(1.7-3.2)	0.1	(0.0-0.2)
Nigeria	2008	0.7	(0.5-0.8)	0.2	(0.1-0.2)
Rwanda	2005	4.6	(4.1-5.1)	0.3	(0.2-0.4)
Senegal	2005	0.5	(0.3-0.7)	0.4	(0.2-0.6)
Sierra Leone	2008	10.4	(9.4-11.3)	6.0	(5.4-6.7)
Swaziland	2006/07	2.1	(1.7-2.6)	1.1	(0.8-1.4)
Tanzania	2004/05	1.5	(1.1-1.8)	0.5	(0.3-0.7)
Uganda	2006	3.8	(3.2-4.4)	0.9	(0.6-1.2)
Zambia	2007	1.7	(1.3-2.2)	0.7	(0.5-1.0)
Zimbabwe	2005/06	0.9	(0.7-1.2)	0.4	(0.2-0.6)
				0.2	(0.0-0.3)
				0.1	(0.0-0.1)
				0.0	(0.0-0.0)
				0.1	(0.0-0.1)
				0.2	(0.1-0.3)
				0.7	(0.4-1.1)
				0.0	(--)
				0.0	(--)
				0.0	(0.0-0.1)
				0.0	(0.0-0.0)
				0.0	(0.0-0.0)
				0.1	(0.0-0.2)
				0.0	(0.0-0.0)
				0.1	(0.0-0.1)
				0.0	(--)
				0.0	(--)
				0.5	(0.4-0.7)
				0.0	(0.0-0.1)
				0.1	(0.0-0.1)
				2.5	(2.2-2.8)
				0.0	(0.0-0.1)
				0.2	(0.1-0.4)
				0.1	(0.0-0.1)
				0.1	(0.0-0.1)
				2.6	(2.1-3.2)
				0.1	(0.0-0.2)
				0.5	(0.4-0.7)
				1.2	(0.8-1.6)
				0.5	(0.4-0.7)

Continued...

**Table 6b—Continued**

Region and Country	Year of survey	Percent using any tobacco	Percent using manufactured cigarettes	Percent using other smoked tobacco	Percent using smokeless tobacco	95% CI	95% CI
<b>North Africa/West Asia/Europe</b>							
Albania	2008/09	4.2	4.2	0.0	na	(0.0-0.0)	na
Armenia	2005	1.7	1.7	0.0	0.0	(--)	(0.0-0.0)
Egypt	2008	0.7	0.6	0.2	0.0	(0.1-0.3)	(0.0-0.0)
Jordan	2009	12.0	8.7	5.5	na	(4.6-6.3)	na
Moldova	2005	7.2	7.1	0.0	0.0	(0.0-0.0)	(0.0-0.1)
Turkey	2003	na	27.7	na	na	na	na
Ukraine	2007	15.3	15.0	2.9	0.0	(2.1-3.6)	(--)
<b>Central Asia</b>							
Kazakhstan	1999	8.6	8.5	0.0	na	(0.0-0.0)	na
Uzbekistan <sup>1</sup>	2002	1.1	0.9	na	0.2	na	(0.1-0.4)
<b>South and Southeast Asia</b>							
Cambodia	2005	10.8	3.6	0.1	7.5	(0.1-0.2)	(6.8-8.3)
India <sup>2</sup>	2005/06	10.8	1.4	0.2	9.0	(0.1-0.2)	(8.6-9.4)
Indonesia	2007	3.0	2.6	0.0	na	(0.0-0.0)	na
Maldives	2009	8.8	2.3	2.6	4.2	(2.1-3.0)	(3.5-5.0)
Nepal	2006	19.6	15.2	2.0	5.0	(0.9-3.1)	(4.1-5.8)
Philippines	2008	5.5	5.1	1.9	0.3	(1.5-2.2)	(0.2-0.4)
Timor-Leste	2009/10	4.7	2.9	1.4	1.9	(1.2-1.7)	(1.7-2.2)
<b>Latin America/Caribbean</b>							
Bolivia	2008	na	8.7	na	na	na	na
Dominican Republic	2007	6.7	6.3	0.1	0.3	(0.0-0.1)	(0.2-0.4)
Haiti	2005/06	5.6	3.2	0.8	2.5	(0.6-1.1)	(2.0-3.1)
Honduras	2005/06	na	2.3	na	na	na	na
Nicaragua	2001	5.3	5.2	0.0	na	(0.0-0.0)	na
Peru	2007/08	na	6.9	na	na	na	na

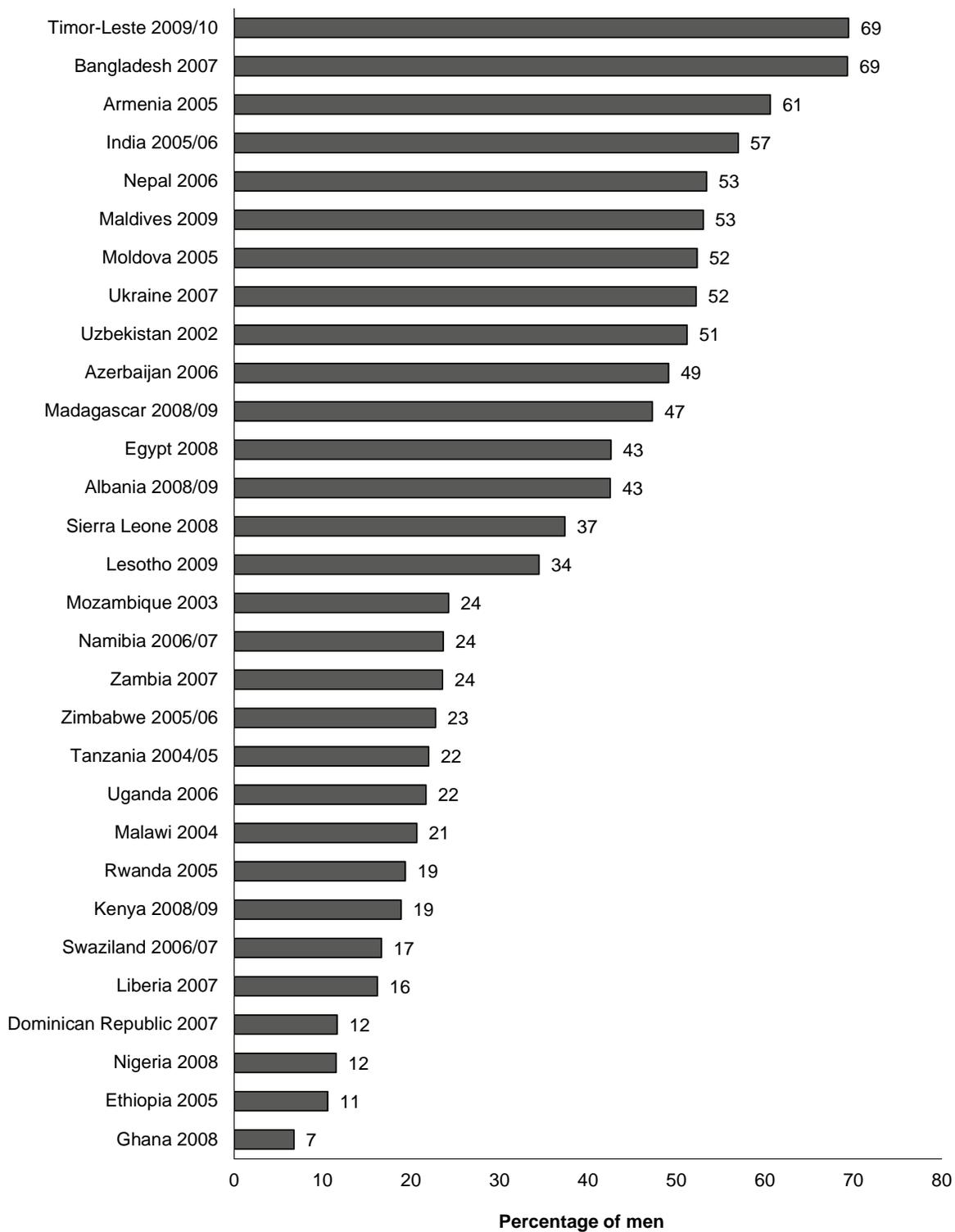
(--) indicates that no respondents used that form of tobacco and therefore confidence intervals are not estimated.

na: Not available

<sup>1</sup> The Uzbekistan survey only assessed current smoking status if respondents ever smoked at least 100 cigarettes in their entire life.

<sup>2</sup> The India survey asked about smoking cigarettes or *bidis*.

**Figure 1. Percentage of men age 15-49 who currently use any type of tobacco**



### ***Type of tobacco used by men***

In all countries except Uzbekistan, India, and Nepal, manufactured cigarettes were the most common type of tobacco used by men. In sub-Saharan Africa, Madagascar stands out with very high prevalence of smokeless tobacco use among men; 23 percent reported using smokeless tobacco, while 28 percent reported using manufactured cigarettes. In Central Asia, men in Uzbekistan were more likely to report using smokeless tobacco (i.e., *nas*) than manufactured cigarettes (32 percent vs. 24 percent). In South and Southeast Asia, the prevalence of smokeless tobacco use among men was higher than the prevalence of manufactured cigarette use in India (37 percent vs. 33 percent) and in Nepal (36 percent vs. 30 percent). Timor-Leste not only has the highest prevalence of manufactured cigarette use for men (66 percent), but it also has a substantial prevalence of smoking other types of tobacco (23 percent). A large majority of men who smoke other types of tobacco in Timor-Leste also smoke manufactured cigarettes

### ***Prevalence of any tobacco use among women***

As was the case for men, tobacco use among women age 15-49 was quite variable across the countries examined (Table 6b). These results are also displayed in Figure 2. In sub-Saharan Africa, less than 1 percent of women reported using any form of tobacco in Ghana, Nigeria, Senegal, and Zimbabwe. The countries in sub-Saharan Africa with the highest prevalence of tobacco use for women were also those with the highest prevalence of tobacco use for men. The prevalence of tobacco use for women in these countries was 21 percent in Madagascar, 10 percent in Sierra Leone, and 9 percent in Lesotho.

In contrast to the results for men in North Africa/West Asia/Europe, where a consistently high proportion of men reported using tobacco, the prevalence of tobacco use among women in the region is highly variable. The countries where women were least likely to report using tobacco are Egypt (less than 1 percent) and Armenia (2 percent). Women were most likely to use tobacco in Ukraine (15 percent) and Jordan (12 percent). Since the Turkey DHS only assessed the use of manufactured cigarettes, we did not estimate the use of 'any tobacco' for women in this country. However, the highest prevalence of tobacco use for women in this report was found in Turkey, where slightly over one in four (28 percent) ever-married women reported using manufactured cigarettes.

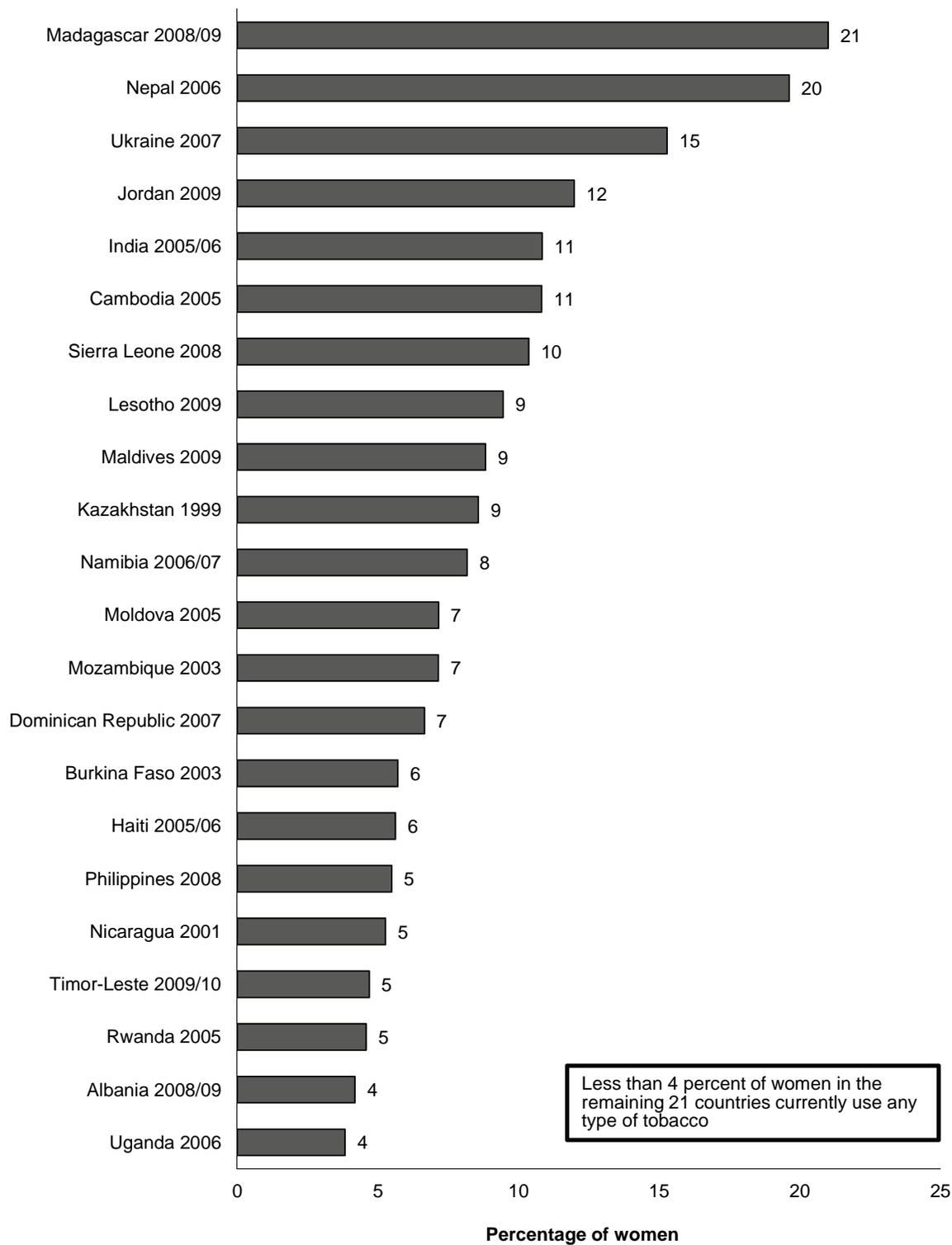
The prevalence of tobacco use among women also varied across the countries in Central Asia and in South and Southeast Asia. In Central Asia, 1 percent of women used some form of tobacco in Uzbekistan, while 9 percent of women used tobacco in Kazakhstan. In South and Southeast Asia, tobacco use among women varied from a low of 3 percent in Indonesia to a high of 20 percent in Nepal.

Finally, the prevalence of tobacco use was relatively low among women in the countries of Latin America and the Caribbean, with less than 9 percent of women in all countries in the region reporting any type of tobacco use.

### ***Type of tobacco used by women***

In contrast to the results for men, where the most common type of tobacco used in almost all countries was manufactured cigarettes, the pattern of tobacco use for women varies by country and by region. In sub-Saharan Africa, where the use of manufactured cigarettes was low for women in most of the countries, the prevalence of smokeless tobacco use was often either comparable to or higher than the prevalence of manufactured cigarette use. In Lesotho and Madagascar, more than 90 percent of women who used any form of tobacco used smokeless tobacco.

**Figure 2. Percentage of women age 15-49 who currently use any type of tobacco**



In North Africa/West Asia/Europe and in Central Asia, women were generally more likely to report using manufactured cigarettes than any other type of tobacco. The pattern of tobacco use among women in South and Southeast Asia varies by country. Whereas women in Cambodia, India, and the Maldives were most likely to report using smokeless tobacco, women in Nepal and the Philippines were most likely to report using manufactured cigarettes. Women in Timor-Leste were only slightly more likely to report using manufactured cigarettes than any other form of tobacco. No data were available to assess smokeless tobacco use in Indonesia.

Finally, only two countries examined in Latin America and the Caribbean for women had data on all forms of tobacco use (the Dominican Republic and Haiti). In the Dominican Republic, tobacco use almost exclusively reflected the use of manufactured cigarettes. In Haiti, however, the prevalence of manufactured cigarette use was about the same as the prevalence of smokeless tobacco use (3 percent).

### ***Gender differences in the prevalence of any tobacco use***

In all countries in which tobacco use was assessed for both men and women, men were more likely than women to report currently using at least one form of tobacco. The magnitude of the gender differences in tobacco use was highly variable across regions and across countries within regions. The smallest gender differences in tobacco use are found in the Dominican Republic and Madagascar, where men age 15-49 were roughly twice as likely as women age 15-49 to report currently using at least one form of tobacco. The largest gender differences in tobacco use are found in Armenia, Uzbekistan, and Egypt. The largest gender difference in tobacco use was found in Egypt, where men were 61 times more likely than women to report currently using tobacco (42.6 percent vs. 0.7 percent). In Uzbekistan, men were 47 times more likely than women to report currently using tobacco (51.2 percent vs. 1.1 percent). In Armenia, men age 15-49 were 36 times more likely than women age 15-49 to report currently using at least one form of tobacco (60.6 percent vs. 1.7 percent).

## **3.2 Prevalence of Manufactured Cigarette Smoking**

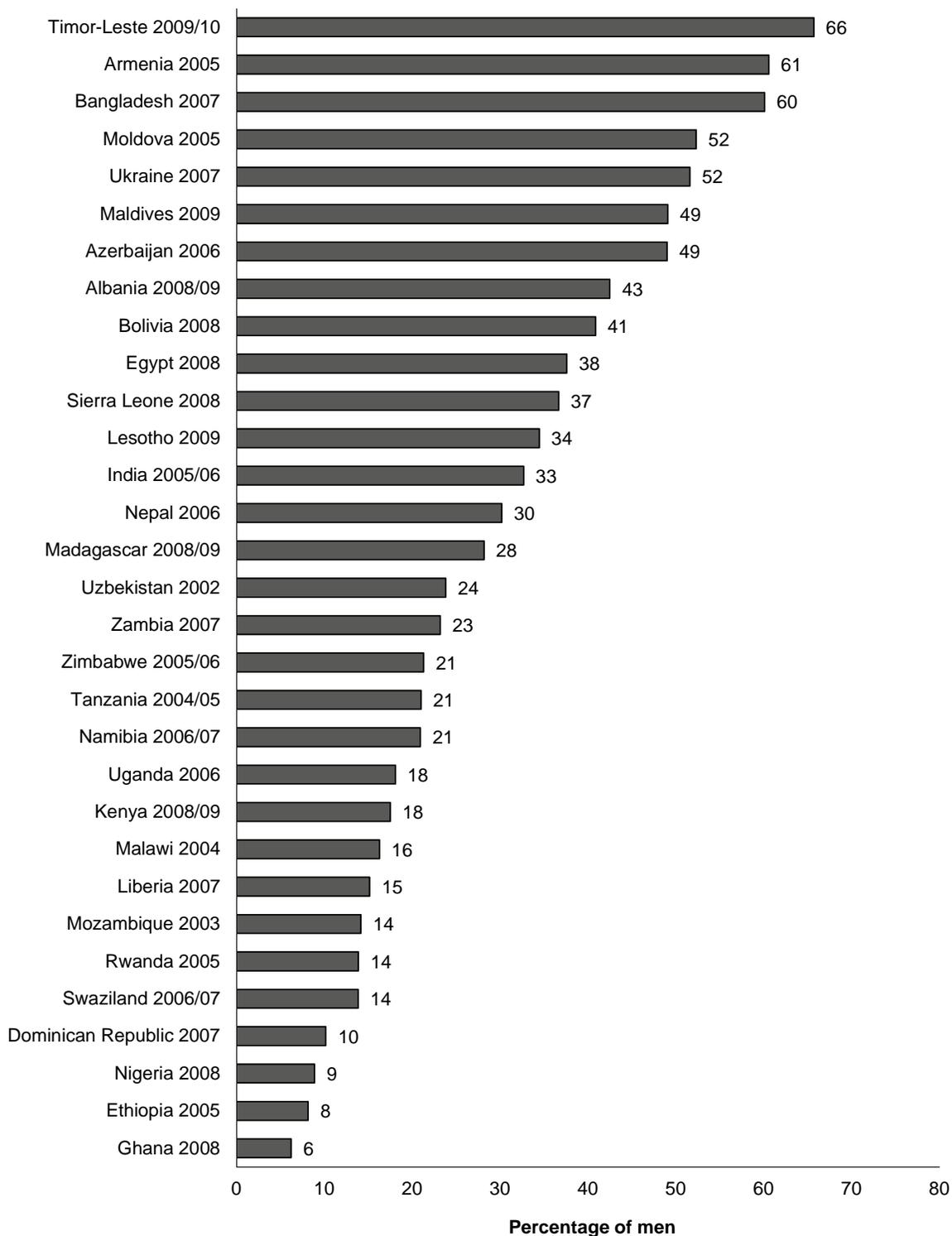
Manufactured cigarettes are the most prevalent type of tobacco used worldwide. Cigarettes represent roughly 80 percent of total global tobacco consumption (Food and Agriculture Organization of the United Nations 2003) and account for 92 percent of total tobacco sales (Eriksen, Mackay and Ross 2012). As such, cigarette smoking is responsible for a substantial burden of death and disability among tobacco users.

### ***Prevalence of manufactured cigarette smoking among men***

The results of this analysis show wide variation in the use of manufactured cigarettes among men age 15-49 in the countries examined. These results are presented in Table 6a and Figure 3. With a few exceptions, the countries in sub-Saharan Africa generally had lower prevalence of cigarette smoking for men than the countries located in other regions. In fact, the countries in this report with the lowest prevalence of cigarette smoking for men are found in sub-Saharan Africa—Ghana (6 percent), Ethiopia (8 percent), and Nigeria (9 percent). Out of 17 countries in sub-Saharan Africa with data on current cigarette use for men, 10 had a prevalence of less than 20 percent. The countries in sub-Saharan Africa with the highest prevalence of manufactured cigarette use for men are Sierra Leone (37 percent), Lesotho (34 percent), and Madagascar (28 percent).

The prevalence of manufactured cigarette smoking among men in North Africa/West Asia/Europe was generally high across all of the countries examined, exceeding one-third of the population in these countries. In Armenia, Azerbaijan, Moldova, and Ukraine, 49-61 percent of men age 15-49 reported currently smoking cigarettes.

**Figure 3. Percentage of men age 15-49 who currently smoke manufactured cigarettes**



In the one country examined in Central Asia (Uzbekistan), roughly one in four men (24 percent) age 15-49 reported currently smoking cigarettes. As was previously noted in the methods section, it is possible that this is a slight underestimate as only those respondents in the Uzbekistan DHS who reported smoking at least 100 cigarettes in their lifetime were asked whether they currently smoked cigarettes.

In the five countries examined in South and Southeast Asia, the prevalence of current cigarette use among men was high, ranging from nearly one-third of men in India and Nepal to 60 percent of men in Bangladesh and 66 percent of men in Timor-Leste. As noted in the methods section, the estimates for Bangladesh and India include the use of manufactured cigarettes as well as *bidis* (hand-rolled tobacco in a leaf wrapper). In all other countries, *bidis* are coded in the 'other smoked tobacco' category. Also, the surveys conducted in Bangladesh and the Maldives only included ever-married men, which likely increased the estimates of cigarette use compared to what it would have been if never-married men had been included in the sample.

Finally, in the two countries examined in Latin America and the Caribbean, the prevalence of smoking among men varied widely. In the Dominican Republic, the prevalence of current cigarette use among men was at the lower end of the spectrum (10 percent), whereas in Bolivia, current cigarette use among men was much higher (41 percent).

### ***Prevalence of manufactured cigarette smoking among women***

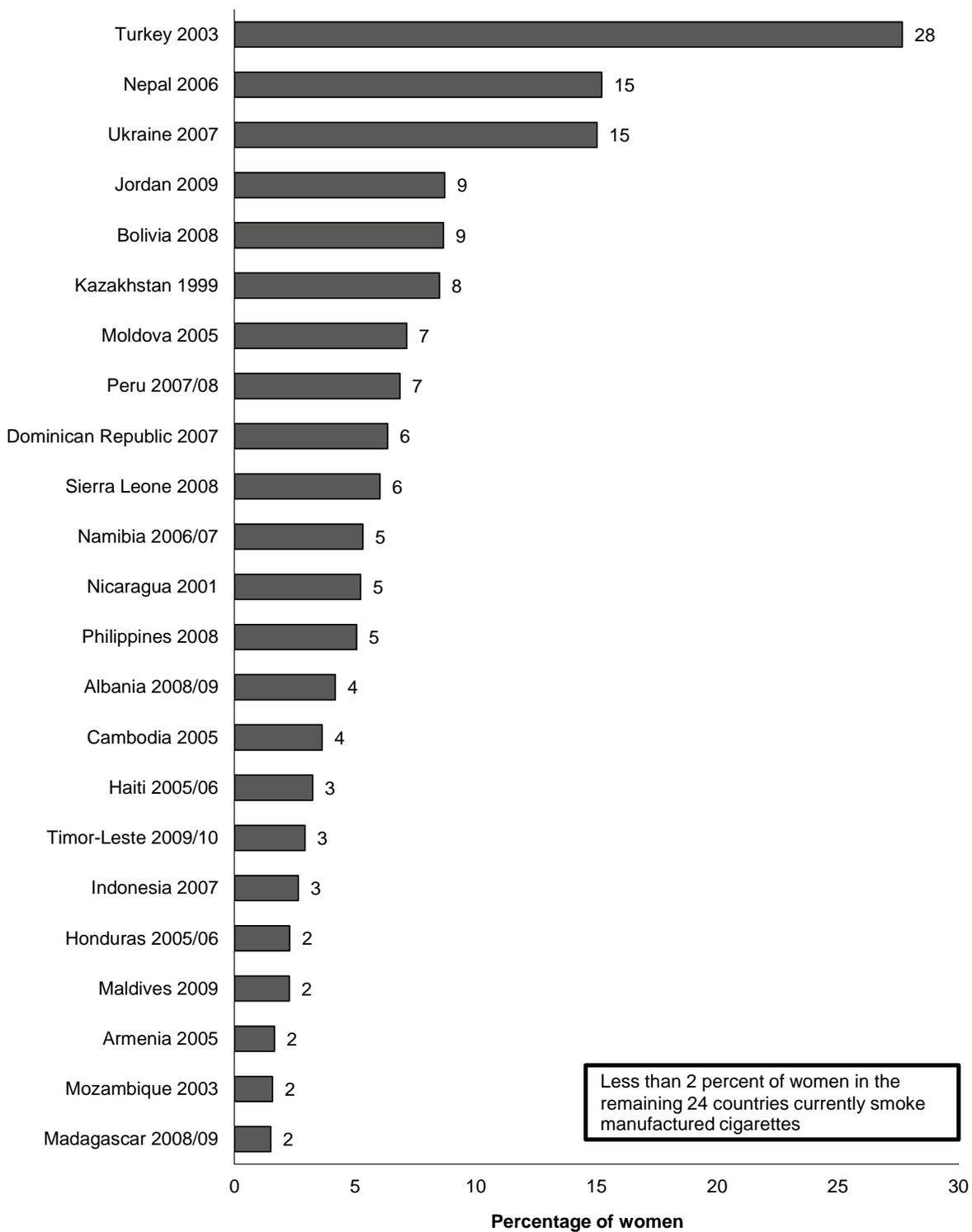
The prevalence of manufactured cigarette smoking among women age 15-49 was low in the majority of the countries examined (Table 6b). In fact, in all but 3 of the 47 countries, the prevalence of current cigarette smoking among women was less than 9 percent. The three countries with the highest prevalence of cigarette smoking for women were Turkey (28 percent), Nepal (15 percent), and Ukraine (15 percent). The results are also presented in Figure 4.

In sub-Saharan Africa, the prevalence of current cigarette smoking among women was universally low. In 19 out of the 25 countries examined, less than 1 percent of women in the population reported currently smoking manufactured cigarettes. The two outliers in this region are Sierra Leone and Namibia, where 6 percent and 5 percent of women, respectively, reported currently smoking manufactured cigarettes.

In contrast to the low prevalence of cigarette smoking among women in sub-Saharan Africa, the prevalence of cigarette smoking among women in countries in North Africa/West Asia/Europe was highly variable. The countries in this region with very low prevalence of smoking were Egypt (0.6 percent) and Armenia (2 percent). The countries with the highest prevalence of smoking among women in this region were Turkey (28 percent) and Ukraine (15 percent). As previously noted, of all of the countries examined in this report, these two countries were among those with the highest prevalence of smoking for women. Moreover, of all of the countries examined in this report, not only did Turkey have the highest prevalence of cigarette smoking among women, this estimate also represents the highest prevalence of any tobacco use for women in this report. It should be noted that the higher prevalence of cigarette smoking among women in Turkey may, to some extent, be due to the fact that only ever-married women were interviewed.

The prevalence of smoking for women varied in the two countries examined in Central Asia. In Kazakhstan, 8 percent of women reported smoking cigarettes, whereas in Uzbekistan, less than 1 percent of women reported smoking. Again, it is possible that the estimate for Uzbekistan may be a slight underestimate as only those respondents who reported smoking at least 100 cigarettes in their lifetime were asked about their current cigarette use.

**Figure 4. Percentage of women age 15-49 who currently smoke manufactured cigarettes**



In South and Southeast Asia, cigarette smoking among women was relatively low, at 5 percent or less in all but one country. The prevalence of smoking among the low prevalence countries in this region ranged from 1 percent in India to 5 percent in the Philippines. The outlier in this region is Nepal, where 15 percent of women age 15-49 in the population reported smoking cigarettes.

Finally, there was relatively little variability in the prevalence of smoking among women in Latin America and the Caribbean. Prevalence estimates for women in this region were low, ranging from 2 percent in Honduras to 9 percent in Bolivia.

### ***Gender differences in the prevalence of manufactured cigarette smoking***

In all countries in which manufactured cigarette use was assessed for both men and women, men were more likely than women to report being current cigarette smokers. The size of the gender differences in manufactured cigarette use is substantial in the majority of the countries examined. In 21 out of the 29 countries in which data were collected from both genders, men age 15-49 were at least 10 times as likely as women age 15-49 to report being current cigarette smokers. The smallest gender differences in smoking status are found in the Dominican Republic and Nepal, where men were 1.6 and 2.0 times as likely as women to report being current smokers. Some of the largest gender differences in the prevalence of cigarette smoking are found in sub-Saharan Africa (e.g., Kenya, Lesotho, Malawi, and Zimbabwe) and North Africa (Egypt), where men were at least 50 times as likely as women to report being current smokers.

## **3.3 Prevalence of the Use of Other Smoked Tobacco**

Other types of smoked tobacco, other than manufactured cigarettes, can include pipes, cigars, hand-rolled cigarettes (i.e., “roll-your-own” or RYO), *bidis*, *kreteks*, and water pipes (e.g., *qalyan*, *shisha*, *nargila*, *hookah*).

### ***Prevalence of the use of other smoked tobacco among men***

The use of other forms of smoked tobacco among men age 15-49 was relatively low (less than 5 percent) across the majority of the countries examined. The three countries in which more than 5 percent of men currently used some other type of smoked tobacco are Lesotho (6 percent), Egypt (8 percent), and Timor-Leste (23 percent). In Lesotho, other smoked tobacco exclusively reflected the use of pipes. In Egypt, the vast majority of those who smoked some other form of tobacco reported using the water pipe. In Timor-Leste, nearly one in four men reported using some other type of smoked tobacco, almost all of which was rolled tobacco.

### ***Prevalence of the use of other smoked tobacco among women***

The use of other forms of smoked tobacco among women age 15-49 was very low across the vast majority of the countries examined. In 35 out of the 42 countries with available data, less than 1 percent of women reported currently using some other form of smoked tobacco. The country with the highest proportion of women reporting the use of other smoked tobacco is Jordan, where 5 percent of women reported using *nargila* (the water pipe/*hookah*).

### ***Gender differences in the use of other smoked tobacco***

In the majority of the countries in which the use of other smoked tobacco was assessed for both men and women, men were more likely than women to report being a current user. The gender differential in Timor-Leste stands out, with nearly one-quarter of men reporting the use of other smoked tobacco compared with only 1 percent of women.

### **3.4 Prevalence of the Use of Smokeless Tobacco**

Smokeless tobacco includes chewing tobacco and snuff. Information on the use of smokeless tobacco was not available in a number of countries for both women and men.

#### ***Prevalence of the use of smokeless tobacco among men***

The use of smokeless tobacco among men was low in the majority of the countries with available data. In 20 out of the 26 countries that measured smokeless tobacco use among men, fewer than 5 percent of men age 15-49 reported using either snuff or chewing tobacco. In general, the use of smokeless tobacco among men was more common in countries in South and Southeast Asia than in countries in any other region. In Bangladesh, almost 20 percent of men reported using smokeless tobacco, while in India and Nepal, over one-third of men reported using smokeless tobacco. The two other countries with a high prevalence of smokeless tobacco use among men are Madagascar in sub-Saharan Africa (23 percent) and Uzbekistan in Central Asia (32 percent). The predominant form of smokeless tobacco used in all of these high prevalence countries is chewing tobacco. In Bangladesh, no respondent reported the use of snuff, whereas in India and Nepal, less than 1 percent of men reported using snuff. In Madagascar, 4 percent of men reported using snuff whereas, 19 percent reported using chewing tobacco.

#### ***Prevalence of the use of smokeless tobacco among women***

As was the case for men, the use of smokeless tobacco among women was low in the majority of the countries examined. In 11 out of the 28 countries with available data, less than 1 percent of women age 15-49 reported using smokeless tobacco. The countries with the highest prevalence of smokeless tobacco use among women are in South and Southeast Asia and sub-Saharan Africa, including Madagascar (20 percent), Lesotho (9 percent), India (9 percent), Cambodia (8 percent), Sierra Leone (5 percent), Nepal (5 percent), and the Maldives (4 percent). As suggested by these numbers, Madagascar has the highest proportion of women who reported using smokeless tobacco. Among these higher prevalence countries, chewing tobacco is the main type of smokeless tobacco used by women in the Maldives, Nepal, Cambodia, India, and Madagascar. Snuff is the main type of smokeless tobacco used by women in Lesotho and Sierra Leone.

#### ***Gender differences in the use of smokeless tobacco***

For countries with data available for women and men, while men are more likely than women to report currently using at least one form of smokeless tobacco in a large number of these countries, there are several countries in which women were either more likely than men to report using smokeless tobacco or were as likely as men to report using this form of tobacco. For example, two countries with a higher prevalence of smokeless tobacco use among women than among men are Lesotho (9 percent vs. 1 percent) and Sierra Leone (5 percent vs. 1 percent). Madagascar stands out as a country with about equally high prevalence of smokeless tobacco use among women and men (20 percent vs. 23 percent).

### **3.5 Differentials in Manufactured Cigarette Use by Sociodemographic Characteristics**

Within countries, smoking and tobacco use is not equally distributed in the population, but varies by demographic and socioeconomic characteristics (Hosseinpoor, Parker et al. 2011). For policy purposes, it is important to examine the profile of tobacco users to identify groups with higher prevalence of tobacco use. This section describes the sociodemographic patterns of cigarette smoking across the countries for women and men. Specifically, it examines differentials in the proportion of women and men age 15-49 who report currently using manufactured cigarettes by selected sociodemographic characteristics. The analysis focuses on cigarette smoking specifically since it is the predominant type of

tobacco used worldwide and is thus responsible for a significant burden of death and disability among tobacco users. To ensure adequate sample sizes when estimating the prevalence of cigarette smoking within sociodemographic groups, the analysis was restricted to those countries with at least a 10 percent prevalence of current cigarette smoking for men (Appendix Table A1). For women, since relatively few countries had a prevalence of cigarette smoking of more than 10 percent, the analysis was restricted to those countries with at least a 5 percent prevalence of current cigarette smoking (Appendix Table A2). Pearson chi-square tests were conducted to test the associations between smoking status and the characteristics examined; the resulting p-values from the chi-square tests are presented in the tables. All analyses were weighted and the standard errors were adjusted for the clustered and stratified sampling design.

### *Age*

Understanding the pattern of tobacco use across age groups or cohorts within countries is important in developing effective policies and programs aimed at reducing and eliminating such use. The age at which tobacco use starts is of particular significance. Research using data from the World Health Organization's (WHO) World Health Survey found that the distribution of smoking across age groups varies across countries (Hosseinpoor, Parker et al. 2011). In middle-income countries, the prevalence of smoking any type of tobacco generally increases with age between the ages of 18 and 50, after which it decreases. This pattern was found for both women and men in middle-income countries. However, in low-income countries, while the same general pattern was found for men, the prevalence of smoking for women continued to increase with each age group.

Higher prevalence of tobacco use among certain age groups may reflect differences in cultural norms or practices related to tobacco within a country. It may also reflect differences in knowledge about the health effects of smoking or differences in the marketing and availability of tobacco within countries. Age differences in tobacco use may also reflect the influence of other factors such as socioeconomic status, education, occupational status, or area of residence. This analysis explores the prevalence of cigarette smoking across age groups for women and men within the countries.

### *Men*

For men, there is a statistically significant relationship between age group and the likelihood of being a current cigarette smoker in all 28 countries that were examined (see Appendix Table A2). The nature and the strength of these associations vary by country. In most countries, the likelihood of men being current smokers increases with age between the ages of 15 and 49. In some countries, there is a threshold increase between the youngest (15-24) and the second youngest (25-34) age groups.

In every country except Bangladesh, there is an increase in the likelihood of smoking between the youngest (15-24) and the second youngest (25-34) age groups. In 16 out of the 28 countries, men age 25-34 are at least twice as likely to smoke cigarettes as men age 15-24.

For countries with available data, the prevalence of cigarette smoking is presented for those 50 years of age and over. The age range of this group varies considerably across the countries and therefore caution should be used when interpreting the estimates for this age group (see Table 1 for the characteristics of the country samples). For example, in some countries, this age group only includes men 50-54, whereas in other countries, this age group captures men age 50-64. In seven countries, men in the 50+ age group are more likely to smoke cigarettes than men age 35-59. The prevalence of cigarette smoking is lower among men in the 50+ age group than among men age 35-49 in Lesotho, Madagascar, Sierra Leone, Uzbekistan, Zambia, Azerbaijan, Moldova, Uzbekistan, and the Maldives.

There are two countries in South and Southeast Asia where the relationship between age and smoking status differs from the trends described above. In Bangladesh, there is no clear trend in smoking prevalence by age group for men, with a high percentage of men smoking in all age groups (56-63 percent). Bangladeshi men are most likely to smoke in the youngest (15-24) and second oldest (35-49) age groups. In the Maldives, the prevalence of smoking is high in the first three age groups, then decreases substantially among men age 50+. What these two countries have in common, which is different from the other countries in the table, is that the prevalence of smoking among the youngest age group of men (15-24) is relatively high.

Cigarette smoking at young ages (15-24) is less prevalent in sub-Saharan Africa than in other regions. In 9 of the 14 countries in sub-Saharan Africa included in Appendix Table A1, less than 10 percent of men age 15-24 are current smokers. In 11 of those 14 countries, the prevalence of cigarette smoking at age 15-24 is far less than half of the prevalence of cigarette smoking in the peak age group for smokers. On the contrary, half of the countries outside of sub-Saharan Africa have a prevalence of cigarette smoking at age 15-24 that is at least 50 percent as high as the prevalence in the peak smoking age group. In Bangladesh, prevalence is highest in the age 15-24 age group. Other countries with particularly high ratios of cigarette smoking at age 15-24 to cigarette smoking in the peak age group are the Maldives (with a ratio of 0.92), Madagascar (0.74), Bolivia and Moldova (0.67 each), Timor-Leste (0.61), and Ukraine (0.60).

### Women

For women, there is a statistically significant relationship between age group and the likelihood of being a current cigarette smoker in 12 out of the 13 countries examined. Peru is the only country in which women were equally likely to smoke across the age groups. The nature of the relationship between age and smoking status varies by country. Consistent with the results for men, in the majority of the countries, the likelihood of being a current smoker for women increases with age. The magnitude of this relationship is particularly pronounced in Nepal, where women age 35-49 were more than 10 times as likely to smoke as women age 15-24 (34 percent vs. 3 percent).

The countries that deviate from this trend are Moldova, Turkey, Ukraine, and Kazakhstan. First, the differentials in smoking status are relatively small across the age groups in all of these countries except Turkey. Second, while the exact age pattern of smoking varies across these four countries, the prevalence of smoking among the oldest age group of women 35-49 is at the lower end of the continuum (compared with the prevalence of smoking in the other age groups). In Moldova and Kazakhstan, women in the oldest age group (35-49) were least likely to smoke, while women in the middle age group (25-34) were most likely to smoke. In Turkey, women in the middle age group (25-34) were also most likely to smoke, whereas there was no difference in the likelihood of smoking between women in the oldest and youngest age groups. Finally, in Ukraine, women in the oldest age group were less likely to smoke than women in the two younger age groups.

There are only two countries examined in which more than 10 percent of women age 15-24 smoke cigarettes—Turkey (24 percent) and Ukraine (17 percent). Half of the 13 countries examined in Appendix Table A2 have a prevalence of cigarette smoking at age 15-24 that is more than half of the peak prevalence in any age group. In Peru, the highest prevalence of smoking is at age 15-24, although less than 8 percent of women smoke in every age group. There are only two countries in which more than 15 percent of women smoke cigarettes in the peak smoking age group and in which the ratio of smokers at age 15-24 to smokers in the peak smoking age group exceeds 0.70—Ukraine (with a ratio of 0.97) and Turkey (with a ratio of 0.74).

### *Marital status*

Marital status is associated with a range of demographic, social, cultural, and economic factors that may influence patterns of tobacco use. For example, marriage may be associated with the assumption of different roles and responsibilities that might influence levels of stress, levels of social support and exposure to different social networks, norms related to acceptable behavior including the acceptability of tobacco use, or socioeconomic circumstances. Those who were formerly married (i.e., widowed, divorced, or separated), particularly women, may experience a downturn in their socioeconomic well-being or may experience other social stressors associated with their marital status that might influence the likelihood of using tobacco. It should also be pointed out that the age distribution of persons in different marital status groups is quite different. Persons who have never been married tend to be in the younger age groups and persons who are formerly married tend to be in the older age groups. Since cigarette smoking tends to increase with age in most countries, the age distribution needs to be taken into account when assessing the relationship between marital status and smoking.

Research using data from the World Health Survey reported the highest prevalence of smoking among women and men who were formerly married (Hosseinpoor, Parker et al. 2011). In low-income countries, however, no significant association was found between marital status and smoking prevalence for women, after controlling for a range of sociodemographic characteristics. The pattern of smoking across the other marital status groups (i.e., never married and currently married/cohabiting) varied by region.

This analysis explores the prevalence of cigarette smoking for women and men by their marital status (never married, currently married/cohabiting, and formerly married) across the countries.

### *Men*

With the exception of Bangladesh, there is a statistically significant relationship between marital status and the likelihood of being a current cigarette smoker for men in all 28 countries examined. It should be noted that for Bangladesh, only ever-married men were interviewed and therefore a significant association between marital status and smoking status may have been found if never married men had been included in the sample. In almost every country, cigarette smoking was least prevalent among men who had never married, intermediate among those who were currently married, and most prevalent among those who were formerly married (widowed, divorced, or separated). For every country except Bangladesh, the prevalence of smoking is highest among men who were formerly married. In Timor-Leste, the prevalence is similar for men who are currently married and men who are formerly married. Men who have never been married have the lowest prevalence of cigarette smoking in every country.

The magnitude of the association between marital status and smoking status among men varies across the countries. The largest group relative differences in the prevalence of smoking for men are found in Mozambique, Tanzania, and Uganda, where formerly married men have over six times the likelihood of being current cigarette smokers as never married men. In addition to these countries, the largest relative differences in the prevalence of smoking between these two groups of men are evident in Liberia, Dominican Republic, Zambia, and Zimbabwe.

### *Women*

For women, there is a statistically significant relationship between current marital status and the likelihood of being current cigarette smokers in all 13 countries examined. In all of the countries, the prevalence of smoking is highest among women who were formerly married.

The marital status group with the lowest prevalence of cigarette smoking for women varies by country. Women who have never been married were least likely to smoke in a number of countries (Namibia, Sierra Leone, Moldova, Nepal, the Philippines, the Dominican Republic, and Nicaragua). In contrast, currently married women were least likely to smoke in Ukraine, Kazakhstan, Bolivia, and Peru. In Jordan and Turkey, where only ever-married women were interviewed, currently married women were less likely to smoke than formerly married women.

The difference in the prevalence of cigarette smoking across marital status groups for women varies substantially across the countries. The largest group differences are found in Sierra Leone, Nepal, and the Dominican Republic. The largest difference is found in Nepal, where formerly married women are 35 times as likely as never married women to smoke.

### *Education*

Research conducted in both low and middle-income countries finds higher prevalence of smoking among women and men with lower levels of education (Hosseinpoor, Parker et al. 2011). Education may be associated with tobacco use through a number of mechanisms. Those with higher levels of education may have better access to information about health promoting behaviors and the negative health effects of tobacco use. They may also have better access to information about tobacco cessation programs and have more resources to use them. Education may also be a proxy for a number of other factors that may affect tobacco use, including socioeconomic status, occupational status, area of residence, or social networks. In addition, age is a confounding factor since as educational attainment increases in a society, those with higher levels of education tend to be younger. This analysis examines the association between level of education (no education, primary, secondary, higher) and the prevalence of cigarette smoking for women and men across the countries.

### *Men*

In 23 out of the 28 countries examined, there is a statistically significant bivariate association between level of education and the likelihood of being a current cigarette smoker for men. The five countries in which education was not associated with smoking status are Kenya, Madagascar, Tanzania, Armenia, and Uzbekistan.

In virtually all of the countries in which a significant association was found for men, there is a negative relationship between level of education and the likelihood of being a current cigarette smoker. That is, men with more education are less likely to smoke. There is no country in which a statistically significant positive association was found for men (i.e., where more educated men are more likely to smoke).

In Mozambique and Namibia, the relationship between education and smoking status for men is difficult to interpret as there is no clear trend in one direction or another.

The strength and the nature of the association between education and smoking status for men vary across the countries. Some countries show relatively small differences in the prevalence of cigarette smoking across education groups for men. For example, smaller differences are found in Timor-Leste, where men with no education are 1.2 times more likely to smoke than are men who have a 'higher' level of education (70.9 percent vs. 60.6 percent). A number of countries show large differences in smoking behavior across education groups. For example, in Malawi, men with no education are almost five times as likely to smoke cigarettes as men who have a 'higher' level of education (25.4 percent vs. 5.3 percent).

Many countries also show a gradient relationship between level of education and smoking status for men (i.e., smoking prevalence decreases with each level of education), whereas other countries show

more of a threshold effect where a large decrease in the prevalence of smoking is observed at certain levels of education. An example of a country where a threshold association is found is Swaziland. In this country, men with no education have the highest prevalence of cigarette smoking (24 percent), whereas men in all other education categories have lower but similar prevalence of cigarette smoking (13-15 percent). Some examples of countries that show a clear gradient in smoking prevalence across all education groups are Lesotho, Malawi, Zimbabwe, Bangladesh, India, and Nepal. In these countries, the prevalence of smoking among men decreases substantially with each additional level of education.

### Women

In 11 out of the 13 countries examined, there is a statistically significant bivariate association between level of education and the likelihood of being a current cigarette smoker for women. In the two countries that were not significant (Ukraine and Kazakhstan) very few women in the population had less than secondary schooling and there was no difference of being a current cigarette smoker between those with secondary schooling and those with higher levels of education.

The results for the remaining 11 countries show two distinct patterns of smoking behavior across education groups for women. In several of the countries (Sierra Leone, Nepal, the Philippines, and the Dominican Republic), there is a negative association between women's educational attainment and the likelihood of being a current cigarette smoker. In contrast, there is a positive association between education and the likelihood of being a smoker for women in Turkey, Bolivia, Nicaragua, and Peru.

Among the countries where a significant association was found between education and smoking status for women, the magnitude of the association varies substantially across the countries. Relatively large differences in smoking status across education groups are found in countries such as the Dominican Republic, Peru, and particularly Nepal. In Nepal, less than 1 percent of women age 15-49 with secondary schooling or higher currently smoke compared with 26 percent of women with no schooling.

The bivariate results for women also show that the specific nature of the relationship between level of education and smoking prevalence varies across the countries. In some of the countries, this association is best described as a gradient. In other countries the relationship between education and smoking status is better described as a threshold effect. The countries that show more of a gradient for women include Sierra Leone, Turkey, the Philippines, the Dominican Republic, and Peru. Countries that show more of a threshold association include Namibia, Jordan, Nepal, and Bolivia.

### ***Urban versus rural areas***

The prevalence of smoking has been shown to vary across urban and rural areas within countries (Hosseinpoor, Parker et al. 2011). Results from the World Health Survey suggest that the particular pattern of these differences varies across countries (Hosseinpoor, Parker et al. 2011). The characteristics of urban areas that may influence tobacco use include factors such as better access to tobacco, targeted marketing, and greater social inequalities within cities and poor living conditions (World Health Organization 2012). On the other hand, the socioeconomic characteristics and cultural norms of rural areas may influence the prevalence of tobacco use. This analysis examines the prevalence of tobacco use among women and men in urban and rural areas within the countries.

### Men

In 13 out of the 28 countries examined, there are significant differences in the prevalence of cigarette smoking between men in urban areas and rural areas. The countries in which a significant association was found are regionally diverse. In four of the countries in which a significant association was found for men, smoking was more prevalent in urban areas than rural areas (Madagascar, Namibia,

Rwanda, and Uzbekistan). In nine of the countries, smoking was more prevalent among men in rural areas than urban areas (Liberia, Sierra Leone, Zambia, Zimbabwe, Bangladesh, India, Timor-Leste, Bolivia, and the Dominican Republic).

The magnitude of the difference in smoking prevalence among men in urban versus rural areas is also variable across the countries. The largest difference in smoking prevalence for men is found in Sierra Leone, where men in rural areas were twice as likely to smoke as men in urban areas (45.4 percent in rural areas vs. 22.6 percent in urban areas).

### Women

In contrast to the results for men where only half of the countries showed significant urban-rural differences, in 12 out of the 13 countries examined, there are significant differences in the prevalence of cigarette smoking between women in urban areas and those in rural areas. In the Dominican Republic, there was only a marginally significant association between area of residence and smoking prevalence ( $p=0.05$ ). In 10 of the countries in which a significant association was found, smoking was more prevalent among women in urban areas than among those in rural areas (Namibia, Jordan, Moldova, Turkey, Ukraine, Kazakhstan, the Philippines, Bolivia, Nicaragua, and Peru). The countries in which smoking was more prevalent among women in rural areas than among those in urban areas are Sierra Leone, Nepal, and the Dominican Republic (marginally).

The magnitude of the difference in smoking prevalence among women in urban versus rural areas varies widely across the countries, although the differences are generally larger than those found for men. Relatively small differences in smoking prevalence are found in Sierra Leone (urban: 5.0 percent vs. rural: 6.6 percent), the Dominican Republic (urban: 6.1 percent vs. rural: 7.0 percent), and the Philippines (urban: 5.5 percent vs. rural: 4.5 percent). Large geographic differences in smoking prevalence are found in Turkey (urban: 32.8 percent vs. rural: 15.0 percent) and Nepal (urban: 8.6 percent vs. rural: 16.5 percent).

Interestingly, in Bolivia, men were significantly more likely to smoke in rural areas than in urban areas, whereas women were more likely to smoke in urban areas than in rural areas.

### ***Employment and cash earnings (women only)***

Employment status may affect the prevalence of smoking among women by directly increasing the affordability of tobacco, or indirectly through women's social networks and the norms and practices of women's co-workers with respect to tobacco use. Other research finds higher prevalence of smoking among women who work for pay in middle-income countries, but no difference in smoking prevalence by employment status among women in low-income countries (Hosseinpoor, Parker et al. 2011). This analysis examines differences in the prevalence of cigarette smoking by women's employment status in the last 12 months and by whether or not women earned cash for their work.

In 10 of the 12 countries for which data were available on women's employment status, there was a significant association between employment in the last 12 months and the likelihood that women smoked cigarettes. There was no significant association between employment status and smoking prevalence in Turkey. In Peru, this association was only marginally significant ( $p=0.06$ ). In all 10 countries in which a significant association was found, women who worked in the last 12 months were more likely to smoke cigarettes than those who did not work in the last 12 months.

The largest difference in smoking prevalence between women who worked and those who did not work are found in Nepal, where women who worked in the last 12 months were five times as likely to

smoke cigarettes as women who did not work. In most other countries, there was less than a two-fold difference between women who worked in the last 12 months and those who did not.

In over half of the countries, there was a significant association between cash earnings and the likelihood that women smoked. Among women who worked in the last 12 months, those who earned cash for their work were more likely to smoke than those who did not earn cash in Namibia, Sierra Leone, Moldova, Turkey, Kazakhstan, Bolivia, and Peru. There was no significant association between cash earnings and smoking prevalence among women in Ukraine, Nepal, the Philippines, and the Dominican Republic. In Nicaragua, there was only a marginally significant association ( $p=0.05$ ).

The magnitude of the differences in smoking prevalence between women who earned cash and those who did not is highly variable across the countries. A small, albeit significant, difference is found in Sierra Leone (No: 6.1 percent vs. Yes: 8.5 percent). Quite substantial differentials are found in Turkey, Peru, and Namibia. In Turkey, 38 percent of women who earned cash smoked cigarettes, compared with 14 percent of those who worked but did not earn cash. In Peru, women who earned cash were more than four times as likely to smoke cigarettes as those who worked but did not earn cash (No: 1.9 percent vs. Yes: 8.7 percent). In Namibia, women who earned cash were seven times as likely to smoke cigarettes as those who did not (No: 1.2 percent vs. Yes: 8.5 percent).

### ***Occupation (men only)***

Research also has also found that in both low and middle-income countries, men who work for pay are more likely to smoke than men who do not (Hosseinpoor, Parker et al. 2011). The current analysis examines differentials in the prevalence of cigarette smoking by employment status and type of occupation for men age 15-49 across the countries.

In all 25 countries in which data were available on men's occupation, a significant bivariate association was found between smoking prevalence and type of occupation. In almost all of the countries, the prevalence of cigarette smoking was lowest among men who did not work at all in the past 12 months. Moreover, the differential in the prevalence of smoking between men who did not work and those who did is large in most of the countries.

In most of the countries, men who work in professional/technical/managerial occupations have a lower prevalence of smoking than men who work in other types of occupations. Some countries in which this differential is particularly large are Malawi, Sierra Leone, and Nepal. In Nepal, for example, men who work in professional/technical/managerial occupations have roughly half the prevalence of smoking as men in any other occupation. A possible explanation for this association is that men who work in professional/technical/managerial occupations tend to be more highly educated and to have higher levels of household wealth, both factors associated with lower prevalence of smoking for men.

The occupations with higher prevalence of cigarette smoking for men vary across the countries. It should be noted that the confidence intervals for some of the occupational sub-groups are large due to small sample sizes. Thus, caution should be used when singling out particular occupations as having the highest prevalence of smoking within the countries.

### ***Household wealth***

The results of a meta-analysis examining the association between smoking prevalence and income suggest an inverse relationship for both women and men across most regions of the world (Ciapponi, Bardach et al. 2011). The only region in which no significant relationship was found was the Eastern Mediterranean region, although the authors noted that insufficient data may have influenced these results. The study also found evidence of a gradient, whereby smoking prevalence decreased among

higher income groups. It also found that the association between income and smoking prevalence was stronger in higher income countries than in lower income countries.

Another study focusing on an asset-based wealth index as a determinant of smoking also found that for adults, lower wealth was associated with a higher prevalence of smoking in most of the 13 low and middle-income countries included in their analysis (Palipudi, Gupta et al. 2012). For women however, this pattern was only observed for those in low income countries. In middle income countries, there was less evidence of an association between wealth and smoking, with some evidence possibly suggesting *lower* prevalence of smoking among lower wealth groups.

The current analysis examines differences in the prevalence of cigarette smoking across household wealth quintiles for women and men across the countries.

### Men

In 19 out of the 27 countries with data on household wealth, a significant bivariate association was found between household wealth and smoking prevalence for men. No significant association was found for men in Kenya, Mozambique, Rwanda, Swaziland, Albania, Armenia, and the Maldives. In Timor-Leste, the association was only marginally significant ( $p=0.08$ ).

In almost all of the 19 countries in which a significant association was found between men's smoking status and household wealth, the association was generally negative in direction. That is, the prevalence of smoking is lower among men in households with higher levels of household wealth. Namibia is the only country in which a positive association was found. In Madagascar, while a significant association was found, there is no clear pattern of smoking prevalence across household wealth quintiles. The prevalence of smoking among men in Madagascar is highest in the wealthiest and poorest wealth quintiles, and is lowest in the middle wealth quintile.

The disparities in smoking prevalence across wealth quintiles vary across the countries for men. Some of the largest disparities in smoking prevalence for men are found in Sierra Leone and Uganda, where men in the lowest wealth quintile are almost three times as likely to smoke as men in the highest wealth quintile. In addition, the prevalence of smoking is approximately twice as high in the lowest wealth quintile than in the highest wealth quintile in Liberia, India, the Dominican Republic, and Zambia.

### Women

In 12 out of the 13 countries examined, there is a significant bivariate association between the prevalence of cigarette smoking and household wealth for women. In the Philippines, this association was only marginally significant ( $p=0.06$ ). The results show two distinct patterns of smoking prevalence across wealth quintiles for women. In the majority of the countries, there is a positive association between the prevalence of cigarette smoking and household wealth. In Namibia, Jordan, Moldova, Turkey, Ukraine, Kazakhstan, Bolivia, Nicaragua, and Peru, the prevalence of smoking among women increases with higher levels of household wealth. In contrast, in Sierra Leone, Nepal, the Philippines, and the Dominican Republic, there is a negative association between smoking prevalence and household wealth.

While the disparities in the prevalence of cigarette smoking for women across wealth quintiles vary across the countries, they are quite large in several of the countries. They are also larger in size than those found for men. Of the countries in which a significant association was found, the smallest disparities are found in Sierra Leone. The prevalence of cigarette smoking in Sierra Leone is comparable for women in the first four wealth quintiles, and only decreases slightly among women in the highest wealth quintile. Sierra Leone is also the one country where a much larger gradient in smoking prevalence across wealth quintiles is found for men than for women. As previously noted, while statistically

significant for both women and men, Sierra Leone is the country with the smallest disparities for women but the largest disparities for men.

In the remaining countries in which a significant association was found, there is at least a two-fold difference in smoking prevalence between women in the lowest and highest wealth quintiles. Moreover, in six of these countries, there is at least a four-fold difference (Namibia, Moldova, Kazakhstan, Nepal, Nicaragua, and Peru).

The results of this analysis also reveal some interesting gender differences in the nature of the associations between smoking status and household wealth. Among the seven countries in which data were examined for both women and men, four of the countries show the same pattern of smoking across wealth quintiles by gender (Namibia, Sierra Leone, Nepal, and the Dominican Republic) whereas three countries show divergent results by gender (Moldova, Ukraine, and Bolivia). In the latter three countries, the prevalence of smoking increases for women in wealthier households, whereas the prevalence of smoking decreases for men in wealthier households.

### ***Maternity status (women only)***

Smoking during pregnancy is associated with a range of adverse maternal and fetal outcomes, including placenta previa, preterm delivery, low birth weight, fetal loss, and developmental outcomes such as cleft lip (U.S. Department of Health and Human Services 2010). Secondhand smoke exposure among infants and children has also been linked to middle ear disease, respiratory symptoms, impaired lung function, and sudden infant death syndrome (U.S. Department of Health and Human Services 2010). This analysis examines the prevalence of cigarette smoking among women according to their maternity status (i.e., their pregnancy and breastfeeding status) across the countries.

The results show that in 12 out of the 13 countries examined, a significant bivariate relationship is found between women's maternity status and their likelihood of smoking. The only country in which no significant association was found is Sierra Leone. In Sierra Leone, women who were pregnant or breastfeeding were as likely to smoke as women who were neither pregnant nor breastfeeding. In the remaining countries, smoking was less prevalent among women who were breastfeeding than among women who were neither pregnant nor breastfeeding. In 9 countries, the prevalence of smoking was lowest among women who were pregnant.

### ***Migration status (men only)***

This analysis examines the relationship between cigarette smoking among men and their migration status, operationalized as the number of times they slept away from home in the last 12 months. While little research has examined the association between labor migration and health (Benach, Muntaner et al. 2010), factors experienced by migrant workers such as social exclusion and decreased social support, poor living and working conditions, and reduced access to health care (Benach, Muntaner et al. 2010) may influence the likelihood of smoking among men. While being away from home is often related to labor migration, men may also be away from home to visit relatives or friends, for a hospital stay or for vacation purposes.

In the present analysis, a significant bivariate association was found between the prevalence of cigarette smoking and the number of times men slept away from home in only 6 of the 17 countries in which data were available on men's migration status. The six countries in which a significant association was found are Lesotho, Liberia, Sierra Leone, Uzbekistan, India, and the Dominican Republic.

The size and the nature of the association between migration status and smoking prevalence among men vary across the countries. In Liberia, Sierra Leone, India and Uzbekistan, there is a gradient

in smoking prevalence across migration subgroups. The prevalence of cigarette smoking is higher for men who stay away from home more frequently. The gradient is particularly large in Uzbekistan, where men who stayed away from home five times or more in the last year were twice as likely to smoke as men who did not stay away from home at all. Although a slight gradient is seen in Sierra Leone, there is also evidence of a threshold effect; smoking is more prevalent among men who stayed away from home any amount of time (1-4 or 5+ times) than among men who did not stay away from home.

In Lesotho, only men who stayed away from home between 1-4 times were more likely to smoke than men who did not stay away from home at all. Finally, the results for men in the Dominican Republic do not appear to follow any of the patterns described above. Men who stayed away from home 1-4 times in the last year were the least likely to smoke, whereas men who stayed away from home 5+ times were the most likely to smoke.

### ***Exposure to mass media***

Exposure to mass media, including newspapers, television, and radio can potentially affect the likelihood that a person smokes in a number of ways. Media exposure may be a proxy for socioeconomic status or education, and these factors may affect the prevalence of smoking. Media can also be a source of information on the negative health consequences of smoking, which may alter attitudes, knowledge, and behavior related to tobacco use. On the other hand, marketing strategies and media portrayal of cigarette smoking as unproblematic, fashionable, masculine, or independent may encourage smoking among individuals (Charlesworth and Glantz 2005; National Cancer Institute 2008; World Health Organization 2010). This analysis examines the relationship between at least weekly exposure to three forms of media (newspapers, television, and radio) and the prevalence of cigarette smoking. It also examines smoking prevalence as a function of the amount or diversity of exposure to these various media sources (described below).

### **Men**

In 22 out of the 27 countries with data on men's media use, there was a significant bivariate association between the prevalence of cigarette smoking and at least one of the media use variables. The five countries in which no significant association was found for any of the media use variables are Namibia, Rwanda, Tanzania, Armenia, and the Maldives. Eighteen of the countries show a significant association between the prevalence of cigarette smoking for men and their weekly use of newspapers. Fourteen of the countries show a significant association between the prevalence of cigarette smoking and their weekly television use. Finally, only nine of the countries show a significant association between the prevalence of cigarette smoking and men's weekly radio use.

In all of the countries except Madagascar, in which exposure to newspapers, television, or the radio was associated with smoking status for men, smoking was more prevalent among men who did not use that form of media at least once a week than among men who did. Madagascar is the only country in which smoking was more common among men who used specific forms of media (i.e., newspapers and the radio) at least once a week than among men who did not use these forms of media at least once a week.

The last two media use variables reflect the amount or diversity of exposure to different types of media. In 16 of the countries there was a significant difference in the prevalence of cigarette smoking between men who used all three forms of media at least once a week and those who used at least one form of media less than once a week. Again, with the exception of Madagascar, in all of the countries smoking was more prevalent among men with less media exposure (i.e., those who used at least one form of media less than once a week). For the last media use variable, in 11 of the countries there was a significant difference in the prevalence of cigarette smoking between men did not use any form of media at least

once a week and men who did. With the exception of Madagascar, smoking was more prevalent among men who did not use any form of media on a weekly basis than among men who did.

### Women

In all 12 countries in which data were available on women's media use, there was a significant association between the prevalence of cigarette smoking and at least one of the media use variables. The specific nature and the strength of these associations vary across the countries. Almost all of the countries show an association between cigarette smoking for women and their weekly use of newspapers (11 out of 12 countries). Fewer countries show a significant association between cigarette smoking and women's weekly television use (7 out of 11 countries) or radio use (6 out of 11 countries). Thus, consistent with the results for men, more of the countries show an association between cigarette smoking among women and their weekly use of newspapers, whereas fewer of the countries show an association between cigarette smoking and their weekly use of the radio.

In eight of the countries in which women's newspaper use was associated with their cigarette smoking, those who read a newspaper at least once a week were more likely to smoke than those who did not read a newspaper (Namibia, Moldova, Turkey, Ukraine, Kazakhstan, Bolivia, Nicaragua, and Peru). In contrast, in Sierra Leone, Nepal, and the Dominican Republic, women who did not read a newspaper at least once a week were more likely to smoke than those who did. The magnitude of this association is particularly striking for Nepal, where less than 1 percent of women who read a newspaper at least once a week smoked cigarettes compared with 16.9 percent of women who did not read a newspaper.

In five of the countries in which women's television use was associated with the prevalence of cigarette smoking, those who watched television at least once a week were more likely to smoke than those who did not (Namibia, Moldova, Bolivia, Nicaragua, and Peru). In contrast, in Nepal and the Dominican Republic, women who did not watch television at least once a week were more likely to smoke than those who did.

Finally, among the six countries in which women's radio use was associated with the prevalence of cigarette smoking, the results for three of the countries showed that women who listened to the radio at least once a week were more likely to smoke than those who did not (Ukraine, Kazakhstan, and Peru), whereas the reverse was true in Nepal, the Philippines, and the Dominican Republic.

With respect to the amount or diversity of media exposure, with the exception of the Philippines, all of the countries with available data show a significant relationship between women's use of all three forms of media and their prevalence of cigarette smoking. However, the nature of this association varies across the countries. The results for seven of the countries show that the prevalence of cigarette smoking is higher for women who used all three forms of media at least once a week than women who used at least one form of media less than once a week (Namibia, Moldova, Ukraine, Kazakhstan, Bolivia, Nicaragua, and Peru). The three countries with contrasting findings are Sierra Leone, Nepal, and the Dominican Republic. Again, the results for Nepal are striking in that smoking is almost exclusively concentrated among women with lower media use.

Eight of the 11 countries with available data show a significant association between smoking prevalence and any weekly media exposure. No significant association was found in Sierra Leone, Ukraine, and Kazakhstan. It should be noted that in Ukraine and Kazakhstan, the confidence intervals for the subgroup of women who did not report any weekly media use are large because relatively few women fell in this category. The results for five of the countries in which a significant association was found show that the prevalence of smoking is higher for women with any weekly media exposure than for women with no weekly media exposure (Namibia, Moldova, Bolivia, Nicaragua, Peru). However, these

results are in opposition to those found in Nepal, the Philippines, and the Dominican Republic, where the prevalence of smoking is higher for women with no weekly media exposure.

In summary, with a few exceptions, the results of this analysis paint a different picture of the relationship between media exposure and smoking prevalence for women and men. For women, smoking was more prevalent among those who reported at least weekly media exposure whereas for men, smoking was less prevalent among those who reported at least weekly media exposure. Future research should examine the extent to which these associations reflect the direct influence of media exposure on tobacco use versus the influence of confounding factors related to both smoking behavior and media exposure.

### ***Number of cigarettes smoked in the last 24 hours by women and men***

While there is no risk-free level of exposure to tobacco smoke, the risk and severity of many adverse health outcomes caused by smoking are directly related to the duration and level of exposure to tobacco smoke (Kuper, Boffetta et al. 2002; Thornton, Edwards et al. 2005; Liang, Chen et al. 2009; Shah and Cole 2010). To understand the public health toll of tobacco use, it is important to examine the quantity of cigarette smoking within countries. This section examines the number of cigarettes smoked in the last 24 hours by current smokers age 15-49 across the countries.

#### **Men**

The number of cigarettes smoked by men who smoke varies across the countries examined, with the lowest generally reported by smokers in sub-Saharan Africa and the highest reported by male smokers in North Africa/West Asia/Europe (Appendix Table A3a). In sub-Saharan Africa, male smokers were most likely to report smoking 3-5 cigarettes in the past 24 hours in almost all of the countries, with between one-third and half of male smokers reporting having smoked 3-5 cigarettes. In a small number of countries in sub-Saharan Africa, more than a quarter of male smokers reported smoking 10 or more cigarettes in the last 24 hours (Ethiopia, Kenya, Namibia, Sierra Leone, Zimbabwe).

The number of cigarettes smoked is consistently high among men who smoke in all countries in North Africa/West Asia/Europe, with 83-93 percent of smokers in these countries reporting having smoked 10 or more cigarettes in the last 24 hours.

In the majority of the remaining countries in Central Asia, South and Southeast Asia, and Latin America/Caribbean, while men who smoked were most likely to report smoking 10 or more cigarettes in the last 24 hours, the proportion was smaller than the proportion reporting this amount in North Africa/West Asia/Europe. In Bangladesh, male smokers were most likely (41 percent) to report smoking no cigarettes in the last 24 hours. However, many male Bangladeshi smokers smoked *bidis* (small hand-rolled leaf wrappers), which were not captured in this analysis. Of the remaining countries, the Maldives stands out with two-thirds of male smokers reporting having smoked 10 or more cigarettes in the last 24 hours.

#### **Women**

The results for women also show variation in the frequency of cigarette smoking across the countries (Appendix Table A3b). Women in sub-Saharan Africa and Latin America/Caribbean who smoke also tended to report a lower number of cigarettes smoked than women in other regions. The largest percentage of female smokers in sub-Saharan Africa and Latin America/Caribbean reported smoking either 1-2 cigarettes or 3-5 cigarettes in the last 24 hours. In Mozambique and Uganda, more than half of female smokers reported smoking only 1-2 cigarettes in the last 24 hours. Countries in sub-Saharan Africa where a notable proportion of female smokers (more than 20 percent) reported smoking 10 or more cigarettes include Guinea, Kenya, Namibia, and Swaziland.

Consistent with the results for men, the number of cigarettes smoked by women who smoke was high across all countries in North Africa/West Asia/Europe, with at least 40 percent of smokers in these countries reporting having smoked 10 or more cigarettes in the last 24 hours. In Albania, more than 60 percent of female smokers reported smoking 10 or more cigarettes in the last 24 hours. In the one country examined in Central Asia (Uzbekistan), the number of cigarettes smoked was also high for female smokers, with 40 percent of smokers reporting having smoked 10 or more cigarettes.

In South and Southeast Asia, female smokers in most countries were most likely to have reported having smoked 3-5 cigarettes. In Timor-Leste and Indonesia, female smokers were most likely to have smoked 1-2 cigarettes in the last 24 hours. In a number of countries in this region, more than 20 percent of female smokers reported smoking 10 or more cigarettes, including Cambodia, India, Nepal, and the Philippines.

Finally, in Latin America and the Caribbean, the number of cigarettes smoked varies across the countries. In Bolivia and Peru, roughly 60 percent of female smokers reported not smoking any cigarettes at all in the last 24 hours. In Honduras and Nicaragua, female smokers were most likely to report having smoked 1-2 cigarettes in the last 24 hours. In Haiti, roughly the same proportion of female smokers reported smoking 1-2 cigarettes and 3-5 cigarettes. Finally, in the Dominican Republic, 29 percent of female smokers reported having smoked 3-5 cigarettes in the last 24 hours, and the same percentage reported smoking 10 or more cigarettes in the last 24 hours.

#### *Gender differences in the number of cigarettes smoked in the last 24 hours*

In most countries with available data for both women and men, the number of cigarettes smoked by male smokers is greater than the number smoked by female smokers. The size of the gender differences varies across the countries. In sub-Saharan Africa, there are some countries where the gender differences are small (Kenya, Namibia, and Swaziland). In North Africa/West Asia/Europe, while women and men who smoked most commonly reported having smoked 10 or more cigarettes in the last 24 hours, men were much more likely to have done so than women. In Uzbekistan, very small gender differences are found in the number cigarettes smoked. The magnitude of the gender differences in South and Southeast Asia vary, with smaller differences found in Nepal and the largest difference found in the Maldives. Finally, among smokers in the one country in Latin America/Caribbean with data available for women and men (the Dominican Republic), 38 percent of men and 29 percent of women smoked 10 or more cigarettes in the last 24 hours.



## 4 Conclusions and Study Limitations

The examination of tobacco use among men and women in 49 developing countries reveals that the prevalence of any tobacco use varies substantially worldwide for both women and men, although women are much less likely than men to use tobacco in all countries examined. For men, the prevalence of any tobacco use exceeds 40 percent in all the countries examined in North Africa/West Asia/Europe, Central Asia, and South and Southeast Asia. For women, no clear regional patterns are visible. Tobacco use, at about one in five women using, is highest in Madagascar and Nepal.

Manufactured cigarettes are the most common type of tobacco used worldwide; thus, a substantial burden of death and disability among tobacco users is due to this one form of tobacco alone. For men, the prevalence of cigarette smoking in North Africa/West Asia/Europe and South and Southeast Asia is consistently high, ranging from nearly one-third to two-thirds of men. Among women by contrast, in all but 3 of the 47 countries with available data, the prevalence of current cigarette smoking is less than 10 percent. The prevalence is less than one percent in 21 of the countries. The use of smokeless tobacco, which includes snuff and chewing tobacco, is low in the majority of the countries examined for both women and men.

The number of cigarettes smoked by men who smoke varies across the countries examined, with fewer cigarettes generally smoked by men in sub-Saharan Africa. In contrast, in North Africa/West Asia/Europe, men who smoked reported smoking the greatest number of cigarettes, with over 80 percent of men reporting having smoked 10 or more cigarettes in the last 24 hours. The regional patterns for women are generally consistent with those found for men, but in almost every country female smokers were much less likely than male smokers to have smoked 10 or more cigarettes in the last 24 hours.

Cigarette smoking among women and men varies significantly by age, marital status, level of education, urban-rural area, employment and cash earnings (women only), occupation (men only), household wealth, maternity status, exposure to mass media, and migration status (men only). For both women and men, the nature and the strength of these associations varies across the countries examined.

Based on this analysis, it is clear that tobacco control efforts need to be strengthened in these countries. The high levels of tobacco use in most countries, particularly among men, pose a clear and significant health hazard for these populations. In addition, men who smoke cigarettes tend to be heavy smokers, especially in North Africa/West Asia and Europe. This suggests that the duration and level of exposure to tobacco smoke, factors that increase the health risks associated with tobacco use, also remain disturbingly high in many of the countries examined.

Despite the important findings of this analysis, there are several limitations of DHS data that should be considered when interpreting these results. The DHS is only conducted in developing countries, and the countries that were included in this report are not representative of all countries within a particular region. There are also a number of developing countries with DHS surveys that were excluded from this report as they did not collect information on current tobacco use. Another limitation is that the data on tobacco use are self-reported and may therefore be affected by reporting bias (e.g., underreporting tobacco use) or recall bias (e.g., incorrectly reporting the number of cigarettes smoked). The DHS surveys are also not intended to be tobacco surveys and therefore do not collect important information related to the duration of smoking or addiction. As noted in the methods section, caution should also be taken when comparing the prevalence of tobacco use across the countries given that the surveys may have been conducted at different points in time, the population surveyed within the countries may have differed with respect to the age range or marital status of respondents, and the questions assessing tobacco use may have differed.



## References

- Baker, F., S.R. Ainsworth, J.T. Dye, C. Crammer, M.J. Thun, D. Hoffmann, J.L. Repace, J.E. Henningfield, J. Slade, J. Pinney, T. Shanks, D.M. Burns, G.N. Connolly, and D.R. Shopland. 2000. "Health Risks Associated with Cigar Smoking." *Journal of the American Medical Association* 284(6): 735-740.
- Benach, J., C. Muntaner, H. Chung, and F.G. Benavides. 2010. "Immigration, Employment Relations, and Health: Developing a Research Agenda." *American Journal of Industrial Medicine* 53(4): 338-43.
- Boffetta, P., S. Hecht, N. Gray, P. Gupta, and K. Straif. 2008. "Smokeless Tobacco and Cancer." *Lancet Oncology* 9(7): 667-675.
- Charlesworth, A., and S.A. Glantz. 2005. "Smoking in the Movies Increases Adolescent Smoking: A Review." *Pediatrics* 116(6): 1516-1528.
- Ciapponi, A., A. Bardach, D. Glujovsky, P. Aruj, A. Mazzone, and B. Linetzky. 2011. *Systematic Review of the Link between Tobacco and Poverty*. Geneva, Switzerland: World Health Organization.
- Eriksen, M., J. Mackay, and H. Ross. 2012. *The Tobacco Atlas*. Fourth Ed. Atlanta, GA, USA: American Cancer Society; New York, NY, USA: World Lung Foundation. Also available at [www.tobaccoatlas.org](http://www.tobaccoatlas.org)
- Fleming, P., and P.S. Blair. 2007. "Sudden Infant Death Syndrome and Parental Smoking." *Early Human Development* 83(11): 721-725.
- Food and Agriculture Organization of the United Nations. 2003. "Projections of Tobacco Production, Consumption and Trade to the Year 2010." Accessed December 29, 2012. <ftp://ftp.fao.org/docrep/fao/006/y4956e/y4956e00.pdf>
- Giovino, G.A., S.A. Mirza, J.M. Samet, P.C. Gupta, M.J. Jarvis, N. Bhala, R. Peto., W. Zatonski, J. Hsia, J. Morton, K.M. Palipudi, and S. Asma, for the GATS Collaborative Group. 2012. "Tobacco Use in 3 Billion Individuals from 16 Countries: An Analysis of Nationally Representative Cross-Sectional Household Surveys." *Lancet* 380(9842): 668-679.
- Gwatkin, D.R., S. Rutstein, K. Johnson, E. Suliman, A. Wagstaff, and A. Amouzou. 2000. *Socio-Economic Differences in Health, Nutrition and Poverty*. Washington D.C., USA: The World Bank.
- Hosseinpoor, A.R., L.A. Parker, E.T. d'Espaignet, and S. Chatterji. 2011. "Social Determinants of Smoking in Low- and Middle-Income Countries: Results from the World Health Survey." *Plos One* 6(5).
- Jaddoe, V.W., E.J. Troe, A. Hofman, J.P. Mackenbach, H.A. Moll, E.A. Steegers, and J.C. Witteman. 2008. "Active and Passive Maternal Smoking during Pregnancy and the Risks of Low Birthweight and Preterm Birth: The Generation R Study." *Paediatric and Perinatal Epidemiology* 22(2): 162-171.
- Kuper, H., P. Boffetta, and H.O. Adami. 2002. "Tobacco Use and Cancer Causation: Association by Tumour Type." *Journal of Internal Medicine* 252(3): 206-224.
- Liang, P.S., T.Y. Chen, and E. Giovannucci. 2009. "Cigarette Smoking and Colorectal Cancer Incidence and Mortality: Systematic Review and Meta-Analysis." *International Journal of Cancer* 124(10): 2406-2415.
- Mathers, C.D., and D. Loncar. 2006. "Projections of Global Mortality and Burden of Disease from 2002 to 2030." *PloS Medicine* 3(11).

- National Cancer Institute. 2008. "The Role of the Media in Promoting and Reducing Tobacco Use." Accessed December 29, 2012. [http://cancercontrol.cancer.gov/tcrb/monographs/19/m19\\_complete.pdf](http://cancercontrol.cancer.gov/tcrb/monographs/19/m19_complete.pdf)
- Oberg, M., M.S. Jaakkola, A. Woodward, A. Peruga, and A. Pruss-Ustun. 2011. "Worldwide Burden of Disease from Exposure to Second-Hand Smoke: A Retrospective Analysis of Data from 192 countries." *Lancet* 377(9760): 139-146.
- Palipudi K.M., P.C. Gupta, D.N. Sinha, L.J. Andes, S. Asma, et al. 2012. "Social Determinants of Health and Tobacco Use in Thirteen Low and Middle Income Countries: Evidence from Global Adult Tobacco Survey." *PLoS ONE* 7(3): e33466.
- Prignot, J.J., A.J. Sasco, E. Poulet, P.C. Gupta, and T.Y. Aditama. 2008. "Alternative Forms of Tobacco Use." *International Journal of Tuberculosis and Lung Disease* 12(7): 718-727.
- Rutstein, S., and K. Johnson. 2004. *The DHS wealth index*. DHS Comparative Reports No. 6. Calverton, MD, USA: ORC Macro.
- Shafey, O., M. Eriksen, H. Ross, and J. Mackay. 2009. "Types of Tobacco Use. The Tobacco Atlas. A. C. Society." Atlanta, GA, USA: Bookhouse Group, Inc.
- Shah, R.S., and J.W. Cole. 2010. "Smoking and Stroke: The More You Smoke the More You Stroke." *Expert Review of Cardiovascular Therapy* 8(7): 917-932.
- StataCorp. 2009. Stata Statistical Software: Release 11. College Station, TX, StataCorp LP.
- Thornton, J., R. Edwards, P. Mitchell. R.A. Harrison, I. Buchan, and S.P. Kelly. 2005. "Smoking and Age-Related Macular Degeneration: A Review of Association." *Eye* 19(9): 935-944.
- U.S. Department of Health and Human Services. 2010. *How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease: A Report of the Surgeon General*. Atlanta, GA, USA: Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- U.S. Department of Health and Human Services. 2006. *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. Atlanta, GA, USA: Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- Warnakulasuriya, S., T. Dietrich, M.M. Bornstein, E. Casala Peidro, P.M. Preshaw, C. Walter, J.L. Wennstrom, and J. Bergstrom. 2010. "Oral Health Risks of Tobacco Use and Effects of Cessation." *International Dental Journal* 60(1): 7-30.
- Watson, C.H., G.M. Polzin, A.M. Calafat, and D.L. Ashley. 2003. "Determination of Tar, Nicotine, and Carbon Monoxide Yields in the Smoke of Bidi Cigarettes." *Nicotine & Tobacco Research* 5(5): 747-753.
- World Health Organization. 2012. "Global Health Observatory (GHO). Tobacco consumption. Situation and trends." Accessed April 4, 2013. [http://www.who.int/gho/urban\\_health/risk\\_factors/tobacco/en/](http://www.who.int/gho/urban_health/risk_factors/tobacco/en/)
- World Health Organization. 2011a. "WHO Report on the Global Tobacco Epidemic, 2011." Accessed November 20, 2011. [http://www.who.int/tobacco/global\\_report/2011/en/](http://www.who.int/tobacco/global_report/2011/en/)

World Health Organization. 2011b. "Global Status Report on Noncommunicable Diseases 2010." Accessed Nov 27, 2011. [http://www.who.int/nmh/publications/ncd\\_report2010/en/](http://www.who.int/nmh/publications/ncd_report2010/en/)

World Health Organization. 2010. "Gender, Women, and the Tobacco Epidemic: The Marketing of Tobacco to Women: Global Perspectives." Accessed December 29, 2012. [http://www.who.int/tobacco/publications/gender/en\\_tfi\\_gender\\_women\\_marketing\\_tobacco\\_women.pdf](http://www.who.int/tobacco/publications/gender/en_tfi_gender_women_marketing_tobacco_women.pdf)

World Health Organization. 2003a. *Gender, Health, and Tobacco*. Geneva, Switzerland: World Health Organization.

World Health Organization. 2003b. "WHO Framework Convention on Tobacco Control." Accessed Nov 27, 2011. [http://www.who.int/tobacco/framework/WHO\\_FCTC\\_english.pdf](http://www.who.int/tobacco/framework/WHO_FCTC_english.pdf)

World Health Organization. 2002. "The World Health Report 2002: Reducing Risks, Promoting Healthy Life." Geneva, Switzerland: World Health Organization.



# Appendix

Appendix Table A1. Correlates of current cigarette smoking among men age 15-49 in countries with >10% prevalence of smoking, 2002-10

Characteristics	Kenya 2008/09		Lesotho 2009		Liberia 2007		Madagascar 2008/09		Malawi 2004	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>										
15-24 years	8.2	(6.2-10.2)	25.8	(23.0-28.5)	2.4	(1.6-3.2)	23.4	(21.1-25.7)	7.0	(5.2-8.7)
25-34 years	22.7	(18.1-27.4)	44.2	(40.3-48.2)	18.3	(15.5-21.1)	31.6	(29.2-34.1)	19.9	(16.9-22.9)
35-49 years	26.4	(22.2-30.7)	41.0	(37.1-44.9)	25.8	(23.1-28.5)	31.0	(28.4-33.7)	26.2	(22.1-30.2)
50 years and over	28.6	(20.7-36.6)	30.8	(25.2-36.5)	na	na	24.2	(21.0-27.5)	23.9	(16.6-31.3)
<b>Marital status</b>										
Never married	9.9	(7.9-12.0)	27.3	(24.7-30.0)	5.1	(3.8-6.4)	20.1	(17.6-22.5)	7.5	(5.8-9.3)
Currently married	22.6	(19.0-26.3)	42.3	(38.9-45.6)	20.8	(18.7-22.9)	31.2	(29.3-33.0)	20.7	(18.1-23.3)
Formerly married	41.7	(30.1-53.2)	54.7	(46.5-62.9)	26.9	(20.0-33.7)	38.1	(32.3-43.8)	26.5	(16.5-36.5)
<b>Education</b>										
No education	19.8	(10.2-29.4)	43.5	(38.2-48.9)	29.4	(25.5-33.4)	30.4	(27.1-33.8)	25.4	(19.8-31.0)
Primary	19.5	(16.4-22.5)	38.0	(34.8-41.2)	13.6	(11.6-15.6)	27.7	(25.5-30.0)	17.1	(14.9-19.3)
Secondary	15.0	(11.5-18.5)	28.5	(25.1-31.9)	11.3	(9.6-12.9)	27.5	(25.2-29.8)	11.3	(8.7-14.0)
Higher	15.4	(10.9-19.8)	22.9	(14.9-30.8)	9.6	(5.0-14.2)	30.6	(23.8-37.5)	5.3	(0.0-11.6)
<b>Residence</b>										
Urban	17.2	(12.5-21.9)	33.0	(28.8-37.2)	11.3	(9.1-13.6)	33.6	(31.2-36.1)	14.5	(10.4-18.7)
Rural	17.6	(15.0-20.2)	35.0	(32.6-37.5)	17.8	(15.7-19.8)	27.1	(25.4-28.8)	16.8	(14.8-18.8)
<b>Occupation</b>										
Not working	4.5	(2.1-6.8)	25.0	(21.4-28.6)	4.5	(2.2-6.7)	10.6	(7.9-13.3)	6.1	(4.2-8.1)
Professional/technical/managerial	19.1	(13.9-24.2)	23.0	(14.9-31.2)	9.3	(5.5-13.2)	33.0	(25.7-40.3)	6.7	(1.9-11.5)
Clerical	23.8	(3.8-43.8)	35.1	(20.8-49.3)	15.0	(4.5-25.5)	26.3	(7.9-44.8)	15.9	(2.5-29.4)
Sales and services	18.9	(12.6-25.3)	32.9	(25.2-40.7)	14.9	(11.4-18.3)	34.4	(28.9-39.8)	18.4	(13.6-23.2)
Skilled manual	19.7	(13.3-26.0)	45.8	(39.7-51.9)	23.2	(18.5-28.0)	37.3	(32.8-41.8)	20.4	(14.8-26.0)
Unskilled manual	24.6	(18.8-30.5)	46.7	(39.3-54.0)	9.6	(3.7-15.5)	33.6	(24.5-42.7)	20.4	(14.3-30.4)
Agriculture	17.9	(14.2-21.6)	38.1	(34.7-41.5)	20.3	(17.9-22.6)	28.8	(26.9-30.8)	22.8	(17.7-23.9)
<b>Household wealth quintile</b>										
Lowest	16.7	(11.3-22.1)	35.1	(30.2-40.0)	20.4	(17.4-23.4)	29.5	(25.8-33.2)	23.7	(18.8-28.6)
Second	17.1	(12.1-22.1)	36.6	(31.7-41.4)	20.9	(17.8-24.0)	26.1	(23.2-28.9)	17.5	(14.1-20.9)
Middle	19.3	(14.8-23.7)	36.7	(32.2-41.1)	14.8	(12.1-17.5)	25.4	(22.3-28.6)	17.5	(14.1-20.9)
Fourth	19.6	(15.2-24.0)	37.4	(32.5-42.3)	11.6	(9.1-14.0)	28.3	(25.3-31.2)	14.4	(10.8-17.9)
Highest	15.4	(11.7-19.2)	27.4	(23.6-31.2)	9.8	(7.0-12.6)	31.1	(28.8-33.4)	12.3	(9.8-14.7)
<b>Migration status - times slept away from home in last 12 months</b>										
None	na	na	32.1	(29.4-34.9)	13.7	(11.9-15.6)	na	na	16.9	(14.6-19.1)
1-4	na	na	37.8	(34.3-41.2)	16.5	(14.2-18.8)	na	na	15.8	(12.9-18.6)
5 or more	na	na	34.6	(30.4-38.7)	17.9	(14.5-21.3)	na	na	14.2	(9.9-18.4)
<b>Exposure to mass media</b>										
Does not read a newspaper at least once a week	18.2	(15.1-21.3)	36.3	(33.8-38.7)	17.3	(15.5-19.1)	27.5	(25.8-29.1)	17.5	(15.3-19.7)
Reads a newspaper at least once a week	16.7	(13.6-19.8)	26.9	(22.2-31.6)	10.8	(8.6-13.0)	32.8	(29.5-36.2)	13.0	(10.8-15.2)
Does not watch television at least once a week	21.1	(18.1-24.1)	36.0	(33.4-38.6)	18.4	(16.6-20.1)	27.6	(25.9-29.4)	16.7	(14.7-18.7)
Watches television at least once a week	13.9	(11.1-16.6)	30.5	(26.7-34.2)	10.2	(7.8-12.5)	30.6	(27.8-33.3)	14.4	(11.4-17.3)
Does not listen to the radio at least once a week	16.9	(10.9-22.8)	35.0	(31.5-38.6)	16.4	(14.2-18.6)	26.2	(23.9-28.5)	18.6	(14.3-22.9)
Listens to the radio at least once a week	17.6	(15.3-19.9)	34.1	(31.7-36.6)	14.6	(12.9-16.3)	29.6	(27.9-31.3)	15.9	(14.0-17.7)
At least one form of media less than once per week	19.2	(16.4-22.0)	35.5	(33.2-37.8)	16.6	(15.0-18.1)	27.6	(26.0-29.2)	16.6	(14.6-18.5)
All three media at least once a week	13.8	(10.5-17.1)	26.2	(20.8-31.6)	9.6	(6.7-12.6)	34.5	(30.8-38.2)	13.6	(10.5-16.7)
At least one form of media at least once a week	17.5	(15.2-19.8)	33.9	(31.6-36.3)	14.2	(12.5-15.9)	29.4	(27.8-31.0)	15.8	(14.0-17.6)
No media at least once a week	17.4	(10.3-24.5)	35.6	(31.7-39.4)	18.4	(15.8-20.9)	26.1	(23.7-28.6)	19.0	(14.4-23.6)
<b>Total age 15-49</b>	17.5	(15.2-19.8)	34.5	(32.4-36.6)	15.2	(13.6-16.7)	28.2	(26.7-29.7)	16.3	(14.5-18.1)
<b>Age 50 to highest age</b>	28.6	(20.7-36.6)	30.8	(25.2-36.5)	na	na	24.2	(21.0-27.5)	23.9	(16.6-31.3)
<b>Total age 15 to highest age</b>	18.2	(16.0-20.4)	34.1	(32.1-36.1)	15.2	(13.6-16.7)	27.7	(26.3-29.2)	16.6	(14.8-18.4)

Continued...

Appendix Table A1—Continued

Characteristics	Mozambique 2003		Namibia 2006/07		Rwanda 2005		Sierra Leone 2008		Swaziland 2006/07	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>										
15-24 years	7.0	(5.1-9.0)	14.4	(12.0-16.8)	7.7	(6.5-8.9)	16.2	(13.2-19.1)	6.4	(5.0-7.7)
25-34 years	24.1	(19.9-28.3)	25.7	(22.5-29.0)	17.8	(15.3-20.2)	41.0	(36.7-45.4)	19.4	(16.6-22.2)
35-49 years	15.1	(12.2-18.0)	25.8	(22.6-28.9)	20.6	(17.9-23.3)	49.7	(46.6-52.8)	25.9	(22.7-29.1)
50 years and over	13.0	(9.0-17.0)	na	na	18.3	(14.6-22.1)	41.9	(35.5-48.2)	na	na
<b>Marital status</b>										
Never married	6.6	(4.6-8.6)	16.6	(14.6-18.7)	9.0	(7.7-10.4)	17.9	(15.1-20.6)	10.0	(8.6-11.3)
Currently married	16.7	(14.3-19.1)	26.8	(23.7-30.0)	18.2	(16.2-20.2)	47.2	(44.4-50.1)	18.2	(15.5-20.8)
Formerly married	42.1	(29.7-54.4)	45.0	(35.2-54.9)	27.7	(18.2-37.3)	56.1	(44.6-67.6)	40.1	(32.4-47.7)
<b>Education</b>										
No education	12.9	(8.3-17.4)	23.1	(18.2-28.0)	21.2	(17.7-24.7)	50.1	(46.9-53.3)	24.1	(18.7-29.5)
Primary	16.1	(13.9-18.2)	18.7	(16.1-21.3)	12.6	(11.3-14.0)	31.9	(27.5-36.4)	13.1	(10.8-15.5)
Secondary	7.3	(4.5-10.0)	22.7	(20.2-25.1)	12.0	(8.9-15.2)	21.3	(18.3-24.2)	12.5	(10.8-14.3)
Higher	16.8	(4.2-29.4)	14.6	(8.7-20.6)	6.0	(0.0-12.3)	20.3	(13.4-27.2)	15.1	(11.4-18.8)
<b>Residence</b>										
Urban	15.1	(12.6-17.6)	23.4	(20.5-26.3)	17.7	(14.5-20.8)	22.6	(19.1-26.1)	15.0	(12.6-17.4)
Rural	13.5	(10.9-16.0)	18.5	(16.5-20.5)	13.0	(11.7-14.4)	45.4	(42.6-48.1)	13.4	(11.7-15.1)
<b>Occupation</b>										
Not working	5.4	(3.4-7.4)	13.3	(11.1-15.5)	11.5	(9.9-13.1)	6.2	(3.1-9.4)	9.1	(7.6-10.6)
Professional/technical/managerial	9.7	(5.2-14.3)	25.5	(20.1-31.0)	8.5	(4.0-13.0)	20.9	(14.3-27.6)	12.3	(8.7-15.8)
Clerical	13.0	(3.0-23.0)	30.9	(12.7-49.1)	na	na	49.9	(35.4-64.4)	12.6	(5.4-19.7)
Sales and services	19.2	(14.0-24.4)	24.9	(18.9-30.9)	13.7	(8.5-18.9)	33.0	(26.5-39.5)	15.2	(12.0-18.5)
Skilled manual	22.5	(16.3-28.6)	23.5	(19.5-27.5)	19.1	(14.2-24.0)	43.3	(36.1-50.6)	22.8	(19.3-26.3)
Unskilled manual	14.0	(4.0-23.9)	26.4	(18.0-34.8)	17.8	(14.0-21.5)	59.4	(48.9-69.9)	12.7	(6.4-19.0)
Agriculture	16.1	(13.1-19.2)	24.9	(21.2-28.7)	15.5	(13.1-17.9)	47.7	(44.7-50.6)	18.4	(14.2-22.6)
<b>Household wealth quintile</b>										
Lowest	11.2	(7.8-14.5)	15.0	(11.5-18.5)	14.4	(11.4-17.4)	50.2	(45.1-55.3)	17.2	(13.9-20.6)
Second	16.2	(11.6-20.9)	14.7	(11.6-17.8)	13.1	(10.2-15.9)	43.4	(38.0-48.8)	13.2	(10.1-16.2)
Middle	14.5	(10.8-18.2)	23.2	(20.2-26.1)	13.6	(11.2-16.0)	44.7	(39.7-49.7)	14.1	(11.1-17.2)
Fourth	17.2	(12.8-21.7)	21.3	(17.8-24.9)	13.9	(11.2-16.6)	35.1	(30.0-40.2)	13.7	(11.0-16.3)
Highest	13.2	(9.7-16.7)	26.2	(21.1-31.4)	14.3	(11.8-16.7)	17.2	(12.5-21.9)	12.3	(10.1-14.6)
<b>Migration status - times slept away from home in last 12 months</b>										
None	14.4	(12.1-16.7)	19.9	(17.6-22.3)	13.8	(12.4-15.2)	30.8	(27.9-33.7)	14.5	(12.2-16.7)
1-4	13.7	(10.8-16.6)	21.3	(17.9-24.7)	13.4	(11.1-15.7)	40.1	(36.5-43.7)	12.8	(10.3-15.3)
5 or more	14.9	(9.5-20.3)	23.8	(20.1-27.5)	16.6	(11.5-21.6)	43.1	(38.4-47.7)	13.8	(11.9-15.6)
<b>Exposure to mass media</b>										
Does not read a newspaper at least once a week	14.6	(12.6-16.6)	21.2	(18.7-23.8)	14.0	(12.7-15.4)	40.4	(37.8-43.1)	16.0	(13.8-18.2)
Reads a newspaper at least once a week	11.6	(7.9-15.3)	20.7	(18.2-23.3)	12.4	(9.2-15.6)	20.5	(15.9-25.0)	12.5	(11.1-14.0)
Does not watch television at least once a week	14.4	(12.2-16.6)	19.5	(17.3-21.7)	13.7	(12.4-15.0)	40.1	(37.6-42.7)	15.6	(13.6-17.6)
Watches television at least once a week	13.4	(9.7-17.2)	22.4	(19.7-25.0)	15.4	(12.1-18.7)	20.5	(15.9-25.1)	11.7	(10.1-13.3)
Does not listen to the radio at least once a week	17.6	(13.8-21.3)	22.6	(17.5-27.8)	12.0	(9.6-14.3)	39.6	(35.4-43.8)	16.2	(13.4-19.1)
Listens to the radio at least once a week	13.1	(11.2-15.1)	20.6	(18.5-22.6)	14.4	(13.0-15.7)	35.0	(32.4-37.6)	13.4	(11.9-14.8)
At least one form of media less than once per week	14.6	(12.7-16.5)	20.5	(18.3-22.8)	14.0	(12.7-15.3)	38.9	(36.5-41.4)	14.4	(12.7-16.1)
All three media at least once a week	9.9	(5.5-14.4)	21.6	(18.2-25.1)	11.8	(7.0-16.7)	15.0	(10.0-20.0)	12.7	(10.6-14.9)
At least one form of media at least once a week	13.3	(11.3-15.3)	21.1	(19.2-23.0)	14.3	(13.0-15.7)	34.7	(32.1-37.3)	13.3	(11.9-14.6)
No media at least once a week	17.7	(13.7-21.7)	19.5	(15.0-24.1)	12.0	(9.5-14.4)	40.7	(36.3-45.1)	22.4	(17.4-27.4)
<b>Total age 15-49</b>	14.2	(12.4-16.0)	20.9	(19.2-22.7)	13.9	(12.6-15.1)	36.7	(34.5-38.9)	13.8	(12.5-15.2)
<b>Age 50 to highest age</b>	13.0	(9.0-17.0)	na	na	18.3	(14.6-22.1)	41.9	(35.5-48.2)	na	na
<b>Total age 15 to highest age</b>	14.0	(12.3-15.7)	20.9	(19.2-22.7)	14.2	(13.1-15.4)	37.2	(35.1-39.3)	13.8	(12.5-15.2)

Continued...

Appendix Table A1—Continued

Characteristics	Tanzania 2004/05		Uganda 2006		Zambia 2007		Zimbabwe 2005/06		Albania 2008/09	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>										
15-24 years	7.5	(5.7-9.4)	6.5	(4.7-8.4)	9.2	(7.8-10.5)	13.3	(11.8-14.8)	23.5	(19.9-27.1)
25-34 years	27.8	(23.1-32.5)	24.7	(20.6-28.8)	29.8	(27.1-32.5)	25.9	(23.4-28.4)	55.2	(50.2-60.2)
35-49 years	34.8	(30.5-39.2)	28.2	(24.2-32.1)	37.2	(34.6-39.7)	32.9	(30.2-35.7)	52.0	(48.9-55.0)
50 years and over	na	na	31.2	(22.6-39.9)	31.7	(27.0-36.4)	40.0	(34.3-45.6)	na	na
<b>Marital status</b>										
Never married	7.3	(5.4-9.2)	6.8	(4.8-8.8)	10.8	(9.4-12.2)	12.5	(11.1-13.9)	28.2	(25.3-31.1)
Currently married	29.2	(26.0-32.4)	23.5	(20.3-26.7)	31.3	(29.3-33.3)	28.0	(26.1-29.9)	53.1	(50.4-55.9)
Formerly married	47.8	(37.8-57.8)	42.9	(32.5-53.3)	45.8	(39.1-52.6)	49.2	(43.6-54.7)	--	--
<b>Education</b>										
No education	24.7	(18.4-31.0)	32.8	(23.4-42.1)	41.3	(35.1-47.4)	52.8	(40.4-65.3)	--	--
Primary	21.4	(18.9-24.0)	21.1	(18.4-23.9)	27.3	(25.3-29.3)	25.4	(23.0-27.8)	48.6	(44.7-52.5)
Secondary	14.0	(8.9-19.2)	9.4	(6.9-12.0)	18.4	(16.5-20.3)	19.9	(18.2-21.5)	38.2	(35.1-41.3)
Higher	15.2	(5.5-24.9)	8.0	(2.8-13.3)	14.1	(9.7-18.6)	12.7	(9.1-16.4)	38.9	(31.9-45.9)
<b>Residence</b>										
Urban	18.5	(13.9-23.1)	12.9	(7.9-18.0)	21.2	(18.5-23.9)	19.5	(17.2-21.9)	42.3	(39.6-45.0)
Rural	21.9	(19.4-24.5)	19.1	(16.8-21.5)	24.7	(23.0-26.4)	22.5	(21.0-24.0)	42.7	(39.5-45.9)
<b>Occupation</b>										
Not working	2.7	(1.0-4.4)	4.4	(0.8-8.0)	6.0	(4.6-7.4)	9.8	(7.9-11.7)	21.2	(17.5-24.9)
Professional/technical/managerial	17.3	(4.8-29.9)	10.5	(4.8-16.2)	15.9	(10.7-21.0)	16.0	(12.0-20.0)	45.9	(40.3-51.5)
Clerical	--	--	--	--	12.9	(2.2-23.5)	15.6	(8.7-22.5)	44.6	(28.1-61.1)
Sales and services	16.4	(8.7-24.2)	14.7	(9.2-20.2)	28.0	(24.5-31.4)	22.4	(19.0-25.8)	49.6	(42.8-56.4)
Skilled manual	22.3	(15.3-29.3)	15.9	(10.0-21.8)	32.4	(28.8-36.0)	31.6	(28.3-35.0)	53.9	(49.9-58.0)
Unskilled manual	27.5	(19.1-35.9)	25.1	(15.3-34.9)	23.4	(5.2-41.7)	33.7	(27.3-40.0)	57.6	(46.4-68.9)
Agriculture	25.9	(22.9-28.9)	20.0	(17.2-22.8)	28.4	(26.3-30.6)	27.1	(24.3-29.9)	40.6	(34.5-46.7)
<b>Household wealth quintile</b>										
Lowest	24.3	(19.8-28.8)	25.5	(20.9-30.1)	28.7	(25.8-31.7)	25.3	(22.4-28.3)	45.1	(39.8-50.4)
Second	22.8	(18.1-27.4)	25.0	(20.3-29.6)	28.2	(25.0-31.4)	22.8	(20.2-25.3)	43.4	(36.4-50.5)
Middle	23.7	(18.8-28.7)	20.5	(15.0-26.0)	22.3	(19.6-25.0)	22.6	(20.1-25.1)	41.0	(36.0-46.1)
Fourth	20.1	(15.4-24.8)	14.4	(11.1-17.6)	25.7	(22.7-28.7)	22.4	(19.7-25.0)	44.6	(40.4-48.7)
Highest	15.5	(11.2-19.8)	8.9	(5.9-12.0)	14.7	(11.9-17.6)	15.4	(12.7-18.1)	39.3	(35.3-43.4)
<b>Migration status - times slept away from home in last 12 months</b>										
None	19.2	(16.4-21.9)	17.7	(14.8-20.7)	23.1	(21.1-25.0)	20.9	(19.0-22.7)	na	na
1-4	22.6	(19.3-25.9)	18.9	(15.7-22.1)	23.4	(21.3-25.6)	21.5	(19.6-23.5)	na	na
5 or more	24.2	(18.5-30.0)	17.8	(14.0-21.5)	23.6	(20.0-27.2)	21.9	(19.3-24.6)	na	na
<b>Exposure to mass media</b>										
Does not read a newspaper at least once a week	22.1	(19.5-24.7)	20.1	(17.7-22.5)	25.4	(23.7-27.0)	22.9	(21.4-24.4)	43.0	(39.6-46.4)
Reads a newspaper at least once a week	19.1	(15.6-22.5)	10.9	(7.4-14.4)	18.0	(15.7-20.3)	19.0	(16.9-21.0)	42.1	(39.2-44.9)
Does not watch television at least once a week	21.9	(19.4-24.5)	19.3	(16.9-21.7)	27.2	(25.5-28.9)	23.4	(21.9-24.9)	49.3	(34.6-64.1)
Watches television at least once a week	18.4	(14.1-22.6)	10.9	(7.3-14.6)	16.4	(14.1-18.6)	18.6	(16.5-20.6)	42.4	(40.3-44.5)
Does not listen to the radio at least once a week	23.3	(19.0-27.7)	16.8	(11.2-22.3)	25.6	(23.0-28.1)	22.7	(20.9-24.5)	45.8	(42.3-49.3)
Listens to the radio at least once a week	20.4	(18.0-22.9)	18.3	(16.0-20.6)	22.4	(20.7-24.1)	20.5	(18.9-22.1)	39.7	(36.7-42.7)
At least one form of media less than once per week	21.8	(19.4-24.2)	18.9	(16.6-21.3)	24.8	(23.2-26.4)	22.3	(21.0-23.5)	43.7	(40.9-46.4)
All three media at least once a week	17.0	(11.9-22.0)	10.4	(5.9-14.8)	15.9	(12.9-18.8)	18.6	(15.9-21.2)	40.4	(37.1-43.7)
At least one form of media at least once a week	20.2	(17.8-22.7)	18.3	(16.0-20.6)	21.6	(20.0-23.2)	20.6	(19.1-22.2)	42.4	(40.3-44.5)
No media at least once a week	25.0	(19.9-30.0)	17.4	(11.3-23.5)	30.2	(27.2-33.3)	22.9	(20.7-25.2)	51.4	(35.3-67.5)
<b>Total age 15-49</b>	21.0	(18.8-23.3)	18.1	(15.9-20.2)	23.2	(21.7-24.7)	21.3	(20.0-22.6)	42.5	(40.4-44.6)
<b>Age 50 to highest age</b>	na	na	31.2	(22.6-39.9)	31.7	(27.0-36.4)	40.0	(34.3-45.6)	na	na
<b>Total age 15 to highest age</b>	21.0	(18.8-23.3)	18.7	(16.6-20.8)	23.9	(22.4-25.4)	22.1	(20.8-23.4)	42.5	(40.4-44.6)

Continued...

Appendix Table A1—Continued

Characteristics	Armenia 2005		Azerbaijan 2006		Egypt 2008		Moldova 2005		Ukraine 2007	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>										
15-24 years	35.6	(30.2-41.0)	22.3	(18.0-26.6)	25.4	(22.9-28.0)	40.8	(36.8-44.7)	36.0	(31.8-40.1)
25-34 years	76.3	(70.4-82.2)	61.0	(56.1-65.9)	43.9	(40.7-47.1)	60.5	(55.7-65.3)	55.1	(51.0-59.2)
35-49 years	74.1	(69.1-79.2)	62.8	(58.7-66.9)	47.0	(44.0-49.9)	57.3	(53.3-61.3)	59.6	(55.7-63.5)
50 years and over	na	na	54.7	(47.5-62.0)	43.4	(39.1-47.7)	46.4	(41.1-51.7)	na	na
<b>Marital status</b>										
Never married	42.2	(36.9-47.5)	28.5	(24.5-32.5)	27.6	(25.1-30.2)	40.4	(36.6-44.2)	39.3	(35.5-43.2)
Currently married	73.8	(69.7-77.9)	61.3	(58.3-64.3)	45.8	(43.4-48.2)	57.8	(54.7-61.0)	55.0	(51.3-58.7)
Formerly married	--	--	71.9	(51.7-92.1)	65.3	(45.2-85.4)	78.2	(69.1-87.2)	72.0	(65.5-78.5)
<b>Education</b>										
No education	--	--	--	--	48.1	(42.8-53.4)	--	--	--	--
Primary	--	--	--	--	51.8	(47.4-56.1)	--	--	--	--
Secondary	61.8	(57.6-66.0)	50.8	(48.2-53.5)	37.3	(35.1-39.5)	54.3	(51.3-57.2)	57.8	(54.5-61.1)
Higher	56.6	(49.8-63.3)	41.6	(34.9-48.4)	23.0	(19.3-26.6)	42.9	(37.7-48.1)	45.1	(41.0-49.2)
<b>Residence</b>										
Urban	60.3	(55.5-65.2)	49.2	(45.3-53.1)	39.5	(36.5-42.4)	49.9	(46.9-52.9)	50.8	(46.9-54.7)
Rural	61.0	(55.0-67.0)	48.7	(45.5-51.9)	36.1	(33.8-38.4)	54.2	(50.2-58.2)	53.7	(50.2-57.2)
<b>Occupation</b>										
Not working	33.9	(27.6-40.3)	26.1	(21.6-30.7)	15.0	(12.5-17.4)	41.7	(37.3-46.1)	30.7	(26.1-35.3)
Professional/technical/managerial	67.8	(59.6-76.0)	44.7	(37.3-52.1)	34.5	(30.5-38.5)	42.5	(34.9-50.0)	38.8	(33.1-44.4)
Clerical	--	--	--	--	38.8	(29.6-47.9)	--	--	52.9	(39.8-65.9)
Sales and services	77.4	(69.6-85.3)	55.0	(47.4-62.6)	46.8	(42.4-51.1)	55.2	(46.6-63.9)	54.0	(49.0-59.1)
Skilled manual	77.1	(70.0-84.3)	66.1	(61.7-70.5)	54.0	(50.7-57.4)	60.5	(56.5-64.6)	65.0	(60.8-69.3)
Unskilled manual	76.0	(64.8-87.2)	51.8	(41.5-62.1)	52.7	(44.2-61.2)	70.7	(60.8-80.7)	71.4	(63.8-79.1)
Agriculture	75.6	(67.9-83.3)	58.8	(52.2-65.4)	37.3	(33.1-41.4)	58.4	(51.8-65.0)	51.8	(39.5-64.1)
<b>Household wealth quintile</b>										
Lowest	65.0	(58.3-71.7)	57.1	(51.9-62.2)	35.7	(31.6-39.8)	62.3	(56.4-68.1)	61.4	(55.8-67.0)
Second	59.9	(52.5-67.4)	44.6	(38.6-50.6)	39.8	(36.1-43.6)	56.1	(49.4-62.7)	53.5	(48.9-58.1)
Middle	59.2	(51.9-66.4)	50.7	(45.4-56.1)	39.5	(35.7-43.3)	53.2	(47.7-58.8)	55.3	(50.5-60.1)
Fourth	54.2	(45.8-62.7)	47.6	(41.2-54.1)	40.5	(36.1-44.9)	47.0	(42.0-52.1)	51.3	(45.3-57.2)
Highest	65.9	(58.9-72.8)	45.8	(39.2-52.5)	32.2	(28.4-36.0)	46.6	(42.2-51.1)	42.7	(36.3-49.2)
<b>Migration status - times slept away from home in last 12 months</b>										
None	62.5	(58.3-66.7)	na	na	na	na	51.7	(48.4-55.0)	na	na
1-4	51.1	(42.6-59.6)	na	na	na	na	55.4	(50.0-60.8)	na	na
5 or more	60.1	(47.0-73.2)	na	na	na	na	51.0	(45.4-56.6)	na	na
<b>Exposure to mass media</b>										
Does not read a newspaper at least once a week	60.9	(56.4-65.4)	51.1	(48.2-54.0)	37.5	(35.3-39.7)	54.7	(51.3-58.0)	58.4	(54.9-61.9)
Reads a newspaper at least once a week	59.8	(53.6-66.0)	44.7	(39.6-49.8)	31.2	(27.7-34.8)	49.0	(45.2-52.8)	48.3	(44.6-52.1)
Does not watch television at least once a week	--	--	51.6	(40.0-63.2)	35.9	(27.6-44.2)	68.7	(60.9-76.5)	56.8	(43.3-70.3)
Watches television at least once a week	60.5	(56.7-64.2)	48.9	(46.2-51.6)	37.7	(35.8-39.6)	50.8	(48.0-53.7)	51.6	(48.6-54.5)
Does not listen to the radio at least once a week	60.4	(56.2-64.6)	52.6	(49.4-55.8)	37.5	(34.9-40.0)	55.7	(50.3-61.1)	53.2	(49.3-57.2)
Listens to the radio at least once a week	60.8	(55.2-66.4)	45.1	(41.2-49.0)	37.7	(35.3-40.2)	51.5	(48.7-54.4)	51.0	(47.5-54.5)
At least one form of media less than once per week	60.6	(56.5-64.7)	51.0	(48.3-53.7)	36.4	(34.3-38.5)	54.3	(51.1-57.4)	55.4	(52.3-58.6)
All three media at least once a week	60.5	(53.9-67.0)	42.7	(37.3-48.1)	33.6	(29.1-38.1)	48.8	(44.7-52.9)	48.6	(44.4-52.7)
At least one form of media at least once a week	60.5	(56.7-64.2)	48.7	(46.0-51.4)	35.9	(33.9-37.8)	51.7	(49.0-54.4)	51.7	(48.7-54.6)
No media at least once a week	--	--	57.6	(45.0-70.2)	39.6	(27.0-52.2)	67.7	(56.1-79.4)	53.5	(32.4-74.6)
<b>Total age 15-49</b>	60.6	(56.8-64.4)	49.0	(46.4-51.6)	37.6	(35.7-39.4)	52.3	(49.7-55.0)	51.6	(48.6-54.6)
<b>Age 50 to highest age</b>	na	na	54.7	(47.5-62.0)	43.4	(39.1-47.7)	46.4	(41.1-51.7)	na	na
<b>Total age 15 to highest age</b>	60.6	(56.8-64.4)	49.7	(47.3-52.1)	38.4	(36.6-40.2)	51.1	(48.6-53.6)	51.6	(48.6-54.6)

Continued...

Appendix Table A1—Continued

Characteristics	Uzbekistan 2002		Bangladesh 2007		India 2005/06		Maldives 2009 <sup>1</sup>		Nepal 2006	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>										
15-24 years	12.8	(9.7-15.8)	63.2	(56.5-69.9)	19.2	(18.3-20.0)	47.3	(37.6-57.0)	16.7	(13.5-19.8)
25-34 years	26.6	(22.7-30.5)	55.6	(51.9-59.3)	36.1	(35.0-37.2)	51.2	(45.1-57.2)	33.0	(28.4-37.6)
35-49 years	33.6	(29.2-37.9)	62.3	(59.7-64.9)	43.8	(42.7-44.9)	47.9	(43.4-52.5)	44.8	(40.2-49.5)
50 years and over	26.8	(19.2-34.4)	59.4	(54.6-64.2)	45.0	(42.9-47.0)	38.5	(31.9-45.1)	48.7	(43.6-53.8)
<b>Marital status</b>										
Never married	11.8	(8.3-15.3)	na	na	18.8	(18.0-19.6)	na	na	13.7	(10.6-16.8)
Currently married	29.5	(26.5-32.5)	60.1	(57.8-62.4)	40.4	(39.5-41.3)	48.2	(44.4-52.0)	37.6	(34.3-41.0)
Formerly married	33.3	(13.9-52.8)	59.6	(36.2-83.0)	48.6	(44.0-53.2)	64.9	(50.6-79.1)	42.1	(26.0-58.1)
<b>Education</b>										
No education			73.4	(69.8-77.0)	50.1	(48.5-51.7)	50.4	(44.2-56.6)	50.5	(45.7-55.3)
Primary	17.5	(10.8-24.2)	63.9	(60.5-67.3)	43.1	(41.7-44.5)	53.6	(48.3-58.8)	38.4	(34.1-42.8)
Secondary	23.6	(20.7-26.5)	51.4	(47.3-55.5)	26.5	(25.8-27.3)	49.0	(42.4-55.6)	20.4	(16.6-24.3)
Higher	28.6	(23.1-34.2)	35.0	(29.3-40.6)	19.8	(18.5-21.1)	34.1	(21.2-46.9)	13.6	(9.2-17.9)
<b>Residence</b>										
Urban	31.7	(27.6-35.8)	54.3	(50.3-58.2)	28.7	(27.7-29.8)	48.5	(40.7-56.3)	28.0	(24.9-31.0)
Rural	19.0	(15.9-22.0)	61.8	(59.1-64.6)	35.0	(34.1-35.9)	49.5	(46.0-53.0)	30.7	(27.4-34.0)
<b>Occupation</b>										
Not working	na	na	na	na	9.6	(8.8-10.5)	na	na	11.8	(7.4-16.1)
Professional/technical/managerial	na	na	na	na	22.8	(20.9-24.7)	48.2	(39.6-56.8)	14.3	(9.9-18.7)
Clerical	na	na	na	na	27.3	(25.0-29.7)	40.8	(28.9-52.7)	37.9	(28.9-46.9)
Sales and services	na	na	na	na	33.1	(31.7-34.5)	37.5	(30.0-45.0)	28.8	(22.7-35.0)
Skilled manual	na	na	na	na	39.4	(38.3-40.5)	51.5	(45.3-57.8)	32.4	(26.6-38.2)
Unskilled manual	na	na	na	na	na	na	na	na	40.2	(34.6-45.8)
Agriculture	na	na	na	na	38.2	(36.9-39.5)	58.5	(51.7-65.3)	33.0	(28.9-37.2)
<b>Household wealth quintile</b>										
Lowest	na	na	70.9	(66.1-75.7)	42.9	(41.1-44.8)	56.9	(49.7-64.0)	45.1	(38.4-51.8)
Second	na	na	65.4	(60.9-70.0)	39.5	(38.7-40.9)	50.7	(44.3-57.0)	35.7	(31.4-40.0)
Middle	na	na	61.7	(57.1-66.3)	35.1	(33.9-36.3)	47.0	(41.5-52.6)	28.9	(25.0-32.8)
Fourth	na	na	56.9	(52.2-61.6)	29.1	(27.9-30.3)	42.7	(34.1-51.4)	22.6	(18.9-26.3)
Highest	na	na	46.4	(42.0-50.8)	21.7	(20.7-22.7)	50.4	(41.0-59.7)	24.4	(20.6-28.2)
<b>Migration status - times slept away from home in last 12 months</b>										
None	21.5	(18.9-24.0)	na	na	28.9	(27.9-29.9)	na	na	na	na
1-4	32.5	(24.0-40.9)	na	na	32.4	(31.3-33.4)	na	na	na	na
5 or more	42.6	(29.6-55.7)	na	na	36.4	(35.4-37.5)	na	na	na	na
<b>Exposure to mass media</b>										
Does not read a newspaper at least once a week	na	na	66.0	(63.3-68.6)	39.7	(38.7-40.7)	52.0	(47.5-56.6)	34.8	(31.8-37.8)
Reads a newspaper at least once a week	na	na	46.9	(43.0-50.8)	26.4	(25.7-27.2)	46.5	(41.4-51.5)	19.9	(17.0-22.8)
Does not watch television at least once a week	na	na	60.2	(56.3-64.2)	39.3	(38.1-40.4)	60.6	(40.9-80.2)	36.9	(33.5-40.3)
Watches television at least once a week	na	na	60.1	(57.4-62.7)	28.8	(28.1-29.6)	48.8	(45.1-52.5)	21.9	(19.2-24.6)
Does not listen to the radio at least once a week	na	na	59.2	(56.6-61.9)	33.9	(33.0-34.7)	50.6	(42.8-58.4)	39.2	(35.1-43.2)
Listens to the radio at least once a week	na	na	61.5	(58.0-65.1)	31.2	(30.3-32.1)	48.6	(44.8-52.5)	27.6	(25.0-30.2)
At least one form of media less than once per week	na	na	61.3	(58.9-63.6)	34.9	(34.2-35.7)	51.1	(46.5-55.7)	33.5	(30.5-36.5)
All three media at least once a week	na	na	49.9	(43.0-56.9)	25.4	(24.3-26.4)	45.9	(40.4-51.4)	18.2	(15.6-20.8)
At least one form of media at least once a week	na	na	59.1	(56.6-61.6)	30.4	(29.7-31.1)	48.8	(45.1-52.5)	27.6	(25.1-30.1)
No media at least once a week	na	na	64.4	(60.1-68.7)	42.1	(40.5-43.7)	na	na	42.7	(37.6-47.7)
<b>Total age 15-49</b>	23.8	(21.4-26.2)	60.1	(57.8-62.4)	32.7	(32.0-33.4)	49.1	(45.5-52.8)	30.2	(27.4-33.0)
<b>Age 50 to highest age</b>	26.8	(19.2-34.4)	59.4	(54.6-64.2)	45.0	(42.9-47.0)	38.5	(31.9-45.1)	48.7	(43.6-53.8)
<b>Total age 15 to highest age</b>	24.1	(21.9-26.2)	60.0	(57.9-62.1)	33.5	(32.8-34.1)	47.0	(43.9-50.2)	32.5	(30.1-34.9)

Continued...

Appendix Table A1—Continued

Characteristics	Timor-Leste 2009/10		Bolivia 2008		Dominican Republic 2007	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>						
15-24 years	49.9	(46.9-52.9)	32.4	(29.6-35.3)	4.1	(3.4-4.7)
25-34 years	82.2	(79.5-84.8)	48.5	(45.3-51.6)	10.0	(8.7-11.3)
35-49 years	72.1	(69.2-75.0)	43.8	(40.8-46.7)	17.7	(16.4-19.0)
50 years and over	na	na	42.3	(38.6-46.0)	19.6	(17.7-21.5)
<b>Marital status</b>						
Never married	53.5	(50.8-56.2)	32.9	(30.3-35.5)	4.5	(3.9-5.2)
Currently married	76.0	(73.8-78.3)	45.7	(43.3-48.2)	12.1	(11.2-13.1)
Formerly married	76.1	(64.3-87.9)	57.0	(46.4-67.6)	20.9	(18.6-23.2)
<b>Education</b>						
No education	70.9	(67.1-74.6)	66.0	(45.1-86.9)	22.0	(18.8-25.2)
Primary	72.5	(69.4-75.5)	47.5	(44.6-50.4)	13.5	(12.4-14.6)
Secondary	60.8	(58.2-63.3)	36.9	(34.3-39.5)	7.0	(6.1-7.8)
Higher	60.6	(52.3-68.9)	38.6	(35.1-42.1)	5.5	(4.2-6.8)
<b>Residence</b>						
Urban	62.5	(58.9-66.2)	38.2	(35.7-40.6)	9.8	(8.9-10.6)
Rural	66.9	(64.8-69.0)	46.0	(43.1-48.9)	11.2	(10.3-12.0)
<b>Occupation</b>						
Not working	38.7	(33.3-44.1)	20.6	(16.9-24.4)	na	na
Professional/technical/managerial	72.8	(66.9-78.6)	43.6	(40.3-47.0)	na	na
Clerical	--	--	42.6	(33.1-52.1)	na	na
Sales and services	76.5	(71.7-81.4)	37.8	(31.7-44.0)	na	na
Skilled manual	80.4	(66.3-94.4)	43.5	(39.6-47.4)	na	na
Unskilled manual	71.1	(60.8-81.4)	36.1	(26.6-45.6)	na	na
Agriculture	67.7	(65.4-70.1)	49.3	(45.8-52.9)	na	na
<b>Household wealth quintile</b>						
Lowest	65.4	(61.6-69.1)	55.1	(51.1-59.1)	15.1	(13.9-16.3)
Second	67.5	(63.9-71.2)	40.4	(36.4-44.4)	12.1	(10.5-13.7)
Middle	67.5	(63.6-71.4)	41.1	(36.6-45.5)	8.6	(7.3-9.9)
Fourth	67.3	(63.7-70.8)	36.7	(32.8-40.6)	7.0	(5.7-8.2)
Highest	61.5	(57.7-65.4)	35.8	(32.2-39.3)	7.7	(6.3-9.1)
<b>Migration status - times slept away from home in last 12 months</b>						
None	na	na	na	na	10.5	(9.8-11.3)
1-4	na	na	na	na	8.5	(7.5-9.6)
5 or more	na	na	na	na	11.3	(9.5-13.1)
<b>Exposure to mass media</b>						
Does not read a newspaper at least once a week	66.2	(64.1-68.3)	43.5	(40.9-46.0)	11.8	(10.9-12.7)
Reads a newspaper at least once a week	63.9	(60.2-67.6)	38.4	(35.8-40.9)	8.6	(7.8-9.5)
Does not watch television at least once a week	67.8	(65.3-70.2)	49.8	(46.2-53.5)	15.5	(13.1-17.9)
Watches television at least once a week	62.8	(60.0-65.6)	38.6	(36.5-40.8)	9.6	(9.0-10.3)
Does not listen to the radio at least once a week	64.6	(62.1-67.0)	38.3	(32.4-44.1)	11.9	(10.3-13.6)
Listens to the radio at least once a week	67.2	(64.5-69.9)	41.1	(39.1-43.1)	9.9	(9.2-10.7)
At least one form of media less than once per week	66.1	(64.0-68.1)	43.2	(40.9-45.5)	11.8	(10.9-12.6)
All three media at least once a week	63.2	(58.0-68.4)	38.0	(35.3-40.8)	8.4	(7.4-9.3)
At least one form of media at least once a week	64.9	(62.6-67.1)	40.9	(39.0-42.9)	10.0	(9.3-10.7)
No media at least once a week	67.0	(64.1-69.9)	36.7	(22.4-51.1)	16.2	(13.0-19.4)
<b>Total age 15-49</b>	65.7	(63.9-67.6)	40.9	(39.0-42.8)	10.2	(9.5-10.8)
<b>Age 50 to highest age</b>	na	na	42.3	(38.6-46.0)	19.6	(17.7-21.5)
<b>Total age 15 to highest age</b>	65.7	(63.9-67.6)	41.1	(39.3-42.8)	11.3	(10.7-11.9)

Note: While the analysis for age includes men 50 years and over, the analysis for all other variables is restricted to those age 15-49.

-- indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed. CI: Confidence interval; na: Not available; \* p<0.05; \*\* p<0.01; \*\*\* p<0.001

<sup>1</sup>The response rate for the men's survey in the 2009 Maldives DHS was inordinately low (interviews were completed with only 54 percent of the men who were eligible for interview).

Appendix Table A2. Correlates of current cigarette smoking among women age 15-49 in countries with >5% prevalence of smoking, 1999-2009

Characteristics	Namibia 2006/07		Sierra Leone 2008		Jordan 2009		Moldova 2005		Turkey 2003	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>										
15-24 years	3.0	(2.4-3.7)	2.1	(1.5-2.7)	3.9	(2.2-5.6)	7.4	(6.2-8.5)	23.7	(21.0-26.4)
25-34 years	5.5	(4.2-6.8)	7.6	(6.5-8.7)	6.8	(5.4-8.2)	8.9	(7.7-10.2)	31.9	(29.9-33.9)
35-49 years	8.7	(7.1-10.2)	8.3	(6.9-9.7)	11.6	(9.9-13.3)	5.8	(4.9-6.7)	25.7	(23.6-27.8)
<b>Marital status</b>										
Never married	3.3	(2.5-4.1)	1.1	(0.6-1.6)	na	na	na	(4.6-7.0)	na	na
Currently married	7.9	(6.5-9.3)	6.9	(6.0-7.7)	8.2	(7.2-9.1)	6.3	(5.5-7.1)	26.7	(25.2-28.1)
Formerly married	9.3	(6.0-12.6)	11.2	(8.0-14.3)	20.1	(13.5-26.8)	17.2	(14.4-20.0)	47.1	(39.6-54.6)
<b>Education</b>										
No education	7.4	(4.9-10.0)	7.0	(6.0-7.9)	8.7	(5.7-11.7)	**	**	16.7	(14.3-19.1)
Primary	4.0	(3.1-4.9)	6.2	(4.6-7.7)	9.3	(6.5-12.0)	14.4	(10.0-29.2)	23.2	(21.6-24.9)
Secondary	5.6	(4.5-6.7)	3.4	(2.3-4.4)	9.7	(8.4-11.0)	6.0	(5.2-6.7)	42.9	(39.6-46.3)
Higher	5.6	(2.7-8.4)	0.6	(0.0-1.6)	6.8	(4.9-8.6)	11.3	(9.8-12.8)	45.5	(40.3-50.7)
<b>Residence</b>										
Urban	8.5	(7.0-10.1)	5.0	(4.2-5.9)	9.3	(8.2-10.5)	13.6	(12.3-14.8)	32.8	(31.0-34.7)
Rural	2.3	(1.8-2.8)	6.6	(5.7-7.5)	5.4	(4.3-6.5)	2.3	(1.5-3.1)	15.0	(12.6-17.3)
<b>Employed in the last 12 months</b>										
Yes	6.4	(5.3-7.6)	6.7	(5.9-7.6)	na	na	8.6	(7.6-9.6)	27.8	(25.4-30.2)
No	4.1	(3.9-4.8)	3.7	(2.5-4.8)	na	na	5.3	(4.4-6.3)	27.6	(26.0-29.2)
<b>Cash earnings (among those who worked)</b>										
Yes	8.5	(6.9-10.1)	8.5	(6.7-10.3)	na	na	9.2	(8.1-10.3)	37.6	(34.4-40.8)
No	1.2	(0.6-1.9)	6.1	(5.2-7.1)	na	na	3.7	(1.6-5.8)	13.5	(11.4-15.6)
<b>Household wealth quintile</b>										
Lowest	0.5	(0.2-0.9)	6.7	(5.2-8.2)	6.2	(4.8-7.5)	1.2	(0.4-1.9)	17.0	(14.3-19.8)
Second	2.0	(1.2-2.7)	6.6	(5.0-8.1)	6.1	(4.7-7.6)	2.4	(1.3-3.5)	21.5	(18.9-24.1)
Middle	3.1	(2.2-3.9)	6.3	(4.8-7.7)	7.5	(5.9-9.2)	3.1	(2.2-4.0)	25.2	(22.6-27.9)
Fourth	7.6	(5.7-9.6)	6.8	(5.4-8.2)	10.5	(8.0-13.0)	8.4	(7.0-9.9)	29.4	(26.8-31.9)
Highest	10.6	(8.2-12.9)	4.2	(3.2-5.3)	13.7	(10.0-17.3)	16.8	(15.0-18.7)	40.0	(37.2-42.7)
<b>Maternity status</b>										
Pregnant	4.7	(2.2-7.2)	4.5	(2.6-6.5)	2.9	(1.5-4.4)	0.8	(0.0-2.0)	15.0	(11.5-18.5)
Breastfeeding (not pregnant)	3.5	(2.1-4.8)	6.0	(4.6-7.4)	5.4	(3.7-7.1)	2.3	(0.6-3.9)	19.6	(16.7-22.5)
Neither	5.7	(4.8-6.5)	6.2	(5.4-7.1)	10.5	(9.2-11.8)	7.5	(6.8-8.3)	29.7	(28.0-31.4)
<b>Exposure to mass media</b>										
Does not read a newspaper at least once a week	3.5	(2.9-4.1)	6.2	(5.5-7.0)	na	na	5.7	(4.9-6.5)	22.0	(20.5-23.5)
Reads a newspaper at least once a week	7.2	(5.8-8.7)	3.4	(1.8-4.9)	na	na	8.2	(7.3-9.2)	41.4	(38.7-44.0)
Does not watch television at least once a week	3.0	(2.4-3.7)	6.2	(5.5-7.0)	na	na	5.1	(3.2-6.9)	na	na
Watches television at least once a week	8.2	(6.6-9.7)	4.5	(2.7-6.2)	na	na	7.3	(6.6-8.1)	na	na
Does not listen to the radio at least once a week	5.3	(3.7-6.9)	5.5	(4.7-6.4)	na	na	7.7	(6.4-9.0)	na	na
Listens to the radio at least once a week	5.3	(4.4-6.2)	6.6	(5.6-7.7)	na	na	7.0	(6.2-7.8)	na	na
At least one form of media less than once per week	3.9	(3.3-4.6)	6.2	(5.5-6.9)	na	na	6.5	(5.7-7.3)	na	na
All three media at least once a week	8.6	(6.7-10.4)	2.0	(0.3-3.7)	na	na	7.9	(6.9-8.9)	na	na
At least one form of media at least once a week	5.6	(4.7-6.5)	6.6	(5.5-7.6)	na	na	7.3	(6.6-8.0)	na	na
No media at least once a week	3.1	(1.9-4.3)	5.6	(4.8-6.5)	na	na	3.3	(1.2-5.4)	na	na

Continued...

Appendix Table A2—Continued

Characteristics	Ukraine 2007		Kazakhstan 1999		Nepal 2006		Philippines 2008		Bolivia 2008	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>										
15-24 years	16.9	(14.6-19.1)	8.8	(7.0-10.6)	3.3	(2.4-4.2)	3.5	(2.8-4.1)	7.3	(6.4-8.2)
25-34 years	17.4	(15.0-19.7)	10.4	(8.6-12.2)	12.8	(10.7-15.0)	4.9	(4.1-5.8)	8.5	(7.5-9.5)
35-49 years	12.4	(10.8-14.0)	6.9	(5.6-8.2)	33.7	(30.7-36.7)	6.8	(6.0-7.7)	10.3	(9.3-11.3)
<b>Marital status</b>										
Never married	17.2	(14.6-19.8)	8.9	(7.2-10.7)	1.0	(0.5-1.6)	3.8	(3.0-4.5)	9.2	(8.1-10.3)
Currently married	12.0	(10.5-13.5)	6.6	(5.6-7.6)	18.0	(16.4-19.5)	5.3	(4.7-5.9)	7.3	(6.6-8.0)
Formerly married	22.6	(19.4-25.8)	17.7	(14.4-20.9)	35.3	(28.8-41.9)	10.6	(8.1-13.2)	16.0	(13.5-18.4)
<b>Education</b>										
No education	†	†	†	†	25.7	(23.5-27.9)	11.8	(6.8-16.8)	8.4	(6.2-10.7)
Primary	†	†	†	†	7.7	(6.0-9.4)	7.6	(6.5-8.8)	6.3	(5.6-7.1)
Secondary	15.5	(13.6-17.4)	8.7	(7.6-9.8)	0.7	(0.4-1.0)	4.6	(4.0-5.3)	7.8	(6.9-8.7)
Higher	14.7	(13.0-16.3)	7.8	(6.0-9.5)	0.5	(0.0-1.2)	3.9	(3.2-4.6)	16.0	(14.1-17.8)
<b>Residence</b>										
Urban	17.9	(16.1-19.7)	12.3	(10.7-14.0)	8.6	(7.4-9.7)	5.5	(4.7-6.3)	10.2	(9.2-11.1)
Rural	7.9	(6.3-9.5)	3.7	(2.9-4.4)	16.5	(14.8-18.1)	4.5	(3.8-5.1)	5.8	(4.9-6.6)
<b>Employed in the last 12 months</b>										
Yes	16.5	(14.8-18.1)	10.0	(8.7-11.2)	17.8	(16.2-19.4)	6.1	(5.3-6.8)	9.7	(8.9-10.5)
No	11.0	(9.4-12.7)	7.2	(6.0-8.4)	3.7	(2.8-4.6)	3.8	(3.2-4.3)	6.1	(5.3-7.0)
<b>Cash earnings (among those who worked)</b>										
Yes	16.5	(14.9-18.1)	10.7	(9.4-12.0)	19.1	(16.6-21.7)	6.0	(5.3-6.8)	10.6	(9.7-11.5)
No	13.6	(0.6-26.7)	4.1	(1.7-6.6)	17.2	(15.4-19.0)	6.2	(4.1-8.3)	5.8	(4.4-7.1)
<b>Household wealth quintile</b>										
Lowest	10.1	(7.6-12.7)	1.8	(0.7-2.8)	29.1	(26.4-31.9)	6.2	(5.0-7.4)	6.2	(5.0-7.4)
Second	8.7	(6.9-10.5)	3.2	(1.8-4.7)	18.0	(15.1-20.9)	5.6	(4.5-6.6)	5.3	(4.2-6.4)
Middle	17.1	(13.9-20.3)	4.5	(2.9-6.1)	15.6	(13.3-17.8)	5.2	(4.1-6.3)	6.7	(5.6-7.9)
Fourth	17.0	(14.4-19.6)	13.9	(11.4-16.5)	10.1	(8.4-11.9)	4.2	(3.3-5.1)	8.0	(6.8-9.1)
Highest	19.3	(16.1-22.5)	14.1	(12.0-16.1)	5.5	(4.5-6.4)	4.6	(3.7-5.6)	14.9	(13.3-16.4)
<b>Maternity status</b>										
Pregnant	3.9	(0.0-8.0)	2.1	(0.0-4.2)	9.7	(7.0-12.5)	2.3	(1.2-3.4)	4.1	(2.3-6.0)
Breastfeeding (not pregnant)	5.3	(1.4-9.2)	1.8	(0.4-3.2)	13.7	(11.5-15.8)	3.9	(2.8-5.0)	3.4	(2.6-4.2)
Neither	15.6	(14.2-17.0)	9.2	(8.3-10.2)	16.3	(14.7-17.8)	5.4	(4.8-6.0)	10.1	(9.3-10.9)
<b>Exposure to mass media</b>										
Does not read a newspaper at least once a week	13.0	(11.1-14.8)	6.1	(4.7-7.6)	16.9	(15.4-18.4)	5.0	(4.5-5.6)	7.0	(6.3-7.7)
Reads a newspaper at least once a week	15.7	(14.1-17.4)	10.0	(8.8-11.2)	0.6	(0.0-1.2)	5.1	(4.3-6.0)	11.6	(10.5-12.8)
Does not watch television at least once a week	18.2	(10.5-25.9)	6.3	(3.4-9.1)	20.0	(18.1-21.9)	5.6	(4.4-6.8)	6.0	(5.0-7.0)
Watches television at least once a week	15.0	(13.6-16.4)	8.7	(7.8-9.7)	7.4	(6.0-8.9)	5.0	(4.4-5.5)	9.4	(8.6-10.2)
Does not listen to the radio at least once a week	13.0	(11.1-14.8)	7.5	(6.4-8.5)	20.9	(18.7-23.0)	5.6	(4.7-6.5)	7.6	(6.3-8.8)
Listens to the radio at least once a week	16.1	(14.4-17.8)	10.3	(8.6-12.1)	11.5	(10.1-12.9)	4.8	(4.2-5.3)	8.9	(8.1-9.6)
At least one form of media less than once per week	13.1	(11.6-14.7)	7.4	(6.4-8.4)	16.5	(15.0-18.0)	5.0	(4.4-5.5)	7.3	(6.6-7.9)
All three media at least once a week	16.7	(14.7-18.6)	11.5	(9.7-13.3)	0.5	(0.0-1.0)	5.2	(4.2-6.2)	11.8	(10.7-13.0)
At least one form of media at least once a week	15.0	(13.6-16.4)	8.8	(7.8-9.7)	11.3	(10.0-12.7)	4.9	(4.4-5.4)	8.8	(8.1-9.5)
No media at least once a week	20.7	(8.9-32.4)	4.6	(1.4-7.9)	24.2	(22.1-26.3)	6.8	(4.9-8.7)	5.3	(3.5-7.1)

Continued...

Appendix Table A2—Continued

Characteristics	Dominican Republic, 2007		Nicaragua 2001		Peru 2007/08	
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)
<b>Age group</b>						
15-24 years	1.8	(1.4-2.2)	3.4	(2.8-4.0)	7.7	(6.7-8.8)
25-34 years	5.6	(4.8-6.4)	4.7	(3.7-5.6)	6.3	(5.2-7.3)
35-49 years	11.9	(10.9-12.8)	8.3	(7.3-9.4)	6.5	(5.5-7.5)
<b>Marital status</b>						
Never married	1.5	(1.0-2.0)	3.6	(2.6-4.6)	9.1	(8.0-10.2)
Currently married	7.5	(6.8-8.1)	5.3	(4.6-6.0)	4.7	(4.0-5.4)
Formerly married	9.1	(7.7-10.5)	7.3	(6.0-8.5)	11.3	(8.8-13.7)
<b>Education</b>						
No education	18.7	(14.4-23.0)	3.7	(2.7-4.8)	1.2	(0.4-2.0)
Primary	9.6	(8.8-10.4)	3.7	(3.1-4.4)	2.2	(1.6-2.8)
Secondary	4.0	(3.3-4.7)	6.3	(5.4-7.3)	6.1	(5.1-7.2)
Higher	2.8	(1.9-3.6)	9.4	(6.5-12.4)	12.3	(10.7-13.8)
<b>Residence</b>						
Urban	6.1	(5.5-6.7)	7.1	(6.3-7.9)	8.9	(7.9-9.8)
Rural	7.0	(6.3-7.7)	2.0	(1.6-2.5)	1.5	(1.1-1.9)
<b>Employed in the last 12 months</b>						
Yes	7.3	(6.8-7.9)	7.6	(6.7-8.4)	7.2	(6.4-8.0)
No	5.3	(4.8-5.9)	3.1	(2.5-3.8)	5.9	(4.7-7.0)
<b>Cash earnings (among those who worked)</b>						
Yes	7.4	(6.7-8.0)	7.9	(7.0-8.8)	8.7	(7.7-9.7)
No	7.5	(4.3-10.7)	5.0	(2.7-7.3)	1.9	(1.3-2.6)
<b>Household wealth quintile</b>						
Lowest	9.8	(8.6-10.9)	2.0	(1.4-2.7)	1.7	(0.9-2.6)
Second	8.2	(7.1-9.3)	3.1	(2.2-4.1)	1.8	(1.2-2.4)
Middle	5.8	(4.9-6.7)	4.1	(3.0-5.2)	3.2	(2.4-4.0)
Fourth	4.5	(3.8-5.2)	5.5	(4.3-6.7)	5.5	(4.3-6.7)
Highest	4.6	(3.6-5.7)	9.4	(7.8-11.0)	13.3	(11.7-15.0)
<b>Maternity status</b>						
Pregnant	2.7	(1.3-4.1)	1.3	(0.1-2.6)	1.1	(0.3-1.9)
Breastfeeding (not pregnant)	3.4	(2.3-4.5)	3.1	(2.0-4.2)	2.4	(1.5-3.4)
Neither	6.7	(6.2-7.2)	5.8	(5.3-6.4)	7.8	(7.0-8.7)
<b>Exposure to mass media</b>						
Does not read a newspaper at least once a week	7.9	(7.2-8.5)	4.4	(3.8-5.0)	5.2	(4.5-5.8)
Reads a newspaper at least once a week	4.9	(4.2-5.6)	6.3	(5.3-7.2)	10.5	(8.9-12.2)
Does not watch television at least once a week	9.4	(8.0-10.8)	2.5	(2.0-3.0)	3.4	(2.8-4.0)
Watches television at least once a week	6.0	(5.6-6.5)	6.4	(5.7-7.2)	8.7	(7.7-9.7)
Does not listen to the radio at least once a week	7.9	(6.9-9.0)	4.4	(3.2-5.6)	5.6	(4.5-6.7)
Listens to the radio at least once a week	6.0	(5.5-6.4)	5.4	(4.8-6.0)	7.5	(6.6-8.3)
At least one form of media less than once per week	7.7	(7.1-8.3)	4.4	(3.9-5.0)	5.7	(5.1-6.4)
All three media at least once a week	4.5	(3.9-5.2)	6.6	(5.6-7.7)	11.1	(9.2-13.0)
At least one form of media at least once a week	6.2	(5.8-6.7)	5.4	(4.9-6.0)	7.5	(6.7-8.3)
No media at least once a week	9.1	(7.1-11.2)	2.3	(1.3-3.3)	2.8	(1.9-3.6)

-- indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

CI: Confidence interval

na: Not available

\* p<0.05; \*\* p<0.01; \*\*\* p<0.001

**Appendix Table A3a. Percent distribution of men age 15-49 who currently smoke cigarettes by number of cigarettes smoked in the past 24 hours, 2002-10**

Region and country	Year of survey	0	1-2	3-5	6-9	10+	Don't know/ missing	Total	Number of cigarette smokers
<b>Sub-Saharan Africa</b>									
Ethiopia	2005	6.0	14.9	28.1	17.8	31.0	2.3	100.0	645
Ghana	2008	5.1	31.5	36.9	16.0	5.8	4.7	100.0	289
Kenya	2008/09	0.9	17.7	35.8	15.5	29.4	0.8	100.0	600
Lesotho	2009	9.9	20.2	33.7	15.2	15.5	5.5	100.0	1,032
Liberia	2007	1.6	16.1	32.6	26.7	21.1	1.9	100.0	948
Madagascar	2008/09	0.6	17.4	42.1	16.4	22.0	1.4	100.0	2,188
Mozambique	2003	11.3	26.7	35.3	13.4	13.1	0.2	100.0	367
Namibia <sup>1</sup>	2006/07	4.1	16.7	36.3	15.8	26.0	1.1	100.0	891
Nigeria	2008	3.1	24.8	39.7	13.5	16.7	2.3	100.0	1,187
Rwanda	2005	12.4	32.2	32.4	10.2	12.5	0.3	100.0	608
Sierra Leone	2008	0.6	7.0	35.2	15.8	39.0	2.5	100.0	1,020
Swaziland	2006/07	8.2	23.5	35.3	14.0	16.7	2.2	100.0	576
Tanzania	2004/05	2.8	28.8	47.3	12.4	8.6	0.2	100.0	547
Uganda	2006	5.8	30.0	35.6	12.1	15.9	0.6	100.0	421
Zambia	2007	7.3	26.4	38.6	13.0	13.8	1.0	100.0	1,378
Zimbabwe	2005/06	5.2	18.5	32.9	14.6	26.7	2.1	100.0	1,438
<b>North Africa/West Asia/Europe</b>									
Albania	2008/09	0.4	1.1	3.5	2.0	92.8	0.2	100.0	1,318
Armenia	2005	0.0	0.5	3.3	2.7	91.7	1.8	100.0	867
Azerbaijan	2006	0.0	0.8	2.2	2.1	93.1	1.8	100.0	1,065
Egypt	2008	0.2	1.0	4.2	3.7	90.0	0.9	100.0	1,706
Moldova	2005	0.0	3.1	7.2	5.8	83.4	0.4	100.0	1,029
Ukraine	2007	0.0	1.0	4.4	4.5	89.3	0.7	100.0	1,692
<b>Central Asia</b>									
Uzbekistan	2002	7.3	9.2	18.8	12.8	40.1	11.8	100.0	574
<b>South and Southeast Asia</b>									
Bangladesh	2007	41.3	8.7	16.0	8.7	25.2	0.1	100.0	1,888
India <sup>2</sup>	2005/06	9.1	18.6	20.2	9.1	42.8	0.2	100.0	22,350
Maldives <sup>3</sup>	2009	2.0	6.8	13.3	9.7	66.2	1.9	100.0	664
Nepal	2006	3.2	26.0	29.3	12.2	29.4	0.0	100.0	1,112
Timor-Leste	2009/10	0.7	12.4	26.7	20.6	39.6	0.0	100.0	2,686
<b>Latin America/Caribbean</b>									
Dominican Republic	2007	8.0	17.0	24.7	11.2	37.9	1.2	100.0	2,517

<sup>1</sup>The Namibia survey asked about cigarettes smoked in the last 24 hours, including rolled cigarettes.

<sup>2</sup>The India survey asked about cigarettes or *bidis* smoked in the last 24 hours.

<sup>3</sup>The response rate for the men's survey in the 2009 Maldives DHS was inordinately low (interviews were completed with only 54 percent of the men who were eligible for interview).

**Appendix Table A3b. Percent distribution of women age 15-49 who currently smoke cigarettes by number of cigarettes smoked in the past 24 hours, 2001-10**

Region and country	Year of survey	0	1-2	3-5	6-9	10+	Don't know/missing	Total	Number of cigarette smokers
<b>Sub-Saharan Africa</b>									
Cameroon	2004	0.0	31.7	30.4	13.8	6.0	18.1	100.0	76
Congo Democratic Republic	2007	0.0	25.7	45.9	16.4	3.6	8.5	100.0	46
Ethiopia	2005	0.0	12.3	37.7	1.6	2.1	46.4	100.0	76
Guinea	2005	2.7	11.2	38.4	27.3	20.5	0.0	100.0	55
Kenya	2008/09	0.8	20.4	36.8	3.8	23.1	15.1	100.0	39
Liberia	2007	0.0	13.3	26.5	16.7	3.9	39.5	100.0	67
Madagascar	2008/09	0.0	28.6	26.9	14.3	17.4	12.8	100.0	131
Mozambique	2003	8.5	57.1	24.4	2.9	6.5	0.6	100.0	163
Namibia <sup>1</sup>	2006/07	3.9	16.1	32.8	15.2	31.2	0.9	100.0	515
Nigeria	2008	0.0	17.9	26.4	13.5	8.4	33.9	100.0	66
Rwanda	2005	8.3	46.3	26.9	2.7	7.5	8.4	100.0	34
Senegal	2005	0.0	15.2	18.1	12.6	14.0	40.1	100.0	31
Sierra Leone	2008	0.0	38.0	36.4	8.4	11.1	6.0	100.0	463
Swaziland	2006/07	0.0	27.4	21.4	14.0	20.2	16.9	100.0	59
Tanzania	2004/05	0.0	35.6	35.3	13.2	1.2	14.6	100.0	53
Uganda	2006	6.2	51.6	24.0	0.0	6.0	12.2	100.0	70
Zambia	2007	0.0	39.2	23.7	6.9	3.5	26.6	100.0	56
Zimbabwe	2005/06	0.0	18.3	14.2	3.1	18.8	45.6	100.0	28
<b>North Africa/West Asia/Europe</b>									
Albania	2008/09	3.5	10.5	15.5	8.2	61.0	1.3	100.0	293
Armenia	2005	0.0	14.4	20.9	4.3	54.9	5.4	100.0	64
Egypt	2008	0.0	2.4	16.6	0.8	44.7	35.4	100.0	39
Moldova	2005	0.0	16.4	26.1	14.1	40.0	3.4	100.0	625
Turkey	2003	2.7	19.7	23.3	12.5	41.7	0.1	100.0	2,220
Ukraine	2007	2.5	7.9	27.9	19.9	41.7	0.1	100.0	902
<b>Central Asia</b>									
Uzbekistan	2002	7.8	6.9	30.1	3.4	39.5	12.3	100.0	46
<b>South and Southeast Asia</b>									
Cambodia	2005	0.0	27.7	33.5	12.0	22.3	4.5	100.0	985
India <sup>2</sup>	2005/06	1.9	21.9	34.8	13.0	25.6	2.8	100.0	1,832
Indonesia	2007	2.5	34.2	29.2	15.5	14.4	4.1	100.0	807
Maldives	2009	7.2	13.3	35.2	10.0	17.3	17.0	100.0	167
Nepal	2006	1.6	19.8	40.3	17.7	20.5	0.0	100.0	1,681
Philippines	2008	3.2	26.8	31.7	8.5	25.0	4.9	100.0	666
Timor-Leste	2009/10	0.0	50.5	27.2	10.5	9.5	2.3	100.0	434
<b>Latin America/Caribbean</b>									
Bolivia	2008	57.7	27.9	9.2	1.7	2.4	1.1	100.0	1,447
Dominican Republic	2007	6.4	21.5	28.9	10.9	28.9	3.4	100.0	1,751
Haiti	2005/06	0.0	26.6	30.0	12.2	15.1	16.1	100.0	298
Honduras	2005/06	17.8	39.4	24.3	6.8	10.7	1.0	100.0	348
Nicaragua	2001	17.8	41.0	20.6	8.2	9.9	2.4	100.0	549
Peru	2004/08	61.8	23.5	7.9	2.4	2.9	1.4	100.0	1,157

<sup>1</sup>The Namibia survey asked about cigarettes smoked in the last 24 hours, including rolled cigarettes.

<sup>2</sup>The India survey asked about cigarettes or *bidis* smoked in the last 24 hours.

**Appendix Table A4. Percentage of men who currently smoke cigarettes or use other tobacco products by age group, according to country and region, 2002-10**

Region and country	Year of survey	Percent using any tobacco		Percent using manufactured cigarettes		Percent using other smoked tobacco		Percent using smokeless	
			(95% CI)		(95% CI)		(95% CI)		(95% CI)
<b>Sub-Saharan Africa</b>									
Ethiopia	2005								
15-49		10.6	(9.3-11.9)	8.1	(7.0-9.3)	1.0	(0.5-1.5)	3.0	(2.3-3.7)
50-59		22.2	(18.2-26.2)	11.9	(8.3-15.6)	3.7	(1.6-5.8)	10.1	(7.2-13.1)
15-59		11.7	(10.4-12.9)	8.5	(7.4-9.6)	1.2	(0.7-1.8)	3.7	(3.0-4.4)
Ghana	2008								
15-49		6.8	(5.9-7.6)	6.2	(5.4-7.0)	0.6	(0.3-0.8)	0.9	(0.6-1.3)
50-59		19.0	(15.1-22.8)	16.0	(12.5-19.6)	2.3	(0.9-3.8)	4.4	(2.3-6.5)
15-59		8.1	(7.2-9.0)	7.3	(6.5-8.2)	0.8	(0.5-1.1)	1.3	(0.9-1.7)
Kenya	2008/09								
15-49		18.9	(16.5-21.2)	17.5	(15.2-19.8)	1.1	(0.4-1.8)	1.8	(1.2-2.4)
50-54		37.8	(29.2-46.4)	28.6	(20.7-36.6)	5.1	(1.1-9.1)	6.2	(1.3-11.0)
15-54		20.0	(17.7-22.3)	18.2	(16.0-20.4)	1.4	(0.7-2.1)	2.1	(1.3-2.8)
Lesotho	2009								
15-49		34.5	(32.4-36.6)	34.5	(32.4-36.6)	5.7	(4.8-6.6)	1.3	(0.8-1.7)
50-59		30.8	(25.2-36.5)	30.8	(25.2-36.5)	4.5	(2.4-6.7)	2.6	(0.5-4.7)
15-59		34.1	(32.1-36.1)	34.1	(32.1-36.1)	5.6	(4.7-6.5)	1.4	(0.9-1.9)
Liberia <sup>1</sup>	2007								
15-49		16.2	(14.6-17.8)	15.2	(13.6-16.7)	0.8	(0.4-1.2)	2.3	(1.6-3.1)
Madagascar	2008/09								
15-49		47.3	(45.6-49.0)	28.2	(26.7-29.7)	1.7	(1.3-2.1)	22.6	(20.9-24.3)
50-59		62.3	(58.5-66.2)	24.2	(21.0-27.5)	1.8	(0.9-2.8)	41.1	(37.1-45.2)
15-59		48.9	(47.3-50.6)	27.7	(26.3-29.2)	1.7	(1.4-2.1)	24.6	(23.0-26.3)
Malawi	2004								
15-49		20.7	(18.6-22.7)	16.3	(14.5-18.1)	0.1	(0.0-0.2)	0.3	(0.2-0.5)
50-54		37.8	(29.4-46.1)	23.9	(16.6-31.3)	0.0	(-)	2.5	(0.4-4.6)
15-54		21.4	(19.4-23.4)	16.6	(14.8-18.4)	0.1	(0.0-0.2)	0.4	(0.2-0.6)
Mozambique	2003								
15-49		24.3	(21.9-26.6)	14.2	(12.4-16.0)	0.2	(0.0-0.6)	na	na
50-64		44.7	(38.5-50.9)	13.0	(9.0-17.0)	0.0	(-)	na	na
15-64		27.2	(24.6-29.7)	14.0	(12.3-15.7)	0.2	(0.0-0.5)	na	na
Namibia <sup>1</sup>	2006/07								
15-49		23.7	(21.8-25.5)	20.9	(19.2-22.7)	0.9	(0.6-1.2)	1.8	(1.3-2.4)
Nigeria	2008								
15-49		11.5	(10.7-12.3)	8.9	(8.2-9.6)	0.7	(0.5-0.9)	3.2	(2.7-3.6)
50-59		17.8	(15.6-20.0)	9.6	(7.9-11.2)	0.5	(0.2-0.8)	8.8	(7.3-10.4)
15-59		12.2	(11.4-13.0)	9.0	(8.3-9.6)	0.7	(0.5-0.9)	3.8	(3.3-4.2)
Rwanda	2005								
15-49		19.4	(18.0-20.8)	13.9	(12.6-15.1)	3.4	(2.8-4.1)	na	na
50-59		47.2	(42.7-51.6)	18.3	(14.6-22.1)	20.9	(17.2-24.6)	na	na
15-59		21.7	(20.4-23.0)	14.2	(13.1-15.4)	4.9	(4.2-5.6)	na	na
Sierra Leone	2008								
15-49		37.4	(35.1-39.7)	36.7	(34.5-38.9)	0.4	(0.1-0.7)	1.3	(0.8-1.9)
50-59		44.6	(38.2-51.1)	41.9	(35.5-48.2)	1.4	(0.0-3.1)	3.2	(1.5-4.9)
15-59		38.1	(36.0-40.3)	37.2	(35.1-39.3)	0.5	(0.2-0.8)	1.5	(1.0-2.0)
Swaziland <sup>1</sup>	2006/07								
15-49		16.7	(15.2-18.1)	13.8	(12.5-15.2)	1.4	(0.9-1.9)	2.8	(2.3-3.4)
Tanzania <sup>1</sup>	2004/05								
15-49		22.0	(19.8-24.3)	21.0	(18.8-23.3)	0.4	(0.1-0.6)	na	na
Uganda	2006								
15-49		21.7	(19.4-24.0)	18.1	(15.9-20.2)	1.8	(1.1-2.6)	3.9	(3.1-4.8)
50-54		40.5	(31.1-49.8)	31.2	(22.6-39.9)	6.6	(2.4-10.9)	7.0	(2.3-11.7)
15-54		22.6	(20.4-24.8)	18.7	(16.6-20.8)	2.1	(1.3-2.8)	4.1	(3.1-5.0)
Zambia	2007								
15-49		23.6	(22.0-25.1)	23.2	(21.7-24.7)	1.2	(0.8-1.6)	0.2	(0.1-0.4)
50-59		33.0	(28.3-37.8)	31.7	(27.0-36.4)	1.6	(0.5-2.7)	1.0	(0.2-1.9)
15-59		24.3	(22.8-25.8)	23.9	(22.4-25.4)	1.2	(0.8-1.6)	0.3	(0.2-0.4)
Zimbabwe	2005/06								
15-49		22.8	(21.5-24.1)	21.3	(20.0-22.6)	3.0	(2.5-3.5)	1.9	(1.6-2.3)
50-54		43.5	(37.6-49.5)	40.0	(34.3-45.6)	5.4	(2.9-7.8)	7.1	(4.0-10.2)
15-54		23.7	(22.4-25.0)	22.1	(20.8-23.4)	3.1	(2.6-3.6)	2.1	(1.8-2.5)

Continued...

Appendix Table A4—Continued

Region and country	Year of survey	Percent using any tobacco		Percent using manufactured cigarettes		Percent using other smoked tobacco		Percent using smokeless	
		(95% CI)		(95% CI)		(95% CI)		(95% CI)	
<b>North Africa/West Asia/Europe</b>									
Albania <sup>1</sup>	2008/09								
15-49		42.5	(40.4-44.6)	42.5	(40.4-44.6)	2.1	(1.2-2.9)	na	na
Armenia <sup>1</sup>	2005								
15-49		60.6	(56.9-64.4)	60.6	(56.8-64.4)	0.9	(0.0-2.1)	1.8	(0.9-2.8)
Azerbaijan	2006								
15-49		49.1	(46.5-51.7)	49.0	(46.4-51.6)	0.5	(0.1-0.9)	0.3	(0.1-0.5)
50-59		54.7	(47.5-62.0)	54.7	(47.5-62.0)	0.0	(--)	0.0	(--)
15-59		49.8	(47.4-52.2)	49.7	(47.3-52.1)	0.4	(0.1-0.8)	0.2	(0.1-0.4)
Egypt	2008								
15-49		42.6	(40.7-44.5)	37.6	(35.7-39.4)	8.4	(7.4-9.4)	0.2	(0.1-0.4)
50-59		52.5	(48.2-56.7)	43.4	(39.1-47.7)	12.2	(9.4-15.0)	0.2	(0.0-0.4)
15-59		44.0	(42.2-45.8)	38.4	(36.6-40.2)	8.9	(8.0-9.9)	0.2	(0.1-0.4)
Moldova	2005								
15-49		52.3	(49.7-55.0)	52.3	(49.7-55.0)	0.1	(0.0-0.2)	0.1	(0.0-0.3)
50-59		46.4	(41.1-51.7)	46.4	(41.1-51.7)	0.1	(0.0-0.3)	0.1	(0.0-0.4)
15-59		51.1	(48.6-53.6)	51.1	(48.6-53.6)	0.1	(0.0-0.2)	0.1	(0.0-0.2)
Ukraine <sup>1</sup>	2007								
15-49		52.2	(49.3-55.2)	51.6	(48.6-54.6)	3.6	(2.8-4.4)	0.3	(0.1-0.4)
<b>Central Asia</b>									
Uzbekistan <sup>2</sup>	2002								
15-49		51.2	(48.0-54.4)	23.8	(21.4-26.2)	na	na	31.8	(28.5-35.0)
50-59		48.4	(38.9-57.8)	26.8	(19.2-34.4)	na	na	23.3	(16.2-30.5)
15-59		51.0	(47.9-54.0)	24.1	(21.9-26.2)	na	na	31.1	(28.0-34.1)
<b>South and Southeast Asia</b>									
Bangladesh <sup>3</sup>	2007								
15-49		69.3	(67.2-71.5)	60.1	(57.8-62.4)	0.0	(--)	19.8	(17.6-21.9)
50-54		76.4	(72.4-80.4)	59.4	(54.6-64.2)	0.0	(--)	30.7	(25.9-35.4)
15-54		70.3	(68.4-72.3)	60.0	(57.9-62.1)	0.0	(--)	21.4	(19.2-23.5)
India <sup>3</sup>	2005/06								
15-49		57.0	(56.3-57.7)	32.7	(32.0-33.4)	0.6	(0.5-0.8)	36.9	(36.1-37.7)
50-54		67.0	(65.1-68.8)	45.0	(42.9-47.0)	1.3	(0.8-1.8)	34.5	(32.4-36.6)
15-54		57.6	(56.9-58.3)	33.5	(32.8-34.1)	0.7	(0.5-0.8)	36.7	(35.9-37.5)
Maldives <sup>4</sup>	2009								
15-49		53.0	(49.2-56.9)	49.1	(45.5-52.8)	0.3	(0.0-0.6)	6.0	(4.6-7.4)
50-64		55.2	(48.7-61.7)	38.5	(31.9-45.1)	1.9	(0.3-3.6)	18.7	(13.8-23.5)
15-64		53.5	(50.2-56.8)	47.0	(43.9-50.2)	0.7	(0.2-1.1)	8.5	(7.0-9.9)
Nepal	2006								
15-49		53.4	(51.2-55.6)	30.2	(27.4-33.0)	1.4	(0.8-2.0)	36.2	(34.3-38.2)
50-59		78.4	(73.9-82.8)	48.7	(43.6-53.8)	4.2	(2.0-6.4)	45.4	(39.0-51.8)
15-59		56.5	(54.5-58.5)	32.5	(30.1-34.9)	1.7	(1.1-2.4)	37.4	(35.3-39.4)
Timor-Leste <sup>1</sup>	2009/10								
15-49		69.5	(67.7-71.3)	65.7	(63.9-67.6)	23.2	(21.5-24.9)	2.5	(1.8-3.1)
<b>Latin America/Caribbean</b>									
Bolivia	2008								
15-49		na	na	40.9	(39.0-42.8)	na	na	na	na
50-64		na	na	42.3	(38.6-46.0)	na	na	na	na
15-64		na	na	41.1	(39.3-42.8)	na	na	na	na
Dominican Republic	2007								
15-49		11.7	(10.9-12.4)	10.2	(9.5-10.8)	0.1	(0.0-0.1)	1.9	(1.6-2.2)
50-59		23.1	(21.0-25.2)	19.6	(17.7-21.5)	0.5	(0.3-0.8)	4.6	(3.8-5.5)
15-59		13.0	(12.3-13.7)	11.3	(10.7-11.9)	0.1	(0.1-0.2)	2.2	(1.9-2.5)

(--) indicates that no respondents used that form of tobacco and therefore confidence intervals are not estimated.

na: Not available

<sup>1</sup>Only men 15-49 were interviewed.

<sup>2</sup>The Uzbekistan survey only assessed current smoking status if respondents ever smoked at least 100 cigarettes in their entire life.

<sup>3</sup>The Bangladesh and India surveys asked about smoking cigarettes or *bidis*.

<sup>4</sup>The response rate for the men's survey in the 2009 Maldives DHS was inordinately low (interviews were completed with only 54 percent of the men who were eligible for interview).

