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FIELDWORK-RELATED FACTORS AND DATA QUALITY IN THE DEMOGRAPHIC AND HEALTH SURVEYS PROGRAM

DHS ANALYTICAL STUDIES 19



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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 ICF Macro, Demographic and Health Research Division, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705 (telephone: 301-572-0200; fax: 301-572-0999; e-mail: reports@macrointernational.com; internet: 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 Analytical Studies No. 19

Fieldwork-Related Factors and Data Quality in the Demographic and Health Surveys Program

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Preface

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

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

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

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

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

Ann Way
Project Director

Executive Summary

The purpose of this report is to describe the association between fieldwork-related factors and the quality of the data collected in the Demographic and Health Surveys (DHS) program. Broadly, the findings of this report confirm expectations: fieldwork in rural areas is often subject to more data quality concerns, and care must be taken to ensure that language does not pose a barrier to the collection of high-quality data. More specifically, the results provide opportunities for individual countries to examine the results in light of their field practices and make adjustments as needed for future DHS surveys.

General recommendations derived from these results are already standard practice in the DHS surveys:

1. All due emphasis should be placed on hiring interviewers based on their knowledge of local languages, proportional to the distribution of languages among clusters.
2. Ensuring that questionnaires are translated into as many local languages as practicable is likely to be a useful step toward improving data quality.
3. The beginning and end of the fieldwork period may be particularly sensitive times, as interviewers are first learning the practice in the beginning and, toward the end of fieldwork, may be fatigued and want to go back to their families. These realities call for increased, careful supervision of fieldwork during these sensitive periods, with an eye to ensuring that fieldworkers have the support that they need to do their job well.

Care must be taken when interpreting these descriptive findings, with thoughtful consideration given to the country-specific context in which the results were obtained. Nevertheless, the information presented in this report may help DHS staff and implementing agencies to identify country-specific fieldwork practices that could be modified to improve data quality.

While there are several key general recommendations for ensuring the quality of DHS data, it is critical that implementing agencies and DHS staff alike ensure a continuous assessment of the situation on the ground during the fieldwork period. Ensuring rapid feedback from the field allows for course adjustments to be made in an efficient manner, thus maintaining the highest possible standards of data quality.

1

Introduction

Data quality is of paramount importance to the Demographic and Health Surveys (DHS) project, which has long been considered the gold standard for nationally representative data collection in the developing world. Data from the DHS project, including DHS surveys, Service Provision Assessments, AIDS Indicator Surveys (AIS), and Malaria Indicator Surveys, are used for setting national agendas in population and health, for informing programs and policymakers at the national and international level, and, among researchers, for analytically examining a broad array of population and health issues. DHS provides information for making evidence-based decisions and recommendations. Given the central role that DHS plays in this regard, it is critical that the data collected through the DHS project are as accurate as possible. Thus, several comparative reports on data quality in the DHS have been commissioned. Previous reports have focused on the quality of age and date reporting (Pullum, 2006; IRD, 1990), and on health and nutrition data (Pullum, 2008; Macro International, 1993). This report looks specifically at the contribution of fieldwork-related factors to the quality of data.

The objective of this analysis is to investigate how fieldwork-related factors during data collection activities impact the quality of the data reported in surveys. Specifically, we use data from 39 countries to examine the differential effects of specific aspects of the data collection environment on a set of common indicators of data quality.

The data quality indicators considered for this analysis are the following: missing or incomplete data, age heaping, age displacement, inconsistencies in age and date reporting, and non-response. We analyze these indicators according to sex of the interviewer, residence of the respondent, whether a translator was used in the interview, whether the language of the questionnaire and the interview was the same, whether the language of the interview and the respondent's mother language was the same, the number of visits to the household required in order to complete the interview, the time of day the interview was conducted, the number of days the interviewer spent in the cluster, and the timing of the interview during the course of fieldwork (beginning, middle, or end of the fieldwork period).

This work is expected to inform fieldwork practices: fieldwork-related factors that influence data quality and that are amenable to modification can be adjusted to improve the quality of the DHS data.

2

Data and Methods

This section presents information on the surveys used in the analysis and the analytical methods employed to assess the relationship between fieldwork-related factors and indicators of data quality.

2.1 Data

Table 2.1 presents basic information on the surveys included in this analysis, including the number of households, women, and men that were interviewed as well as the household's, women's, and men's response rates. Data included in this analysis were drawn from 21 countries in sub-Saharan Africa, 5 in North Africa/West Asia/Europe, 7 in South and Southeast Asia, and 6 in Latin America and the Caribbean; these constitute all DHS and AIS surveys conducted between 2003 and 2006. Data for each survey were collected based on nationally representative probability samples of households. Sample sizes range from 2,608 households (Guyana) to 109,041 households (India). Nearly all household response rates were 95 percent or above; exceptions include Colombia (88 percent), Turkey (93 percent), and Guyana (93 percent).

Female residents of selected households were eligible to respond to the individual woman's questionnaire if they were age 15-49; men's age range of eligibility is typically 15-54, though sometimes the eligibility range is extended to 59 for men. Except in Burkina Faso, response rates among women were higher than those among men across all countries. The lowest response rate for women was in Guyana (87 percent). In 14 of 33 countries where male interviews were conducted, response rates for men were below 90 percent; the lowest male response rate was also found in Guyana (77 percent).

Table 2.1: Summary of surveys included in this report, DHS/AIS 2003-06 (unweighted)

Country/year	Number of households interviewed	Household response rate	Number of women interviewed	Women's response rate	Number of men interviewed	Men's response rate
Sub-Saharan Africa						
Benin 2006	17,511	99.1	17,794	94.4	5,321	91.4
Burkina Faso 2003	9,097	99.0	12,477	96.3	3,605	99.3
Cameroon 2004	10,462	97.6	10,656	94.3	5,280	93.0
Chad 2004	5,369	99.4	6,085	97.2	1,887	94.4
Congo 2005	5,879	99.2	7,051	94.8	3,146	89.5
Cote d'Ivoire ¹ 2005	4,368	95.5	5,183	90.0	4,503	88.0
Ethiopia 2005	13,721	98.5	14,070	95.6	6,033	89.0
Ghana 2003	6,251	98.7	5,691	95.7	5,015	93.8
Guinea 2005	6,282	99.2	7,954	97.2	3,174	94.5
Kenya 2003	8,561	96.3	8,195	94.0	3,578	85.5
Lesotho 2004	8,592	95.2	7,095	94.3	2,797	84.6
Madagascar 2003-04	8,420	98.4	7,949	95.9	2,432	91.4
Malawi 2004	13,664	97.8	11,698	95.7	3,261	85.9
Mozambique 2003	12,315	94.8	12,418	91.0	2,900	80.6
Niger 2006	7,660	97.9	9,223	96.0	3,549	92.4
Nigeria 2003	7,225	98.6	7,620	95.4	2,346	91.2
Rwanda 2005	10,272	99.7	11,321	98.1	4,820	97.2
Senegal 2005	7,412	98.5	14,602	93.7	3,761	86.0
Tanzania 2004	9,735	98.8	10,329	97.3	2,635	91.8

continued

Table 2.1 (continued). Summary of surveys included in this report, DHS/AIS 2003-06 (unweighted)

Country/year	Number of households interviewed	Household response rate	Number of women interviewed	Women's response rate	Number of men interviewed	Men's response rate
Sub-Saharan Africa						
Uganda 2006	8,770	97.5	8,531	94.7	2,503	90.7
Zimbabwe 2005-06	9,285	95.0	8,907	90.2	7,175	81.7
North Africa/West Asia/Europe						
Armenia 2005	6,707	95.8	6,566	96.9	1,447	88.8
Egypt 2005	21,972	98.9	19,474	99.5	na	na
Moldova Republic 2005	11,095	95.2	7,440	95.1	2,508	86.6
Morocco 2003-04	11,513	98.8	16,798	96.3	na	na
Turkey 2003	10,836	92.9	8,075	95.6	na	na
South and Southeast Asia						
Bangladesh 2004	10,500	99.8	11,440	98.6	4,297	95.7
Cambodia 2005	14,243	98.0	16,823	97.5	6,731	93.1
India 2005-06	109,041	97.7	124,385	94.5	74,369	87.1
Indonesia 2002-03	33,088	99.0	29,483	98.3	8,310	95.1
Nepal 2006	8,707	99.6	10,793	98.4	4,397	96.0
Philippines 2003	12,586	99.1	13,633	97.8	4,766	95.1
Vietnam ¹ 2005	6,337	99.9	13,996	98.9	6,707	98.8
Latin America and the Caribbean						
Bolivia 2003	19,207	98.9	17,654	95.5	6,230	89.7
Colombia 2005	37,211	88.4	41,344	92.4	na	na
Guyana ¹ 2005	2,608	93.1	2,425	87.4	1,875	76.8
Haiti 2005	9,998	99.6	10,757	98.8	4,958	97.3
Honduras 2005	18,683	97.9	19,948	92.2	na	na
Peru ² 2004-06	13,211	99.2	12,465	97.7	na	na

¹ Standard AIS data.

² Continuous DHS data.

2.2 Methods

In this section, we first describe several commonly used indicators of data quality that are examined in this report. We then describe the fieldwork-related factors that are assessed.

2.2.1 Indicators of Data Quality

Age Displacement: Transfers Across Age Boundaries

Obtaining the correct ages of all household members is a critical element of the data collection process, because age information gathered in the household schedule is used to identify those members who are eligible for individual interviews or additional questionnaire modules, where the majority of policy- and programmatically-relevant information is collected. During the household interview, the ages of household members can be recorded incorrectly as falling below or above the eligibility age range. For example, when the eligibility range for an individual interview for women is 15-49, age displacement at the lower bound of eligibility occurs when ages of women who are actually age 15 or 16 years old are recorded as age 13 or 14.¹ An excess of women reported at

¹ It is also possible, though less common, to have age displacement occur in the other direction. For example, without sufficient probing by the interviewer, respondents to the household survey may round the age of a 13- or 14-year-old household member up to the age of 15, thus incorrectly transferring the household member into the age range of eligibility.

age 10-14 would be indicative of this type of age displacement or transfer across borders. Age displacement can occur due to either the misstatement of age by the respondent or due to the interviewer's deliberate efforts to move an eligible woman outside of the age range of eligibility in order to reduce interviewer workload.

The occurrence of age transfers for both men and women are identified in this report using age ratios. Age ratios are defined as the reported number of cases in a given age interval divided by the reported number of cases in the preceding age interval. Based on historical patterns of population growth worldwide, age ratios decline regularly as age increases and are expected to be slightly less than 1 (or 100) at most ages. Irregularity in age ratios would indicate displacement of age or transfers across intervals (Pullum, 2006).

In 1990, Rutstein and Bicego summarized possible transfers outside the 15-49 age interval in a Botswana household survey by first calculating the relevant age ratios in the following intervals: 10-14, 15-19, 45-49, and 50-54. Subsequently, they summarized displacement by subtracting the age ratio inside the boundary (AR_i) from the age ratio outside the boundary (AR_o).

In 2006 Pullum used an adapted approach to Rutstein and Bicego's (1990) method to identify transfers downward or upward. First, with the lower boundary for eligibility (age 15), two intervals were identified below and two identified above age 15.

Pullum (2006) presents the following table for illustration of his method:

Age Interval	Observed Frequency	Fitted Frequency
5-9	a	a
10-14	b	\hat{b}
15-19	c	\hat{c}
20-24	d	d

Assuming that frequencies a and d are reported correctly, a model is used to estimate fitted frequencies \hat{b} and \hat{c} using the frequencies of a and d. The development of the model is based on two assumptions: first, $\hat{b} + \hat{c} = b + c$; and second, based on the assumption that changes in both cohort size and the force of mortality tend to be linear on a log scale, the ratios d/\hat{c} , \hat{c}/\hat{b} , and \hat{b}/a are, therefore, also linear on a log scale (Pullum, 2006). Given the second assumption, Pullum derives the following equation—

$$-\ln(\hat{c}/\hat{b}) = [\ln(d/a)]/3$$

$$\text{—where } u = (d/a)^{1/3}, \hat{b} = (b + c)[1/(1 + u)], \text{ and } \hat{c} = (b + c)[u/(1 + u)].$$

To then estimate the proportion of ages in the 15-19 interval that have been misreported downward, Pullum presents the formula: $(\hat{c} - c)/\hat{c} = 1 - c/\hat{c}$. For upward transfers across age 50, the proportion of 45-49 year olds misreported as 50-54 year olds, given the following age intervals (40-44, 45-49, 50-54, and 55-59), would be estimated using: $(\hat{b} - b)/\hat{b} = 1 - b/\hat{b}$.

Pullum's method is applied in this analysis to identify upward and downward age transfers, which move respondents outside the range of eligibility. These transfers may have occurred for both men and women during the DHS household survey interviews in the 39 country surveys conducted between 2003 and 2006. The four intervals investigated for downward age transfers for younger women and men are 5-9, 10-14, 15-19, and 20-24; for upward age transfers for older women, the intervals are 40-44, 45-49, 50-54, and 55-59. For older men, the intervals investigated depend on the range used for men in each survey: while the oldest age of eligibility for men is usually 54, the upper end of the age range for men can vary across surveys and, consequently, where x is the final five-year interval in the eligible age range and 1 is equivalent to a five-year interval, we investigate $x - 1$, x , $x + 1$, and $x + 2$.

Incomplete and Inconsistent Data

Two major sources of problems that can occur in DHS and other surveys are (1) partial or incomplete reporting of information and (2) inconsistent responses to different survey questions (Croft, 1996). To address these problems, DHS uses data programs that edit dates of events and impute incomplete dates.

Variables that are particularly likely to suffer from missing or incomplete data, or can be checked for consistency with other variables that reflect complementary data, were selected for inclusion in this analysis. For each of these selected variables, a new dichotomous variable was created where 0 was assigned if the original response was complete and 1 was assigned if the response recorded was incomplete; this procedure was also followed in the case of consistency, where a 0 was assigned if responses were consistent across complementary variables, and 1 was assigned to cases exhibiting inconsistent responses. The proportion of cases coded with 1 was calculated for each country for both incomplete and inconsistent data.

Age Heaping or Digit Preference

Digit preference in reported ages or age heaping is one of the most frequently used indicators of data quality. During fieldwork, when either the respondent or interviewer estimates an unknown age or year, the tendency is to select numbers ending in 0 or 5, resulting in heaping on these digits.

In this analysis, the summary measure of digit preference—the Myers' "blended" method—is used to determine an index of preference for each terminal digit. Because population growth and mortality most often results in a larger number of people age x than age $x + 1$, a blending procedure is used to adjust for this natural tendency (Pullum, 2006).

The Myers' Index is calculated by subtracting half the sum of the absolute deviations of the observed blended percentages from the expected percentages at each digit (10 percent across categories). The resulting value can be interpreted as the minimum percentage of cases that are required to shift from one digit to another in order to achieve a uniform distribution. Preferred digits will have the largest positive deviations and result in a large value of the index.

Additionally, in this analysis, a restricted version of Myers' Index is calculated in which only the blended percentages at 0 and 5 are used, minus 20. This is equivalent to the excess percentages at these digits and can be a negative number since absolute deviations are not used. With this comparison, heaping is not present at 0 and 5 if the excess at these digits are small and the Myers' Index is large.

Myers' Index was calculated using multinomial logistic regression on the final digit (as a category of a 10-category variable) and converting the resulting coefficients into proportions at each integer. This method for calculating the index was developed by Pullum (2006) and is equivalent to the usual approach illustrated in Siegel and Swanson (2004).

Non-Response

This report considers the non-responses received during DHS surveys from 2003 to 2006 for HIV and anemia testing. All responses that were marked as "not present," "refused," or "other" are included in the category of non-response. Each of these non-responses were coded as 1 and summarized to obtain the proportion of non-responses for anemia testing and HIV testing.

2.2.2 Fieldwork-Related Factors

The purpose of the report is to assess the impact of fieldwork-related factors on data quality. The specific factors, their expected association with data quality, and their operationalization for analysis are presented in Figure 2.1 and Tables 2.2.a-b through 2.4.a-b.

Figure 2.1: Variables, their expected associations with data quality, and how they are operationalized

Variables	Expected data quality associations	Analytical operationalization
Sex of interviewer for the household survey	Age displacement beyond the range of eligibility for household members of the same sex as the household interviewer	Dichotomous variable (0/1): interviewer was male or female
Place of residence	Age heaping Inconsistent responses Non-response	Dichotomous variable (0/1): residence located in rural or urban area
Translator used during interview	Inconsistent response Non-response Age displacement	Dichotomous variable (0/1): translator not used or used during interview
Language of questionnaire and interviewer	Inconsistent response Non-response	Dichotomous variable (0/1): interviewer uses a questionnaire that is printed in a different language than the interview was conducted
Language of the interviewer and respondent	Inconsistent responses Non-response	Trichotomous variable (0/1/2): interview language is different from respondent's first language but is still a major language; it is different and not a major language; or the language is the same
Number of visits to household made to complete the interview	Inconsistent responses Non-response Age displacement	Trichotomous variable (1/2/≥3): Household visited 1, 2, or 3 or more times

continued

Figure 2.1 (continued). Variables, their expected associations with data quality, and how they are operationalized

Variables	Expected data quality associations	Analytical operationalization
Time of day in the field	Age heaping Age displacement	Trichotomous variable (1/2/3): Interviewer in the field in the morning, afternoon, or evening hours
Number of days in the cluster	Non-responses Age displacement	Dichotomous variable (0/1): If 4 or more days spent in the cluster at the time of interview
Timing of interview in the field	Age displacement Age heaping Inconsistent responses Non-response	Trichotomous variable (1/2/3): Interview conducted in the beginning, middle or end of the fieldwork (terciles)

Sex of Person Conducting the Household Interview

Anecdotal observations from the field indicate that, in some surveys, when men are responsible for conducting the household interview and filling out the household schedule (which is where the eligibility of individual household members to be interviewed is determined), there is an increased likelihood of age displacement of male household members outside of the ages of eligibility—but not a corresponding displacement of female household members. This pattern would suggest that some male interviewers tend to reduce their own workload by reducing the number of eligible males, while at the same time not reducing the workload of female fieldworkers (as indicated by the lack of age displacement of female household members). Female interviewers may engage in similar displacement behavior when they are responsible for conducting the household interview. If this phenomenon of sex-specific age displacement at the household level is common across surveys, strategies to combat the practice would be needed.

In addition, the sex of the interviewer may affect the approach to interviewing. As observed anecdotally during fieldwork, where male interviewers are assigned to conduct the household interview as well as male interviews, male interviewers may have a tendency to “rush” household interviews, causing increases in incomplete and inconsistent responses. If a systematic review of data quality according to sex of interviewer demonstrates an association between sex of interviewer and overall data quality at the household level, this would also suggest a need for more specialized interviewer training to emphasize these specific data quality issues, as well as stronger and closer supervision in the field.

Place of Residence

During fieldwork, interviewers visit households in both rural and urban areas to conduct interviews. It is known that overall non-response is generally higher in urban areas. However, other elements of data quality may be associated with type of place of residence. For example, a possible bias may develop toward conducting interviews in urban areas given the relative ease of data collection: in these households, the education level of respondents is typically higher, allowing for faster-paced interviews. In rural households, where education levels are often lower, respondents may require more time to understand questions; consequently, there may be increased incidence of age heaping and age displacement outside of eligibility intervals in rural households. Further, in rural households, respondents are less likely to have necessary

documents for age determination such as birth certificates; therefore, error rates in age reporting such as age heaping and inconsistencies may be higher.

Language

In this analysis, we look at the effect on data quality of language used during fieldwork. DHS questionnaires are translated into the major languages spoken in a particular country. However, during fieldwork, interviewers can encounter situations with languages that challenge their preparedness for interviews, resulting in the potential for compromised data quality.

First, interviewers may encounter language groups for which they require an interpreter. This can result in non-responses, age displacements, and inconsistencies, which reflect the respondent and the interviewer's frustration with the interviewing process or the interpreter's skill and familiarity with the topics covered in the questionnaire.

Second, consistency between the language of the questionnaire and the language the interviewer speaks can impact the confidence and eventually the motivation of the interviewer. If the interviewer must conduct the interview in a language other than the one used in the questionnaire, this can result in increased age displacements to avoid prolonged interviews. Inconsistencies and non-responses may also arise more frequently if the interviewer incorrectly records the response to a question, does not accurately communicate the meaning of the question, or does not conduct thorough probing. Similar effects on data quality can arise if the language of the interviewer and respondent are not the same. In the attempt to find a common language for communication, they may be forced to use a language they are less comfortable with; this could result in increased frustration of both parties, which could then lead to an increase in non-responses, incompleteness, inconsistencies, and age displacements. The respondent may also be more reserved and inhibited to answer personal questions when the interviewer does not speak his or her language or belongs to another group—ethnic or otherwise.

The strength of the relationship between language variables and indicators of data quality, and the proportion of responses affected, will determine the need to take steps to ameliorate language-related incompatibilities in future surveys. Incompatibilities can be ameliorated perhaps by increasing the number of languages the questionnaire is translated into, and by hiring interviewers based on their knowledge of local languages, proportional to the distribution of languages among clusters.

Number of Visits to Household

During DHS data collection, if respondents are not available on the interviewers' initial visit, households should be visited repeatedly until all eligible respondents in a household have been interviewed. Age displacements may occur as the number of visits to the household increase, depending on the motivation of the interviewer to return to a household and interview all eligible respondents. Age displacements also may occur as interviewers attempt to reduce the number of eligible respondents per household to avoid multiple visits and spend less time in the household. Respondents can also become frustrated with multiple visits, resulting in an increase in non-responses. Interviewers who are willing to make multiple visits to try to capture the absent

household or household members may be particularly conscientious about their work and so may be less likely to have problems with data quality.

Timing of Interview

Interviewer motivation and skill can be affected by the length of time the interviewer has been conducting fieldwork, the number of days an interviewer spends in a particular cluster, and the time of day the interview is conducted. These factors can impact interviewer interest and motivation in conducting interviews. In turn, this can affect the amount of age displacement and age heaping.

For example, in the beginning of fieldwork, interviewers may still be getting familiar with the questionnaire, the fieldwork logistics, and the interviewing techniques required to successfully conduct the complex DHS interview. Therefore, it may be expected that overall data quality will improve over the course of the fieldwork as interviewers become proficient at implementing the DHS questionnaire. However, other less desirable types of expertise may develop with increasing comfort and familiarity with the questionnaire. Early in the fieldwork, there may be less age displacement since interviewers are less familiar with the questionnaire, but later in the fieldwork they become more experienced and learn (unfortunately) how to eliminate eligible respondents through age displacements. Additionally, because fieldwork for the DHS typically lasts for four to five months, interviewers who do not have permanent positions within the agency that is conducting the fieldwork may become distracted toward the end of fieldwork as they start thinking about or trying to arrange their next source of employment. Additionally, all interviewers experience fatigue toward the end of fieldwork and want to go home; they may, therefore, have the tendency to rush through the last few clusters.

Regarding length of time spent in a given cluster, when the survey team is newly arrived in a cluster, both interviewers and respondents tend to be more highly motivated to conduct and participate in answering questions, reducing the number of non-responses and age displacements. Once the novelty of the visit wears off, however, data quality may begin to suffer as the teams try to wrap up their work in the cluster before moving on to the next.

Finally, the time of day when the interview begins may affect data quality. In the morning, respondents may be preparing to go to work for the day and, thus, may attempt to rush the interview, which could reduce data quality. At the end of the day, when potential respondents may be more relaxed, the interviewers—who begin work very early in the morning—may desire to end their day of interviewing. Thus, evening interviews may result in a greater number of age displacements than those conducted earlier in the day. On the other hand, as observed during fieldwork in Albania, evening interviews, especially with eligible urban men, may result in higher response rates because respondents are back at home after business hours and more available to participate in the survey.

Tables 2.2.a-b through 2.4.a-b show the distribution of the fieldwork-related factors for, respectively, the household, women's, and men's samples used in this analysis.

Table 2.2.a: Description of fieldwork-related factors for household sample, DHS/AIS 2003-06

Percent distribution of households by sex of interviewer, residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS surveys 2003-06

Country/year	Sex of interviewer		Residence Urban	Translator used in interview Yes	Language of questionnaire and interviewer Same	Language of interview and respondent		Number of households
	Male	Female				Same	Other	
Sub-Saharan Africa								
Benin 2006	na	na	41.3	6.9	21.7	na	na	17,511
Burkina Faso 2003	6.9	93.1	24.2	na	na	na	na	9,097
Cameroon 2004	27.3	72.7	46.3	na	na	na	na	10,462
Chad 2004	29.1	70.9	46.2	na	na	na	na	5,369
Congo 2005	28.1	71.9	65.5	na	na	na	na	5,879
Cote d'Ivoire 2005	na	na	43.2	na	na	na	na	4,368
Ethiopia 2005	39.2	60.8	26.7	27.8	67.4	60.1	22.9	13,721
Ghana 2003	na	na	40.3	11.1	89.0	49.6	5.2	6,251
Guinea 2005	2.9	97.1	27.3	na	na	na	na	6,282
Kenya 2003	1.9	98.1	33.8	na	na	na	na	8,561
Lesotho 2004	na	na	26.0	na	na	na	na	8,592
Madagascar 2003-04	14.2	85.8	62.2	na	na	na	na	8,420
Malawi 2004	3.8	96.2	12.6	2.8	96.5	58.2	0.3	13,664
Mozambique 2003	13.0	87.0	37.3	na	na	na	na	12,315
Niger 2006	44.1	55.9	30.8	na	na	na	na	7,660
Nigeria 2003	14.6	85.4	40.6	8.8	na	42.7	2.2	7,225
Rwanda 2005	30.5	69.5	20.5	na	na	na	na	10,272
Senegal 2005	4.6	95.4	42.0	na	na	na	na	7,412
Tanzania 2004	11.5	88.5	22.2	na	na	na	na	9,735
Uganda 2006	30.8	69.2	15.7	6.3	61.4	65.0	12.5	8,870
Zimbabwe 2005-06	na	na	32.9	na	95.8	na	na	9,285
North Africa/West Asia/Europe								
Armenia 2005	14.9	85.1	71.7	na	na	na	na	6,707
Egypt 2005	na	na	48.0	na	na	na	na	21,972
Moldova Republic 2005	19.7	80.3	56.1	na	na	na	na	11,095
Morocco 2003-04	na	na	55.7	na	na	na	na	11,513
Turkey 2003	na	na	73.4	1.7	na	na	na	10,836
South and Southeast Asia								
Bangladesh 2004	0.0	100.0	33.5	na	na	na	na	10,500
Cambodia 2005	14.6	85.4	21.8	na	na	na	na	14,243
India 2005-06	na	na	46.1	na	na	na	na	109,041
Indonesia 2002-03	na	na	42.2	na	na	na	na	33,088
Nepal 2006	65.7	34.3	27.8	0.2	96.1	58.7	1.4	8,707
Philippines 2003	na	na	49.1	1.4	81.1	90.3	0.0	12,586
Vietnam 2005	na	na	33.0	na	na	na	na	6,337
Latin America and the Caribbean								
Bolivia 2003	0.1	99.9	60.2	na	na	na	na	19,207
Colombia 2005	na	na	74.7	na	na	na	na	37,211
Guyana 2005	na	na	49.8	0.5	na	99.7	0.0	2,608
Haiti 2005	25.5	74.5	40.6	na	na	na	na	9,998
Honduras 2005	na	na	40.1	na	na	na	na	18,683
Peru 2004-08	na	na	53.8	na	na	na	na	13,211

Table 2.2.b: Description of fieldwork-related factors for household sample, DHS/AIS 2003-06

Percent distribution of households by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster 4+	Timing of interview during the course of fieldwork			Number of households
	1	2	3+	Morning	Afternoon	Evening		Beginning	Middle	End	
Sub-Saharan Africa											
Benin 2006	94.1	4.4	1.5	na	na	na	29.4	32.4	39.4	28.2	17,511
Burkina Faso 2003	95.9	3.4	0.7	na	na	na	12.6	26.2	41.0	32.8	9,097
Cameroon 2004	92.8	5.0	2.3	na	na	na	45.8	32.2	43.4	24.5	10,462
Chad 2004	94.4	3.6	2.0	na	na	na	42.3	28.0	40.5	31.5	5,369
Congo 2005	94.3	3.7	2.0	na	na	na	34.1	43.6	37.0	19.4	5,879
Cote d'Ivoire 2005	91.4	6.8	1.7	na	na	na	8.1	19.5	43.3	37.3	4,368
Ethiopia 2005	92.7	4.9	2.5	na	na	na	57.6	31.7	41.7	26.5	13,721
Ghana 2003	91.2	6.3	2.5	na	na	na	16.0	32.4	45.8	21.7	6,251
Guinea 2005	98.5	1.2	0.3	na	na	na	18.4	35.8	36.3	28.0	6,282
Kenya 2003	88.8	6.2	5.0	na	na	na	42.5	39.5	40.1	20.4	8,561
Lesotho 2004	92.4	5.4	2.1	na	na	na	39.7	31.6	48.8	19.6	8,592
Madagascar 2003-04	95.4	3.3	1.4	na	na	na	29.4	30.6	40.6	28.8	8,420
Malawi 2004	96.4	2.6	1.1	na	na	na	57.3	19.7	47.3	32.9	13,664
Mozambique 2003	96.7	2.5	0.8	na	na	na	2.0	34.7	40.0	25.2	12,315
Niger 2006	98.1	1.3	0.5	na	na	na	42.0	26.3	46.5	27.2	7,660
Nigeria 2003	91.5	6.1	2.3	na	na	na	13.0	32.9	39.1	28.0	7,225
Rwanda 2005	94.9	3.7	1.4	na	na	na	40.4	24.0	41.7	34.3	10,272
Senegal 2005	96.0	2.8	1.1	na	na	na	53.2	27.4	36.7	35.9	7,412
Tanzania 2004	97.4	1.9	0.7	na	na	na	7.5	32.8	36.5	30.6	9,735
Uganda 2006	94.0	3.9	2.0	na	na	na	44.8	38.2	30.1	31.7	8,870
Zimbabwe 2005-06	92.8	5.3	1.9	na	na	na	52.8	33.6	34.9	31.4	9,285
North Africa/West Asia/Europe											
Armenia 2005	93.7	5.1	1.2	na	na	na	6.6	41.8	38.7	19.5	6,707
Egypt 2005	97.5	1.2	1.3	na	na	na	4.1	41.5	55.6	2.9	21,972
Moldova Republic 2005	87.8	8.1	4.1	34.1	33.2	32.7	8.2	27.4	35.0	37.6	11,095
Morocco 2003-04	96.2	2.8	1.0	34.0	52.5	13.5	11.9	29.0	50.6	20.3	11,513
Turkey 2003	79.1	15.4	5.5	35.1	50.8	14.0	4.3	52.9	28.8	18.4	10,836
South and Southeast Asia											
Bangladesh 2004	96.3	2.7	1.0	na	na	na	19.7	31.4	34.8	33.8	10,500
Cambodia 2005	99.5	0.3	0.2	na	na	na	78.8	32.9	34.8	32.2	14,243
India 2005-06	92.3	4.7	3.0	na	na	na	67.6	38.8	33.3	28.0	109,041
Indonesia 2002-03	98.4	1.3	0.3	na	na	na	4.7	23.8	64.2	11.9	33,088
Nepal 2006	92.2	6.0	1.7	na	na	na	86.5	33.2	30.4	36.4	8,707
Philippines 2003	92.7	5.3	2.0	59.0	35.9	5.0	27.0	48.6	43.9	7.4	12,586
Vietnam 2005	96.2	3.3	0.5	na	na	na	8.6	34.2	38.0	27.8	6,337
Latin America and the Caribbean											
Bolivia 2003	84.2	10.0	5.8	44.3	34.8	20.8	36.1	37.8	28.7	33.5	19,207
Colombia 2005	96.7	2.7	0.5	40.0	38.6	21.4	13.0	28.6	36.6	34.8	37,211
Guyana 2005	81.6	12.3	6.1	na	na	na	37.5	41.2	38.5	20.3	2,608
Haiti 2005	92.8	5.5	1.7	na	na	na	39.8	33.4	31.1	35.5	9,998
Honduras 2005	91.7	5.7	2.6	49.2	42.2	8.5	13.3	23.6	36.2	40.2	18,683
Peru 2004-08	77.0	13.9	9.1	na	na	na	75.6	63.4	36.0	0.6	13,211

Table 2.3.a: Description of fieldwork-related factors for female sample, DHS/AIS 2003-06

Percentage of women by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence	Translator used in interview	Language of questionnaire and interviewer	Language of interview and respondent		Number of women
	Urban	Yes	Same	Same	Other	
Sub-Saharan Africa						
Benin 2006	42.0	6.5	17.0	na	na	17,794
Burkina Faso 2003	24.2	na	na	na	na	12,477
Cameroon 2004	49.5	1.6	60.1	na	na	10,656
Chad 2004	47.4	na	na	na	na	6,085
Congo 2005	69.2	na	na	na	na	7,051
Cote d'Ivoire 2005	43.1	13.5	na	na	na	9,686
Ethiopia 2005	31.4	29.9	69.6	60.7	21.9	14,070
Ghana 2003	41.7	12.1	83.8	47.4	10.0	5,691
Guinea 2005	29.6	4.2	52.2	na	na	7,954
Kenya 2003	33.6	2.5	82.2	55.9	0.5	8,195
Lesotho 2004	27.4	0.2	na	99.7	0.0	7,095
Madagascar 2003-04	65.1	na	na	na	na	7,949
Malawi 2004	14.0	1.9	97.9	56.9	0.4	11,698
Mozambique 2003	43.3	na	na	na	na	12,418
Niger 2006	35.2	11.3	75.5	na	na	9,223
Nigeria 2003	40.1	9.9	na	41.4	2.2	7,620
Rwanda 2005	23.1	0.3	na	na	na	11,321
Senegal 2005	43.2	na	na	na	na	14,602
Tanzania 2004	24.3	na	na	na	na	10,329
Uganda 2006	17.0	8.5	62.4	63.5	12.1	8,531
Zimbabwe 2005-06	36.0	0.6	93.9	na	na	8,907
North Africa/West Asia/Europe						
Armenia 2005	69.9	na	na	99.6	0.0	6,566
Egypt 2005	41.6	na	na	na	na	19,474
Moldova Republic 2005	57.8	1.0	98.2	99.9	0.0	7,440
Morocco 2003-04	53.6	na	na	na	na	16,798
Turkey 2003	74.0	na	na	na	na	8,075
South and Southeast Asia						
Bangladesh 2004	34.1	na	na	na	na	11,440
Cambodia 2005	24.7	na	na	na	na	16,823
India 2005-06	32.8	na	na	na	na	124,385
Indonesia 2002-03	41.8	na	na	na	na	29,483
Nepal 2006	27.3	0.3	95.1	57.5	1.7	10,793
Philippines 2003	54.5	1.0	82.6	89.9	0.0	13,633
Vietnam 2005	33.6	na	na	na	na	13,996
Latin America and the Caribbean						
Bolivia 2003	65.7	na	na	na	na	17,654
Colombia 2005	76.6	na	na	na	na	41,344
Guyana 2005	48.3	0.5	na	99.8	0.0	4,300
Haiti 2005	48.3	na	na	na	na	10,757
Honduras 2005	41.6	na	na	na	na	19,948
Peru 2004-08	63.2	na	na	na	na	6,251

Table 2.3.b: Description of fieldwork-related factors for female sample, DHS/AIS 2003-06

Percent distribution of women by number of visits to interview, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to interview			Time of day in the field			Number of days in cluster 4+	Timing of interview during the course of fieldwork			Number of women
	1	2	3+	Morning	Afternoon	Evening		Beginning	Middle	End	
Sub-Saharan Africa											
Benin 2006	91.9	6.1	2.0	39.8	37.9	22.3	31.0	33.9	38.5	27.6	17,794
Burkina Faso 2003	93.6	5.5	0.9	46.9	36.7	16.4	17.0	23.2	43.1	33.6	12,477
Cameroon 2004	94.3	4.4	1.3	37.9	40.2	21.9	46.1	35.9	42.5	21.6	10,656
Chad 2004	91.5	5.9	2.6	57.7	31.8	10.5	50.1	28.7	43.9	27.4	6,085
Congo 2005	86.1	9.2	4.7	46.4	44.8	8.8	49.8	43.8	37.7	18.5	7,051
Cote d'Ivoire 2005	92.5	5.7	1.8	41.6	28.6	29.9	11.0	30.0	39.1	30.9	9,686
Ethiopia 2005	90.9	6.7	2.5	54.9	36.4	8.7	59.3	31.2	41.3	27.5	14,070
Ghana 2003	90.2	7.3	2.5	46.1	37.1	16.9	15.4	44.2	39.3	16.5	5,691
Guinea 2005	96.8	2.7	0.6	46.6	39.1	14.4	16.2	34.5	35.8	29.7	7,954
Kenya 2003	84.6	11.0	4.5	38.7	49.7	11.6	44.8	41.1	38.9	20.0	8,195
Lesotho 2004	92.4	5.8	1.8	49.7	38.5	11.8	35.1	35.6	47.2	17.3	7,095
Madagascar 2003-04	94.3	4.3	1.4	45.4	40.9	13.7	25.3	30.6	39.4	30.0	7,949
Malawi 2004	94.6	4.4	1.0	53.0	45.9	1.1	54.7	35.0	39.0	26.0	11,698
Mozambique 2003	95.4	3.7	0.9	54.9	42.0	3.1	1.1	39.4	38.1	22.5	12,418
Niger 2006	95.3	3.8	1.0	48.5	35.0	16.5	48.7	30.6	46.4	23.0	9,223
Nigeria 2003	90.0	7.8	2.2	35.9	46.6	17.5	13.6	36.5	37.3	26.2	7,620
Rwanda 2005	92.0	5.9	2.1	40.8	54.9	4.3	53.3	27.4	41.0	31.6	11,321
Senegal 2005	91.9	6.5	1.6	27.5	52.1	20.3	69.6	28.6	36.4	34.9	14,602
Tanzania 2004	93.0	6.0	0.9	47.6	45.1	7.2	9.9	34.7	35.3	30.1	10,329
Uganda 2006	91.8	6.5	1.7	50.6	47.6	1.8	51.8	38.4	28.1	33.4	8,531
Zimbabwe 2005-06	93.0	5.2	1.8	44.6	47.5	7.9	59.9	37.4	35.9	26.7	8,907
North Africa/West Asia/Europe											
Armenia 2005	94.3	4.8	0.8	11.7	68.4	19.9	5.5	41.9	38.5	19.7	6,566
Egypt 2005	98.8	0.8	0.4	31.7	46.6	21.7	3.0	46.4	50.9	2.8	19,474
Moldova Republic 2005	85.2	10.4	4.4	28.4	32.8	38.8	8.3	30.9	32.6	36.5	7,440
Morocco 2003-04	93.2	5.9	0.9	26.4	54.0	19.5	13.3	33.2	49.1	17.7	16,798
Turkey 2003	94.5	4.7	0.8	28.5	53.4	18.1	3.8	49.9	29.2	20.9	8,075
South and Southeast Asia											
Bangladesh 2004	96.2	3.1	0.7	64.4	34.5	1.1	21.1	33.8	34.1	32.1	11,440
Cambodia 2005	96.9	2.2	0.9	54.4	40.2	5.3	81.4	33.2	34.3	32.5	16,823
India 2005-06	94.7	4.1	1.2	na	na	na	67.9	32.7	35.3	32.0	124,385
Indonesia 2002-03	98.0	1.8	0.3	40.3	44.0	15.7	4.3	31.7	57.5	10.9	29,483
Nepal 2006	88.3	9.3	2.4	50.8	40.2	9.0	97.7	33.2	30.2	36.6	10,793
Philippines 2003	85.5	10.7	3.9	49.9	40.0	10.1	34.0	50.8	41.9	7.4	13,633
Vietnam 2005	86.8	11.8	1.4	46.5	35.7	17.9	6.2	38.0	35.8	26.2	13,996
Latin America and the Caribbean											
Bolivia 2003	79.8	13.3	7.0	39.3	35.3	25.4	46.0	43.4	25.6	31.0	17,654
Colombia 2005	85.9	11.9	2.2	32.2	39.5	28.3	20.9	27.7	37.2	35.1	41,344
Guyana 2005	70.4	20.0	9.6	19.7	60.8	19.5	57.1	42.7	38.1	19.2	4,300
Haiti 2005	90.2	7.7	2.1	38.2	51.7	10.1	47.6	36.3	35.1	28.5	10,757
Honduras 2005	89.8	7.4	2.7	41.2	43.6	15.2	18.9	26.0	37.1	36.9	19,948
Peru 2004-08	79.3	12.3	8.3	42.9	35.5	21.6	81.1	32.5	35.3	32.1	6,251

Table 2.4.a: Description of fieldwork-related factors for male sample, DHS/AIS 2003-06

Percent distribution of men by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence	Translator used in interview	Language of questionnaire and interviewer	Language of interview and respondent		Number of men
	Urban	Yes	Same	Same	Other	
Sub-Saharan Africa						
Benin 2006	42.1	6.8	33.0	na	na	5,321
Burkina Faso 2003	25.6	na	na	na	na	3,605
Cameroon 2004	50.2	1.6	68.7	na	na	5,280
Chad 2004	55.2	na	na	na	na	1,887
Congo 2005	70.4	na	na	na	na	3,146
Ethiopia 2005	27.0	21.3	71.6	61.5	19.1	6,033
Ghana 2003	37.9	10.9	89.6	42.3	5.8	5,015
Guinea 2005	36.1	4.0	66.5	na	na	3,174
Kenya 2003	32.1	1.7	90.0	58.9	0.4	3,578
Lesotho 2004	24.8	0.4	na	99.6	na	2,797
Madagascar 2003-04	61.6	na	na	na	na	2,432
Malawi 2004	15.5	1.8	96.8	62.1	na	3,261
Mozambique 2003	45.3	na	na	na	na	2,900
Niger 2006	42.5	7.3	68.6	na	na	3,549
Nigeria 2003	42.0	5.2	na	na	na	2,346
Rwanda 2005	23.4	0.2	na	na	na	4,820
Senegal 2005	49.1	na	na	na	na	3,761
Tanzania 2004	22.8	na	na	na	na	2,635
Uganda 2006	15.6	2.5	72.5	65.2	13.1	2,503
Zimbabwe 2005-06	34.3	0.5	96.3	na	na	7,175
West Asia/Europe						
Armenia 2005	69.0	na	na	na	na	1,447
Moldova Republic 2005	56.5	1.2	96.1	99.6	0.0	2,508
South and Southeast Asia						
Bangladesh 2004	35.2	na	na	na	na	4,297
Cambodia 2005	23.6	na	na	na	na	6,731
India 2005-06	36.6	na	na	na	na	69,751
Indonesia 2002-03	42.8	na	na	na	na	8,310
Nepal 2006	29.6	0.1	95.7	55.4	2.1	4,397
Philippines 2003	49.9	1.6	83.2	89.8	0.0	4,766
Latin America and the Caribbean						
Bolivia 2003	62.4	na	na	na	na	6,230
Haiti 2005	41.9	na	na	na	na	4,958

Table 2.4.b: Description of fieldwork-related factors for male sample, DHS/AIS 2003-06

Percent distribution of men by number of visits to interview, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to interview			Time of day in the field			Number of days in cluster	Timing of interview during the course of fieldwork			Number of men
	1	2	3+	Morning	Afternoon	Evening	4+	Beginning	Middle	End	
Sub-Saharan Africa											
Benin 2006	89.8	7.4	2.9	40.4	36.7	22.9	11.6	33.8	38.5	27.7	5,321
Burkina Faso 2003	90.9	7.4	1.7	44.2	33.8	22.0	12.5	25.3	41.2	33.5	3,605
Cameroon 2004	92.5	4.5	3.0	37.1	36.0	26.9	39.4	37.0	40.2	22.8	5,280
Chad 2004	87.3	7.2	5.5	53.3	32.0	14.7	35.1	32.5	36.8	30.7	1,887
Congo 2005	74.2	15.0	10.8	46.1	42.2	11.7	47.6	42.3	37.7	20.0	3,146
Ethiopia 2005	85.8	9.3	4.9	54.1	33.6	12.3	50.4	32.2	42.3	25.5	6,033
Ghana 2003	88.7	7.5	3.7	46.0	35.3	18.7	14.7	44.3	39.9	15.9	5,015
Guinea 2005	93.1	4.8	2.1	42.9	37.1	20.0	15.2	38.3	32.5	29.2	3,174
Kenya 2003	72.2	15.5	12.2	36.1	48.2	15.7	34.8	42.2	39.0	18.8	3,578
Lesotho 2004	87.0	10.0	2.9	53.0	33.0	14.0	25.2	34.0	43.0	23.0	2,797
Madagascar 2003-04	88.4	8.1	3.5	44.7	40.9	14.5	16.3	31.3	37.3	31.4	2,432
Malawi 2004	86.8	8.8	4.4	48.4	49.3	2.3	41.6	34.3	38.2	27.6	3,261
Mozambique 2003	90.4	7.5	2.0	55.7	40.3	4.0	0.7	40.0	36.8	23.2	2,900
Niger 2006	89.5	7.2	3.3	44.8	35.7	19.5	39.4	29.4	45.5	25.1	3,549
Nigeria 2003	84.5	10.5	5.0	38.9	39.3	21.8	8.6	35.1	38.8	26.1	2,346
Rwanda 2005	88.7	8.3	3.0	40.8	53.9	5.3	37.3	25.2	42.5	32.3	4,820
Senegal 2005	84.1	11.0	5.0	20.4	48.2	31.4	49.3	31.6	34.9	33.6	3,761
Tanzania 2004	83.2	13.5	3.3	97.0	3.0	0.0	5.8	33.1	34.5	32.4	2,635
Uganda 2006	81.6	12.4	6.0	49.8	47.2	3.0	31.3	37.2	31.3	31.4	2,503
Zimbabwe 2005-06	87.9	7.6	4.5	46.3	43.2	10.4	59.8	34.4	35.6	30.0	7,175
West Asia/Europe											
Armenia 2005	90.7	8.4	1.0	9.3	62.7	28.0	1.5	40.8	38.3	20.9	1,447
Moldova Republic 2005	75.0	17.0	8.0	30.1	27.9	42.0	1.1	28.5	31.9	39.6	2,508
South and Southeast Asia											
Bangladesh 2004	58.4	30.0	11.7	46.5	40.6	13.0	21.9	31.7	35.8	32.5	4,297
Cambodia 2005	93.7	4.9	1.4	54.9	36.9	8.2	65.0	32.9	35.2	31.9	6,731
India 2005-06	64.2	27.4	8.4	na	na	na	66.8	31.6	34.9	33.5	69,751
Indonesia 2002-03	94.9	4.2	0.9	35.6	42.5	21.9	2.0	31.6	57.2	11.2	8,310
Nepal 2006	76.0	14.5	9.5	50.8	35.1	14.1	92.2	35.8	29.0	35.2	4,397
Philippines 2003	81.0	13.8	5.2	46.2	39.6	14.2	15.4	53.0	40.5	6.4	4,766
Latin America and the Caribbean											
Bolivia 2003	75.3	13.7	10.9	35.5	33.0	31.6	24.3	40.8	27.0	32.3	6,230
Haiti 2005	85.1	10.7	4.2	35.9	48.9	15.2	34.3	34.0	33.4	32.6	4,958

3

Results

This chapter presents the results of the data quality analysis of 39 DHS household surveys conducted between 2003 and 2006. We examine indicators of data quality (age displacement of women and men, age heaping for household members, the presence of inconsistencies and non-responses) and their associations with fieldwork-related factors.

3.1 Household-Level Data

3.1.1 Age Heaping or Digit Preference: Household Members

The distribution of Myers' Index and the excess percentage of digits reported ending in 0 and 5 (reported for ages 0-79) are presented in Figures 3.1 and 3.2. Table 3.1 lists the results for each of the 39 countries. The largest values of the Myers' Index (greater than 8) occurred in eight (20 percent) of the countries, signifying a preference for digits 0 and 5 in these countries compared with the others.² The eight countries with a large Index are mostly West African (Chad, Benin, Guinea, Niger, and Nigeria) with one in East Africa (Ethiopia) and two in Southeast Asia (Bangladesh and India). When compared with the Myers' Index, the excess percentage of digits reported ending in 0 and 5 in these countries is as large as the Index, indicating the presence of heaping on those two digits specifically. A comparison of the two indices shows that the two distributions are highly correlated ($r^2 = 0.97$) which is indicative that the majority of age digit preferences are for final digits 0 and 5 (Figure 3.3).

Differentials in Age Heaping for Household Members

Tables 3.1.1.a and 3.1.1.b show the age heaping and digit preference found at the household level according to the selected fieldwork-related factors.

In most countries, there is no remarkable variation in age heaping by the sex of the interviewer, and there are no clear patterns in the relationship between the two. Bangladesh, Bolivia, and Ethiopia are the only exceptions. In Bangladesh, Myers' Index for male interviewers is more than three times as high as that observed for female interviewers (33.8 compared with 10.9); in Bolivia it is more than four times higher for male as compared with female interviewers (13.5 versus 2.7); while in Ethiopia, female interviewers have a Myers' Index that is considerably higher than that observed for men (15.7 versus 9.1).

Looking at residence as a fieldwork-related factor, in 28 of the 39 countries the Myers' Index is higher for rural than for urban areas. In a few countries the difference is pronounced. For example, in Niger, Myers' Index is more than twice as high in rural areas (13.6) than in urban areas (6.5).

² The definition of a large index is based on Pullum's (2006) estimation that a large index lies above at least twice the median values (4.3 percent for Myers' Index and 2.3 percent for percentage of heaping at 0 and 5).

Table 3.1: Age heaping for household members, DHS/AIS 2003-06

Country/year	Myers' Index	Percent excess at final digit 0 or 5
Sub-Saharan Africa		
Benin 2006	12.5	11.0
Burkina Faso 2003	5.1	4.3
Cameroon 2004	5.5	4.1
Chad 2004	12.0	10.0
Congo 2005	3.5	2.2
Cote d'Ivoire 2005	6.3	5.8
Ethiopia 2005	13.2	11.4
Ghana 2003	5.0	2.4
Guinea 2005	11.5	9.2
Kenya 2003	4.4	3.7
Lesotho 2004	2.7	0.9
Madagascar 2003-04	3.4	2.5
Malawi 2004	4.9	2.3
Mozambique 2003	3.9	1.5
Niger 2006	11.2	10.7
Nigeria 2003	14.3	12.9
Rwanda 2005	2.2	1.1
Senegal 2005	7.3	5.9
Tanzania 2004	6.4	4.4
Uganda 2006	5.6	3.5
Zimbabwe 2005-06	1.7	0.5
North Africa/West Asia/Europe		
Armenia 2005	2.9	1.9
Egypt 2005	6.7	6.6
Moldova Republic 2005	2.1	1.3
Morocco 2003-04	2.3	1.9
Turkey 2003	3.1	2.2
South and Southeast Asia		
Bangladesh 2004	10.9	10.5
Cambodia 2005	2.4	1.2
India 2005-06	15.2	13.5
Indonesia 2002-03	5.6	4.4
Nepal 2006	2.6	0.4
Philippines 2003	1.7	0.8
Vietnam 2005	1.9	1.2
Latin America and the Caribbean		
Bolivia 2003	2.7	1.2
Colombia 2005	2.6	1.4
Guyana 2005	1.8	1.1
Haiti 2005	4.9	3.7
Honduras 2005	2.5	1.9
Peru 2004-08	4.1	2.1

Based on ages 0-79.

In all the countries with available data, the use of a translator seems to have a direct impact on Myers' Index; it is significantly higher in households where a translator is used than when a translator is not used. For example, in Guyana, Myers' Index is 17.4 for members of the households where a translator was used, compared with 1.7 for members of those where a translator was not used. The relationship between the Myers' Index and whether the language of the interview and the language of the respondent are the same or different is not consistent.

Table 3.1.1.a: Differentials in age heaping for household members, DHS/AIS 2003-06

Myers' Index for age heaping for household members by sex of interviewer, residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Sex of interviewer		Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent		
	Male	Female	Urban	Rural	Yes	No	Same	Different	Same	Same/Other	Different
Sub-Saharan Africa											
Benin 2006	na	na	9.2	14.6	14.3	12.3	9.2	13.4	na	na	na
Burkina Faso 2003	7.0	5.1	4.6	5.4	na	na	na	na	na	na	na
Cameroon 2004	4.2	6.0	4.2	6.6	na	na	na	na	na	na	na
Chad 2004	11.0	12.4	11.0	13.0	na	na	na	na	na	na	na
Congo 2005	3.2	3.7	3.2	4.3	na	na	na	na	na	na	na
Cote d'Ivoire 2005	na	na	5.5	6.9	na	na	na	na	na	na	na
Ethiopia 2005	9.1	15.7	11.9	13.6	16.0	12.0	11.9	15.8	11.9	16.8	12.5
Ghana 2003	na	na	3.3	5.9	7.3	4.6	4.7	6.6	4.7	4.8	5.4
Guinea 2005	12.5	11.5	8.8	12.7	na	na	na	na	na	na	na
Kenya 2003	6.1	4.4	4.9	4.3	na	na	na	na	na	na	na
Lesotho 2004	na	na	3.1	2.6	na	na	na	na	na	na	na
Madagascar 2003-04	3.4	3.6	3.0	4.9	na	na	na	na	na	na	na
Malawi 2004	6.0	4.8	3.9	5.0	6.9	4.8	4.9	4.6	4.9	15.2	5.0
Mozambique 2003	3.4	4.0	2.8	5.1	na	na	na	na	na	na	na
Niger 2006	11.5	11.5	6.5	13.6	na	na	na	na	na	na	na
Nigeria 2003	11.7	14.7	12.5	15.5	17.1	14.1	na	na	16.4	16.7	12.8
Rwanda 2005	2.4	2.4	2.4	2.2	na	na	na	na	na	na	na
Senegal 2005	7.8	7.3	5.5	8.5	na	na	na	na	na	na	na
Tanzania 2004	6.0	6.4	5.4	6.6	na	na	na	na	na	na	na
Uganda 2006	4.0	6.4	6.3	5.7	8.1	5.5	5.7	5.5	5.7	4.7	6.1
Zimbabwe 2005-06	na	na	2.0	1.9	na	na	1.8	3.6	na	na	na
North Africa/West Asia/Europe											
Armenia 2005	3.2	3.1	3.0	2.7	na	na	na	na	na	na	na
Egypt 2005	na	na	5.7	7.6	na	na	na	na	na	na	na
Moldova Republic 2005	2.9	2.1	1.8	2.6	na	na	na	na	na	na	na
Morocco 2003-04	na	na	2.1	2.5	na	na	na	na	na	na	na
Turkey 2003	na	na	2.9	3.7	10.6	2.9	na	na	na	na	na
South and Southeast Asia											
Bangladesh 2004	33.8	10.9	10.7	11.1	na	na	na	na	na	na	na
Cambodia 2005	2.9	2.5	2.9	2.3	na	na	na	na	na	na	na
India 2005-06	na	na	13.2	16.8	na	na	na	na	na	na	na
Indonesia 2002-03	na	na	4.5	6.5	na	na	na	na	na	na	na
Nepal 2006	3.2	2.7	3.4	2.6	16.9	2.6	2.5	5.7	3.2	7.6	2.5
Philippines 2003	na	na	1.8	1.7	6.6	1.6	1.6	2.6	1.7	na	2.0
Vietnam 2005	na	na	2.2	1.9	na	na	na	na	na	na	na
Latin America and the Caribbean											
Bolivia 2003	13.5	2.7	2.7	2.8	na	na	na	na	na	na	na
Colombia 2005	na	na	2.4	3.0	na	na	na	na	na	na	na
Guyana 2005	na	na	2.8	2.2	17.4	1.7	na	na	1.7	na	20.0
Haiti 2005	4.4	5.2	3.4	6.1	na	na	na	na	na	na	na
Honduras 2005	na	na	2.3	2.6	na	na	na	na	na	na	na
Peru 2004-08	na	na	3.4	5.0	na	na	na	na	na	na	na

Table 3.1.1.b shows that, for 33 of the 39 countries, Myers' Index is lower for members of the households that were visited only once than for those visited three or more times, with the Myers' Index generally increasing with the number of visits. Information on the relationship between the time of day of the interview and Myers' Index is limited and inconsistent across countries. In about half of the countries, Myers' Index is higher in clusters where the team spent fewer than four days than among those where the team spent four or more days, indicating the lack of a consistent relationship between Myers' Index and length of stay in the cluster.

The majority of surveys show no relationship between Myers' Index and the timing of the interview during the course of fieldwork. Data in countries where there are clear trends toward improvement (e.g., India) or worsening (e.g., Niger) of Myers' Index over time may provide useful information for implementation of fieldwork specific to those countries, implementing agencies, and DHS project staff.

Table 3.1.1.b: Differentials in age heaping for household members in household member listing, DHS/AIS 2003-06

Myers' Index for age heaping for household members by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork		
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End
Sub-Saharan Africa											
Benin 2006	12.6	10.6	10.4	na	na	na	13.0	11.4	13.4	12.3	11.6
Burkina Faso 2003	5.1	6.9	6.5	na	na	na	5.2	4.8	5.6	5.1	4.9
Cameroon 2004	5.5	6.9	3.9	na	na	na	6.2	4.7	4.9	4.9	7.5
Chad 2004	12.1	11.6	9.5	na	na	na	13.0	10.6	9.6	12.2	14.3
Congo 2005	3.5	4.8	6.4	na	na	na	3.6	3.6	3.8	3.4	4.1
Cote d'Ivoire 2005	6.4	7.7	11.0	na	na	na	6.5	5.3	5.6	5.9	7.3
Ethiopia 2005	13.5	9.0	11.0	na	na	na	13.2	13.2	13.1	12.9	13.8
Ghana 2003	5.1	5.5	6.8	na	na	na	5.0	4.6	4.8	4.3	6.5
Guinea 2005	11.5	12.1	21.0	na	na	na	11.8	10.6	10.5	12.0	12.4
Kenya 2003	4.5	4.6	7.1	na	na	na	4.5	4.4	4.7	4.6	4.6
Lesotho 2004	2.8	3.5	2.8	na	na	na	2.4	3.8	2.0	3.2	3.2
Madagascar 2003-04	3.5	4.7	9.0	na	na	na	3.8	2.8	4.3	3.8	2.8
Malawi 2004	4.8	6.1	9.0	na	na	na	4.9	4.9	4.9	5.4	4.2
Mozambique 2003	3.9	6.7	3.6	na	na	na	3.8	6.6	3.6	4.5	4.2
Niger 2006	11.2	11.1	11.3	na	na	na	13.1	9.0	8.1	11.9	13.3
Nigeria 2003	14.4	13.7	12.6	na	na	na	14.4	13.6	15.3	13.7	14.0
Rwanda 2005	2.3	2.7	8.3	na	na	na	2.5	2.0	2.2	2.5	2.7
Senegal 2005	7.3	7.6	11.8	na	na	na	7.4	7.2	6.4	5.5	9.8
Tanzania 2004	6.3	6.2	9.9	na	na	na	6.3	7.2	6.3	6.8	5.9
Uganda 2006	5.6	6.8	5.6	na	na	na	5.9	5.5	5.8	6.3	5.0
Zimbabwe 2005-06	1.9	2.5	5.8	na	na	na	2.2	1.8	1.6	1.9	2.3
North Africa/West Asia/Europe											
Armenia 2005	3.1	4.2	7.5	na	na	na	2.9	3.1	3.1	2.9	3.2
Egypt 2005	6.7	5.3	8.3	na	na	na	6.7	5.7	6.9	6.5	7.0
Moldova Republic 2005	2.1	1.8	3.2	2.5	2.0	2.2	2.2	2.1	1.4	2.7	2.3
Morocco 2003-04	2.2	3.9	8.3	2.2	2.4	2.2	2.4	2.2	1.9	2.8	2.9
Turkey 2003	3.1	3.6	2.8	2.9	3.3	3.1	3.1	3.3	2.9	3.0	3.8
South and Southeast Asia											
Bangladesh 2004	10.9	11.5	13.7	na	na	na	10.9	11.1	12.5	10.9	9.4
Cambodia 2005	2.4	10.4	12.3	na	na	na	2.1	2.6	3.1	2.4	2.1
India 2005-06	15.3	14.3	13.8	na	na	na	15.3	15.2	16.7	14.9	13.3
Indonesia 2002-03	5.6	5.9	8.1	na	na	na	5.6	4.5	5.5	5.7	5.3
Nepal 2006	2.6	5.1	5.2	na	na	na	3.6	2.5	2.9	3.6	1.9
Philippines 2003	1.6	2.9	4.9	1.3	2.4	3.3	1.6	2.0	1.5	2.2	2.3
Vietnam 2005	1.9	5.6	9.0	na	na	na	1.9	2.5	1.8	2.3	3.1
Latin America and the Caribbean											
Bolivia 2003	2.7	3.5	3.0	2.8	2.5	2.9	2.8	2.5	2.6	2.9	2.9
Colombia 2005	2.6	2.2	5.8	2.6	2.6	2.6	2.5	2.7	2.2	2.9	2.6
Guyana 2005	1.8	3.3	6.1	na	na	na	1.8	2.9	3.1	2.8	2.9
Haiti 2005	4.9	4.4	7.6	na	na	na	4.5	5.4	6.6	3.9	4.6
Honduras 2005	2.5	2.4	4.3	2.7	2.5	2.4	2.5	2.3	2.4	2.6	2.6
Peru 2004-06	4.1	4.4	5.3	na	na	na	5.2	4.2	3.9	4.4	na

Figure 3.1: Myers' Index for household member (0-79 years)

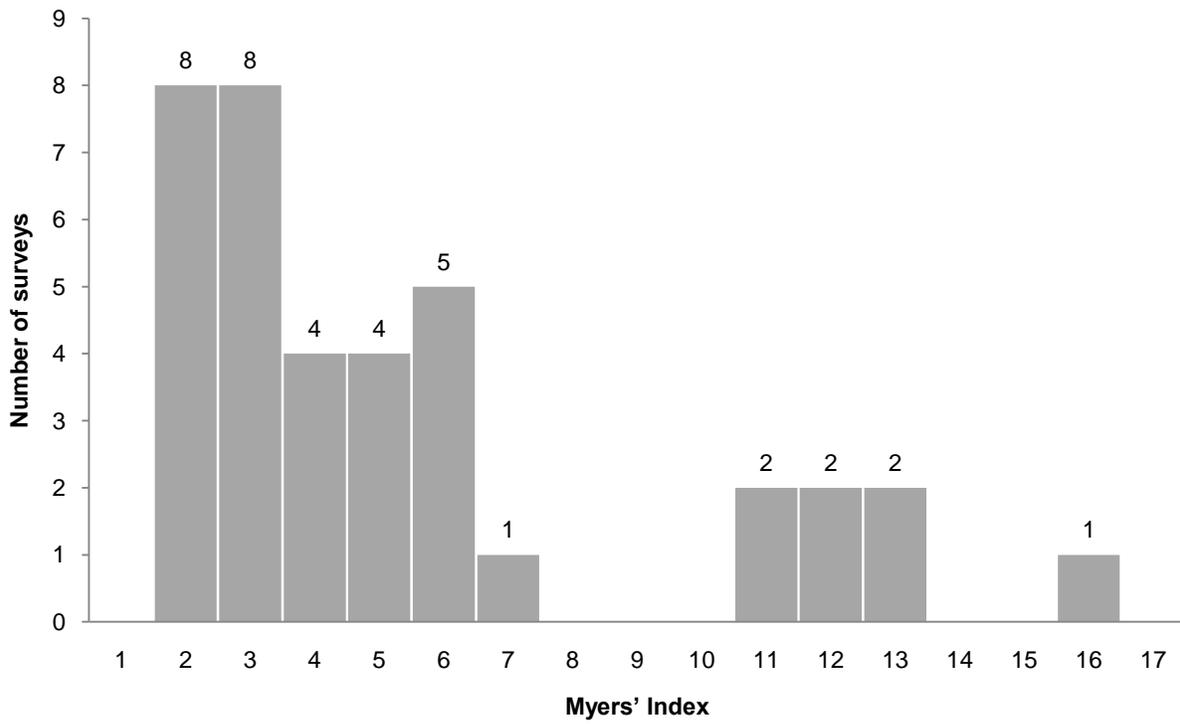


Figure 3.2: Heaping at digits 0 or 5 for household members (0-79 years)

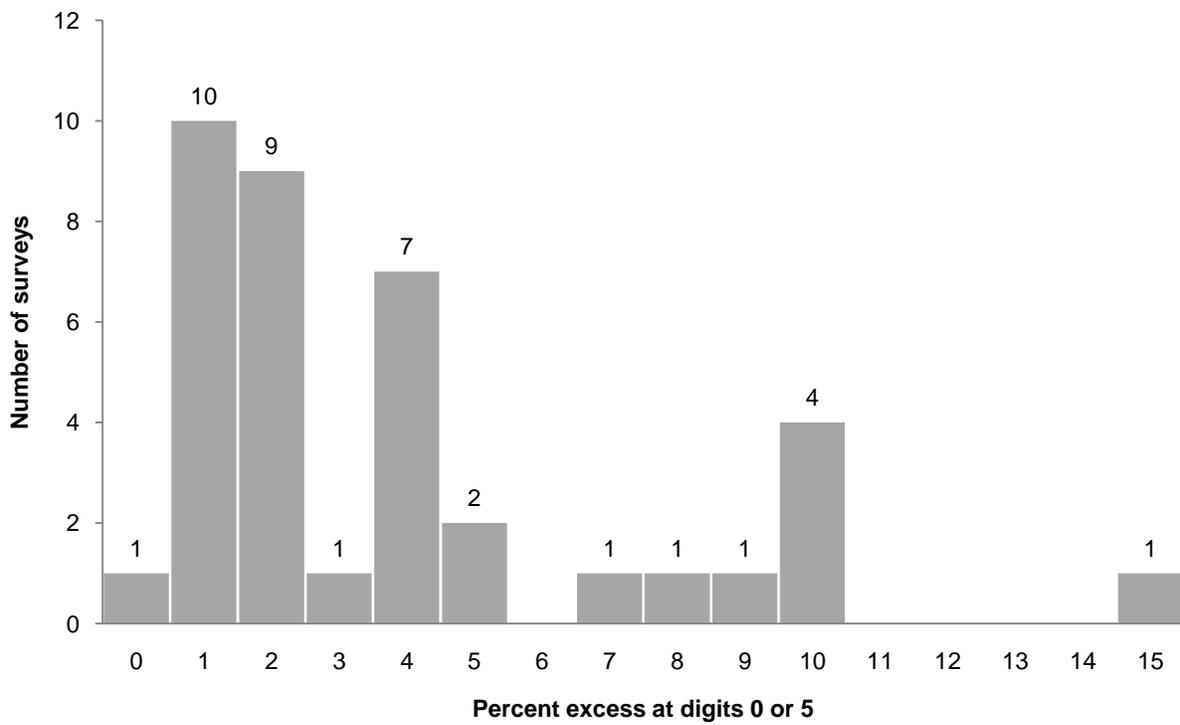


Figure 3.3: Comparison of Myers' Index and heaping at digits 0 or 5

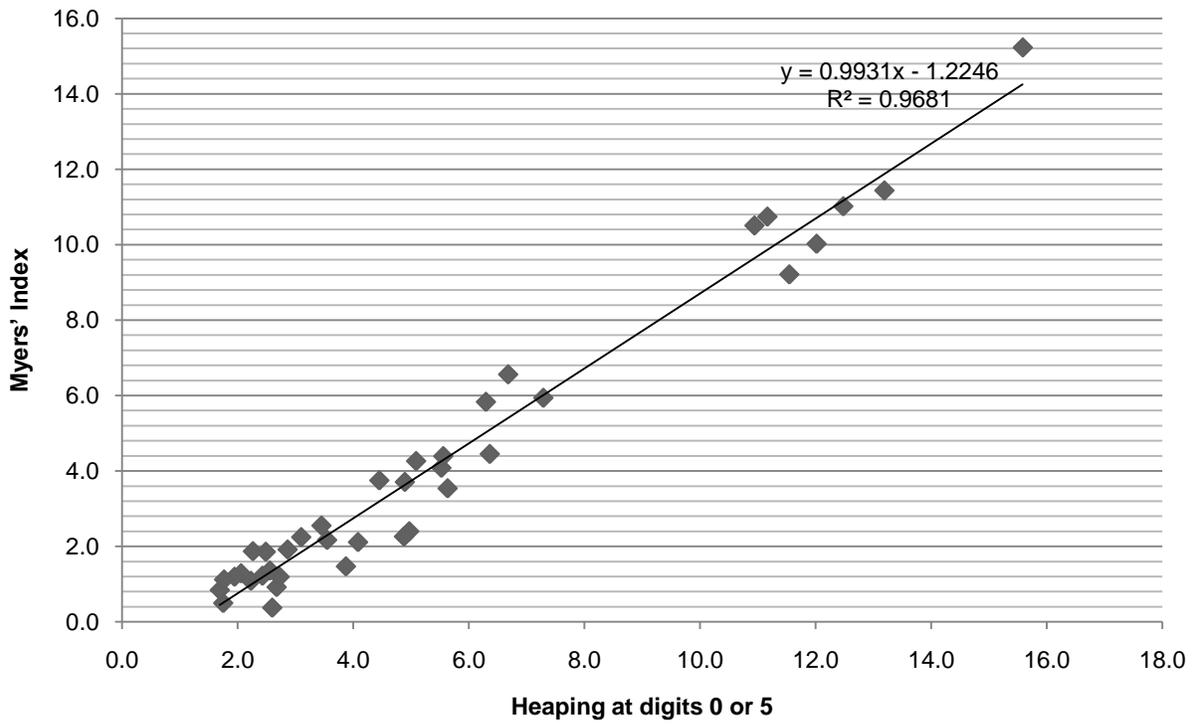


Figure 3.4: Myers' Index for year of birth of female respondents

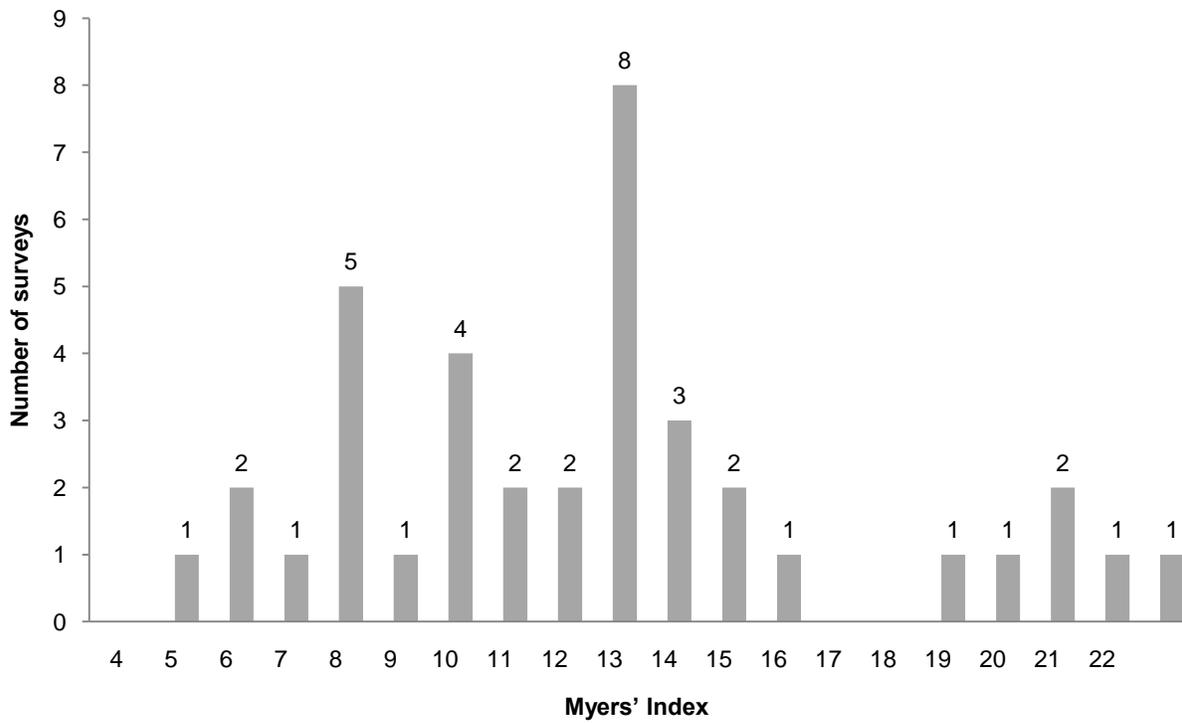


Figure 3.5: Heaping at digits 0 or 5 for year of birth of female respondents

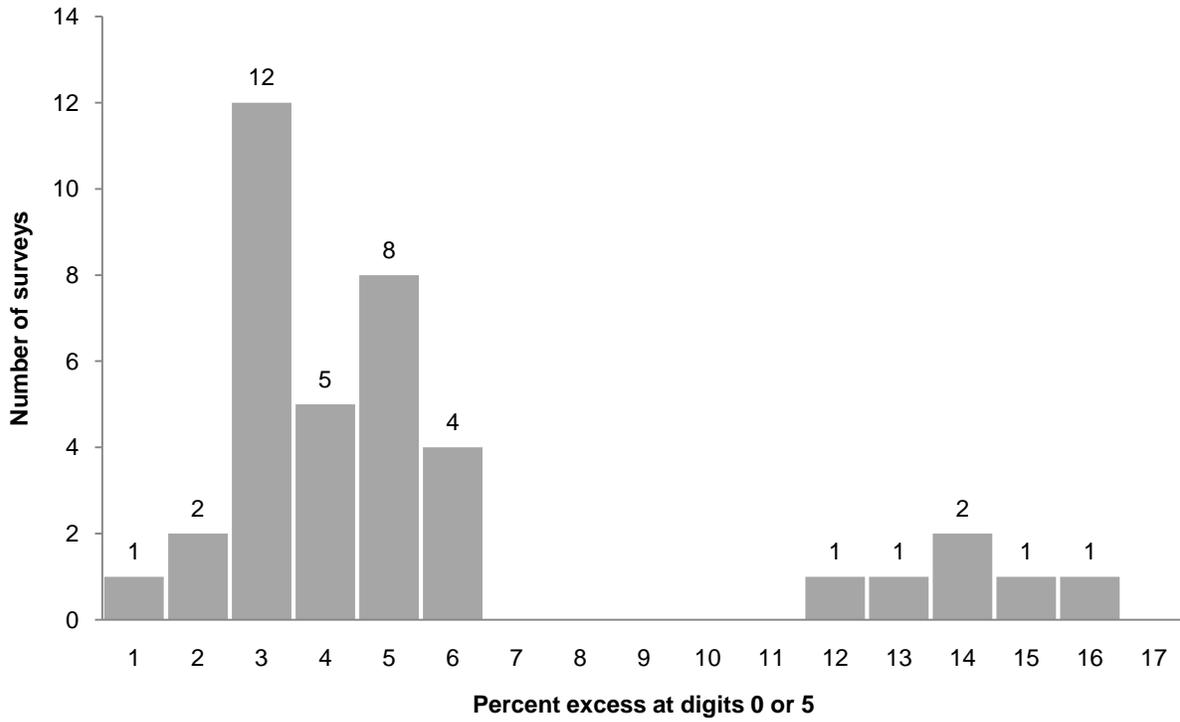


Figure 3.6: Myers' Index for male respondents' birth year

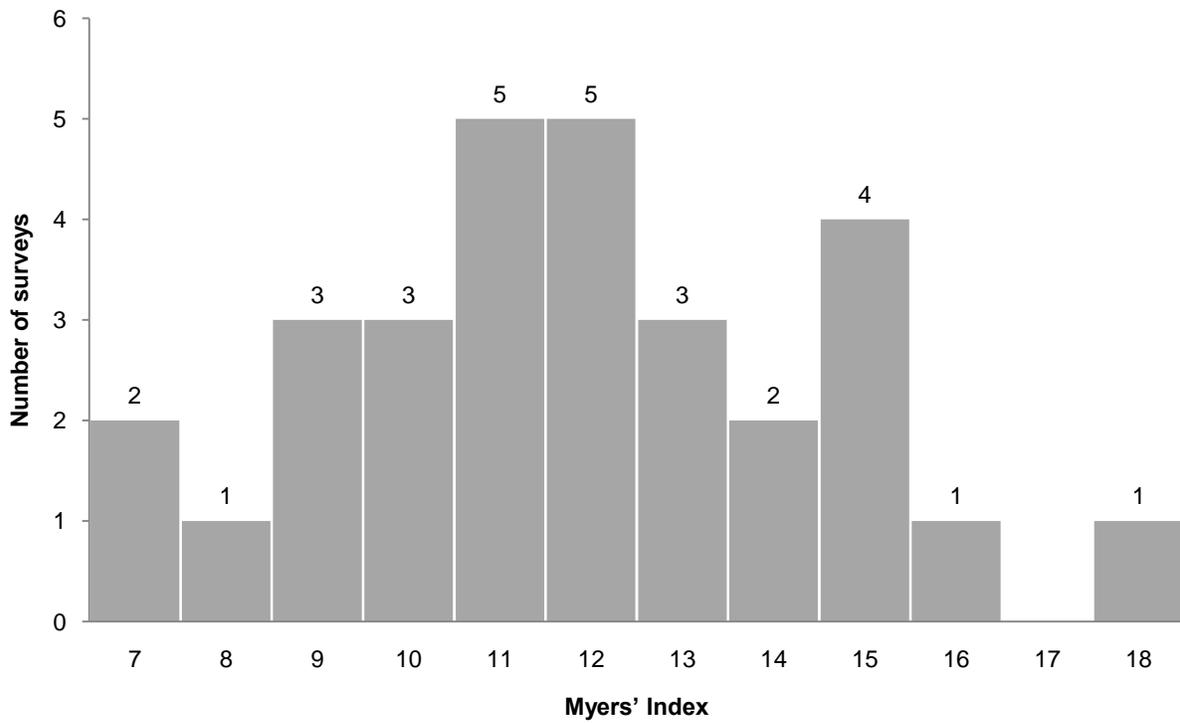
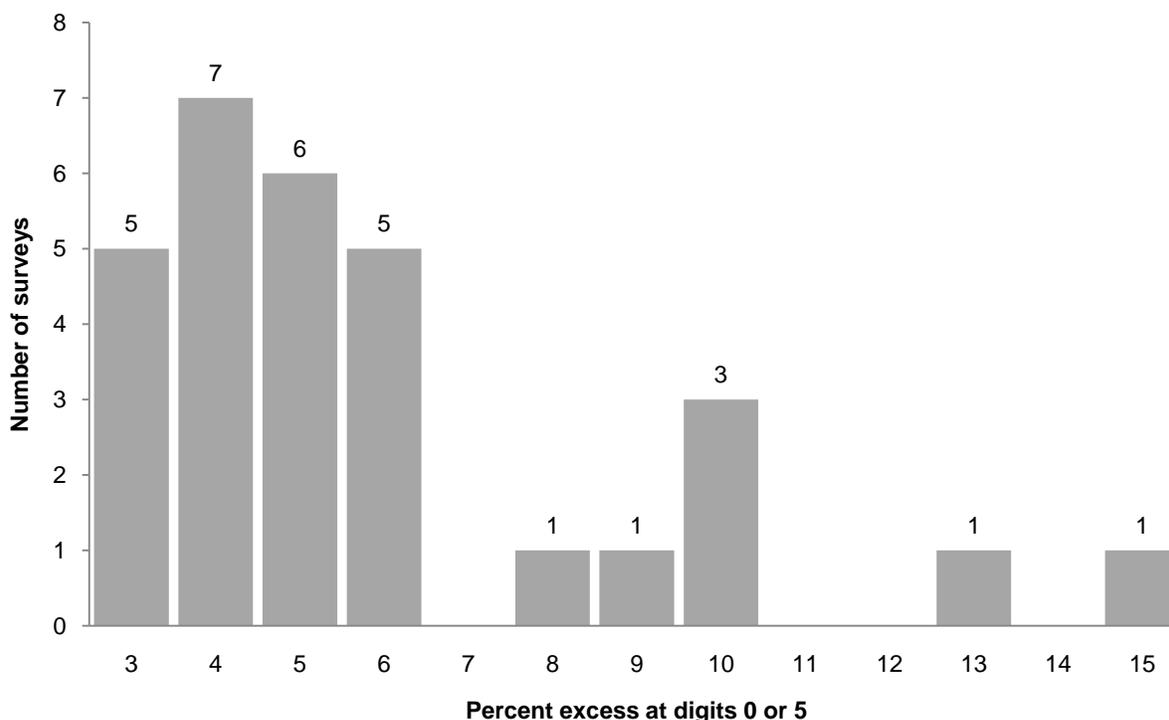


Figure 3.7: Heaping at digits 0 or 5 for male respondents' birth year



3.1.2 Age Displacement of Women

Women who are de facto residents of the household and who are eligible for individual interviews are identified during the household interview. Interviewers can potentially misstate ages, creating age shifts across age eligibility boundaries. This section of the report examines evidence of age displacements viewed as upward and downward transfers at the lower and upper boundaries of eligibility, respectively.

The eligibility age range for women in all the surveys included in this analysis was 15-49; both downward and upward age transfers across these boundaries are considered.

Downward Age Displacement of Women

Estimates and percentages of downward age transfers for women from 15-19 to 10-14 are presented in Figures 3.8 and 3.9 and Table 3.2. Downward transfers were discovered in over three-fourths of the countries in this analysis. Niger and Malawi had the two highest percentages of downward transfers with 15 percent and 19 percent, respectively. Six of the 39 countries have age displacements of 10 percent or more (Figure 3.8, Table 3.2). These countries were all in sub-Saharan Africa and include Benin, Ghana, Madagascar, Malawi, Niger, and Uganda. Age ratios (number of cases in the 15-19 age group divided by the number of cases in the 10-14 age group) observed for these countries are all low relative to the previous age group and improve when adjusted during estimation. For example, in Benin 2006, the age ratio observed for the 15-19 to 10-14 age groups is $3,532/5,914 = 0.60$, an unlikely decline given the ratio of 0.77 in the previous age range. After adjustment, the estimated ratio of 0.77 seems more plausible.

Rutstein and Bicego's (1990) indicator AR_i-AR_0 also indicates that these surveys have large amounts of displacement.

Table 3.2: Downward age transfers¹ for younger women in household member listing, DHS/AIS 2003-06

Country/year	Estimated percentage of women 15-19 misreported at 10-14	Observed number				Estimated "true" number	
		Age 5-9	Age 10-14	Age 15-19	Age 20-24	Age 10-14	Age 15-19
Sub-Saharan Africa							
Benin 2006	14.1	7,673	5,914	3,532	3,520	5,333	4,113
Burkina Faso 2003	4.0	4,908	4,155	3,059	2,435	4,026	3,188
Cameroon 2004	0.9	3,702	3,398	2,933	2,510	3,370	2,961
Chad 2004	-0.4	2,558	1,993	1,546	1,172	1,998	1,541
Congo 2005	3.8	2,099	2,066	1,766	1,636	1,996	1,836
Cote d'Ivoire 2005	-6.6	1,751	1,431	1,464	1,290	1,521	1,374
Ethiopia 2005	4.1	5,189	4,740	3,614	2,888	4,584	3,770
Ghana 2003	9.9	1,926	1,794	1,240	1,103	1,658	1,376
Guinea 2005	9.1	3,231	2,779	1,720	1,233	2,608	1,891
Kenya 2003	6.1	2,592	2,518	2,010	1,870	2,387	2,141
Lesotho 2004	2.7	2,442	2,732	2,459	2,080	2,665	2,526
Madagascar 2003-04	12.6	2,801	2,673	1,747	1,573	2,422	1,998
Malawi 2004	19.4	4,808	4,506	2,682	3,078	3,861	3,327
Mozambique 2003	4.0	5,086	4,138	3,203	2,947	4,003	3,338
Niger 2006	15.1	4,358	3,497	2,000	1,837	3,142	2,355
Nigeria 2003	-16.8	3,484	1,904	2,019	1,704	2,194	1,729
Rwanda 2005	3.0	3,624	3,307	2,747	2,456	3,223	2,831
Senegal 2005	-2.2	5,137	4,595	4,077	3,182	4,681	3,991
Tanzania 2004	5.4	3,562	3,361	2,578	2,175	3,213	2,726
Uganda 2006	12.9	3,979	3,621	2,237	1,898	3,289	2,569
Zimbabwe 2005-06	8.0	3,130	3,162	2,423	2,225	2,951	2,634
North Africa/West Asia/Europe							
Armenia 2005	1.3	741	1,089	1,227	1,150	1,073	1,243
Egypt 2005	-8.6	6,249	5,800	6,765	5,925	6,338	6,227
Moldova Republic 2005	-2.5	927	1,323	1,570	1,321	1,361	1,532
Morocco 2003-04	-0.4	3,402	3,655	3,656	3,326	3,669	3,642
Turkey 2003	-1.5	2,373	2,390	2,497	2,472	2,427	2,460
South and Southeast Asia							
Bangladesh 2004	-5.8	3,404	3,483	3,737	2,986	3,689	3,531
Cambodia 2005	9.0	4,535	5,383	4,106	3,384	4,976	4,513
India 2005-06	3.6	28,778	29,224	26,238	25,752	28,244	27,218
Indonesia 2002-03	-0.1	7,827	7,543	7,298	7,030	7,553	7,288
Nepal 2006	0.3	2,977	2,910	2,636	2,257	2,901	2,645
Philippines 2003	7.3	3,738	3,886	2,958	2,498	3,652	3,192
Vietnam 2005	3.9	1,054	1,458	1,398	1,183	1,401	1,455
Latin America and the Caribbean							
Bolivia 2003	4.4	5,595	5,339	4,166	3,399	5,146	4,359
Colombia 2005	2.5	8,277	8,693	7,933	7,296	8,488	8,138
Guyana 2005	4.6	657	688	563	467	661	590
Haiti 2005	0.2	3,183	3,246	2,795	2,052	3,241	2,800
Honduras 2005	4.4	6,810	6,634	5,245	4,298	6,394	5,485
Peru 2004-08	7.1	1,566	1,676	1,316	1,136	1,576	1,416

¹ See Pullum (p. 5-6, 2006) for methodological details.

Differentials in Downward Age Displacement of Women

Tables 3.2.1.a and 3.2.1.b show the percentage of downward age transfers of female household members according to the selected fieldwork-related factors.

In about one-third of the countries with available data, downward age displacement is higher for women in households where the interviewer was female rather than male (Table 3.2.1.a). In a number of countries there is a significant age displacement for women—by male interviewers—that actually shifts women who should have been reported at an age less than 15 into the 15-19 age group, as indicated by percentages with a negative sign. This could be explained by the possibility that male interviewers may not probe enough when women have a reported age such as 15, which may be rounded. This kind of age displacement for male interviewers is especially high in Senegal (-18 percent), Guinea (-12 percent), and Nigeria (-10 percent). Egregious displacement out of the age range of eligibility by male interviewers in particular can be seen in two countries: Kenya and Bolivia; the percentage of downward age displacement for female household members is five and six times higher, respectively, for male interviewers than for female interviewers.

Urban-rural residence is correlated with downward age displacement for younger women. In 36 of the 39 countries in the study, downward age displacement is higher in rural than in urban areas, the difference being quite pronounced in several countries including Zimbabwe, Ethiopia, Ghana, and Peru. In eight of the nine countries with available data, the percentage of downward age displacement is considerably higher in cases when a translator was used for the interview than when not used.

In the majority of countries under study (six out of eight countries), age displacement is greater when the language of the questionnaire and the interviewer are different than when they are the same. The last fieldwork-related factor presented in Table 3.2.1.a, whether the language of the interview and respondent are the same or different, shows that age displacement is generally worse when the interviewer and the respondent conduct the interview in the same language, but not in one of the main languages spoken in the country (the “Same/Other” category).

Table 3.2.1.a: Differentials in downward age transfers for younger women in household member listing, DHS/AIS 2003-06

Percentage of women 15-19 misreported at 10-14 by sex of interviewer, residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Sex of interviewer		Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Male	Female	Urban	Rural	Yes	No	Same	Different	Same	Other	Different	
Sub-Saharan Africa												
Benin 2006	na	na	10.0	17.7	16.8	13.9	8.5	15.8	na	na	na	14.1
Burkina Faso 2003	1.1	4.3	-2.7	7.4	na	na	na	na	na	na	na	4.0
Cameroon 2004	-1.3	1.8	-3.7	6.3	na	na	na	na	na	na	na	0.9
Chad 2004	2.5	-1.6	-2.4	2.2	na	na	na	na	na	na	na	-0.4
Congo 2005	5.6	3.4	3.3	5.4	na	na	na	na	na	na	na	3.8
Cote d'Ivoire 2005	na	na	-6.2	-6.2	na	na	na	na	na	na	na	-6.6
Ethiopia 2005	-0.7	7.3	-7.2	10.0	13.3	0.9	0.1	13.9	1.5	19.3	-3.5	4.1
Ghana 2003	na	na	1.6	17.0	20.2	8.5	8.8	18.7	10.6	21.9	7.7	9.9
Guinea 2005	-11.6	9.6	5.1	11.9	na	na	na	na	na	na	na	9.1
Kenya 2003	29.6	5.7	0.7	7.1	na	na	na	na	na	na	na	6.1
Lesotho 2004	na	na	0.6	3.2	na	na	na	na	na	na	na	2.7
Madagascar 2003-04	9.2	13.1	10.7	16.1	na	na	na	na	na	na	na	12.6
Malawi 2004	19.2	19.1	13.8	20.4	6.6	19.7	19.4	18.5	19.9	-36.9	18.9	19.4
Mozambique 2003	-4.0	5.2	-2.1	11.0	na	na	na	na	na	na	na	4.0
Niger 2006	14.9	16.3	9.6	19.1	na	na	na	na	na	na	na	15.1
Nigeria 2003	-9.9	0.9	-11.6	-19.4	na	na	na	na	na	na	na	-16.8
Rwanda 2005	3.5	2.7	-4.2	5.1	na	na	na	na	na	na	na	3.0
Senegal 2005	-17.5	-1.5	-6.5	1.5	na	na	na	na	na	na	na	-2.2
Tanzania 2004	11.2	4.7	-1.0	7.3	na	na	na	na	na	na	na	5.4
Uganda 2006	11.7	13.6	1.2	14.9	18.4	12.5	11.2	15.6	12.1	17.3	12.8	12.9
Zimbabwe 2005-06	na	na	-6.2	14.0	na	na	7.7	15.4	na	na	na	8.0
North Africa/West Asia/Europe												
Armenia 2005	3.8	0.8	2.1	-0.5	na	na	na	na	na	na	na	1.3
Egypt 2005	na	na	-8.6	-8.7	na	na	na	na	na	na	na	-8.6
Moldova Republic 2005	4.3	-3.8	-3.5	-2.4	na	na	na	na	na	na	na	-2.5
Morocco 2003-04	na	na	-2.6	1.9	na	na	na	na	na	na	na	-0.4
Turkey 2003	na	na	-0.7	-3.4	11.6	-1.9	na	na	na	na	na	-1.5
South and Southeast Asia												
Bangladesh 2004	na	-5.8	-4.1	-6.7	na	na	na	na	na	na	na	-5.8
Cambodia 2005	9.9	8.8	2.6	11.2	na	na	na	na	na	na	na	9.0
India 2005-06	na	na	1.9	4.8	na	na	na	na	na	na	na	3.6
Indonesia 2002-03	na	na	-5.4	4.0	na	na	na	na	na	na	na	-0.1
Nepal 2006	-0.5	2.0	-3.8	1.6	64.3	0.2	0.0	7.9	-1.9	13.9	2.8	0.3
Philippines 2003	na	na	2.7	11.7	28.0	7.0	8.6	2.3	6.5	0.0	15.0	7.3
Vietnam 2005	na	na	-2.9	6.5	na	na	na	na	na	na	na	3.9
Latin America and the Caribbean												
Bolivia 2003	28.5	4.4	0.5	11.2	na	na	na	na	na	na	na	4.4
Colombia 2005	na	na	2.0	3.7	na	na	na	na	na	na	na	2.5
Guyana 2005	na	na	0.8	8.1	100.0	4.3	na	na	4.4	0.0	0.0	4.6
Haiti 2005	1.2	-0.3	-1.8	2.0	na	na	na	na	na	na	na	0.2
Honduras 2005	na	na	-1.7	8.5	na	na	na	na	na	na	na	4.4
Peru 2004-08	na	na	1.0	15.2	na	na	na	na	na	na	na	7.1

¹ Based on country-level data.

Table 3.2.1.b looks at the impact of several other fieldwork-related factors on downward age displacement. Age displacement is generally more common for women living in households that were visited three or more times when compared with those that were visited only once. In several countries—including Burkina Faso, Lesotho, Rwanda, Tanzania, Armenia, Indonesia, and Vietnam—there is a positive downward age displacement for women of households visited only once and a considerable negative displacement for women of households visited three or more times. The latter phenomenon could be due to interviewer fatigue or lack of patience when visiting a household multiple times and, therefore, a lack of proper probing when women report a rounded age such as 15 years.

Table 3.2.1.b: Differentials in downward age transfers for younger women in household member listing, DHS/AIS 2003-06

Percentage of women 15-19 misreported at 10-14 by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	13.5	24.2	21.1	na	na	na	14.5	13.2	12.9	12.4	18.2	14.1
Burkina Faso 2003	4.0	9.0	-9.7	na	na	na	4.7	2.0	4.8	3.7	4.0	4.0
Cameroon 2004	1.3	-6.0	-0.5	na	na	na	2.3	-0.2	-2.9	0.5	7.9	0.9
Chad 2004	0.2	-19.6	7.1	na	na	na	-3.0	3.3	1.8	0.4	-3.5	-0.4
Congo 2005	3.7	-4.2	35.7	na	na	na	6.9	-2.2	4.4	4.9	0.3	3.8
Cote d'Ivoire 2005	-8.3	23.6	-13.1	na	na	na	-6.4	-8.3	-1.2	-10.0	-5.2	-6.6
Ethiopia 2005	5.7	-13.4	-12.4	na	na	na	9.7	0.3	15.9	0.8	-3.9	4.1
Ghana 2003	10.0	8.0	11.3	na	na	na	10.1	9.5	7.8	10.1	13.3	9.9
Guinea 2005	8.2	57.2	40.0	na	na	na	9.3	8.1	14.4	7.1	4.7	9.1
Kenya 2003	6.0	4.1	8.7	na	na	na	8.3	2.3	5.7	3.5	12.5	6.1
Lesotho 2004	2.6	6.5	-4.3	na	na	na	2.8	2.3	4.4	0.2	6.0	2.7
Madagascar 2003-04	12.4	13.6	19.8	na	na	na	11.7	14.7	8.9	14.8	13.4	12.6
Malawi 2004	19.6	7.9	20.4	na	na	na	18.7	19.9	15.5	21.1	19.4	19.4
Mozambique 2003	4.1	-1.2	5.1	na	na	na	3.7	16.6	3.0	3.8	5.8	4.0
Niger 2006	15.3	2.5	-2.9	na	na	na	18.4	11.2	11.3	18.6	13.7	15.1
Nigeria 2003	-16.6	-18.6	-24.4	na	na	na	0.0	0.0	0.0	0.0	0.0	-16.8
Rwanda 2005	3.0	8.8	-15.0	na	na	na	5.0	0.2	2.7	4.2	1.7	3.0
Senegal 2005	-1.9	-11.9	3.3	na	na	na	-1.7	-2.6	0.5	-5.6	-0.9	-2.2
Tanzania 2004	5.7	2.0	-20.6	na	na	na	6.4	-3.5	7.3	3.5	5.7	5.4
Uganda 2006	12.9	14.1	14.5	na	na	na	16.4	8.7	13.7	18.0	7.3	12.9
Zimbabwe 2005-06	7.8	12.6	0.3	na	na	na	13.3	3.1	6.7	4.8	13.7	8.0
North Africa/West Asia/Europe												
Armenia 2005	1.4	8.6	-37.7	na	na	na	1.2	2.3	-2.8	5.8	1.5	1.3
Egypt 2005	-8.6	-8.3	-9.0	na	na	na	-8.6	-11.0	-8.4	-8.8	-11.6	-8.6
Moldova Republic 2005	-4.2	11.4	3.4	0.7	-6.1	-2.3	-2.6	-1.4	-2.6	0.5	-6.0	-2.5
Morocco 2003-04	-0.3	-4.7	3.3	-0.9	-0.5	1.5	0.1	-4.2	0.7	-1.8	2.0	-0.4
Turkey 2003	-2.7	4.1	6.8	-2.0	-1.9	1.8	-1.4	-5.0	-2.1	-1.4	-0.5	-1.5
South and Southeast Asia												
Bangladesh 2004	-6.0	-2.5	9.3	na	na	na	-5.6	-6.8	-5.8	-5.8	-5.9	-5.8
Cambodia 2005	9.0	26.0	12.5	na	na	na	9.5	8.9	11.1	9.5	6.3	9.0
India 2005-06	3.3	5.4	12.1	na	na	na	5.9	2.5	3.2	4.3	3.3	3.6
Indonesia 2002-03	0.1	-13.0	-19.8	na	na	na	0.6	-13.4	1.5	-0.6	-0.8	-0.1
Nepal 2006	-0.1	4.5	15.2	na	na	na	-1.2	0.6	0.2	-2.6	2.7	0.3
Philippines 2003	7.8	3.4	-0.6	7.1	8.5	2.6	9.6	1.1	6.4	8.8	4.6	7.3
Vietnam 2005	3.9	6.1	-31.1	na	na	na	2.7	16.6	9.2	0.7	1.8	3.9
Latin America and the Caribbean												
Bolivia 2003	4.0	10.2	0.7	3.1	4.4	7.7	6.6	0.7	-1.6	8.5	7.4	4.4
Colombia 2005	2.7	-4.6	7.0	2.9	1.9	2.9	2.3	3.8	2.3	1.3	4.0	2.5
Guyana 2005	1.3	27.2	8.1	na	na	na	6.3	1.3	5.8	3.4	6.3	4.6
Haiti 2005	0.2	-0.5	-1.1	na	na	na	0.1	0.2	1.2	-2.3	1.3	0.2
Honduras 2005	4.5	2.5	3.0	3.7	4.3	7.8	4.9	0.6	2.6	3.1	6.5	4.4
Peru 2004-08	4.1	16.2	19.7	na	na	na	4.3	7.9	6.9	7.5	na	7.1

There is no strong or clear relationship between the time of day of the interview and the frequency of downward age displacement for women in the few countries that have these data. In 22 of the 39 countries, the percentage of downward age displacement is higher in clusters where the team spent fewer than four days compared with clusters where the team spent four or more days. For 15 of the surveys, the level of downward age displacement among women was highest if the interview was conducted toward the end of fieldwork; for 13 of the surveys, it was highest if the interview was conducted in the middle; and for an additional 8 surveys, the displacement was highest if the interview was conducted in the beginning of fieldwork. As with heaping, data on downward age transfers in countries where there are clear trends toward improvement (e.g., Guinea, Cambodia) or worsening (e.g., Ghana) of age transfers over time may be useful on a country-specific basis.

Upward Age Displacement of Women

For our purposes, upward transfers involve the estimation of the percentage of women age 45-49 misreported at 50-54. Fifteen out of 21 sub-Saharan African countries demonstrate evidence of upward transfers of 10 percent or more (Table 3.3). There being more evidence of age transfer at the upper bounds of eligibility (pushing older eligible women out of the range of eligibility for interview) than age transfer at the lower bounds of eligibility is not surprising for two reasons. First, the incentive to misreport the ages of older women is greater because women in their late 40s typically have a much longer birth history than 15-year-old girls; because the surveys collect birth history information from all female respondents, much more work is involved when interviewing an older woman. Second, a compounding factor may be the age rounding by older women who may not remember their exact birth year or who may not be able to calculate their age correctly. The DHS interviewers are instructed to probe carefully for the respondent's exact month and year of birth, as well as age in completed years, and to make sure that the two are consistent. This is especially important when the respondent gives a rounded age such as 50 years old. If the probing is not done carefully or not done at all, age transfers to the 50-54 age group could also be the result of rounding.

The highest estimated percentages of misreporting occurred in Madagascar (19 percent), Mozambique and Malawi (17 percent each), Senegal and Benin (16 percent each), and Nigeria (15 percent). Only Benin, Madagascar, Malawi, and Niger had high percentages of both upward and downward age transfers. Nigeria is particularly interesting because there appears to have been a systematic effort to shift older women out of the range of eligibility, while compensating for that shift by replacing older women with younger women: Table 3.3 shows that, in Nigeria, 15 percent of women age 45-49 were misreported as age 50-54; at the same time, Table 3.2 shows that an estimated 17 percent of girls age 10-14 were reported as being of eligible age (15-19 years old). An alternative explanation of the observed upward age displacement at both ends of the age range of eligibility in Nigeria would be that it is due to frequent rounding by respondents and a lack of proper probing for age by the interviewer.

The impact of the age transfers, in terms of the loss of sample size, can be calculated using both the rates of upward and downward transfers for each country. For Benin, the downward transfer rate was 14 percent (calculated by subtracting the observed number of women age 15-19 from the estimated "true" number, and then dividing the difference by the estimated "true" number ($4,113 - 3,532 = 581$ women age 15-19; $581/4,113 * 100 = 14.1$). For upward transfers in Benin

(found in Table 3.3), rates were 16.1 (calculated by subtracting the observed number of women age 45-49 from the estimated “true” number, and then dividing the difference by the estimated “true” number: $1,705 - 1,431 = 274$ women age 45-49; $274 / 1,705 * 100 = 16.1$). The total loss of cases due to age displacement in the Benin DHS was 855. These women represent a 4.6 percent loss to the sample. Similarly for Malawi, misreporting due to age transfers would result in a loss of 6.4 percent. Two other countries with high combined losses were Madagascar and Niger at 5.0 percent each.

Table 3.3: Upward age transfers¹ for older women in household member listing, DHS/AIS 2003-06

Country/year	Estimated percentage of women 45-49 misreported at 50-54	Observed number				Estimated “true” number	
		Age 40-44	Age 45-49	Age 50-54	Age 55-59	Age 45-49	Age 50-54
Sub-Saharan Africa							
Benin 2006	16.1	1,709	1,431	1,665	928	1,705	1,391
Burkina Faso 2003	10.2	1,348	1,147	1,208	809	1,277	1,078
Cameroon 2004	11.7	984	825	923	650	934	814
Chad 2004	-2.1	539	564	408	236	552	420
Congo 2005	11.4	663	505	524	347	570	459
Cote d'Ivoire 2005	12.3	539	433	468	303	494	407
Ethiopia 2005	-1.3	1,238	1,142	984	859	1,128	998
Ghana 2003	10.6	612	524	552	356	586	490
Guinea 2005	-0.6	882	874	730	534	869	735
Kenya 2003	13.7	840	560	595	398	649	506
Lesotho 2004	11.4	913	753	849	635	849	753
Madagascar 2003-04	18.7	947	737	835	375	906	666
Malawi 2004	16.6	1,005	799	1,020	729	958	861
Mozambique 2003	17.2	1,381	1,073	1,266	722	1,295	1,044
Niger 2006	14.2	949	721	826	566	840	707
Nigeria 2003	14.8	781	633	723	437	743	613
Rwanda 2005	5.2	1,154	932	756	424	984	704
Senegal 2005	16.3	1,415	1,142	1,393	895	1,364	1,171
Tanzania 2004	8.3	976	783	785	569	854	714
Uganda 2006	5.9	741	627	588	414	666	549
Zimbabwe 2005-06	11.0	814	715	794	550	804	705
North Africa/West Asia/Europe							
Armenia 2005	6.0	1,082	1,055	1,006	632	1,123	938
Egypt 2005	-1.5	2,912	2,677	2,164	1,700	2,637	2,204
Moldova Republic 2005	6.0	1,130	1,281	1,423	1,078	1,363	1,341
Morocco 2003-04	1.4	2,038	1,683	1,325	900	1,708	1,300
Turkey 2003	6.5	1,453	1,157	1,089	787	1,237	1,009
South and Southeast Asia							
Bangladesh 2004	-12.9	1,244	1,170	735	733	1,036	869
Cambodia 2005	0.5	2,224	1,831	1,488	1,153	1,840	1,479
India 2005-06	7.1	13,902	11,176	11,182	8,773	12,035	10,323
Indonesia 2002-03	-6.7	4,681	4,283	2,663	1,828	4,013	2,933
Nepal 2006	4.0	1,108	915	848	681	953	810
Philippines 2003	5.3	1,653	1,418	1,285	862	1,498	1,205
Vietnam 2005	4.0	1,015	922	679	514	891	710
Latin America and the Caribbean							
Bolivia 2003	8.9	2,027	1,625	1,647	1,174	1,785	1,487
Colombia 2005	0.0	5,041	4,492	3,735	2,899	4,492	3,735
Guyana 2005	7.5	362	315	304	198	341	278
Haiti 2005	6.9	995	973	1,010	721	1,045	938
Honduras 2005	8.1	2,095	1,741	1,747	1,246	1,895	1,593
Peru 2004-08	5.0	779	653	610	457	687	576

¹ See Pullum (p. 5-6, 2006) for methodological details.

Differentials in Upward Age Displacement of Women

Tables 3.3.1.a and 3.3.1.b show the percentage of upward age transfers (from age 45-49 to age 50 or older) of female household members according to the selected fieldwork-related factors.

The gender of the interviewer does not have a consistent relationship with upward age displacement of female household members (Table 3.3.1.a). In about half of the surveys, the level of age displacement is higher when the interviewer was female, while in the other half it is higher when the interviewer was male. That being said, there are several countries where differences in displacement by sex of interviewer are large. These differences should be taken into consideration during the training and supervision of interviewers in future surveys. Overall, about half of surveys demonstrate that upward age displacement for women is somewhat more pronounced in rural than in urban areas, while in the other half the reverse is true, indicating a lack of relationship between residence and upward age displacement.

In 6 of the 10 surveys with available data, the percentage of upward age displacement is higher when a translator was used for the interview than when not used. When the language of the interview is different from the language of the questionnaire, there can be large differences in levels of age displacement; however, the differences are not consistent in direction. For example, in Ghana, displacement is worse when the language of interview and questionnaire is the same, while in Malawi, the reverse is true. Similarly, differences in the language of the interview and of the respondent are not consistently associated with upward age displacement of women in the households.

Looking at the number of visits to the household, in 26 of the 39 surveys, upward age displacement of the household female population is more frequent among women in households that were visited three or more times than in households that were visited only once (Table 3.3.1.b). Similar to downward age displacement (ascribing those in the 15-19 age group to an age less than 15), in several countries there was an upward age displacement when households were visited only once while there was age displacement into the age group 45-49 (negative value) when households were visited three or more times.

There are limited data to make a useful analysis of the impact of the time of day when the interview was conducted and the percentage of upward age displacement for females in the household. Similar to the downward age displacement, in 22 of the 39 countries, the level of upward age displacement is higher if the team spent fewer than four days in the cluster than if the team spent four or more days, while the opposite is true for 16 countries. The timing of the interview during the course of fieldwork does not appear to have a strong impact on the upward age displacement. However, the data show that for a number of countries, the negative downward age displacement among women (i.e., women 50-54 were misreported as 45-49) is higher if the interview was conducted toward the end of fieldwork.

Table 3.3.1.a: Differentials in upward age transfers for older women in household member listing, DHS/AIS 2003-06

Percentage of women 45-49 misreported at 50-54 by sex of interviewer, residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Sex of interviewer		Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Male	Female	Urban	Rural	Yes	No	Same	Different	Same	Same/ Other	Different	
Sub-Saharan Africa												
Benin 2006	na	na	12.1	18.4	27.7	14.9	14.6	16.4	na	na	na	16.1
Burkina Faso 2003	9.8	10.3	4.8	11.4	na	na	na	na	na	na	na	10.2
Cameroon 2004	18.6	9.2	11.4	12.2	na	na	na	na	na	na	na	11.7
Chad 2004	10.5	-7.0	1.9	-5.3	na	na	na	na	na	na	na	-2.1
Congo 2005	7.1	12.9	13.0	8.4	na	na	na	na	na	na	na	11.4
Cote d'Ivoire 2005	na	na	7.8	15.4	na	na	na	na	na	na	na	12.3
Ethiopia 2005	0.5	-3.1	-5.3	0.2	9.5	-5.7	-3.9	4.2	-7.4	7.3	8.9	-1.3
Ghana 2003	na	na	8.6	12.0	11.9	10.5	12.2	0.8	12.0	-16.2	13.9	10.6
Guinea 2005	-12.1	-0.3	8.3	-3.4	na	na	na	na	na	na	na	-0.6
Kenya 2003	-1.6	14.0	8.8	15.6	na	na	na	na	na	na	na	13.7
Lesotho 2004	na	na	13.3	10.9	na	na	na	na	na	na	na	11.4
Madagascar 2003-04	8.8	20.2	17.0	21.8	na	na	na	na	na	na	na	18.7
Malawi 2004	24.9	16.5	21.0	16.2	16.9	16.6	15.9	37.4	19.3	-29.4	13.4	16.6
Mozambique 2003	31.1	15.3	18.3	16.3	na	na	na	na	na	na	na	17.2
Niger 2006	13.1	14.6	3.6	18.9	na	na	na	na	na	na	na	14.2
Nigeria 2003	14.8	14.9	13.4	15.7	8.3	15.8	na	na	17.6	10.4	13.1	14.8
Rwanda 2005	3.8	6.0	12.2	3.7	na	na	na	na	na	na	na	5.2
Senegal 2005	14.4	16.4	11.7	19.2	na	na	na	na	na	na	na	16.3
Tanzania 2004	6.6	8.5	7.6	8.6	na	na	na	na	na	na	na	8.3
Uganda 2006	8.9	4.6	-3.6	7.1	15.9	4.7	8.2	2.2	7.2	8.0	1.2	5.9
Zimbabwe 2005-06	na	na	13.9	10.1	na	na	11.5	1.3	na	na	na	11.0
North Africa/West Asia/Europe												
Armenia 2005	12.7	5.0	5.6	6.8	na	na	na	na	na	na	na	6.0
Egypt 2005	na	na	3.9	-7.0	na	na	na	na	na	na	na	-1.5
Moldova Republic 2005	27.1	0.1	7.3	4.1	na	na	na	na	na	na	na	6.0
Morocco 2003-04	na	na	2.0	0.7	na	na	na	na	na	na	na	1.4
Turkey 2003	na	na	7.0	5.8	26.9	6.2	na	na	na	na	na	6.5
South and Southeast Asia												
Bangladesh 2004	na	-13.0	-10.4	-14.1	na	na	na	na	na	na	na	-12.9
Cambodia 2005	-1.5	0.8	-2.5	1.5	na	na	na	na	na	na	na	0.5
India 2005-06	na	na	6.6	7.7	na	na	na	na	na	na	na	7.1
Indonesia 2002-03	na	na	-4.8	-8.2	na	na	na	na	na	na	na	-6.7
Nepal 2006	1.0	9.3	0.9	5.0	0.0	4.0	4.6	-10.7	0.8	27.6	7.8	4.0
Philippines 2003	na	na	4.8	5.9	-2.3	5.5	4.2	9.9	5.8	0.0	0.4	5.3
Vietnam 2005	na	na	-1.0	-5.1	na	na	na	na	na	na	na	4.0
Latin America and the Caribbean												
Bolivia 2003	na	9.0	9.8	7.7	na	na	na	na	na	na	na	8.9
Colombia 2005	na	na	0.3	-1.1	na	na	na	na	na	na	na	0.0
Guyana 2005	na	na	13.1	1.7	0.0	7.7	na	na	7.9	0.0	0.0	7.5
Haiti 2005	6.3	7.2	7.5	6.3	na	na	na	na	na	na	na	6.9
Honduras 2005	na	na	11.6	5.5	na	na	na	na	na	na	na	8.1
Peru 2004-08	na	na	6.8	2.2	na	na	na	na	na	na	na	5.0

Table 3.3.1.b: Differentials in upward age transfers for older women in household member listing, DHS/AIS 2003-06

Percentage of women 45-49 misreported at 50-54 by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	16.2	14.9	6.9	na	na	na	15.5	17.4	17.6	9.9	23.9	16.1
Burkina Faso 2003	11.0	-16.7	40.0	na	na	na	11.1	3.6	7.7	9.6	12.6	10.2
Cameroon 2004	11.3	12.9	30.9	na	na	na	14.7	7.7	10.1	14.1	8.7	11.7
Chad 2004	-2.4	13.1	-21.5	na	na	na	-4.5	1.6	13.6	-2.3	-17.1	-2.1
Congo 2005	11.0	25.8	0.8	na	na	na	9.1	16.1	15.3	1.3	21.1	11.4
Cote d'Ivoire 2005	12.0	19.5	-4.1	na	na	na	13.2	1.2	-2.2	14.0	16.5	12.3
Ethiopia 2005	-1.0	-5.9	-5.3	na	na	na	-0.7	-1.7	13.2	-3.1	-16.7	-1.3
Ghana 2003	10.5	8.3	28.5	na	na	na	12.0	2.8	22.6	6.0	2.5	10.6
Guinea 2005	-0.8	12.7	50.0	na	na	na	-0.1	-3.3	14.8	-2.7	-15.1	-0.6
Kenya 2003	15.0	2.5	-6.9	na	na	na	13.2	14.6	22.3	7.0	7.7	13.7
Lesotho 2004	12.1	7.2	-24.0	na	na	na	10.6	12.6	10.5	9.7	16.9	11.4
Madagascar 2003-04	19.3	9.8	10.3	na	na	na	20.9	13.9	18.4	18.7	19.0	18.7
Malawi 2004	16.2	52.4	13.5	na	na	na	16.5	16.7	14.9	18.5	14.7	16.6
Mozambique 2003	17.7	-1.9	-8.0	na	na	na	17.3	11.8	19.7	17.0	13.7	17.2
Niger 2006	14.2	16.7	0.9	na	na	na	17.5	10.0	13.4	13.9	15.9	14.2
Nigeria 2003	15.0	20.3	-2.1	na	na	na	15.1	13.1	20.7	13.2	9.4	14.8
Rwanda 2005	5.3	8.3	-5.5	na	na	na	6.3	3.6	3.2	0.6	11.9	5.2
Senegal 2005	16.6	10.9	-1.4	na	na	na	16.8	15.9	15.1	15.0	18.5	16.3
Tanzania 2004	8.5	14.3	-18.5	na	na	na	7.7	14.9	11.6	7.9	5.4	8.3
Uganda 2006	6.0	14.2	-22.7	na	na	na	8.7	2.4	14.9	0.4	-0.2	5.9
Zimbabwe 2005-06	10.7	6.1	56.8	na	na	na	15.4	7.1	12.5	4.8	18.0	11.0
North Africa/West Asia/Europe												
Armenia 2005	6.0	8.8	-5.4	na	na	na	5.6	12.7	4.7	8.8	3.1	6.0
Egypt 2005	-1.8	21.1	-2.5	na	na	na	-2.2	13.6	3.1	-4.8	-6.7	-1.5
Moldova Republic 2005	5.8	5.7	10.8	6.3	5.7	5.5	6.8	-2.8	5.0	7.9	5.1	6.0
Morocco 2003-04	1.5	0.5	-8.4	-5.9	4.7	8.3	2.5	-5.6	2.0	1.7	0.0	1.4
Turkey 2003	6.9	6.6	-0.7	2.8	7.9	10.8	5.7	25.3	10.1	0.7	5.0	6.5
South and Southeast Asia												
Bangladesh 2004	-13.2	-5.4	21.1	na	na	na	-13.3	-11.6	-9.1	-12.9	-17.2	-12.9
Cambodia 2005	0.5	7.9	-24.9	na	na	na	3.3	-0.1	1.2	-3.4	4.0	0.5
India 2005-06	6.8	7.7	21.0	na	na	na	8.0	6.7	3.2	9.2	9.8	7.1
Indonesia 2002-03	-6.7	-15.3	32.2	na	na	na	-7.4	7.5	-2.9	-10.9	7.6	-6.7
Nepal 2006	3.3	13.0	16.5	na	na	na	3.3	4.1	1.5	1.5	7.7	4.0
Philippines 2003	5.2	3.7	16.9	3.1	8.2	5.2	4.8	6.8	4.4	7.4	-0.8	5.3
Vietnam 2005	-3.6	-0.9	1.3	na	na	na	-3.4	-5.1	-8.0	-3.3	1.0	4.0
Latin America and the Caribbean												
Bolivia 2003	11.7	-8.1	-3.9	6.4	16.0	2.5	11.1	5.2	9.2	10.2	7.9	8.9
Colombia 2005	0.2	-13.4	33.0	-1.5	1.0	0.9	-0.9	6.1	-0.2	1.1	-1.0	0.0
Guyana 2005	6.4	15.9	6.3	na	na	na	4.2	14.3	11.8	6.0	0.9	7.5
Haiti 2005	7.4	-4.2	41.5	na	na	na	10.0	1.9	1.6	4.6	13.4	6.9
Honduras 2005	7.8	10.4	13.0	6.8	8.1	19.7	6.9	15.7	8.8	10.2	5.6	8.1
Peru 2004-08	2.6	12.0	15.7	na	na	na	5.1	5.1	6.0	3.2	0.0	5.0

Figure 3.8: Estimated upward transfers for older women

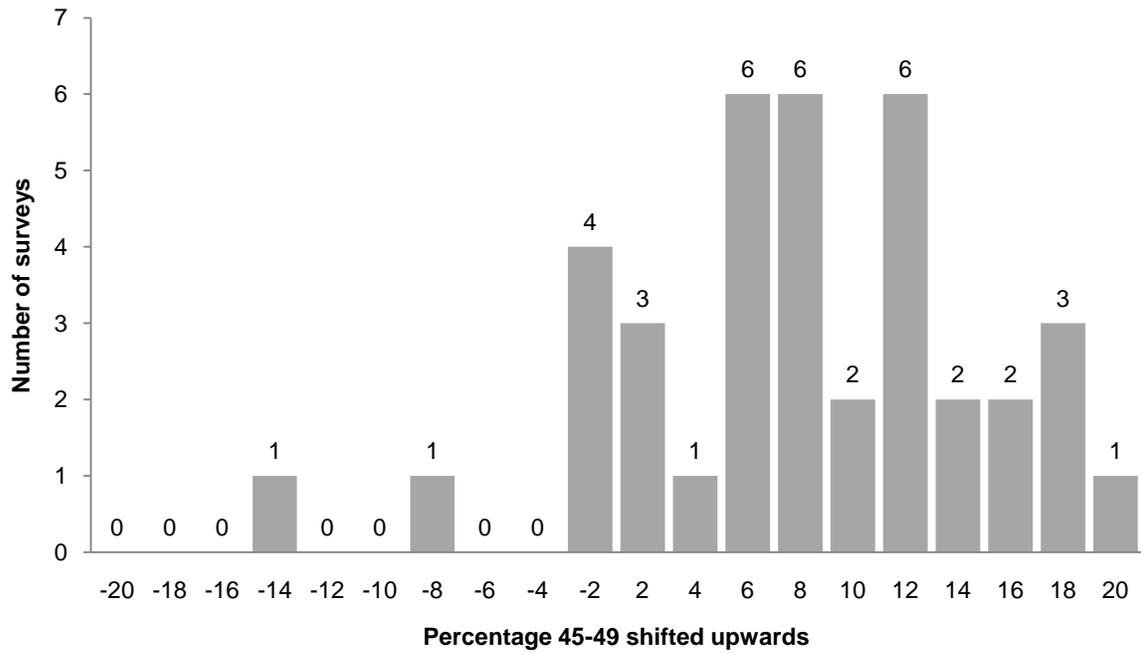
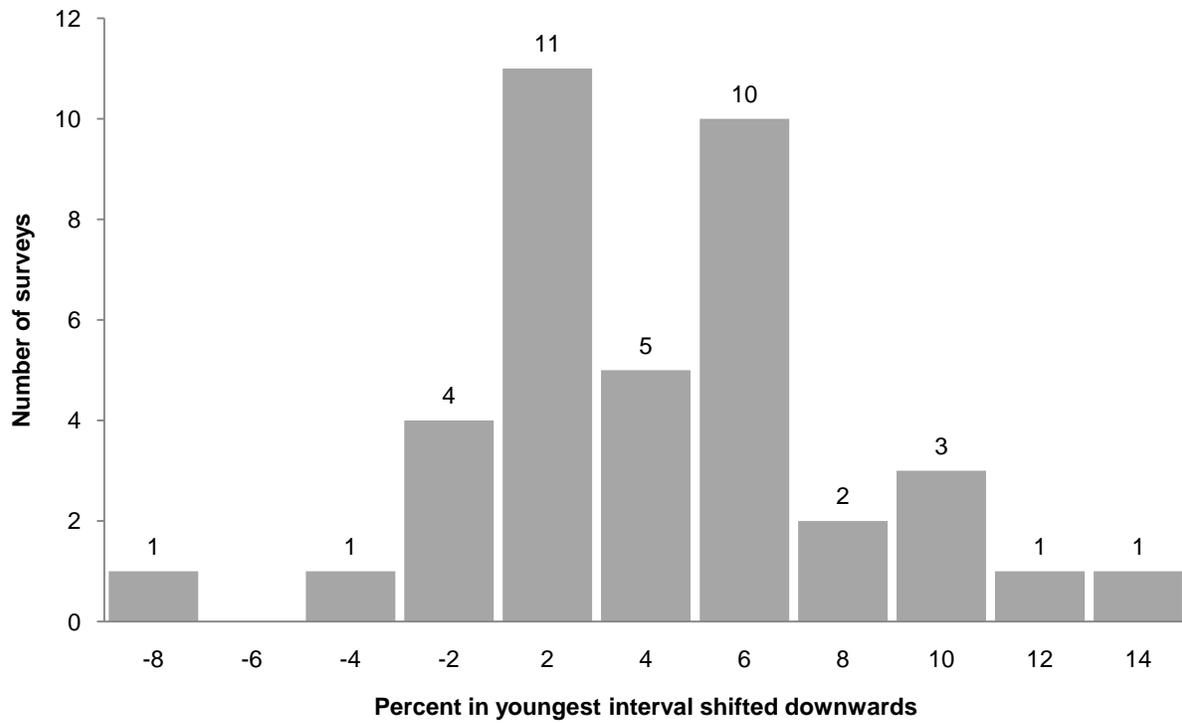


Figure 3.9: Estimated downward transfers for younger women



Age Displacement of Men

Ages of males screened for eligibility during the DHS household interview are also subject to displacement. The age range of eligibility for men varies across DHS surveys. The age intervals studied are as follows: 15-49 (Côte d'Ivoire, Tanzania, Armenia, and Cambodia), 15-54 (Kenya, Malawi, Uganda, Zimbabwe, Bangladesh, India, Indonesia, and the Philippines), 15-59 (Burkina Faso, Cameroon, Chad, the Republic of Congo, Ethiopia, Ghana, Guinea, Lesotho, Madagascar, Niger, Nigeria, Rwanda, Senegal, the Moldova Republic, Nepal, and Haiti), and 15-64 (Benin and Mozambique). For the eight countries with no male survey, age displacement was assessed for a 15-59 age interval; these include Egypt, Morocco, Turkey, Vietnam, Colombia, Guyana, Honduras, and Peru.

Fewer men's surveys than women's surveys had significant levels of downward age transfers. Among countries with male surveys, only Ghana (12 percent) and Niger (14 percent) exceeded 10 percent for downward transfers (Table 3.4). The highest rates of upward transfers were in sub-Saharan African countries with Ethiopia, Ghana, and Niger having the highest (21 percent, 20 percent, and 18 percent, respectively; Table 3.5 and Figure 3.10).

Table 3.4: Downward age transfers for younger men in household member listing, DHS/AIS 2003-06

Country/year	Estimated percentage of men 15-19 misreported at 10-14	Observed number				Estimated "true" number	
		Age 5-9	Age 10-14	Age 15-19	Age 20-24	Age 10-14	Age 15-19
Sub-Saharan Africa							
Benin 2006	6.5	7,977	6,669	4,101	2,583	6,385	4,385
Burkina Faso 2003	0.1	5,047	4,456	3,334	2,120	4,454	3,336
Cameroon 2004	4.1	3,771	3,581	2,770	2,188	3,463	2,888
Chad 2004	4.7	2,533	2,069	1,421	1,051	1,999	1,491
Congo 2005	1.3	2,052	2,069	1,705	1,231	2,047	1,727
Cote d'Ivoire 2005	6.2	1,835	1,605	1,204	1,092	1,526	1,283
Ethiopia 2005	6.1	5,432	5,025	3,580	2,730	4,794	3,811
Ghana 2003	11.5	2,022	2,060	1,243	817	1,899	1,404
Guinea 2005	8.8	3,309	2,836	1,626	973	2,680	1,782
Kenya 2003	7.0	2,635	2,706	2,051	1,701	2,552	2,205
Lesotho 2004	-0.7	2,425	2,727	2,654	2,148	2,745	2,636
Madagascar 2003-04	6.3	2,926	2,657	1,926	1,574	2,527	2,056
Malawi 2004	9.4	4,807	4,232	2,844	2,443	3,935	3,141
Mozambique 2003	0.3	4,910	4,312	3,370	2,377	4,303	3,379
Niger 2006	13.7	4,458	3,472	1,844	1,352	3,180	2,136
Nigeria 2003	1.0	3,229	2,702	1,959	1,299	2,681	1,980
Rwanda 2005	1.6	3,644	3,147	2,546	2,108	3,105	2,588
Senegal 2005	-1.0	5,206	4,620	3,686	2,501	4,658	3,648
Tanzania 2004	5.3	3,784	3,449	2,451	1,806	3,312	2,588
Uganda 2006	9.3	3,924	3,552	2,166	1,449	3,329	2,389
Zimbabwe 2005-06	5.8	3,286	3,175	2,358	1,851	3,030	2,503
North Africa/West Asia/Europe							
Armenia 2005	1.4	867	1,110	1,147	1,044	1,094	1,163
Egypt 2005	-8.3	6,541	6,107	6,909	5,796	6,639	6,377
Moldova Republic 2005	-0.9	945	1,343	1,512	1,274	1,356	1,499
Morocco 2003-04	1.5	3,434	3,635	3,323	2,856	3,586	3,372
Turkey 2003	-1.8	2,400	2,456	2,540	2,378	2,502	2,494

continued

Table 3.4 (continued). Downward age transfers for younger men in household member listing, DHS/AIS 2003-06

Country/year	Estimated percentage of men 15-19 misreported at 10-14	Observed number				Estimated "true" number	
		Age 5-9	Age 10-14	Age 15-19	Age 20-24	Age 10-14	Age 15-19
South and Southeast Asia							
Bangladesh 2004	3.9	3,490	3,437	2,706	2,116	3,327	2,816
Cambodia 2005	6.4	4,571	5,427	4,282	3,239	5,133	4,576
India 2005-06	6.2	30,285	31,716	26,086	24,185	29,984	27,818
Indonesia 2002-03	0.1	8,289	7,836	7,214	6,508	7,828	7,222
Nepal 2006	5.8	3,088	2,876	2,017	1,453	2,752	2,141
Philippines 2003	1.9	4,038	3,931	3,334	2,741	3,867	3,398
Vietnam 2005	2.4	1,141	1,563	1,451	1,052	1,527	1,487
Latin America and the Caribbean							
Bolivia 2003	4.2	5,719	5,458	4,177	3,230	5,275	4,360
Colombia 2005	3.4	8,582	8,930	7,681	6,652	8,658	7,953
Guyana 2005	5.0	730	673	519	443	646	546
Haiti 2005	-2.9	3,244	3,175	2,782	1,866	3,252	2,705
Honduras 2005	1.1	7,016	6,763	5,488	3,972	6,705	5,546
Peru 2004-08	3.5	1,697	1,705	1,467	1,326	1,651	1,521

¹ See Pullum (p. 5-6, 2006) for methodological details.

Differentials in Downward Age Displacement of Men

Tables 3.4.1.a and 3.4.1.b show the percentage of downward age transfers of male household members according to the selected fieldwork-related factors.

In 13 out of 22 countries, downward age displacement among men is higher when the interviewer was male than when female. In two-thirds of the countries surveyed, downward age displacement for men is higher in rural than in urban areas, but the difference is not as large as downward age displacement for women (Table 3.4.1.a). In all the surveys where data are available, the frequency of downward age displacement is higher if a translator was used for the interview than if a translator was not used, and if the language of the questionnaire is different from the language used by the interviewer. Similarly, in all countries, downward age displacement is highest if the language of the interviewer and the respondent were the same but were different from the questionnaire that was used to guide the interview.

For most surveys, downward age displacement for men is higher for men in households that were visited three or more times than for those that were visited only once (Table 3.4.1.b). There is no clear relationship between the percentage of downward age displacement for men and the time of day the interview was conducted, the length of stay in the field, or the timing of the interview during the course of fieldwork.

Table 3.4.1.a: Differentials in downward age transfers for younger men in household member listing, DHS/AIS 2003-06

Percentage of men 15-19 misreported at 10-14 by sex of interviewer, residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Sex of interviewer		Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Male	Female	Urban	Rural	Yes	No	Same	Different	Same/ Other	Different		
Sub-Saharan Africa												
Benin 2006	na	na	3.2	8.4	10.3	6.5	4.4	7.0	na	na	na	6.5
Burkina Faso 2003	0.1	0.1	1.9	-1.4	na	na	na	na	na	na	na	0.1
Cameroon 2004	2.8	4.6	-2.0	9.7	na	na	na	na	na	na	na	4.1
Chad 2004	3.1	5.7	4.1	5.6	na	na	na	na	na	na	na	4.7
Congo 2005	6.8	-1.3	-1.9	7.8	na	na	na	na	na	na	na	1.3
Cote d'Ivoire 2005	na	na	4.2	7.7	na	na	na	na	na	na	na	6.2
Ethiopia 2005	11.1	2.9	-2.5	8.7	12.3	3.3	4.1	9.9	3.4	11.1	7.0	6.1
Ghana 2003	na	na	7.6	13.6	13.8	11.0	10.7	17.4	7.3	24.4	13.5	11.5
Guinea 2005	12.2	8.6	-0.6	12.8	na	na	na	na	na	na	na	8.8
Kenya 2003	12.4	6.9	6.7	5.7	na	na	na	na	na	na	na	7.0
Lesotho 2004	na	na	-2.0	-0.4	na	na	na	na	na	na	na	-0.7
Madagascar 2003-04	14.7	4.7	6.2	6.4	na	na	na	na	na	na	na	6.3
Malawi 2004	19.1	8.9	9.5	9.2	24.1	9.0	9.4	11.5	9.0	52.0	10.1	9.4
Mozambique 2003	6.4	-0.7	-5.8	6.2	na	na	na	na	na	na	na	0.3
Niger 2006	21.3	7.2	4.1	20.7	na	na	na	na	na	na	na	13.7
Nigeria 2003	5.8	-0.8	1.5	0.9	na	na	na	na	na	na	na	1.0
Rwanda 2005	7.7	-0.9	7.5	-0.2	na	na	na	na	na	na	na	1.6
Senegal 2005	-8.0	-0.7	-4.9	2.1	na	na	na	na	na	na	na	-1.0
Tanzania 2004	8.1	4.8	4.6	5.2	na	na	na	na	na	na	na	5.3
Uganda 2006	9.6	9.1	1.6	9.6	10.9	9.2	8.5	10.6	5.2	14.7	18.0	9.3
Zimbabwe 2005-06	na	na	5.5	4.1	na	na	5.5	12.6	na	na	na	5.8
North Africa/West Asia/Europe												
Armenia 2005	-2.3	2.0	-1.3	6.2	na	na	na	na	na	na	na	1.4
Egypt 2005	na	na	-8.8	-8.1	na	na	na	na	na	na	na	-8.3
Moldova Republic 2005	-10.0	1.7	-6.1	4.3	na	na	na	na	na	na	na	-0.9
Morocco 2003-04	na	na	1.7	1.3	na	na	na	na	na	na	na	1.5
Turkey 2003	na	na	-4.7	4.7	2.5	-2.1	na	na	na	na	na	-1.8
South and Southeast Asia												
Bangladesh 2004	na	3.9	1.3	5.1	na	na	na	na	na	na	na	3.9
Cambodia 2005	9.0	6.0	8.0	5.9	na	na	na	na	na	na	na	6.4
India 2005-06	na	na	4.3	7.6	na	na	na	na	na	na	na	6.2
Indonesia 2002-03	na	na	-3.4	2.6	na	na	na	na	na	na	na	0.1
Nepal 2006	5.4	6.5	-2.0	8.9	50.0	5.7	5.5	10.7	4.1	15.5	7.6	5.8
Philippines 2003	na	na	1.6	1.6	-11.6	2.1	1.5	3.2	1.5	0.0	5.1	1.9
Vietnam 2005	na	na	1.5	2.6	na	na	na	na	na	na	na	2.4
Latin America and the Caribbean												
Bolivia 2003	-0.2	4.2	3.1	5.0	na	na	na	na	na	na	na	4.2
Colombia 2005	na	na	3.8	2.3	na	na	na	na	na	na	na	3.4
Guyana 2005	na	na	3.8	6.5	60.0	4.9	na	na	5.0	0.0	43.5	5.0
Haiti 2005	-2.9	-2.8	-5.5	-1.6	na	na	na	na	na	na	na	-2.9
Honduras 2005	na	na	0.3	1.4	na	na	na	na	na	na	na	1.1
Peru 2004-08	na	na	2.3	4.8	na	na	na	na	na	na	na	3.5

Table 3.4.1.b: Differentials in downward age transfers for younger men in household member listing, DHS/AIS 2003-06

Percentage of men 15-19 misreported at 10-14 by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	6.1	11.8	14.8	na	na	na	6.9	5.5	4.2	8.0	7.3	6.5
Burkina Faso 2003	-0.3	9.9	-9.0	na	na	na	-0.2	-0.8	1.3	-3.3	2.0	0.1
Cameroon 2004	4.3	-2.5	10.5	na	na	na	2.0	6.0	0.5	4.0	9.2	4.1
Chad 2004	4.5	24.8	-20.4	na	na	na	4.8	4.5	5.2	4.5	4.1	4.7
Congo 2005	1.3	1.6	-1.7	na	na	na	1.4	1.0	0.7	2.4	-0.1	1.3
Cote d'Ivoire 2005	5.9	8.2	9.0	na	na	na	6.3	1.8	7.6	2.5	9.3	6.2
Ethiopia 2005	6.2	8.2	-1.5	na	na	na	6.0	6.0	8.6	6.5	2.0	6.1
Ghana 2003	11.2	15.9	10.5	na	na	na	10.3	17.5	9.5	9.7	17.8	11.5
Guinea 2005	9.0	-9.3	0.0	na	na	na	8.0	11.2	10.2	12.6	1.5	8.8
Kenya 2003	6.4	6.2	23.2	na	na	na	4.7	9.2	5.4	11.3	0.4	7.0
Lesotho 2004	-1.2	10.6	-7.0	na	na	na	-3.0	3.2	-1.6	1.1	-3.6	-0.7
Madagascar 2003-04	6.5	11.3	-17.8	na	na	na	7.9	2.5	3.9	8.2	5.9	6.3
Malawi 2004	9.1	25.9	9.4	na	na	na	10.6	8.6	11.7	8.2	9.8	9.4
Mozambique 2003	0.4	-0.7	-8.2	na	na	na	0.2	2.7	0.3	0.0	0.4	0.3
Niger 2006	13.4	28.2	35.5	na	na	na	18.6	8.2	6.8	14.4	20.3	13.7
Nigeria 2003	1.0	0.4	5.0	na	na	na	0.0	0.0	0.0	0.0	0.0	1.0
Rwanda 2005	1.5	-1.0	17.6	na	na	na	1.1	2.2	2.0	3.8	-1.6	1.6
Senegal 2005	-1.3	1.2	43.9	na	na	na	-1.7	-0.5	-1.5	-1.5	-0.4	-1.0
Tanzania 2004	4.9	22.2	15.2	na	na	na	5.2	6.4	10.9	5.2	-0.6	5.3
Uganda 2006	9.1	18.1	-1.2	na	na	na	9.5	9.0	7.8	10.5	9.5	9.3
Zimbabwe 2005-06	6.0	2.7	1.7	na	na	na	5.3	5.8	5.7	4.0	8.1	5.8
North Africa/West Asia/Europe												
Armenia 2005	1.0	8.9	5.1	na	na	na	1.2	5.5	6.4	-3.0	-2.6	1.4
Egypt 2005	-8.4	-6.0	-1.1	na	na	na	-8.5	-3.6	-8.8	-8.4	0.1	-8.3
Moldova Republic 2005	-0.2	-7.6	-3.9	-6.3	-0.3	4.1	-0.2	-11.4	-8.9	6.8	-2.6	-0.9
Morocco 2003-04	1.5	-3.1	12.0	2.3	1.0	0.9	2.0	-2.6	1.7	2.0	-0.4	1.5
Turkey 2003	-1.8	-4.5	5.5	-2.8	-0.4	-5.0	-1.9	1.0	-3.0	-0.2	-1.5	-1.8
South and Southeast Asia												
Bangladesh 2004	3.8	19.5	-9.8	na	na	na	4.0	3.3	2.0	6.4	3.3	3.9
Cambodia 2005	6.4	2.5	-9.5	na	na	na	11.0	5.3	6.8	6.8	5.6	6.4
India 2005-06	5.9	10.3	11.5	na	na	na	6.0	6.3	6.6	4.8	7.4	6.2
Indonesia 2002-03	-0.1	6.6	26.8	na	na	na	0.1	-0.4	2.3	-0.6	-0.5	0.1
Nepal 2006	5.8	5.1	4.9	na	na	na	10.1	5.2	4.2	7.8	4.9	5.8
Philippines 2003	2.0	0.8	-0.1	2.0	2.1	-1.2	2.9	-1.3	3.3	0.7	-0.6	1.9
Vietnam 2005	2.1	15.1	-10.3	na	na	na	2.8	-1.8	5.6	1.6	-0.3	2.4
Latin America and the Caribbean												
Bolivia 2003	4.1	7.0	1.2	5.5	3.1	3.8	4.6	2.9	2.2	5.2	4.2	4.2
Colombia 2005	3.4	2.3	14.4	4.4	2.0	4.4	3.6	1.7	3.0	3.7	3.4	3.4
Guyana 2005	4.0	0.5	33.5	na	na	na	8.8	-1.9	4.1	2.7	11.4	5.0
Haiti 2005	-3.4	8.1	-12.8	na	na	na	-2.6	-3.2	-0.8	-3.0	-5.2	-2.9
Honduras 2005	1.0	1.2	2.1	0.0	2.0	4.3	1.6	-4.0	0.0	0.6	2.0	1.1
Peru 2004-08	2.1	10.3	3.8	na	na	na	5.6	3.0	2.6	5.2	0.0	3.5

Differentials in Upward Age Displacement of Men

Table 3.5: Upward age transfers for older men in household member listing, DHS/AIS 2003-06

Country/year	Estimated percentage of men x misreported at x+1	Observed number				Estimated "true" number	
		Age x-1	Age x	Age x+1	Age x+2	Age x	Age x+1
Sub-Saharan Africa							
Benin 2006 ^d	-8.5	771	741	558	567	683	616
Burkina Faso 2003 ^c	9.8	835	632	653	485	701	584
Cameroon 2004 ^c	13.4	666	489	532	352	565	456
Chad 2004 ^c	15.3	371	241	258	159	285	214
Congo 2005 ^c	4.3	340	303	277	196	317	263
Cote d'Ivoire 2005 ^e	0.6	410	311	235	169	313	233
Ethiopia 2005 ^c	20.7	878	604	798	523	761	641
Ghana 2003 ^c	19.7	349	225	299	230	280	244
Guinea 2005 ^c	4.2	620	478	453	402	499	432
Kenya 2003 ^b	-5.6	571	525	384	325	497	412
Lesotho 2004 ^c	16.5	626	425	482	299	509	398
Madagascar 2003-04 ^c	14.6	608	344	351	232	403	292
Malawi 2004 ^b	5.7	724	705	720	539	748	677
Mozambique 2003 ^d	-1.6	608	581	438	291	572	447
Niger 2006 ^c	17.6	625	451	568	401	547	472
Nigeria 2003 ^c	8.9	579	381	380	318	418	343
Rwanda 2005 ^c	-0.3	555	343	239	192	342	240
Senegal 2005 ^c	13.2	886	614	675	493	707	582
Tanzania 2004 ^a	4.6	1,071	733	646	538	768	611
Uganda 2006 ^b	2.0	578	398	330	288	406	322
Zimbabwe 2005-06 ^b	12.9	550	434	489	341	498	425
North Africa/West Asia/Europe							
Armenia 2005 ^a	-2.6	838	902	725	517	879	748
Egypt 2005 ^e	2.0	2,237	1,671	1,307	933	1,704	1,274
Moldova Republic 2005 ^c	-3.6	1,156	860	613	537	830	643
Morocco 2003-04 ^e	9.1	1,328	799	759	614	879	679
Turkey 2003 ^e	-1.9	1,009	777	584	487	763	598
South and Southeast Asia							
Bangladesh 2004 ^b	-11.7	1,262	971	617	714	869	719
Cambodia 2005 ^a	-0.4	1,968	1,375	1,037	871	1,369	1,043
India 2005-06 ^b	6.7	13,408	9,521	9,282	8,017	10,205	8,598
Indonesia 2002-03 ^b	-16.2	3,993	3,364	1,801	1,927	2,895	2,270
Nepal 2006 ^c	15.2	749	553	623	387	652	524
Philippines 2003 ^b	-5.5	1,484	1,168	793	680	1,107	854
Vietnam 2005 ^e	-0.4	591	385	290	260	383	292
Latin America and the Caribbean							
Bolivia 2003 ^d	7.3	1,063	776	738	563	837	677
Colombia 2005 ^e	2.0	3,260	2,408	1,984	1,597	2,456	1,936
Guyana 2005 ^e	0.5	244	175	135	108	176	134
Haiti 2005 ^c	9.7	798	585	599	453	648	536
Honduras 2005 ^e	5.0	1,426	1,088	982	753	1,145	925
Peru 2004-08 ^e	4.8	541	470	413	266	493	390

x = Oldest age group in male survey.

^a x = 45-49 years old.

^b x = 50-54 years old.

^c x = 55-59 years old.

^d x = 60-64 years old.

^e No male survey in this country; age displacement shown for x = 55-59 years old.

Tables 3.5.1.a and 3.5.1.b show the percentage of upward age transfers of male household members according to the selected fieldwork-related factors.

The frequency of upward age displacement of male household members is higher if the interviewer is male in 10 countries, compared with only 7 countries where it is higher if the interviewer is female (Table 3.5.1.a). Urban-rural residence doesn't have a clear effect on upward age displacement for men. Generally, for most countries, the percentage of upward age displacement is higher when a translator was used for the interview than when not used. Similar to women, the other two language-related fieldwork-related factors do not play a significant role in the frequency of upward age displacement among male household members.

Table 3.5.1.a: Differentials in upward age transfers for older men in household member listing, DHS/AIS 2003-06

Percentage of men x misreported at x+1¹ by sex of interviewer, residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Sex of interviewer		Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Male	Female	Urban	Rural	Yes	No	Same	Different	Same	Same/ Other	Different	
Sub-Saharan Africa												
Benin 2006	na	na	-2.2	-12.1	0.8	-9.1	1.6	-11.2	na	na	na	-8.5
Burkina Faso 2003	7.0	10.0	17.5	8.0	na	na	na	na	na	na	na	9.8
Cameroon 2004	15.1	12.9	11.2	14.6	na	na	na	na	na	na	na	13.4
Chad 2004	10.3	17.5	20.6	11.0	na	na	na	na	na	na	na	15.3
Congo 2005	-5.8	8.4	3.7	7.1	na	na	na	na	na	na	na	4.3
Cote d'Ivoire 2005	na	na	-3.6	3.2	na	na	na	na	na	na	na	0.6
Ethiopia 2005	22.6	19.6	20.1	20.8	28.3	17.2	15.2	31.1	17.9	31.2	13.7	20.7
Ghana 2003	na	na	14.9	22.4	23.1	19.1	20.2	16.5	16.4	8.7	24.1	19.7
Guinea 2005	-5.0	4.6	7.9	3.1	na	na	na	na	na	na	na	4.2
Kenya 2003	-30.7	-5.0	-6.0	-5.2	na	na	na	na	na	na	na	-5.6
Lesotho 2004	na	na	13.2	17.3	na	na	na	na	na	na	na	16.5
Madagascar 2003-04	43.0	9.2	15.8	12.5	na	na	na	na	na	na	na	14.6
Malawi 2004	7.7	5.4	22.3	3.3	46.1	4.5	5.7	3.8	8.9	-60.0	1.9	5.7
Mozambique 2003	-2.9	-1.4	-1.2	-1.7	na	na	na	na	na	na	na	-1.6
Niger 2006	22.3	13.3	18.9	16.7	na	na	na	na	na	na	na	17.6
Nigeria 2003	-1.0	18.6	2.9	10.7	na	na	na	na	na	na	na	8.9
Rwanda 2005	-2.5	0.4	1.0	-0.6	na	na	na	na	na	na	na	-0.3
Senegal 2005	25.9	12.8	15.8	11.7	na	na	na	na	na	na	na	13.2
Tanzania 2004	-1.9	5.5	11.3	2.6	na	na	na	na	na	na	na	4.6
Uganda 2006	5.5	0.4	-0.4	2.4	-17.7	3.1	-1.8	7.0	1.9	18.4	-9.6	2.0
Zimbabwe 2005-06	na	na	-0.8	21.5	na	na	13.1	8.8	na	na	na	12.9
North Africa/West Asia/Europe												
Armenia 2005	-3.0	-2.5	-3.2	-1.8	na	na	na	na	na	na	na	-2.6
Egypt 2005	na	na	2.9	1.1	na	na	na	na	na	na	na	2.0
Moldova Republic 2005	-6.7	-2.7	0.2	-8.0	na	na	na	na	na	na	na	-3.6
Morocco 2003-04	na	na	8.8	9.1	na	na	na	na	na	na	na	9.1
Turkey 2003	na	na	-1.9	-2.0	-13.0	-1.7	na	na	na	na	na	-1.9
South and Southeast Asia												
Bangladesh 2004	0.0	-11.7	-9.3	-13.0	na	na	na	na	na	na	na	-11.7
Cambodia 2005	-5.2	0.4	1.8	-1.2	na	na	na	na	na	na	na	-0.4
India 2005-06	na	na	9.1	4.7	na	na	na	na	na	na	na	6.7
Indonesia 2002-03	na	na	-14.5	-17.5	na	na	na	na	na	na	na	-16.2
Nepal 2006	16.2	13.5	9.7	17.3	0.0	15.3	16.0	-5.2	17.7	-19.2	13.3	15.2
Philippines 2003	na	na	-4.3	-6.6	16.0	-5.8	-6.8	0.7	-6.0	0.0	-0.3	-5.5
Vietnam 2005	na	na	-8.4	4.2	na	na	na	na	na	na	na	-0.4
Latin America and the Caribbean												
Bolivia 2003	50.0	7.3	0.6	13.2	na	na	na	na	na	na	na	7.3
Colombia 2005	na	na	3.0	-0.7	na	na	na	na	na	na	na	2.0
Guyana 2005	na	na	-0.3	1.4	33.3	0.8	na	na	0.6	0.0	33.3	0.5
Haiti 2005	21.2	5.8	9.1	10.0	na	na	na	na	na	na	na	9.7
Honduras 2005	na	na	3.3	5.8	na	na	na	na	na	na	na	5.0
Peru 2004-08	na	na	-1.4	11.5	na	na	na	na	na	na	na	4.8

In a large majority of countries, upward age displacement for the household male population is significantly higher in households that were visited three or more times than those that were visited only once (Table 3.5.1.b). Furthermore, in one-third of the countries' surveys, there is considerable negative upward age displacement for males in households that were visited three or more times. Large values observed here are usually due to having a relatively small number of cases in the denominator.

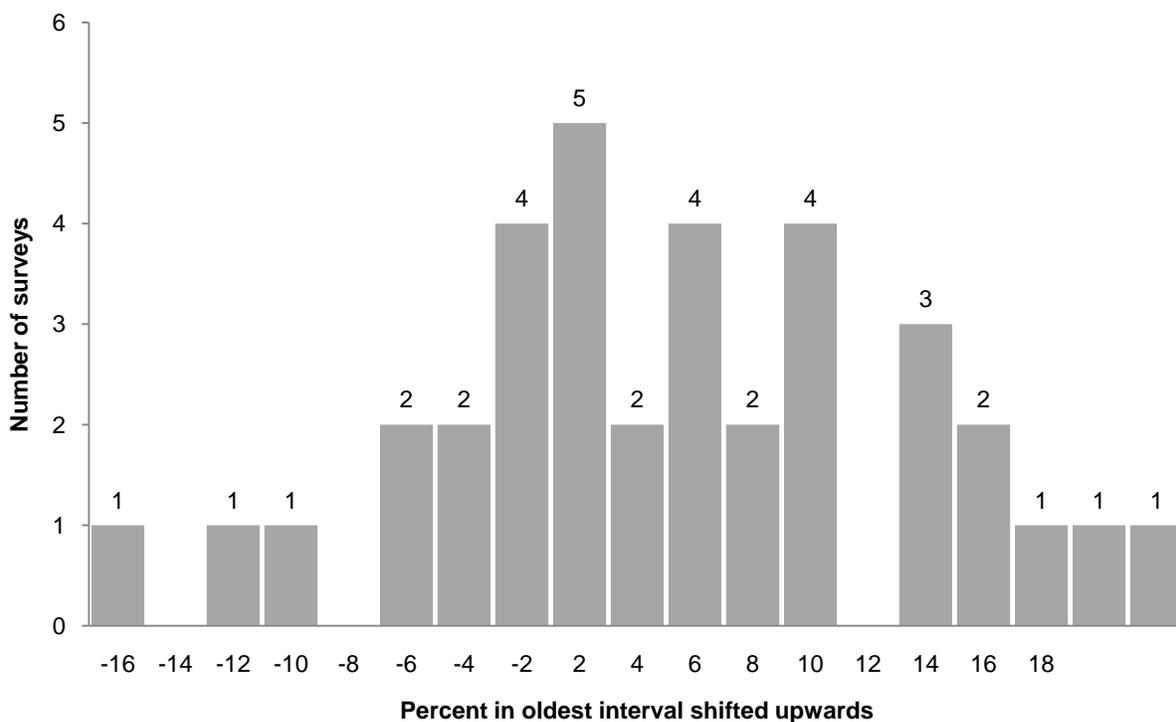
The time of day when the interview was conducted has no consistent association with upward age displacement. Similarly, the length of stay in the field is not consistently associated with upward age displacement. In a large majority of countries, upward age reporting for men appears to be higher at the beginning of fieldwork.

Table 3.5.1.b: Differentials in upward age transfers for older men in household member listing, DHS/AIS 2003-06

Percentage of men 50-54 (55-59) misreported at 55-60 (60-65) by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	-9.3	11.2	1.3	na	na	na	-14.6	5.4	-12.4	-8.3	-4.4	-8.5
Burkina Faso 2003	9.0	31.7	-5.7	na	na	na	9.3	13.4	15.0	8.5	8.1	9.8
Cameroon 2004	13.6	6.6	25.6	na	na	na	13.5	13.1	10.0	12.6	18.0	13.4
Chad 2004	15.9	10.4	-40.5	na	na	na	16.9	12.8	28.3	10.7	10.0	15.3
Congo 2005	2.9	22.5	49.6	na	na	na	4.9	2.6	-1.2	1.9	21.2	4.3
Cote d'Ivoire 2005	0.1	-1.8	52.6	na	na	na	2.1	-23.1	11.3	-2.3	-0.7	0.6
Ethiopia 2005	19.6	31.8	39.3	na	na	na	15.9	24.2	32.5	16.3	11.5	20.7
Ghana 2003	18.7	19.0	72.7	na	na	na	21.9	7.0	21.8	17.9	20.4	19.7
Guinea 2005	3.6	52.1	10.3	na	na	na	7.2	-9.4	18.2	-0.2	-7.0	4.2
Kenya 2003	-4.6	-27.7	6.3	na	na	na	-6.3	-4.4	-5.1	-3.2	-11.6	-5.6
Lesotho 2004	18.3	-20.8	-7.5	na	na	na	17.4	15.0	14.8	15.2	23.6	16.5
Madagascar 2003-04	14.6	13.3	19.3	na	na	na	13.3	17.3	11.3	15.9	16.1	14.6
Malawi 2004	6.6	-26.1	25.0	na	na	na	10.0	2.2	15.1	0.9	7.1	5.7
Mozambique 2003	-1.8	-3.6	50.0	na	na	na	-1.5	-11.8	-4.2	-1.7	3.6	-1.6
Niger 2006	18.0	-10.2	50.0	na	na	na	17.2	17.7	21.4	14.5	19.6	17.6
Nigeria 2003	10.2	-9.8	-19.6	na	na	na	0.0	0.0	0.0	0.0	0.0	8.9
Rwanda 2005	-0.6	10.0	-1.6	na	na	na	-0.8	0.5	-9.1	-2.5	7.0	-0.3
Senegal 2005	13.3	23.8	-25.2	na	na	na	7.0	18.6	17.4	11.4	11.7	13.2
Tanzania 2004	4.5	33.8	-47.3	na	na	na	4.8	2.6	11.4	1.2	2.2	4.6
Uganda 2006	2.2	0.5	-6.7	na	na	na	4.2	-0.5	7.6	2.5	-5.9	2.0
Zimbabwe 2005-06	11.2	35.3	36.7	na	na	na	17.1	9.7	15.3	2.6	23.5	12.9
North Africa/West Asia/Europe												
Armenia 2005	-2.7	6.7	-36.3	na	na	na	-2.9	1.7	-2.5	-2.5	-2.8	-2.6
Egypt 2005	1.7	7.4	23.5	na	na	na	1.1	21.1	4.3	0.3	-0.2	2.0
Moldova Republic 2005	-4.9	12.9	-0.2	-0.9	-1.8	-8.1	-3.6	-3.3	5.0	-1.0	-11.3	-3.6
Morocco 2003-04	8.8	9.0	32.9	9.6	9.4	6.3	8.2	15.5	4.5	10.4	11.4	9.1
Turkey 2003	-0.8	-3.8	-16.7	-5.8	1.0	-2.2	-1.7	-5.8	-2.7	-4.3	4.3	-1.9
South and Southeast Asia												
Bangladesh 2004	-12.1	3.3	11.8	na	na	na	-10.6	-16.4	-11.9	-15.1	-7.9	-11.7
Cambodia 2005	-0.4	-12.9	10.3	na	na	na	-1.9	-0.1	0.8	1.2	-3.5	-0.4
India 2005-06	6.5	6.9	15.8	na	na	na	7.5	6.3	2.7	5.4	13.5	6.7
Indonesia 2002-03	-16.0	-30.8	-20.5	na	na	na	-16.6	-7.5	-17.0	-16.6	-12.3	-16.2
Nepal 2006	15.8	5.3	16.1	na	na	na	17.6	14.9	10.2	20.2	15.5	15.2
Philippines 2003	-5.3	-8.3	-1.2	-8.4	-3.4	9.0	-3.9	-9.9	-6.6	-5.8	3.9	-5.5
Vietnam 2005	-0.3	10.3	0.0	na	na	na	-1.5	14.0	-4.5	4.4	-2.9	-0.4
Latin America and the Caribbean												
Bolivia 2003	7.8	1.7	6.9	3.5	7.4	16.4	9.0	3.3	1.3	11.0	8.5	7.3
Colombia 2005	2.4	-13.3	12.3	6.1	-1.2	-0.4	1.7	3.9	3.5	2.5	0.0	2.0
Guyana 2005	2.8	1.8	-24.8	na	na	na	-7.1	12.9	9.9	-8.4	-2.6	0.5
Haiti 2005	9.4	7.8	35.7	na	na	na	6.4	14.8	8.2	11.2	9.9	9.7
Honduras 2005	5.5	-3.7	-5.7	7.6	2.4	3.1	5.3	1.4	1.9	6.1	5.6	5.0
Peru 2004-08	7.4	-17.9	12.8	na	na	na	5.3	4.6	0.7	11.6	0.0	4.8

Figure 3.10: Upward transfers for older men



3.2 Women’s Individual-Level Data

3.2.1 Completeness of Age or Birth Date

The percentage of women with missing information on age or birth date is shown in Table 3.6. Incompleteness of age or birth dates varies widely from less than 1 percent in several countries—such as Armenia, Moldova, Bolivia, Colombia, Guyana, Honduras, and Peru—to over 80 percent in Bangladesh (94 percent), Guinea (89 percent), and Burkina Faso (81 percent). By region, surveys in Latin America and the Caribbean show the least amount of missing information. In the other regions, the countries that have the least missing information on women’s age or birth date are Zimbabwe (1 percent), Congo and Lesotho (4 percent each), Armenia and Moldova (less than 1 percent each), and the Philippines (2 percent).

The second column of this table illustrates that, overall, missing any information in the birth history is less likely than missing information on age or birth date. Missing information ranges from less than 1 percent to 18 percent for all countries other than Guinea (51 percent).

Inconsistent reporting of age at first sex³ and time since last sex is also shown in Table 3.6. Both indicators of data quality show wide variation across and within region. However, for the majority of countries, inconsistencies in reported time since last sexual intercourse are more likely than inconsistencies in reported age at first intercourse. For example, in Guinea, 36 percent

³ Inconsistent age at first sex refers to a reported age at first sex that is after the age at first birth minus nine months.

of respondents have inconsistent data on time since last intercourse, while only 11 percent have inconsistent data on age of first intercourse. This pattern is reversed in several countries. For example, in Moldova, respondents are seven times more likely to have inconsistent data on age at first intercourse (15 percent) than on time since last intercourse (2 percent). It may be that, in some contexts, women hesitate to report the exact age at sexual debut due to social stigma related to early sexual exposure.

Table 3.6: Completeness of reporting on age or birth date and completeness of reporting on birth history, and consistency of reporting on age at first sexual intercourse and on time since last intercourse, among women, DHS/AIS 2003-06

Country/year	Percentage of women missing any information on age or birth date ¹	Percentage of women missing any birth history data	Inconsistent reporting on age at first intercourse (%)	Inconsistent reporting on time since last intercourse (%)
Sub-Saharan Africa				
Benin 2006	63.8	17.0	10.5	22.4
Burkina Faso 2003	81.2	9.7	7.0	30.4
Cameroon 2004	28.0	7.9	12.6	16.8
Chad 2004	49.7	2.9	1.5	3.0
Congo 2005	4.1	4.1	6.4	13.5
Cote d'Ivoire 2005	34.2	14.7	4.4	7.7
Ethiopia 2005	57.2	2.5	12.8	na
Ghana 2003	34.8	4.2	15.8	19.9
Guinea 2005	89.4	51.4	11.1	35.8
Kenya 2003	30.4	7.3	12.0	11.7
Lesotho 2004	4.1	1.5	17.2	18.0
Madagascar 2003-04	17.6	9.2	7.6	2.7
Malawi 2004	24.0	2.3	19.6	17.4
Mozambique 2003	22.9	5.0	9.2	23.9
Niger 2006	62.1	18.4	12.1	9.5
Nigeria 2003	24.8	8.8	12.7	15.2
Rwanda 2005	55.0	3.7	6.4	11.4
Senegal 2005	34.8	10.5	11.6	15.9
Tanzania 2004	27.9	4.0	9.7	13.7
Uganda 2006	38.0	5.0	11.4	12.1
Zimbabwe 2005-06	1.0	0.9	17.4	9.1
North Africa/West Asia/Europe				
Armenia 2005	0.0	0.1	9.6	3.0
Egypt 2005	23.1	13.9	na	na
Moldova Republic 2005	0.1	0.1	15.0	2.1
Morocco 2003-04	43.4	10.5	na	na
Turkey 2003	22.9	8.4	na	na
South and Southeast Asia				
Bangladesh 2004	93.7	0.3	na	na
Cambodia 2005	19.5	2.3	20.8	8.0
India 2005-06	45.9	2.0	5.3	4.7
Indonesia 2002-03	30.6	13.3	9.7	4.5
Nepal 2006	41.9	0.2	2.0	5.4
Philippines 2003	1.6	0.5	13.9	9.2
Vietnam 2005	11.2	na	0.9	0.0
Latin America and the Caribbean				
Bolivia 2003	0.3	3.9	16.5	9.5
Colombia 2005	0.2	1.3	0.5	4.4
Guyana 2005	0.3	1.0	12.2	2.4
Haiti 2005	1.8	0.9	2.9	8.2
Honduras 2005	0.3	0.7	8.3	10.3
Peru 2004-08	0.2	1.9	4.3	6.1

¹ Missing data on age, year of birth, or month of birth.

Differentials in Completeness of Reporting on Age of Women

When looking at differentials in completeness of reporting age of women, in the vast majority of countries studied, more missing information on woman's age or birth date is observed in rural areas when compared with urban areas (Table 3.6.1.a). In Ghana, for example, missing information on a woman's age or birth date is more than twice as likely to occur in rural areas as in urban areas. There are, however, countries where the differentials are small. For example, in Nigeria, urban and rural areas are about equally likely to have missing data on a woman's age or birth date.

Table 3.6.1.a: Differentials in completeness of reporting on age of women, DHS 2003-06

Percentage of women with missing information on age or birth date by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS surveys 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same/Other	Different		
Sub-Saharan Africa										
Benin 2006	51.6	72.6	89.4	62.0	40.9	68.4	na	na	na	63.8
Burkina Faso 2003	46.6	92.2	na	na	na	na	na	na	na	81.2
Cameroon 2004	14.7	41.1	50.3	27.7	8.9	56.9	na	na	na	28.0
Chad 2004	45.2	53.7	na	na	na	na	na	na	na	49.7
Congo 2005	2.7	7.4	na	na	na	na	na	na	na	4.1
Cote d'Ivoire 2005	28.2	38.7	51.1	31.5	na	na	na	na	na	34.2
Ethiopia 2005	46.0	62.4	73.0	50.5	50.1	73.5	48.6	76.4	63.2	57.2
Ghana 2003	19.9	45.5	63.3	30.9	30.1	59.2	25.1	73.9	36.5	34.8
Guinea 2005	75.2	95.4	94.6	89.3	90.1	88.7	na	na	na	89.4
Kenya 2003	19.0	36.2	63.2	29.6	31.8	24.3	39.2	62.8	18.8	30.4
Lesotho 2004	1.4	5.1	6.3	4.1	na	na	4.0	na	25.0	4.1
Madagascar 2003-04	9.4	33.0	na	na	na	na	na	na	na	17.6
Malawi 2004	13.7	25.7	22.8	24.0	23.9	28.0	26.3	50.0	20.8	24.0
Mozambique 2003	9.9	32.9	na	na	na	na	na	na	na	22.9
Niger 2006	53.9	66.6	58.2	62.5	62.3	61.4	na	na	na	62.1
Nigeria 2003	24.0	25.3	41.0	23.1	na	na	24.2	43.0	24.5	24.8
Rwanda 2005	42.3	58.8	59.0	55.0	na	na	na	na	na	55.0
Senegal 2005	23.3	43.5	na	na	na	na	na	na	na	34.8
Tanzania 2004	16.9	31.5	na	na	na	na	na	na	na	27.9
Uganda 2006	26.8	40.4	67.7	35.4	38.8	36.8	42.0	20.2	36.6	38.0
Zimbabwe 2005-06	0.4	1.4	0.0	1.0	1.0	0.6	na	na	na	1.0
North Africa/West Asia/Europe										
Armenia 2005	0.0	0.1	0.0	0.0	na	na	0.0	na	0.0	0.0
Egypt 2005	10.3	32.2	na	na	na	na	na	na	na	23.1
Moldova Republic 2005	0.1	0.0	0.0	0.1	0.1	0.0	0.1	na	0.0	0.1
Morocco 2003-04	31.3	57.3	na	na	na	na	na	na	na	43.4
Turkey 2003	17.7	37.6	na	na	na	na	na	na	na	22.9
South and Southeast Asia										
Bangladesh 2004	88.6	96.3	na	na	na	na	na	na	na	93.7
Cambodia 2005	16.9	20.3	na	na	na	na	na	na	na	19.5
India 2005-06	34.0	55.9	na	na	na	na	na	na	na	45.9
Indonesia 2002-03	17.5	40.1	na	na	na	na	na	na	na	30.6
Nepal 2006	29.5	46.5	48.4	41.9	40.4	71.0	41.2	83.3	41.2	41.9
Philippines 2003	0.8	2.5	22.3	1.4	0.6	6.4	1.4	na	3.6	1.6
Vietnam 2005	5.5	14.1	na	na	na	na	na	na	na	11.2
Latin America and the Caribbean										
Bolivia 2003	0.1	0.5	na	na	na	na	na	na	na	0.3
Colombia 2005	0.1	0.4	na	na	na	na	na	na	na	0.2
Guyana 2005	0.2	0.4	0.0	0.3	na	na	0.3	0.0	0.0	0.3
Haiti 2005	0.9	2.8	na	na	na	na	na	na	na	1.8
Honduras 2005	0.1	0.4	na	na	na	na	na	na	na	0.3
Peru 2004-08	0.0	0.5	na	na	na	na	na	na	na	0.2

In all but 3 of the 19 countries where a translator was used, the proportion of missing information on women's ages or birth dates is higher when a translator is used than when not used. The difference in completeness of reporting on age of women is very pronounced in some countries. For example, in Ghana, 63 percent of women had missing information on age or birth date when a translator was used compared with 31 percent when a translator was not used.

The two other language-related factors are not strongly associated with completeness of age reporting for women. In 7 of the 13 countries with available data, the prevalence of missing age or birth date information is greater when the language of the questionnaire and the interviewer are different. Data quality also varies depending on whether the language of the interview and the language of the respondent are the same. The most striking finding is that, in most of the countries that have these data, missing information on age or date of birth is highest when the interviewer and respondent use the same language, but it is a language that is not included on the list of main languages spoken in the country (the "Same/Other" column).

Table 3.6.1.b shows that having only one visit to the household is generally associated with higher proportions of missing information on a woman's age or date of birth. This is very likely due to the residence of the respondent: urban residents are less likely to be found at home than rural residents, thus requiring multiple visits; however, once interviewed, they are more likely to provide complete data.

In Burkina Faso, 82 percent of interviews that had only one household visit were missing information on woman's age or birth date, while 66 percent of households that were visited three or more times were missing information. There are a few exceptions—such as Benin, Tanzania, Uganda, Bangladesh, Nepal, and Haiti—where the prevalence of missing data is highest for households visited three times. In a few other countries—such as Congo, Lesotho, Armenia, and Moldova—there is no relationship between the number of visits to the households and the completeness of reporting on age of women.

The association between the time of day when the interview was conducted and missing data on woman's age or birth date is inconsistent across countries. In 12 countries missing data were more common in clusters where the team spent fewer than four days, with the difference being considerable in a number of countries. In Egypt, for example, missing data on woman's age or birth date is more than twice as likely in clusters where the team spent four or fewer days (24 percent) than in clusters where teams spent four or more days (10 percent). In about half of the countries, there is no relationship between missing age data and the length of time the team spent in the cluster. The majority of surveys show no relationship between missing data and the timing of the interview during the course of fieldwork.

Table 3.6.1.b: Differentials in completeness of reporting on age of women, DHS/AIS 2003-06

Percentage of women with missing information on age or birth date by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	63.8	61.0	70.1	65.4	63.3	61.4	62.1	67.4	73.8	61.4	54.7	63.8
Burkina Faso 2003	81.7	74.7	66.4	81.3	80.2	82.6	85.5	59.9	58.6	87.1	89.2	81.2
Cameroon 2004	28.8	17.1	9.6	33.2	27.6	20.0	35.6	19.3	20.6	27.3	42.0	28.0
Chad 2004	49.4	54.4	47.8	50.3	46.5	56.0	53.8	45.5	42.8	60.2	40.0	49.7
Congo 2005	4.1	4.3	4.6	4.0	4.0	5.2	3.6	4.7	4.3	4.4	3.1	4.1
Cote d'Ivoire 2005	34.4	33.5	26.6	34.5	32.7	34.8	35.7	22.1	27.3	37.6	36.5	34.2
Ethiopia 2005	58.1	50.6	45.0	59.0	56.8	47.9	58.3	56.5	57.8	56.0	58.4	57.2
Ghana 2003	35.8	28.8	17.9	35.6	37.0	27.8	36.0	28.7	32.7	37.5	34.1	34.8
Guinea 2005	90.0	71.7	70.5	90.4	87.9	90.4	91.4	79.1	79.9	93.6	95.4	89.4
Kenya 2003	31.9	23.6	20.4	33.3	30.6	20.4	34.7	25.2	30.9	32.9	24.8	30.4
Lesotho 2004	4.0	4.4	3.9	3.9	4.3	3.8	4.1	4.0	4.8	3.2	5.0	4.1
Madagascar 2003-04	18.0	12.4	10.8	18.1	16.6	19.1	18.5	15.2	30.0	17.6	5.2	17.6
Malawi 2004	24.1	23.7	16.9	23.7	24.6	14.3	24.8	23.4	23.2	25.1	23.4	24.0
Mozambique 2003	23.2	17.2	16.5	24.0	21.8	18.2	23.1	8.5	26.6	22.6	17.0	22.9
Niger 2006	62.5	59.0	33.0	62.4	61.0	64.0	65.2	58.9	56.6	67.5	58.6	62.1
Nigeria 2003	24.9	24.2	22.8	23.3	26.7	22.8	24.4	27.1	30.0	20.1	24.3	24.8
Rwanda 2005	55.1	54.0	53.7	56.9	54.7	41.3	56.6	53.6	49.3	55.7	59.0	55.0
Senegal 2005	35.1	31.5	28.9	37.9	33.2	34.3	36.8	33.9	31.0	27.7	45.3	34.8
Tanzania 2004	27.9	27.9	31.6	28.0	25.5	0.0	27.4	33.2	27.3	30.3	25.8	27.9
Uganda 2006	38.2	34.8	43.5	37.0	39.6	22.7	38.7	37.4	38.6	39.1	36.5	38.0
Zimbabwe 2005-06	1.1	0.0	0.6	1.0	1.1	0.6	1.3	0.8	1.1	0.9	1.0	1.0
North Africa/West Asia/Europe												
Armenia 2005	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Egypt 2005	23.1	25.8	9.3	25.6	22.3	21.4	23.5	9.7	23.3	23.5	12.7	23.1
Moldova Republic 2005	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1
Morocco 2003-04	44.3	31.6	27.1	46.1	44.1	37.8	45.1	32.4	36.4	46.9	46.9	43.4
Turkey 2003	23.1	19.9	19.4	21.4	24.5	20.3	23.0	20.5	16.2	24.5	36.6	22.9
South and Southeast Asia												
Bangladesh 2004	93.7	93.3	95.1	93.6	93.7	96.1	94.5	90.5	94.9	92.8	93.2	93.7
Cambodia 2005	19.5	18.4	13.8	19.8	19.4	16.3	20.2	19.3	16.0	21.3	21.1	19.5
India 2005-06	46.3	42.5	39.8	44.2	48.7	40.6	40.0	47.9	53.9	45.8	34.5	45.9
Indonesia 2002-03	30.8	21.7	15.0	30.7	30.2	30.6	31.6	9.9	26.6	34.1	24.3	30.6
Nepal 2006	40.2	55.7	49.6	40.8	45.0	33.7	39.9	41.9	38.0	44.5	43.2	41.9
Philippines 2003	1.7	0.7	0.8	1.6	1.7	0.7	1.4	1.8	1.6	1.7	0.6	1.6
Vietnam 2005	12.0	5.9	4.2	13.2	12.0	4.3	11.6	5.8	10.0	8.9	16.1	11.2
Latin America and the Caribbean												
Bolivia 2003	0.3	0.3	0.2	0.4	0.2	0.2	0.3	0.2	0.1	0.5	0.3	0.3
Colombia 2005	0.1	0.2	0.6	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2
Guyana 2005	0.3	0.3	0.7	0.5	0.3	0.2	0.3	0.4	0.3	0.4	0.1	0.3
Haiti 2005	1.8	2.0	3.5	1.7	1.9	2.4	1.5	2.3	3.4	0.8	1.2	1.8
Honduras 2005	0.3	0.0	0.2	0.3	0.3	0.1	0.3	0.1	0.4	0.1	0.3	0.3
Peru 2004-08	0.2	0.1	0.0	0.2	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.2

Differentials in Completeness of Reporting on Date of Births in the Past 15 Years

Table 3.6.2.a shows that, overall, lower data quality (in this case, incomplete birth dates of children born in the 15 years preceding the survey) is associated with rural residence, use of a translator, and—in the majority of countries in sub-Saharan Africa—use of a different language between the interviewer and the questionnaire. Missing birth information by language of the interview and the respondent is available for 12 countries. In 3 of the 12 countries, missing data are most often found among interviews where the language of the interview and the respondent were the same, but were not one of the main languages used in the country (“other” language). In

the remaining countries, prevalence of missing data on births is generally low, and there is little variation in missing data by language of the interview and respondent.

Table 3.6.2.a: Differentials in completeness of reporting on date of births in the past 15 years, DHS/AIS 2003-06

Percentage of women missing any birth history in the past 15 years by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same	Same/Other	Different	
Sub-Saharan Africa										
Benin 2006	14.1	19.0	22.0	16.6	5.9	19.2	na	na	na	17.0
Burkina Faso 2003	7.4	10.5	na	na	na	na	na	na	na	9.7
Cameroon 2004	5.9	10.0	15.0	7.8	7.3	8.9	na	na	na	7.9
Chad 2004	2.8	3.0	na	na	na	na	na	na	na	2.9
Congo 2005	3.5	5.6	na	na	na	na	na	na	na	4.1
Cote d'Ivoire 2005	11.7	17.0	25.6	13.0	na	na	na	na	na	14.7
Ethiopia 2005	1.0	3.2	5.6	1.1	1.5	4.7	1.2	5.7	3.1	2.5
Ghana 2003	2.6	5.3	6.4	3.9	3.9	6.0	3.7	6.5	4.2	4.2
Guinea 2005	34.4	58.5	58.1	51.2	53.7	48.8	na	na	na	51.4
Kenya 2003	5.2	8.3	23.5	6.9	7.7	5.1	9.2	7.0	4.8	7.3
Lesotho 2004	0.8	1.8	0.0	1.5	na	na	1.5	na	4.2	1.5
Madagascar 2003-04	4.9	17.1	na	na	na	na	na	na	na	9.2
Malawi 2004	0.9	2.5	4.1	2.2	2.3	2.0	2.2	0.0	2.3	2.3
Mozambique 2003	3.0	6.5	na	na	na	na	na	na	na	5.0
Niger 2006	15.9	19.7	11.9	19.2	18.9	17.0	na	na	na	18.4
Nigeria 2003	9.7	8.3	14.9	8.2	na	na	11.5	20.0	6.5	8.8
Rwanda 2005	2.6	4.0	2.6	3.7	na	na	na	na	na	3.7
Senegal 2005	8.6	11.9	na	na	na	na	na	na	na	10.5
Tanzania 2004	2.2	4.6	na	na	na	na	na	na	na	4.0
Uganda 2006	1.7	5.7	7.1	4.8	5.9	3.6	5.4	1.8	5.7	5.0
Zimbabwe 2005-06	0.4	1.2	1.9	0.9	0.9	0.7	na	na	na	0.9
North Africa/West Asia/Europe										
Armenia 2005	0.1	0.1	0.0	0.1	na	na	0.1	na	0.0	0.1
Egypt 2005	6.9	18.8	na	na	na	na	na	na	na	13.9
Moldova Republic 2005	0.1	0.1	0.0	0.1	0.1	0.0	0.1	na	0.0	0.1
Morocco 2003-04	6.2	15.5	na	na	na	na	na	na	na	10.5
Turkey 2003	6.4	14.1	na	na	na	na	na	na	na	8.4
South and Southeast Asia										
Bangladesh 2004	0.4	0.3	na	na	na	na	na	na	na	0.3
Cambodia 2005	2.0	2.3	na	na	na	na	na	na	na	2.3
India 2005-06	1.5	2.4	na	na	na	na	na	na	na	2.0
Indonesia 2002-03	8.0	17.1	na	na	na	na	na	na	na	13.3
Nepal 2006	0.2	0.2	3.2	0.2	0.2	0.0	0.2	0.0	0.2	0.2
Philippines 2003	0.3	0.8	6.5	0.5	0.3	1.6	0.5	na	1.2	0.5
Vietnam 2005	na	na	na	na	na	na	na	na	na	na
Latin America and the Caribbean										
Bolivia 2003	3.1	5.4	na	na	na	na	na	na	na	3.9
Colombia 2005	0.9	2.4	na	na	na	na	na	na	na	1.3
Guyana 2005	0.9	1.0	0.0	0.9	na	na	1.0	na	0.0	1.0
Haiti 2005	0.6	1.2	na	na	na	na	na	na	na	0.9
Honduras 2005	0.6	0.7	na	na	na	na	na	na	na	0.7
Peru 2004-08	0.8	3.7	na	na	na	na	na	na	na	1.9

Table 3.6.2.b shows that, outside of sub-Saharan Africa, the prevalence of missing data on births is generally low, and there is little variation in missing data for births in the past 15 years. Within sub-Saharan Africa, the relationship between missing information and the number of visits to the household, time of day in the field, number of days in the cluster, and timing of interview during the course of fieldwork is weak and inconsistent across the majority of countries. However, there are exceptions. For example, in Benin and Burkina Faso, data quality declines with the number

of visits to the household, while in Côte d'Ivoire, Guinea, Kenya, and Indonesia, data quality improves as the number of visits increase. In Benin, Kenya, Tanzania, and Morocco, missing information is most common when the interview occurs in the morning and least when the interview occurs in the evening.

Countries such as Benin, Chad, Côte d'Ivoire, Guinea, Mozambique, Nigeria, Egypt, Morocco, and Indonesia have relatively large differences in missing information depending on whether teams spend less than four days in the cluster. The differences are not unidirectional; thus, no general recommendations can be made about the ideal number of days that a team should spend in a cluster. However, this information may help to identify country-specific fieldwork practices that could be modified to improve data quality.

Table 3.6.2.b: Differentials in completeness of reporting on date of births in the past 15 years, DHS/AIS 2003-06

Percentage of women missing any birth history in the past 15 years by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	16.7	18.0	23.8	19.5	15.8	14.2	15.8	19.5	23.7	14.8	11.7	17.0
Burkina Faso 2003	9.3	15.4	17.3	9.6	10.6	8.1	9.3	11.9	10.5	10.1	8.8	9.7
Cameroon 2004	8.1	6.0	5.1	8.6	7.8	7.0	9.0	6.7	8.1	8.3	7.0	7.9
Chad 2004	3.0	1.7	3.8	3.3	2.7	1.4	3.9	1.9	3.3	3.7	1.2	2.9
Congo 2005	3.9	5.4	6.4	4.0	4.0	4.9	3.5	4.8	6.0	3.1	1.8	4.1
Cote d'Ivoire 2005	14.9	13.2	11.0	15.6	14.8	13.1	15.3	10.5	11.0	17.9	14.4	14.7
Ethiopia 2005	2.6	1.4	2.0	2.7	2.5	1.1	2.0	2.8	3.9	2.5	0.8	2.5
Ghana 2003	4.1	5.8	4.1	4.7	3.9	3.3	4.1	4.6	4.7	3.8	4.0	4.2
Guinea 2005	51.8	40.1	31.8	52.2	50.0	52.6	53.5	40.2	43.5	56.8	54.0	51.4
Kenya 2003	7.9	3.8	3.0	9.1	6.8	3.4	8.7	5.5	8.5	7.9	3.5	7.3
Lesotho 2004	1.5	1.2	3.1	1.4	1.8	0.8	1.5	1.4	1.8	1.5	0.9	1.5
Madagascar 2003-04	9.3	8.8	2.7	10.3	8.4	7.7	9.5	8.2	14.8	9.2	3.4	9.2
Malawi 2004	2.3	2.2	1.7	2.3	2.2	1.5	2.1	2.5	2.9	1.8	2.2	2.3
Mozambique 2003	5.0	6.1	2.8	5.8	4.0	3.9	5.0	1.4	6.4	3.8	4.5	5.0
Niger 2006	18.6	15.2	5.7	18.2	17.7	20.3	18.2	18.6	20.1	20.1	12.6	18.4
Nigeria 2003	8.9	7.7	9.0	8.1	9.5	8.4	8.3	12.4	14.7	6.5	4.0	8.8
Rwanda 2005	3.6	3.0	6.2	3.2	4.1	2.7	3.8	3.5	3.9	3.8	3.2	3.7
Senegal 2005	10.7	7.5	10.3	11.5	10.2	9.8	10.1	10.6	13.3	8.7	9.9	10.5
Tanzania 2004	4.0	3.7	1.0	4.0	1.9	0.0	3.7	6.5	4.7	3.5	3.7	4.0
Uganda 2006	5.1	4.7	4.1	4.5	5.6	2.7	5.1	5.0	6.3	5.0	3.7	5.0
Zimbabwe 2005-06	0.9	1.1	0.0	0.9	1.0	0.7	1.3	0.6	0.8	0.8	1.1	0.9
North Africa/West Asia/Europe												
Armenia 2005	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1
Egypt 2005	13.9	17.9	10.5	14.8	14.0	12.5	14.1	6.1	15.6	12.5	11.4	13.9
Moldova Republic 2005	0.1	0.3	0.0	0.1	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.1
Morocco 2003-04	10.8	6.9	7.1	12.0	10.7	8.0	11.0	7.3	8.3	11.8	11.2	10.5
Turkey 2003	8.4	8.8	9.0	8.2	8.8	7.9	8.4	9.8	6.3	8.2	13.9	8.4
South and Southeast Asia												
Bangladesh 2004	0.3	0.6	0.0	0.3	0.4	0.8	0.3	0.5	0.4	0.3	0.2	0.3
Cambodia 2005	2.3	1.1	0.0	2.1	2.6	1.3	1.9	2.3	2.3	2.4	2.0	2.3
India 2005-06	2.0	1.9	2.4	1.8	1.9	2.6	1.7	2.1	2.6	1.7	1.5	2.0
Indonesia 2002-03	13.4	10.8	6.3	13.3	12.5	14.6	13.7	4.5	9.7	16.1	9.2	13.3
Nepal 2006	0.2	0.3	0.0	0.2	0.2	0.2	0.0	0.2	0.4	0.1	0.1	0.2
Philippines 2003	0.6	0.3	0.2	0.7	0.5	0.1	0.5	0.6	0.5	0.6	0.5	0.5
Vietnam 2005	na	na	na	na	na	na	na	na	na	na	na	na
Latin America and the Caribbean												
Bolivia 2003	3.9	3.8	4.1	4.0	3.7	4.0	4.6	3.0	2.7	5.1	4.5	3.9
Colombia 2005	1.2	1.1	2.7	1.6	1.3	0.8	1.4	0.9	1.3	1.2	1.3	1.3
Guyana 2005	1.0	0.9	0.7	0.6	1.2	0.6	0.8	1.1	1.4	0.5	0.7	1.0
Haiti 2005	0.9	1.0	0.9	1.0	0.9	0.6	0.8	1.1	1.3	0.6	0.7	0.9
Honduras 2005	0.7	0.8	0.9	0.7	0.7	0.6	0.7	0.4	0.9	0.6	0.5	0.7
Peru 2004-08	2.2	1.2	0.2	2.4	1.4	1.7	2.8	1.7	2.3	1.6	1.8	1.9

Differentials in Inconsistent Reporting on Age at First Intercourse for Women

For the most part, inconsistencies in reporting on the age at first intercourse are not affected by place of residence, use of a translator, or the language use variables. Only in Ethiopia can there be observed a fairly large association between rural residence and inconsistent reporting on age at first sexual intercourse (Table 3.6.3.a). In Cameroon and Nigeria, use of a translator is positively associated with inconsistent reporting of data, while in Lesotho, the Philippines, and Guyana, use of a translator is associated with improved data quality.

Table 3.6.3.a: Differentials in inconsistent reporting on age at first intercourse for women, DHS/AIS 2003-06

Percentage of women with inconsistent reporting on age at first intercourse by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same/Other	Different		
Sub-Saharan Africa										
Benin 2006	9.5	11.3	13.5	10.3	8.3	11.0	na	na	na	10.5
Burkina Faso 2003	8.2	6.6	na	na	na	na	na	na	na	7.0
Cameroon 2004	14.1	11.2	21.0	12.5	13.0	12.1	na	na	na	12.6
Chad 2004	1.9	1.1	na	na	na	na	na	na	na	1.5
Congo 2005	6.4	6.6	na	na	na	na	na	na	na	6.4
Cote d'Ivoire 2005	4.2	4.6	5.9	4.2	na	na	na	na	na	4.4
Ethiopia 2005	7.9	15.0	12.0	13.1	13.5	11.2	13.5	11.7	11.6	12.8
Ghana 2003	16.0	15.7	14.4	16.0	15.7	16.3	16.5	17.1	14.8	15.8
Guinea 2005	13.6	10.0	10.5	11.1	11.2	10.9	na	na	na	11.1
Kenya 2003	11.8	12.1	14.2	12.0	11.9	12.3	11.6	11.6	12.5	12.0
Lesotho 2004	16.6	17.5	12.5	17.2	na	na	17.2	0.0	25.0	17.2
Madagascar 2003-04	7.1	8.6	na	na	na	na	na	na	na	7.6
Malawi 2004	18.7	19.8	20.5	19.6	19.7	17.1	20.2	26.2	18.8	19.6
Mozambique 2003	9.2	9.2	na	na	na	na	na	na	na	9.2
Niger 2006	14.3	10.9	11.7	11.9	12.0	12.4	na	na	na	12.1
Nigeria 2003	11.9	13.2	18.3	12.1	na	na	13.2	6.7	12.5	12.7
Rwanda 2005	9.3	5.5	2.6	6.4	na	na	na	na	na	6.4
Senegal 2005	10.8	12.2	na	na	na	na	na	na	na	11.6
Tanzania 2004	10.1	9.5	na	na	na	na	na	na	na	9.7
Uganda 2006	9.2	11.9	8.9	11.7	11.7	11.0	12.2	12.2	9.0	11.4
Zimbabwe 2005-06	16.0	18.1	19.2	17.4	17.6	14.3	na	na	na	17.4
North Africa/West Asia/Europe										
Armenia 2005	9.2	10.7	na	9.6	na	na	9.6	0.0	8.7	9.6
Egypt 2005	na	na	na	na	na	na	na	na	na	na
Moldova Republic 2005	13.6	16.9	17.1	15.0	14.9	18.9	15.0	0.0	10.0	15.0
Morocco 2003-04	na	na	na	na	na	na	na	na	na	na
Turkey 2003	na	na	na	na	na	na	na	na	na	na
South and Southeast Asia										
Bangladesh 2004	na	na	na	na	na	na	na	na	na	na
Cambodia 2005	19.1	21.3	na	na	na	na	na	na	na	20.8
India 2005-06	5.0	5.6	na	na	na	na	na	na	na	5.3
Indonesia 2002-03	10.0	9.5	na	na	na	na	na	na	na	9.7
Nepal 2006	2.6	1.8	0.0	2.0	2.0	1.3	2.1	2.2	1.9	2.0
Philippines 2003	13.0	14.9	7.9	13.9	14.3	11.9	13.8	0.0	15.0	13.9
Vietnam 2005	1.1	0.8	na	na	na	na	na	na	na	0.9
Latin America and the Caribbean										
Bolivia 2003	15.4	18.5	na	na	na	na	na	na	na	16.5
Colombia 2005	0.5	0.5	na	na	na	na	na	na	na	0.5
Guyana 2005	11.2	13.1	5.0	12.2	na	na	12.2	0.0	11.1	12.2
Haiti 2005	2.6	3.1	na	na	na	na	na	na	na	2.9
Honduras 2005	8.5	8.2	na	na	na	na	na	na	na	8.3
Peru 2004-08	4.5	4.0	na	na	na	na	na	na	na	4.3

Table 3.6.3.b shows that there is little relationship between inconsistent reporting of age of first intercourse and number of interviewer visits to the household. There are several countries—such as Benin, Burkina Faso, and Guinea—where data quality declines with an increasing number of visits. There are several others—including Ethiopia, Kenya, Uganda, Zimbabwe, Armenia, and Cambodia—where the opposite occurs. These differences indicate that country-specific examinations of fieldwork procedures may be a useful step to take in order to improve data quality.

The consistency with which age at first sex is reported is not related to the time of day in the field or the number of days in the cluster. Overall, the consistency of reporting on the age of first intercourse improves over the course of fieldwork. In Uganda, for example, inconsistent reporting declines from 17 percent in the beginning of fieldwork to 7 percent at the end of fieldwork.

Table 3.6.3.b: Differentials in inconsistent reporting on age at first intercourse for women, DHS/AIS 2003-06

Percentage of women with inconsistent reporting on age at first intercourse by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	10.4	11.5	15.5	11.5	10.4	9.1	9.3	13.2	13.3	9.0	9.4	10.5
Burkina Faso 2003	6.9	8.9	9.1	7.6	6.3	6.6	6.7	8.3	10.0	6.5	5.5	7.0
Cameroon 2004	12.5	14.7	13.2	12.5	12.6	12.9	11.8	13.5	16.6	11.5	8.3	12.6
Chad 2004	1.3	3.0	3.2	1.7	1.2	0.5	1.1	1.8	3.0	1.0	0.5	1.5
Congo 2005	6.5	6.8	4.9	6.3	6.6	6.5	7.1	5.8	6.6	5.5	8.1	6.4
Cote d'Ivoire 2005	4.5	3.8	3.5	4.6	4.4	4.3	4.6	2.9	4.7	4.9	3.7	4.4
Ethiopia 2005	13.2	9.3	7.7	12.5	13.5	11.2	16.2	10.4	15.8	12.6	9.6	12.8
Ghana 2003	15.9	15.7	14.5	15.0	16.3	16.8	15.6	16.8	19.1	13.3	13.1	15.8
Guinea 2005	10.9	16.5	18.2	10.4	12.1	10.4	10.4	14.6	16.9	9.1	6.6	11.1
Kenya 2003	12.4	10.0	9.3	12.3	11.7	11.9	11.7	12.3	13.8	11.2	9.8	12.0
Lesotho 2004	17.2	18.1	12.6	18.2	16.6	15.2	16.3	18.8	21.4	15.6	13.1	17.2
Madagascar 2003-04	7.5	9.1	6.3	8.1	7.3	6.6	7.6	7.5	11.3	6.6	5.2	7.6
Malawi 2004	19.7	19.4	14.4	20.2	19.1	11.3	19.8	19.5	24.2	17.9	16.1	19.6
Mozambique 2003	9.3	8.5	5.5	9.7	8.7	5.8	9.2	9.2	12.0	8.1	6.2	9.2
Niger 2006	12.1	10.3	22.7	12.4	11.9	11.5	10.2	14.1	16.9	10.8	8.4	12.1
Nigeria 2003	13.0	9.7	11.4	12.9	12.6	12.3	12.3	14.9	16.4	11.9	8.6	12.7
Rwanda 2005	6.4	5.7	4.5	6.6	6.2	6.0	5.4	7.2	10.5	5.9	3.3	6.4
Senegal 2005	11.8	9.6	9.9	11.7	12.0	10.4	12.1	11.4	13.7	11.8	9.7	11.6
Tanzania 2004	9.7	9.0	8.2	9.8	9.6	8.5	9.9	7.8	12.4	7.7	8.7	9.7
Uganda 2006	11.8	7.9	6.8	11.3	11.6	8.7	11.8	11.1	16.9	9.5	6.8	11.4
Zimbabwe 2005-06	17.6	15.8	11.6	17.7	17.4	15.0	18.0	17.0	19.1	17.1	15.4	17.4
North Africa/West Asia/Europe												
Armenia 2005	9.9	5.3	3.8	11.1	9.4	9.6	9.6	10.9	13.1	8.4	4.6	9.6
Egypt 2005	na	na	na	na	na	na	na	na	na	na	na	na
Moldova Republic 2005	14.9	15.4	14.6	15.2	14.2	15.5	15.2	12.8	14.6	15.2	15.1	15.0
Morocco 2003-04	na	na	na	na	na	na	na	na	na	na	na	na
Turkey 2003	na	na	na	na	na	na	na	na	na	na	na	na
South and Southeast Asia												
Bangladesh 2004	na	na	na	na	na	na	na	na	na	na	na	na
Cambodia 2005	20.9	16.3	15.2	22.2	20.0	12.2	19.1	21.2	22.9	20.9	18.5	20.8
India 2005-06	5.3	5.2	5.3	5.2	5.3	5.8	6.5	4.9	4.9	6.2	4.9	5.3
Indonesia 2002-03	9.7	7.7	7.5	9.8	9.6	9.2	9.4	15.6	11.4	8.2	12.9	9.7
Nepal 2006	2.1	1.7	0.8	2.1	1.9	2.1	2.8	2.0	2.8	2.0	1.3	2.0
Philippines 2003	14.3	11.2	13.1	14.4	13.9	11.4	13.9	13.9	15.1	12.5	13.1	13.9
Vietnam 2005	0.9	0.8	0.0	0.9	1.0	0.8	0.9	1.2	1.0	0.9	0.9	0.9

continued

Table 3.6.3.b (continued). Differentials in inconsistent reporting on age at first intercourse for women, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Latin America and the Caribbean												
Bolivia 2003	16.8	15.8	14.1	17.0	16.4	15.8	17.6	15.2	14.3	17.8	18.4	16.5
Colombia 2005	0.5	0.6	0.4	0.5	0.5	0.6	0.6	0.4	1.3	0.3	0.2	0.5
Guyana 2005	12.2	12.1	12.1	13.0	12.0	12.0	12.3	12.1	12.6	12.9	9.8	12.2
Haiti 2005	2.8	2.6	6.2	3.2	2.8	2.1	2.3	3.5	4.7	2.0	1.6	2.9
Honduras 2005	8.4	7.0	8.8	8.5	8.4	7.5	8.0	9.7	13.8	6.7	6.1	8.3
Peru 2004-08	4.1	4.9	5.4	4.2	3.9	5.2	4.2	4.3	5.8	4.3	2.7	4.3

Differentials in Inconsistent Reporting on Time Since Last Intercourse for Women

Inconsistencies in reporting of time since last sexual intercourse are strongly associated with rural place of residence (primarily in sub-Saharan Africa) and use of a translator. There are some relatively large differences in consistency of reporting according to whether the questionnaire was in a language different from the language used by the interviewer; however, the differences are not consistent in direction across countries. In the few countries where information is available, inconsistent reporting on time since last sex was more problematic when the interviewer and respondent spoke the same language, using a language not included in the list of main languages spoken in the country (“other” language; Table 3.6.4.a).

Table 3.6.4.a: Differentials in inconsistent reporting on time since last intercourse for women, DHS/AIS 2003-06

Percentage of women with inconsistent reporting on time since last intercourse by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same	Same/ Other	Different	
Sub-Saharan Africa										
Benin 2006	18.1	25.4	37.3	21.2	18.8	23.0	na	na	na	22.4
Burkina Faso 2003	15.2	34.8	na	na	na	na	na	na	na	30.4
Cameroon 2004	12.9	20.4	22.0	16.7	15.8	18.1	na	na	na	16.8
Chad 2004	2.9	3.0	na	na	na	na	na	na	na	3.0
Congo 2005	10.2	20.6	na	na	na	na	na	na	na	13.5
Cote d'Ivoire 2005	7.5	7.9	5.6	8.1	na	na	na	na	na	7.7
Ethiopia 2005	na	na	na	na	na	na	na	na	na	na
Ghana 2003	11.7	25.1	31.4	18.2	18.3	28.0	15.8	32.8	21.5	19.9
Guinea 2005	27.0	39.2	36.0	35.9	37.2	34.3	na	na	na	35.8
Kenya 2003	9.4	12.9	28.6	11.2	11.7	11.6	11.5	32.3	11.7	11.7
Lesotho 2004	10.2	20.9	30.8	18.0	na	na	18.0	na	20.8	18.0
Madagascar 2003-04	1.8	4.2	na	na	na	na	na	na	na	2.7
Malawi 2004	12.6	18.2	18.9	17.4	17.3	23.7	16.0	22.0	19.1	17.4
Mozambique 2003	17.4	28.7	na	na	na	na	na	na	na	23.9
Niger 2006	9.3	9.5	7.7	9.6	9.7	8.7	na	na	na	9.5
Nigeria 2003	13.6	16.2	29.5	13.5	na	na	12.0	18.1	17.4	15.2
Rwanda 2005	13.6	10.8	14.8	11.4	na	na	na	na	na	11.4
Senegal 2005	14.0	17.1	na	na	na	na	na	na	na	15.9
Tanzania 2004	9.5	15.0	na	na	na	na	na	na	na	13.7
Uganda 2006	7.8	12.9	17.6	11.6	13.2	10.2	13.5	8.1	10.5	12.1
Zimbabwe 2005-06	5.6	10.8	7.5	9.1	9.2	8.1	na	na	na	9.1

continued

Table 3.6.4.a (continued). Differentials in inconsistent reporting on time since last intercourse for women, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same	Same/Other	Different	
North Africa/West Asia/Europe										
Armenia 2005	3.0	2.9	na	3.0	na	na	3.0	na	0.0	3.0
Egypt 2005	na	na	na	na	na	na	na	na	na	na
Moldova Republic 2005	1.9	2.4	1.6	2.1	2.1	0.0	2.1	na	0.0	2.1
Morocco 2003-04	na	na	na	na	na	na	na	na	na	na
Turkey 2003	na	na	na	na	na	na	na	na	na	na
South and Southeast Asia										
Bangladesh 2004	na	na	na	na	na	na	na	na	na	na
Cambodia 2005	7.3	8.3	na	na	na	na	na	na	na	8.0
India 2005-06	3.7	5.5	na	na	na	na	na	na	na	4.7
Indonesia 2002-03	4.0	4.9	na	na	na	na	na	na	na	4.5
Nepal 2006	3.8	5.9	4.0	5.4	5.5	2.8	5.5	5.0	5.2	5.4
Philippines 2003	8.8	9.6	15.4	9.1	9.3	8.7	9.3	na	8.0	9.2
Vietnam 2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Latin America and the Caribbean										
Bolivia 2003	8.3	11.5	na	na	na	na	na	na	na	9.5
Colombia 2005	4.1	5.2	na	na	na	na	na	na	na	4.4
Guyana 2005	2.8	2.0	5.3	2.4	na	na	2.3	na	22.2	2.4
Haiti 2005	6.8	9.5	na	na	na	na	na	na	na	8.2
Honduras 2005	8.0	11.8	na	na	na	na	na	na	na	10.3
Peru 2004-08	4.5	8.5	na	na	na	na	na	na	na	6.1

Results in Table 3.6.4.b indicate that, in most countries, inconsistent reporting of time since last intercourse is least among respondents who were interviewed on the third visit to the household. The quality of data on time since last intercourse for women is not associated with the time of the day the interview occurred, the length of time the interview teams spent in the clusters, and the timing of the interview during the course of fieldwork.

Table 3.6.4.b: Differentials in inconsistent reporting on time since last intercourse for women, DHS/AIS 2003-06

Percentage of women with inconsistent reporting on time since last intercourse by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	22.5	20.4	19.7	23.5	22.2	20.3	21.8	23.5	25.2	21.3	20.2	22.4
Burkina Faso 2003	30.6	28.1	21.5	30.0	30.5	31.2	32.2	20.9	21.6	34.4	31.0	30.4
Cameroon 2004	17.0	14.3	11.6	17.7	16.5	15.7	19.0	14.2	15.7	19.0	14.3	16.8
Chad 2004	2.8	4.6	5.2	2.8	3.0	3.6	2.4	3.6	3.9	2.9	2.1	3.0
Congo 2005	13.9	11.4	9.9	13.9	12.6	14.8	13.2	13.7	12.0	13.6	16.6	13.5
Cote d'Ivoire 2005	7.7	8.8	7.9	7.3	8.6	7.6	7.6	8.9	7.9	7.5	7.9	7.7
Ethiopia 2005	na	na	na	na	na	na	na	na	na	na	na	na
Ghana 2003	20.5	14.9	11.4	20.6	21.4	14.3	20.5	16.5	21.2	19.3	17.9	19.9
Guinea 2005	36.0	34.2	20.0	36.3	35.8	34.6	36.0	34.9	35.3	36.2	36.0	35.8
Kenya 2003	11.9	12.5	5.8	12.5	11.8	8.5	12.0	11.3	12.7	12.2	8.7	11.7
Lesotho 2004	18.1	17.6	14.1	18.4	19.5	11.4	18.2	17.6	18.8	17.8	16.9	18.0
Madagascar 2003-04	2.7	1.1	2.4	2.7	2.5	3.1	2.8	2.3	4.5	2.6	0.8	2.7
Malawi 2004	17.2	22.0	17.2	17.0	18.1	11.7	17.9	17.0	19.3	16.6	16.2	17.4
Mozambique 2003	24.2	19.6	11.4	23.4	24.8	17.6	24.0	18.9	24.8	24.3	21.6	23.9
Niger 2006	9.4	10.9	9.1	9.6	9.7	8.7	9.1	9.9	11.0	9.5	7.7	9.5
Nigeria 2003	15.1	16.4	12.7	15.4	15.0	15.2	14.8	17.4	17.8	14.8	12.0	15.2

continued

Table 3.6.4.b (continued). Differentials in inconsistent reporting on time since last intercourse for women, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Rwanda 2005	11.2	12.6	15.2	11.8	11.0	10.8	10.3	12.4	14.1	10.7	10.0	11.4
Senegal 2005	16.0	16.2	9.4	16.8	15.6	15.6	15.4	16.2	16.2	16.5	15.1	15.9
Tanzania 2004	13.8	12.5	15.3	13.8	10.2	0.0	13.5	16.2	14.3	13.0	14.0	13.7
Uganda 2006	12.0	12.3	16.3	12.2	12.1	9.9	11.4	12.7	13.6	12.0	10.3	12.1
Zimbabwe 2005-06	9.1	9.3	6.3	8.9	9.2	9.8	10.0	8.4	9.2	9.9	7.9	9.1
North Africa/West Asia/Europe												
Armenia 2005	3.0	2.0	5.7	3.9	2.9	2.7	2.9	4.0	3.5	3.1	1.8	3.0
Egypt 2005	na	na	na	na	na	na	na	na	na	na	na	na
Moldova Republic 2005	2.2	1.8	0.7	2.7	1.9	1.8	2.1	2.1	1.9	2.4	1.9	2.1
Morocco 2003-04	na	na	na	na	na	na	na	na	na	na	na	na
Turkey 2003	na	na	na	na	na	na	na	na	na	na	na	na
South and Southeast Asia												
Bangladesh 2004	na	na	na	na	na	na	na	na	na	na	na	na
Cambodia 2005	8.0	11.1	4.2	8.2	8.1	5.6	7.2	8.2	8.7	7.2	8.2	8.0
India 2005-06	4.7	5.5	4.8	4.8	4.8	4.3	4.7	4.8	4.4	5.3	4.6	4.7
Indonesia 2002-03	4.5	5.6	3.8	4.9	4.3	4.4	4.5	5.1	5.7	3.9	4.0	4.5
Nepal 2006	5.5	4.5	2.7	5.5	5.4	4.0	5.6	5.4	5.0	5.7	5.4	5.4
Philippines 2003	9.3	8.6	6.7	8.8	9.9	8.1	9.6	8.3	9.9	8.6	7.4	9.2
Vietnam 2005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Latin America and the Caribbean												
Bolivia 2003	9.6	9.4	7.7	9.9	9.4	9.0	10.0	8.8	8.2	10.9	10.0	9.5
Colombia 2005	4.1	5.7	6.1	4.5	4.8	3.7	4.5	4.0	4.5	4.3	4.4	4.4
Guyana 2005	2.6	2.4	0.9	2.4	2.5	1.9	2.5	2.3	2.6	1.8	3.1	2.4
Haiti 2005	8.4	7.4	4.9	8.2	8.6	6.0	8.6	7.8	9.7	6.5	8.4	8.2
Honduras 2005	10.4	9.4	9.4	10.2	10.6	9.8	10.6	8.7	10.0	11.6	9.2	10.3
Peru 2004-08	6.7	4.2	2.4	6.3	6.8	4.4	5.9	6.1	4.4	7.1	6.6	6.1

3.2.2 Heaping of Female Respondents' Birth Year

Large Myers' Indices are considered to be those at a level of 23 or higher; the percent excess of numbers ending in 0 or 5 is considered large when it exceeds the threshold of 7.6 percent. Large Myers' Indices are not seen in any of the countries, though the percent excess of numbers ending in 0 or 5 is large in more than half of the countries, the majority of which are in sub-Saharan Africa. Additionally, the correlation coefficient between the Myers' Index and the percent excess at 0 or 5 is high ($r^2 = 0.90$), indicating that there is considerable preference for reporting numbers that end in 0 or 5.

Table 3.7: Heaping of female respondents' birth year, DHS/AIS 2003-06

Country/year	Myers' Index	Percent excess at final digit 0 or 5
Sub-Saharan Africa		
Benin 2006	18.7	14.8
Burkina Faso 2003	12.6	4.5
Cameroon 2004	13.7	5.2
Chad 2004	20.1	12.9
Congo 2005	13.2	5.6
Cote d'Ivoire 2005	12.5	6.2
Ethiopia 2005	21.8	14.4
Ghana 2003	10.6	3.3
Guinea 2005	20.4	14.4
Kenya 2003	10.9	3.4
Lesotho 2004	12.1	4.3
Madagascar 2003-04	8.5	2.2
Malawi 2004	11.8	4.7
Mozambique 2003	11.5	3.0
Niger 2006	21.0	15.5
Nigeria 2003	17.5	11.7
Rwanda 2005	10.0	4.6
Senegal 2005	13.5	5.2
Tanzania 2004	11.7	3.6
Uganda 2006	11.5	3.3
Zimbabwe 2005-06	11.5	4.7
North Africa/West Asia/Europe		
Armenia 2005	5.7	2.6
Egypt 2005	4.8	3.4
Moldova Republic 2005	6.8	3.2
Morocco 2003-04	9.4	3.0
Turkey 2003	3.8	1.1
South and Southeast Asia		
Bangladesh 2004	6.5	2.2
Cambodia 2005	8.9	5.8
India 2005-06	10.0	3.4
Indonesia 2002-03	5.2	3.1
Nepal 2006	12.0	4.6
Philippines 2003	9.1	3.8
Vietnam 2005	7.3	3.5
Latin America and the Caribbean		
Bolivia 2003	9.9	3.5
Colombia 2005	6.9	3.4
Guyana 2005	6.5	3.3
Haiti 2005	14.6	5.6
Honduras 2005	11.7	4.7
Peru 2004-08	8.2	3.0

Based on women aged 15-44 (index must be based on multiples of 10).

Differentials in Age Heaping for Female Respondents

There are three countries in which age heaping differs according to residence by more than 5 percentage points. All of these countries are in sub-Saharan Africa (Benin, Guinea, and Niger) and, in them, heaping is associated with rural residence (Table 3.7.1.a). The use of a translator is almost invariably associated with age heaping. Agreement between the language of the questionnaire and that used by the interviewer, and the language used by the interviewer and respondent, does not have a strong or consistent association. However, in several instances, age heaping is more prevalent when the language of interviewer and questionnaire are different, and when the language of the interview and the respondent are the same but the interview is conducted in some “other” non-major language.

Table 3.7.1.a: Differentials in age heaping for female respondents, DHS/AIS 2003-06

Myers' Index for age heaping among female respondents by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same	Same/Other	Different	
Sub-Saharan Africa										
Benin 2006	15.0	22.1	23.0	18.4	17.0	19.5	na	na	na	18.7
Burkina Faso 2003	16.8	12.0	na	na	na	na	na	na	na	12.6
Cameroon 2004	15.1	12.5	18.9	13.8	15.3	14.3	na	na	na	13.7
Chad 2004	20.0	20.2	na	na	na	na	na	na	na	20.1
Congo 2005	13.5	12.6	na	na	na	na	na	na	na	13.2
Cote d'Ivoire 2005	13.3	11.9	13.1	13.2	na	na	na	na	na	12.5
Ethiopia 2005	19.1	23.3	25.6	20.7	20.0	27.2	20.2	28.5	20.7	21.8
Ghana 2003	12.0	10.5	9.2	11.0	10.8	10.7	10.4	11.3	11.5	10.6
Guinea 2005	15.8	22.4	24.2	20.3	20.3	20.6	na	na	na	20.4
Kenya 2003	10.1	11.2	11.0	11.0	10.8	11.1	10.3	35.9	11.5	10.9
Lesotho 2004	14.0	11.4	40.5	12.0	na	na	12.0	na	43.0	12.1
Madagascar 2003-04	8.8	8.4	na	na	na	na	na	na	na	8.5
Malawi 2004	15.9	11.2	9.8	11.9	11.7	13.7	11.8	34.7	11.9	11.8
Mozambique 2003	13.8	10.3	na	na	na	na	na	na	na	11.5
Niger 2006	15.1	24.9	24.1	20.7	21.0	21.1	na	na	na	21.0
Nigeria 2003	16.7	18.8	18.5	17.5	na	na	22.2	26.4	15.4	17.5
Rwanda 2005	12.3	9.3	21.2	10.0	na	na	na	na	na	10.0
Senegal 2005	13.9	14.1	na	na	na	na	na	na	na	13.5
Tanzania 2004	13.0	11.3	na	na	na	na	na	na	na	11.7
Uganda 2006	14.6	10.9	11.1	11.9	11.0	12.4	11.9	10.2	11.4	11.5
Zimbabwe 2005-06	12.8	10.8	28.4	11.5	11.7	8.5	na	na	na	11.5
North Africa/West Asia/Europe										
Armenia 2005	5.7	5.9	*	5.7	na	na	5.7	*	22.3	5.7
Egypt 2005	2.1	6.8	na	na	na	na	na	na	na	4.8
Moldova Republic 2005	6.0	8.0	9.7	6.8	6.8	11.8	6.8	*	30.0	6.8
Morocco 2003-04	8.0	11.0	na	na	na	na	na	na	na	9.4
Turkey 2003	3.5	4.6	na	na	na	na	na	na	na	3.8
South and Southeast Asia										
Bangladesh 2004	5.7	6.9	na	na	na	na	na	na	na	6.5
Cambodia 2005	10.5	8.4	na	na	na	na	na	na	na	8.9
India 2005-06	9.4	10.7	na	na	na	na	na	na	na	10.0
Indonesia 2002-03	4.2	6.0	na	na	na	na	na	na	na	5.2
Nepal 2006	11.2	12.2	29.6	12.0	12.1	11.8	11.9	17.6	12.1	12.0
Philippines 2003	9.3	8.9	10.7	9.1	8.8	10.8	9.3	*	8.3	9.1
Vietnam 2005	5.6	8.1	na	na	na	na	na	na	na	7.3
Latin America and the Caribbean										
Bolivia 2003	10.1	9.5	na	na	na	na	na	na	na	9.9
Colombia 2005	6.8	7.6	na	na	na	na	na	na	na	6.9
Guyana 2005	7.6	6.2	58.2	6.6	na	na	6.5	*	70.0	6.5
Haiti 2005	15.1	14.1	na	na	na	na	na	na	na	14.6
Honduras 2005	12.7	10.9	na	na	na	na	na	na	na	11.7
Peru 2004-08	8.1	8.4	na	na	na	na	na	na	na	8.2

* Indicates that the figure is based on fewer than 25 cases in the denominator and has been suppressed.

In a majority of countries, there is no relationship between the number of visits an interviewer makes to a household and age heaping of female respondents (Table 3.7.1.b). However, in several countries—including Madagascar, Malawi, Mozambique, Rwanda, Uganda, Turkey, Bangladesh, Cambodia, and Guyana—data quality declines as the number of visits to a household increases. In Benin and Nigeria, the opposite occurs; more visits are associated with less heaping. In several countries, data quality also varies with the number of days spent in each cluster; for example, in Chad and Niger, spending less than four days in the cluster is associated

with increased heaping, while in Cameroon, Côte d'Ivoire, Rwanda, Tanzania, Armenia, and Turkey, the converse is true. There is no consistent relationship between age heaping and either time of day in the field or the timing of interview during the course of fieldwork.

Table 3.7.1.b: Differentials in age heaping for female respondents, DHS/AIS 2003-06

Myers' Index for age heaping among female respondents by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	19.0	16.1	14.9	19.1	19.0	18.0	18.8	18.9	19.7	18.3	18.2	18.7
Burkina Faso 2003	12.7	11.4	11.9	11.1	13.7	14.7	12.6	13.0	14.5	12.0	12.8	12.6
Cameroon 2004	13.8	14.1	12.9	12.7	14.8	14.8	12.5	15.2	15.2	13.6	12.6	13.7
Chad 2004	20.2	21.3	19.2	20.8	19.1	19.4	22.1	18.1	19.2	19.3	22.7	20.1
Congo 2005	13.4	13.6	10.1	13.3	13.8	9.6	12.7	13.7	13.1	14.0	11.9	13.2
Cote d'Ivoire 2005	12.5	12.0	16.9	11.9	14.2	11.8	12.3	15.0	12.0	13.2	12.4	12.5
Ethiopia 2005	21.8	23.7	19.3	22.4	21.6	20.4	22.1	21.7	22.2	21.2	22.3	21.8
Ghana 2003	10.4	13.5	11.9	10.0	11.2	12.4	10.8	9.8	11.5	10.0	11.5	10.6
Guinea 2005	20.6	18.0	29.9	20.6	20.3	20.4	20.6	19.6	19.4	21.2	21.3	20.4
Kenya 2003	10.5	13.8	11.6	9.8	10.7	15.0	11.1	10.6	10.9	12.0	8.4	10.9
Lesotho 2004	12.0	12.7	19.9	11.1	12.8	14.1	12.3	11.7	10.2	13.8	11.3	12.1
Madagascar 2003-04	8.4	12.7	15.2	7.7	8.3	11.7	8.3	9.1	9.7	7.2	8.8	8.5
Malawi 2004	11.4	16.5	29.4	10.5	13.3	14.8	12.1	11.9	10.0	12.5	13.7	11.8
Mozambique 2003	11.4	15.0	19.9	11.1	12.0	12.1	11.5	13.5	10.6	12.2	11.8	11.5
Niger 2006	21.4	13.4	15.6	20.3	20.7	24.1	24.0	18.2	17.3	22.9	22.2	21.0
Nigeria 2003	17.9	16.0	11.9	17.6	18.3	16.9	17.6	18.0	18.2	15.9	19.5	17.5
Rwanda 2005	9.6	13.1	20.3	9.5	9.9	14.8	8.6	11.2	12.3	9.1	9.2	10.0
Senegal 2005	13.6	13.4	10.8	12.0	13.9	14.7	13.2	13.8	12.0	14.4	14.8	13.5
Tanzania 2004	11.7	11.7	15.3	11.2	11.9	14.3	11.3	15.4	11.4	11.0	12.8	11.7
Uganda 2006	11.2	14.1	24.0	11.0	11.8	20.5	11.1	11.9	10.5	11.2	13.2	11.5
Zimbabwe 2005-06	11.6	9.7	10.6	10.0	13.1	11.4	10.9	11.9	11.9	12.2	10.2	11.5
North Africa/West Asia/Europe												
Armenia 2005	5.8	10.2	7.4	4.5	5.8	9.8	6.1	11.4	6.4	5.7	4.8	5.7
Egypt 2005	4.8	13.9	14.7	4.5	5.2	4.5	5.0	5.4	4.0	5.3	8.3	4.8
Moldova Republic 2005	7.5	6.4	8.9	7.5	7.9	6.0	6.9	7.6	6.7	6.8	8.3	6.8
Morocco 2003-04	9.4	11.3	9.2	6.9	9.5	12.9	9.4	9.3	8.8	9.6	10.0	9.4
Turkey 2003	3.7	9.1	26.5	4.4	3.8	4.5	3.7	7.1	3.9	4.2	4.1	3.8
South and Southeast Asia												
Bangladesh 2004	6.6	8.9	17.5	5.8	7.9	14.4	6.8	6.4	6.1	6.6	6.9	6.5
Cambodia 2005	8.6	19.4	22.1	8.0	9.5	15.3	8.7	9.0	9.6	7.9	9.3	8.9
India 2005-06	10.0	9.4	9.9	9.6	10.0	10.7	10.4	10.0	10.1	10.1	9.6	10.0
Indonesia 2002-03	5.2	10.9	11.2	5.3	5.2	5.5	5.1	6.7	5.2	5.4	5.5	5.2
Nepal 2006	12.0	12.8	13.2	11.1	12.1	16.1	13.6	12.1	10.5	11.0	14.1	12.0
Philippines 2003	8.6	12.5	12.2	8.1	8.8	16.1	9.0	9.4	9.0	9.3	9.4	9.1
Vietnam 2005	6.9	9.7	13.2	7.1	7.0	8.1	7.1	9.2	7.6	7.8	6.1	7.3
Latin America and the Caribbean												
Bolivia 2003	10.1	10.2	7.5	9.6	9.8	10.4	9.7	10.2	9.8	9.7	10.3	9.9
Colombia 2005	7.0	6.5	7.7	6.7	7.2	7.2	7.0	6.8	6.4	7.5	6.8	6.9
Guyana 2005	5.9	6.9	13.3	5.7	6.6	7.9	6.7	7.1	5.5	8.1	7.2	6.5
Haiti 2005	14.4	16.9	12.7	12.2	16.1	16.1	14.4	14.7	15.4	14.9	13.1	14.6
Honduras 2005	11.5	12.6	13.5	10.2	12.4	13.4	11.7	11.4	11.6	12.6	10.8	11.7
Peru 2004-08	8.0	11.4	8.1	7.2	9.3	9.0	7.5	8.6	7.6	10.2	6.7	8.2

3.2.3 Non-Response for HIV Testing—Women

Table 3.8 shows the levels of non-response for HIV testing. Non-response ranges from 1 percent in Cambodia to 24 percent in Malawi.

Country/year	Non-response for HIV testing (%)
Sub-Saharan Africa	
Cameroon 2004	10.1
Cote d'Ivoire 2005*	11.1
Guinea 2005	7.8
Lesotho 2004	18.0
Malawi 2004*	24.2
Niger 2006	8.5
Rwanda 2005	3.2
Senegal 2005	15.6
Zimbabwe 2005-06	13.6
South and Southeast Asia	
Cambodia 2005	1.2
India 2005-06	20.0
Vietnam 2005*	6.5
Latin America and the Caribbean	
Haiti 2005	2.3

¹ Referred to a combined category of "not present," "refused," and "other."
 * The response variable is in the individual data file.

Differentials in Non-Response for HIV Testing

Non-response for HIV testing is higher in urban areas in nearly all countries (Table 3.8.1.a). In Cameroon, for example, non-response is twice as high in urban areas as in rural areas. Use of a translator is associated with lower non-response in the only two countries with this information (Malawi and Zimbabwe). In Malawi, use of a language that is different from the language of the questionnaire is associated with higher non-response, but there is no such association in Zimbabwe. Additionally, in Malawi, when the interviewer and respondent use the same language to conduct the interview, but the language is not one of the main languages spoken in the country ("other"), there is a higher likelihood of non-response to the HIV-testing component of the survey.

Table 3.8.1.a: Differentials in non-response for HIV testing among women, DHS/AIS 2003-06

Percentage of women who did not participate in HIV testing by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same	Same/Other	Different	
Sub-Saharan Africa										
Cameroon 2004	13.5	6.7	na	na	na	na	na	na	na	10.1
Cote d'Ivoire 2005*	15.3	7.9	8.9	11.4	na	na	na	na	na	11.1
Guinea 2005	12.0	6.0	na	na	na	na	na	na	na	7.8
Lesotho 2004	26.2	15.0	na	na	na	na	na	na	na	18.0
Malawi 2004*	28.6	23.5	22.1	24.3	24.0	33.0	26.3	35.0	21.2	24.2
Niger 2006	13.5	5.7	na	na	na	na	na	na	na	8.5
Rwanda 2005	4.5	2.8	na	na	na	na	na	na	na	3.2
Senegal 2005	16.5	15.0	na	na	na	na	na	na	na	15.6
Zimbabwe 2005-06	20.6	9.8	na	na	13.7	12.6	na	na	na	13.6
South and Southeast Asia										
Cambodia 2005	1.8	1.0	na	na	na	na	na	na	na	1.2
Vietnam 2005*	10.1	4.3	na	na	na	na	na	na	na	6.5
Latin America and the Caribbean										
Haiti 2005	3.1	1.5	na	na	na	na	na	na	na	2.3

* The response variable is in the individual data file.

In most countries, non-response to HIV testing is positively associated with the number of visits to the household. In Rwanda, non-response increases from 3 percent in households with one visit to 19 percent in households with three or more visits. Of the three countries with information on the time of the day in the field, non-response increases as interviews are conducted later in the day. Results also indicate that, in about half of the countries, non-response is higher when teams spend four or more days in the field. It is important to understand that teams may be required to spend more time explaining the HIV testing protocols in places where there may be initial resistance to the idea of anonymous HIV testing. Therefore, these results must be interpreted with a great deal of caution. The relationship between non-response to HIV testing and timing of the interview during the course of fieldwork is inconsistent; again, these results may be most interpretable and useful for country managers and implementing agencies with a more comprehensive understanding of how the fieldwork rolled out in each respective survey.

Table 3.8.1.b: Differentials in non-response for HIV testing among women, DHS/AIS 2003-06

Percentage of women who did not participate in HIV testing by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Cameroon 2004	9.7	11.9	23.3	na	na	na	8.2	12.1	15.6	6.9	7.1	10.1
Cote d'Ivoire 2005*	10.4	15.0	33.3	9.0	10.9	14.3	10.1	19.4	11.9	9.1	12.8	11.1
Guinea 2005	7.8	11.5	25.0	na	na	na	7.5	9.5	11.3	7.4	4.1	7.8
Lesotho 2004	17.4	23.0	25.7	na	na	na	16.6	20.1	16.9	15.9	25.1	18.0
Malawi 2004*	23.8	28.1	39.2	22.9	25.3	32.6	25.2	23.3	22.3	24.5	26.4	24.2
Niger 2006	8.2	19.1	12.0	na	na	na	6.7	10.5	10.8	7.0	8.7	8.5
Rwanda 2005	2.8	4.5	18.7	na	na	na	2.1	4.7	5.8	2.2	2.4	3.2
Senegal 2005	15.2	26.3	33.3	na	na	na	13.7	17.1	15.7	14.3	17.0	15.6
Zimbabwe 2005-06	13.6	13.2	18.5	na	na	na	12.5	14.5	14.7	11.8	14.7	13.6
South and Southeast Asia												
Cambodia 2005	1.2	0.0	0.0	na	na	na	1.5	1.1	0.7	1.3	1.6	1.2
Vietnam 2005*	6.4	7.1	16.7	5.8	6.0	7.5	6.6	5.6	4.2	8.8	6.1	6.5
Latin America and the Caribbean												
Haiti 2005	2.2	2.4	5.1	na	na	na	1.8	2.9	2.4	3.3	1.0	2.3

* The response variable is in the individual data file.

3.2.4 Non-Response for Anemia Testing—Women

Non-response for anemia ranges from 1 percent or less in Madagascar, Rwanda, Egypt, and Nepal to 24 percent in Malawi, with large variations within and across regions. Non-response for anemia is less than 5 percent in 17 out of the 25 countries with data (Table 3.9).

Table 3.9: Non-response for anemia testing¹ among women, DHS/AIS 2003-06

Country/year	Non-response for anemia testing (%)
Sub-Saharan Africa	
Benin 2006	6.9
Burkina Faso 2003	3.4
Cameroon 2004	3.7
Congo 2005	5.4
Ethiopia 2005	11.1
Ghana 2003	4.3
Guinea 2005	3.8
Lesotho 2004	10.6
Madagascar 2003-04	1.0
Malawi 2004	24.1
Niger 2006	3.3
Rwanda 2005	1.1
Senegal 2005	7.0
Tanzania 2004	1.8
Uganda 2006	2.1
Zimbabwe 2005-06	15.1

continued

Table 3.9 (continued). Non-response for anemia testing¹ among women, DHS/AIS 2003-06

Country/year	Non-response for anemia testing (%)
North Africa/West Asia/Europe	
Armenia 2005	4.4
Egypt 2005	0.3
Moldova Republic 2005	3.4
South and Southeast Asia	
Cambodia 2005	2.1
India 2005-06	4.2
Nepal 2006	1.0
Latin America and the Caribbean	
Bolivia 2003	3.2
Haiti 2005	1.3
Honduras 2005	6.2

¹ Refers to a combined category of "not present," "refused," and "other."

Differentials in Non-Response for Anemia Testing

In nearly all countries, non-response for anemia testing is higher in urban areas than in rural areas. In Lesotho, non-response is more than twice as high in urban areas as in rural areas (Table 3.9.1.a). The other variables in Table 3.9.1.a are not strongly associated with non-response for anemia testing. There are some notable exceptions, such as Benin and Zimbabwe, where the use of a translator is strongly associated with non-response for anemia testing. In Malawi, this pattern is reversed.

Table 3.9.1.a: Differentials in non-response for anemia testing among women, DHS/AIS 2003-06

Percentage of women who did not participate in anemia testing by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same/Other	Different		
Sub-Saharan Africa										
Benin 2006	6.5	7.2	9.8	6.7	6.9	6.9	na	na	na	6.9
Burkina Faso 2003	9.3	1.5	na	na	na	na	na	na	na	3.4
Cameroon 2004	5.8	1.6	0.0	3.7	4.3	2.8	na	na	na	3.7
Congo 2005	7.0	1.7	na	na	na	na	na	na	na	5.4
Ethiopia 2005	19.7	7.3	10.9	11.2	11.2	11.0	11.5	9.7	11.7	11.1
Ghana 2003	5.4	3.6	4.4	4.3	4.2	4.9	3.2	6.2	5.2	4.3
Guinea 2005	6.8	2.5	1.7	3.9	3.4	4.2	na	na	na	3.8
Lesotho 2004	18.9	7.5	0.0	10.7	na	na	10.7	na	0.0	10.6
Madagascar 2003-04	1.2	0.7	na	na	na	na	na	na	na	1.0
Malawi 2004	30.1	23.1	19.0	24.2	23.8	33.0	25.5	36.8	22.0	24.1
Niger 2006	6.4	1.6	3.1	3.3	3.2	3.5	na	na	na	3.3
Rwanda 2005	2.1	0.8	0.0	1.1	na	na	na	na	na	1.1
Senegal 2005	7.6	6.4	na	na	na	na	na	na	na	7.0
Tanzania 2004	3.3	1.3	na	na	na	na	na	na	na	1.8
Uganda 2006	6.2	1.3	2.7	2.1	2.6	1.3	2.0	0.6	3.2	2.1
Zimbabwe 2005-06	27.0	8.8	25.0	15.1	15.3	13.1	na	na	na	15.1
North Africa/West Asia/Europe										
Armenia 2005	4.7	3.9	na	4.4	na	na	4.5	na	0.0	4.4
Egypt 2005	0.4	0.2	na	na	na	na	na	na	na	0.3
Moldova Republic 2005	5.1	1.2	5.3	3.4	3.4	5.4	3.4	na	0.0	3.4

continued

Table 3.9.1.a (continued). Differentials in non-response for anemia testing among women, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same/Other	Different		
South and Southeast Asia										
Cambodia 2005	3.3	1.6	na	na	na	na	na	na	na	2.1
India 2005-06	6.3	2.4	na	na	na	na	na	na	na	4.2
Nepal 2006	1.7	0.8	0.0	1.0	1.0	1.1	1.0	2.8	1.0	1.0
Latin America and the Caribbean										
Bolivia 2003	3.5	2.7	na	na	na	na	na	na	na	3.2
Haiti 2005	1.8	0.8	na	na	na	na	na	na	na	1.3
Honduras 2005	8.1	4.9	na	na	na	na	na	na	na	6.2

Non-response for anemia testing is positively associated with the number of visits that an interviewer makes to the household in about half of the countries in the study (Table 3.9.1.b). In Ethiopia, for example, non-response more than doubles from one visit (10 percent) to three or more visits (27 percent). There is little relationship between non-response and time of day in the field or the number of days in the cluster, though there are several exceptions.

In Burkina Faso, Ethiopia, Ghana, Zimbabwe, Moldova, and Honduras, a larger number of days in the cluster is associated with greater non-response. Overall, there is little variation in non-response to anemia testing according to the timing of the interview during the course of fieldwork. Nevertheless, there are several countries (such as Burkina Faso, Cameroon, Ethiopia, Niger, Zimbabwe, Armenia, Moldova, and Bolivia) where non-response is highest at the beginning of fieldwork.

Table 3.9.1.b: Differentials in non-response for anemia testing among women, DHS/AIS 2003-06

Percentage of women who did not participate in anemia testing by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	6.8	7.5	12.5	6.8	7.0	7.1	7.5	5.7	5.7	7.1	8.1	6.9
Burkina Faso 2003	3.0	8.9	5.9	3.0	3.4	4.1	2.6	7.4	7.7	2.2	1.9	3.4
Cameroon 2004	3.5	7.4	11.3	3.3	3.7	4.3	2.3	5.2	6.6	1.7	2.6	3.7
Congo 2005	5.2	5.2	9.4	5.6	5.3	4.0	5.6	5.1	9.0	3.1	1.7	5.4
Ethiopia 2005	10.3	16.7	27.4	11.2	10.1	15.1	7.0	13.9	11.9	10.8	10.6	11.1
Ghana 2003	4.2	3.5	13.8	3.6	3.7	7.6	3.9	6.6	4.1	3.8	6.2	4.3
Guinea 2005	3.6	6.2	15.8	3.4	4.4	3.4	3.6	4.7	5.7	3.2	2.1	3.8
Lesotho 2004	10.5	11.6	15.9	9.8	10.0	15.8	10.0	11.9	8.3	9.0	19.4	10.6
Madagascar 2003-04	1.0	0.9	2.3	0.4	0.8	3.2	0.8	1.6	1.8	0.8	0.5	1.0
Malawi 2004	23.8	26.4	37.8	22.7	25.4	34.2	25.4	23.0	21.5	24.9	26.3	24.1
Niger 2006	3.0	8.5	6.8	2.9	3.5	3.7	1.9	4.7	4.9	2.4	3.2	3.3
Rwanda 2005	1.1	1.0	2.8	0.9	1.3	1.5	0.6	1.6	2.2	0.7	0.7	1.1
Senegal 2005	7.0	5.8	6.1	6.1	6.8	8.6	5.9	7.4	4.0	8.2	8.0	7.0
Tanzania 2004	1.7	1.9	8.2	1.8	1.2	0.0	1.8	1.7	2.0	2.2	1.1	1.8
Uganda 2006	2.1	2.1	5.1	2.6	1.7	1.8	1.8	2.5	1.7	1.3	3.4	2.1
Zimbabwe 2005-06	13.8	23.3	38.5	13.9	15.5	18.3	10.6	17.8	21.4	12.4	10.3	15.1

continued

Table 3.9.1.b (continued). Differentials in non-response for anemia testing among women, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
North Africa/West Asia/Europe												
Armenia 2005	4.4	4.8	5.7	6.0	4.0	5.0	4.4	4.2	6.2	4.1	1.4	4.4
Egypt 2005	0.3	0.0	0.0	0.2	0.2	0.4	0.2	0.5	0.3	0.2	0.5	0.3
Moldova Republic 2005	2.9	5.5	7.8	3.0	2.5	4.5	3.1	7.4	7.9	1.7	1.3	3.4
South and Southeast Asia												
Cambodia 2005	2.0	4.3	3.7	1.8	2.2	3.1	2.3	2.0	3.1	1.6	1.5	2.1
India 2005-06	4.0	5.1	7.7	3.8	4.3	4.6	3.8	4.3	5.6	4.3	1.9	4.2
Nepal 2006	1.0	1.1	3.1	0.9	1.2	0.9	0.0	1.1	2.1	0.5	0.5	1.0
Latin America and the Caribbean												
Bolivia 2003	2.8	4.3	6.8	2.6	3.9	3.3	2.4	4.2	4.3	2.7	2.2	3.2
Haiti 2005	1.2	1.9	2.6	1.1	1.5	0.7	1.1	1.4	1.3	1.6	0.8	1.3
Honduras 2005	5.9	7.9	11.0	5.3	6.2	8.8	5.8	8.3	6.5	5.6	6.7	6.2

3.3 Men's Individual-Level Data

3.3.1 Completeness of Age Data for Men

Table 3.10 shows the percentage of men who are missing information on age or birth date. It ranges from less than 1 percent in Zimbabwe and Bolivia to 84 percent in Bangladesh. By region, Latin America and the Caribbean and West Asia/Europe have the lowest levels of missing data. Within the other two regions, there is wide variation across countries.

Table 3.10: Completeness of reporting on age among men, DHS/AIS 2003-06

Country/year	Percentage of men missing any information on age or birth date ¹
Sub-Saharan Africa	
Benin 2006	58.6
Burkina Faso 2003	74.7
Cameroon 2004	22.3
Chad 2004	43.3
Congo 2005	4.8
Ethiopia 2005	53.2
Ghana 2003	28.0
Guinea 2005	68.9
Kenya 2003	27.2
Lesotho 2004	14.4
Madagascar 2003-04	16.0
Malawi 2004	25.3
Mozambique 2003	14.3
Niger 2006	50.7
Nigeria 2003	23.4
Rwanda 2005	59.3
Senegal 2005	28.9
Tanzania 2004	27.8
Uganda 2006	29.1
Zimbabwe 2005-06	0.9
West Asia/Europe	
Armenia 2005	0.1
Moldova Republic 2005	1.1

continued

Table 3.10 (continued). Completeness of reporting on age among men, DHS/AIS 2003-06

Country/year	Percentage of men missing any information on age or birth date ¹
South and Southeast Asia	
Bangladesh 2004	84.3
Cambodia 2005	25.5
India 2005-06	29.9
Indonesia 2002-03	31.0
Nepal 2006	23.6
Philippines 2003	1.4
Latin America and the Caribbean	
Bolivia 2003	0.6
Haiti 2005	1.4

¹ Missing age, year, or month.

Differentials in Completeness of Age Data for Men

Completeness of age data for men is strongly associated with rural place of residence, use of a translator, and use of a questionnaire that was written in a language different from that used to conduct the interview. Additionally, data quality is lower when the language of the interview and the respondent is different, or the language used is the same but is an “other,” non-major language. These details are shown in Table 3.10.1.a.

Table 3.10.1.a: Differentials in completeness of reporting on age of men, DHS/AIS 2003-06

Percentage of men with missing information on age or birth date by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same/	Other	Different	
Sub-Saharan Africa										
Benin 2006	44.5	68.9	95.8	55.8	42.4	66.6	na	na	na	58.6
Burkina Faso 2003	36.6	87.8	na	na	na	na	na	na	na	74.7
Cameroon 2004	12.5	32.2	45.3	21.9	13.6	41.3	na	na	na	22.3
Chad 2004	36.0	52.3	na	na	na	na	na	na	na	43.3
Congo 2005	3.5	8.0	na	na	na	na	na	na	na	4.8
Ethiopia 2005	35.4	59.7	75.2	47.1	45.8	71.7	43.9	74.7	61.4	53.2
Ghana 2003	11.7	37.9	62.6	23.8	24.7	56.5	17.3	68.0	32.2	28.0
Guinea 2005	56.8	75.8	84.8	68.2	64.6	77.5	na	na	na	68.9
Kenya 2003	16.0	32.5	56.5	26.7	26.9	30.0	32.2	73.3	19.5	27.2
Lesotho 2004	4.3	17.7	30.0	14.3	na	na	14.3	na	36.4	14.4
Madagascar 2003-04	8.1	28.8	na	na	na	na	na	na	na	16.0
Malawi 2004	13.2	27.5	20.0	25.4	25.4	21.2	26.5	na	23.3	25.3
Mozambique 2003	7.5	19.9	na	na	na	na	na	na	na	14.3
Niger 2006	40.3	58.4	33.3	52.0	51.9	48.2	na	na	na	50.7
Nigeria 2003	23.4	23.4	42.0	22.4	na	na	na	na	na	23.4
Rwanda 2005	46.9	63.0	50.0	59.3	na	na	na	na	na	59.3
Senegal 2005	16.7	40.7	na	na	na	na	na	na	na	28.9
Tanzania 2004	16.1	31.3	na	na	na	na	na	na	na	27.8
Uganda 2006	19.7	30.9	42.9	28.7	31.5	22.8	32.4	24.1	22.4	29.1
Zimbabwe 2005-06	0.4	1.1	0.0	0.9	0.9	0.8	na	na	na	0.9

continued

Table 3.10.1.a (continued). Differentials in completeness of reporting on age of men, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same/Other	Different		
West Asia/Europe										
Armenia 2005	0.2	0.0	na	na	na	na	na	na	na	0.1
Moldova Republic 2005	0.7	1.6	0.0	1.1	0.7	10.3	1.1	na	0.0	1.1
South and Southeast Asia										
Bangladesh 2004	76.2	88.7	na	na	na	na	na	na	na	84.3
Cambodia 2005	20.4	27.1	na	na	na	na	na	na	na	25.5
India 2005-06	21.2	39.0	na	na	na	na	na	na	na	29.9
Indonesia 2002-03	17.1	41.3	na	na	na	na	na	na	na	31.0
Nepal 2006	16.8	26.4	40.0	23.6	22.1	56.8	21.1	77.4	24.1	23.6
Philippines 2003	0.8	2.1	16.9	1.2	0.8	4.9	1.2	na	3.7	1.4
Latin America and the Caribbean										
Bolivia 2003	0.3	1.2	na	na	na	na	na	na	na	0.6
Haiti 2005	0.6	2.0	na	na	na	na	na	na	na	1.4

In a majority of the countries, the number of household visits does not correlate with missing age data for men (Table 3.10.1.b). However, in Burkina Faso, Cameroon, Ghana, Kenya, Niger, and Senegal, there is a negative association between this outcome and number of visits. Data obtained from men that required three visits were of better quality in these countries.

For the most part, the relationships between the time of day of the interview and the timing of the interview during the course of fieldwork are only weakly associated. In several countries, however, there are stronger associations. For example, in Ethiopia, Kenya, Rwanda, and Senegal, data quality is poorest in the morning, and improves as the day goes on. In several—though less than half—of the countries, there is lower data quality when teams spend fewer than four days in a cluster. In Benin and Madagascar, data quality is lowest at the beginning of fieldwork and improves with time. In Burkina Faso, Cameroon, Ethiopia, and Guinea, the opposite occurs.

Table 3.10.1.b: Differentials in completeness of reporting on age of men, DHS 2003-06

Percentage of men with missing information on age or birth date by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	59.4	51.9	52.6	59.4	57.1	59.7	57.3	68.3	70.0	57.1	46.9	58.6
Burkina Faso 2003	76.3	61.0	53.2	76.6	73.4	73.1	78.8	46.1	53.6	79.3	85.0	74.7
Cameroon 2004	22.9	16.8	12.1	27.0	23.3	14.6	26.6	15.7	17.8	20.7	32.5	22.3
Chad 2004	44.5	34.6	35.6	46.1	38.4	44.0	46.6	37.3	32.3	49.6	47.3	43.3
Congo 2005	4.8	3.8	6.5	4.8	4.7	5.2	5.3	4.3	4.4	4.5	6.3	4.8
Ethiopia 2005	53.6	50.6	50.3	54.8	52.0	49.0	51.3	54.9	50.1	53.5	56.5	53.2
Ghana 2003	29.0	25.2	9.6	28.0	29.9	24.2	30.1	15.5	26.0	30.0	28.6	28.0
Guinea 2005	69.9	53.6	62.7	70.3	64.3	74.6	71.0	57.4	59.2	74.1	76.0	68.9
Kenya 2003	29.6	23.4	17.8	30.7	25.7	23.7	30.2	21.6	28.3	28.5	21.9	27.2
Lesotho 2004	14.1	16.0	17.1	13.9	15.4	13.8	14.4	14.3	16.6	13.5	12.8	14.4
Madagascar 2003-04	17.3	5.6	7.1	17.9	14.8	13.4	15.6	18.4	29.1	15.4	3.8	16.0
Malawi 2004	25.3	24.7	25.5	24.8	26.1	20.3	26.4	23.8	26.1	25.5	24.0	25.3
Mozambique 2003	15.1	7.3	6.8	15.7	12.5	12.9	14.2	23.8	17.4	14.6	8.5	14.3
Niger 2006	51.2	48.2	42.7	49.9	52.4	49.4	56.1	42.5	45.1	56.3	47.3	50.7
Nigeria 2003	22.3	30.4	27.4	23.7	24.7	20.4	23.5	21.9	27.1	20.1	23.4	23.4

continued

Table 3.10.1.b (continued). Differentials in completeness of reporting on age of men, DHS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Rwanda 2005	60.2	50.0	56.2	61.4	59.1	44.9	60.0	58.0	54.0	60.7	61.4	59.3
Senegal 2005	29.6	27.4	20.9	34.1	30.0	23.9	33.9	23.8	23.3	20.7	42.7	28.9
Tanzania 2004	27.8	30.1	19.5	28.1	28.0	24.9	27.7	28.9	27.7	28.5	27.2	27.8
Uganda 2006	28.5	32.9	29.8	29.1	30.2	12.2	29.4	28.5	29.4	32.1	25.8	29.1
Zimbabwe 2005-06	0.9	0.6	1.2	0.8	1.1	0.7	1.1	0.7	0.7	0.7	1.2	0.9
West Asia/Europe												
Armenia 2005	0.1	0.8	0.0	0.0	0.2	0.0	0.1	0.0	0.2	0.2	0.0	0.1
Moldova Republic 2005	1.3	0.5	0.0	1.2	0.6	1.1	1.1	0.0	0.1	0.9	1.9	1.1
South and Southeast Asia												
Bangladesh 2004	83.7	84.4	87.1	83.3	85.0	85.6	85.6	79.6	86.7	81.5	85.2	84.3
Cambodia 2005	25.4	26.5	32.3	24.8	27.2	23.6	28.5	23.9	21.6	26.5	28.4	25.5
India 2005-06	29.5	30.7	31.1	27.8	32.5	28.1	27.3	30.6	35.6	29.1	21.2	29.9
Indonesia 2002-03	31.4	23.1	20.8	33.1	31.7	25.7	31.5	4.2	26.0	35.4	22.4	31.0
Nepal 2006	22.1	24.8	33.5	22.6	25.8	21.8	18.7	24.0	25.0	21.8	23.6	23.6
Philippines 2003	1.5	1.7	0.4	1.8	1.3	0.7	1.4	1.6	1.3	1.7	1.0	1.4
Latin America and the Caribbean												
Bolivia 2003	0.6	0.6	0.6	0.7	0.5	0.7	0.7	0.3	0.2	1.1	0.7	0.6
Haiti 2005	1.2	2.3	2.9	1.5	1.1	2.3	0.8	2.6	2.3	1.4	0.6	1.4

3.3.2 Heaping of Male Respondents' Birth Year

While no country shows a Myers' Index over twice the median value of 11.6, there are five countries, all in sub-Saharan Africa, that show large excesses at digit 0 or 5. These are Benin, Chad, Guinea, Niger, and Nigeria. The correlation between Myers' Index and the percent excess at 0 or 5 is lower ($r^2 = 0.81$) than that found for data on women, indicating that heaping of ages for men is less likely to occur on age 0 or 5 for men.

Table 3.11: Heaping of male respondents' birth year, DHS/AIS 2003-06

Country/year	Myers' Index	Percent excess at final digit 0 or 5
Sub-Saharan Africa		
Benin 2006	17.6	15.4
Burkina Faso 2003	11.9	4.8
Cameroon 2004	12.7	3.9
Chad 2004	16.3	9.7
Congo 2005	11.9	6.4
Ethiopia 2005	14.7	9.2
Ghana 2003	12.4	3.7
Guinea 2005	15.0	9.6
Kenya 2003	10.5	3.4
Lesotho 2004	13.5	4.4
Madagascar 2003-04	10.0	3.9
Malawi 2004	9.2	2.5
Mozambique 2003	11.6	6.0
Niger 2006	15.3	9.5
Nigeria 2003	15.1	12.5
Rwanda 2005	11.4	5.8
Senegal 2005	13.3	5.3
Tanzania 2004	10.8	4.6
Uganda 2006	10.9	4.6
Zimbabwe 2005-06	14.1	6.4
West Asia/Europe		
Armenia 2005	7.2	3.9
Moldova Republic 2005	7.8	2.6

continued

Table 3.11 (continued). Heaping of male respondents' birth year, DHS/AIS 2003-06

Country/year	Myers' Index	Percent excess at final digit 0 or 5
South and Southeast Asia		
Bangladesh 2004	9.3	4.5
Cambodia 2005	11.7	7.5
India 2005-06	10.6	6.1
Indonesia 2002-03	6.5	4.1
Nepal 2006	9.7	3.1
Philippines 2003	9.0	4.1
Latin America and the Caribbean		
Bolivia 2003	10.0	3.2
Haiti 2005	12.5	4.6

Differentials in Myers' Index for Age of Men

Age heaping of men's age is associated with rural place of residence and with the use of a translator during the interview. Malawi, Mozambique, Senegal, and Haiti are exceptions, where urban data quality is associated with higher Myers' Indices. The number of visits to the household is positively associated with higher indices in only a few countries (Burkina Faso, Ethiopia, Mozambique, Rwanda, Senegal, Tanzania, Uganda, and Armenia). Data quality is weakly associated with the other variables shown in Table 3.11.1.a and Table 3.11.1.b.

Table 3.11.1.a: Differentials in age heaping for men, DHS/AIS 2003-06

Myers' Index for age heaping among men by residence, use of translator, language of questionnaire and interviewer, and language of interview and respondent's mother language, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same	Same/Other	Different	
Sub-Saharan Africa										
Benin 2006	12.9	22.4	30.1	16.8	13.0	21.4	na	na	na	17.6
Burkina Faso 2003	11.6	12.0	na	na	na	na	na	na	na	11.9
Cameroon 2004	13.6	11.9	15.4	12.7	13.7	10.8	na	na	na	12.7
Chad 2004	15.1	17.9	na	na	na	na	na	na	na	16.3
Congo 2005	11.8	12.3	na	na	na	na	na	na	na	11.9
Ethiopia 2005	13.3	16.3	19.8	13.4	13.3	19.7	13.0	21.5	15.8	14.7
Ghana 2003	12.3	12.4	16.1	12.4	12.6	13.6	11.6	13.5	13.4	12.4
Guinea 2005	12.5	17.4	25.2	14.8	14.8	15.6	na	na	na	15.0
Kenya 2003	8.2	11.7	22.5	10.5	10.7	11.6	12.0	36.7	8.4	10.5
Lesotho 2004	14.9	13.5	50.0	13.7	na	na	13.5	na	32.9	13.5
Madagascar 2003-04	7.5	14.0	na	na	na	na	na	na	na	10.0
Malawi 2004	12.3	8.7	13.1	9.2	9.2	12.1	10.8	na	7.0	9.2
Mozambique 2003	15.2	9.6	na	na	na	na	na	na	na	11.6
Niger 2006	11.2	19.7	17.5	15.3	14.3	17.5	na	na	na	15.3
Nigeria 2003	11.8	18.9	19.4	15.0	na	na	na	na	na	15.1
Rwanda 2005	10.7	11.7	50.0	11.4	na	na	na	na	na	11.4
Senegal 2005	15.1	12.7	na	na	na	na	na	na	na	13.3
Tanzania 2004	11.7	10.6	na	na	na	na	na	na	na	10.8
Uganda 2006	9.1	11.2	18.5	10.9	10.9	11.3	11.5	9.5	11.0	10.9
Zimbabwe 2005-06	10.5	16.0	27.1	14.2	14.3	10.7	na	na	na	14.1
West Asia/Europe										
Armenia 2005	7.4	7.2	na	na	na	na	na	na	na	7.2
Moldova Republic 2005	7.8	8.9	19.4	7.9	7.5	16.5	7.7	na	41.9	7.8

continued

Table 3.11.1.a (continued). Differentials in age heaping for men, DHS/AIS 2003-06

Country/year	Residence		Translator used in interview		Language of questionnaire and interviewer		Language of interview and respondent			Total
	Urban	Rural	Yes	No	Same	Different	Same/Other	Different		
South and Southeast Asia										
Bangladesh 2004	8.9	9.6	na	na	na	na	na	na	na	9.3
Cambodia 2005	12.2	11.5	na	na	na	na	na	na	na	11.7
India 2005-06	9.1	12.5	na	na	na	na	na	na	na	10.6
Indonesia 2002-03	4.9	7.9	na	na	na	na	na	na	na	6.5
Nepal 2006	11.7	9.3	70.0	9.8	9.7	15.7	10.3	19.3	9.1	9.7
Philippines 2003	9.8	8.2	16.5	8.8	8.0	13.5	9.3	na	9.2	9.0
Latin America and the Caribbean										
Bolivia 2003	9.7	10.5	na	na	na	na	na	na	na	10.0
Haiti 2005	14.0	11.3	na	na	na	na	na	na	na	12.5

Table 3.11.1.b: Differentials in age heaping for men, DHS/AIS 2003-06

Myers' Index for age heaping among men by number of visits to household, time of day the interview was conducted, number of days the survey team spent in the field in the particular cluster, and timing of interview during the course of fieldwork, DHS/AIS 2003-06

Country/year	Number of visits to household			Time of day in the field			Number of days in cluster		Timing of interview during the course of fieldwork			Total
	1	2	3+	Morning	Afternoon	Evening	<4	4+	Beginning	Middle	End	
Sub-Saharan Africa												
Benin 2006	18.1	13.3	19.6	17.8	18.6	16.4	17.7	17.5	19.0	17.1	18.1	17.6
Burkina Faso 2003	11.6	16.4	25.4	11.9	11.2	14.8	11.7	12.9	9.6	12.4	13.6	11.9
Cameroon 2004	12.9	14.7	8.3	11.3	14.1	12.8	14.0	10.7	13.9	11.8	12.5	12.7
Chad 2004	17.3	13.0	15.2	17.7	14.6	19.0	18.1	13.3	13.8	17.7	20.6	16.3
Congo 2005	12.8	12.0	10.3	12.4	11.1	12.4	12.6	11.6	11.5	13.8	11.0	11.9
Ethiopia 2005	14.7	16.1	18.5	14.2	14.4	18.8	13.3	16.1	14.9	14.0	16.6	14.7
Ghana 2003	12.4	12.7	19.5	13.1	11.9	11.3	12.3	13.1	11.8	13.4	12.9	12.4
Guinea 2005	15.1	18.3	14.7	13.7	16.4	17.3	15.5	15.1	13.0	17.2	16.7	15.0
Kenya 2003	11.6	12.0	7.4	10.9	10.8	11.6	11.0	10.2	11.9	11.4	7.5	10.5
Lesotho 2004	13.6	13.8	17.5	14.9	11.8	13.3	14.2	11.6	12.8	14.4	13.1	13.5
Madagascar 2003-04	9.9	15.1	15.8	9.7	9.8	13.1	9.9	10.9	11.7	10.5	7.8	10.0
Malawi 2004	9.4	9.1	17.1	9.4	9.1	14.4	9.4	8.9	8.6	9.0	12.9	9.2
Mozambique 2003	11.7	12.4	19.8	11.2	12.5	16.1	11.7	24.6	12.8	10.5	11.7	11.6
Niger 2006	15.4	12.7	19.4	15.8	14.6	16.1	15.5	15.5	10.5	17.2	18.6	15.3
Nigeria 2003	15.1	14.8	16.9	15.2	16.3	15.0	15.2	14.7	13.6	14.5	21.6	15.1
Rwanda 2005	11.1	13.2	22.2	9.7	12.4	18.6	12.4	9.8	9.3	9.7	15.3	11.4
Senegal 2005	12.7	15.4	18.0	11.9	14.6	12.3	12.7	13.9	10.4	14.3	16.2	13.3
Tanzania 2004	10.1	12.9	25.3	12.3	9.4	11.4	10.7	18.1	10.6	10.2	12.3	10.8
Uganda 2006	9.8	16.4	19.1	11.5	10.1	17.8	9.9	14.3	11.3	10.3	11.5	10.9
Zimbabwe 2005-06	13.6	19.3	16.6	14.6	14.0	13.3	14.8	13.6	15.0	13.9	13.5	14.1
West Asia/Europe												
Armenia 2005	7.0	17.7	27.4	19.1	7.9	7.1	7.0	38.9	7.4	8.0	11.2	7.2
Moldova Republic 2005	7.3	7.5	15.7	7.7	8.3	8.4	7.8	21.8	6.9	8.5	8.7	7.8
South and Southeast Asia												
Bangladesh 2004	8.4	12.1	10.5	8.6	10.3	9.7	8.8	11.4	8.3	10.0	10.4	9.3
Cambodia 2005	11.4	17.2	18.0	11.6	11.2	15.6	9.4	12.9	12.1	10.8	12.8	11.7
India 2005-06	10.7	10.4	10.2	10.0	11.5	10.0	11.5	10.5	10.9	10.2	10.9	10.6
Indonesia 2002-03	6.6	12.6	12.8	6.5	6.9	6.0	6.5	10.4	5.4	7.2	7.0	6.5
Nepal 2006	10.2	9.6	15.4	9.3	11.1	12.3	10.6	9.8	10.8	10.5	10.4	9.7
Philippines 2003	9.4	8.1	8.0	8.5	9.4	9.2	8.3	12.8	7.9	9.8	14.2	9.0
Latin America and the Caribbean												
Bolivia 2003	11.1	8.4	5.3	9.7	10.4	9.7	10.2	9.3	10.3	10.0	9.5	10.0
Haiti 2005	12.6	13.0	12.3	12.0	13.7	9.8	12.2	12.9	11.2	15.2	11.1	12.5

4

Discussion and Conclusions

The purpose of this analysis was to try to discern whether fieldwork-related factors were associated with the quality of the data collected in the DHS program. Broadly, the findings of this report confirm expectations: fieldwork in rural areas is often more subject to data quality concerns, and care must be taken to ensure that language does not pose a barrier to the collection of high-quality data. More specifically, the results provide opportunities for individual countries to examine the results in light of their field practices and make adjustments as needed for future DHS surveys.

Most of the general recommendations that could be made on the basis of the results of this analysis are already standard practice in the DHS surveys. However, it is useful to be reminded of their importance:

1. All due emphasis should be placed on hiring interviewers based on their knowledge of local languages, proportional to the distribution of languages among clusters.
2. Ensuring that questionnaires are translated into as many local languages as practicable is likely to be a useful step toward improving data quality.
3. The beginning and end of the fieldwork period may be particularly sensitive times, as interviewers are first learning the practice in the beginning, and toward the end of fieldwork may be fatigued and want to go back to their families. These realities call for increased, careful supervision of fieldwork during these sensitive periods, with an eye to ensuring that fieldworkers have the support that they need to do their job well.

Country-specific anecdotal observations can also provide insights for improving data quality. For example, in Albania, by making appointments to conduct interviews with eligible urban men after business hours, improved response rates for men were obtained.

In many instances, data quality was associated either positively or negatively with the number of visits to the household. Care must be taken when interpreting these findings, with thoughtful consideration given to the country-specific context in which the results were obtained. Without intimate firsthand knowledge of how fieldwork-related decisions were arrived at in each instance, it is not possible to know why, for example, heaping of age-related data increases with the number of visits to the household in some countries; the findings may in fact be confounded by other variables such as urban residence. Nevertheless, these findings may be useful in terms of indicating to the survey implementing agency the areas where they could make some improvements in data quality, perhaps by increasing supervision when more than one visit to a household is required.

Similarly, some differences in data quality were found to be associated with the number of days spent in the cluster doing fieldwork. However, the differences were not unidirectional, and general recommendations cannot be made about the ideal number of days that a team should spend in a cluster. Nevertheless, this information may help DHS staff and implementing agencies to identify country-specific fieldwork practices that could be modified to improve data quality.

Regarding the collection of biological data, there was some evidence to suggest that non-response to both HIV and anemia biomarkers increased throughout the day and was most pronounced when data were collected in the evening. Making a concerted effort to get all biological data collection completed earlier in the day may have the effect of improving response rates; however, it is recognized that there may be little room to negotiate the time of day the interview occurs.

In sum, while there are several key general recommendations for ensuring the quality of DHS data, it is critical that implementing agencies and DHS staff alike ensure a continuous assessment of the situation on the ground during the fieldwork period. Ensuring rapid feedback from the field allows for course adjustments to be made in an efficient manner, thus maintaining the highest possible standards of data quality.

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