THE MEASUREMENT OF INFECUNDITY WITH SURVEY DATA: STRATEGIES AND IMPLICATIONS

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Infecundity – a term that encompasses primary and secondary infertility – is a fundamental reproductive component (Leridon 1977, Wood 1994). It is of interest in its own right, with many consequences for other facets of reproduction and for psychological and social well-being. In addition, infecundity must be taken into account when investigating other reproductive phenomenon, for example when estimating unmet need for contraception and when considering fertility at later reproductive ages. Hence over the decades demographic surveys (such as the Demographic and Health Surveys [DHS]) have included items that inquire directly about infecundity – "self-reported infecundity" – and they have collected behavioral information from which a woman's fecundity status can be inferred.

The goal of this research is to consider alternative survey-based strategies for measuring infecundity, as offered by the DHS. We will assess the implications of alternative measurement strategies not only for estimated patterns of infecundity but also implications for estimated levels of other key indicators, in particular unmet need for contraception (a Millennium Development Goals [MDG] indicator). We will also assess the alternative DHS estimates against age-patterns of infecundity that have been derived via indirect estimation and/or from careful prospective and biomedical studies (Larsen and Menken 1989, Wood 1994, Larsen 2001, Leridon 2008).

In some respects this research is an update of Rutstein and Shah's (2004) comparative analysis of DHS data. But this research goes well beyond Rutstein and Shah by: (a) Analyzing a far larger body of DHS data, including all DHS surveys since 2000 (Rutstein and Shah analyze DHS data from the late 1990s only); (b) Comparing a larger number of alternative measures of infecundity and conducting a more probing examination of the resulting variation in estimates; (c) Considering the implications of the alternative measurement strategies for other facets of reproduction, specifically unmet need for contraception.

Data and Methods

DHS offers four strategies for measuring infecundity that have been employed in recent analyses. The first strategy relies entirely on attitudinal data (self-report of infecundity), the second strategy is a blend of attitudinal and behavioral data, and the third and fourth strategies are based entirely on behavioral variables. The alternative criteria for identifying infecund women are as follows:

1. When questioned about preferences for another child, women respond "can't get pregnant" OR when questioned about the reason for not intending to use contraception in the future women respond "menopausal/hysterectomy"
2. When questioned about the elapsed time since last menstrual period: last menstrual period ≥ 6 months OR "menopausal/hysterectomy" OR "never menstruated" OR "last period was before last birth" and last birth was 5+ years ago[1]
3. Women were first married 5+ years ago, have no children in past 5 years, and have never used a contraceptive method
4. Where monthly calendar data are available: women have been continuously married and not using contraception for past 5 years, have no birth in past 5 years, and are not currently pregnant

In the paper, we will provide a concise yet thorough review of these four measures – the questionnaire items on which they are based, and the algorithms used to convert the responses to specific questionnaire items into measures of infecundity. This is an important component of this research. The eventual estimates of infecundity hinge on questionnaire design, for example whether self-report of infecundity is asked directly of the respondent or must be volunteered by the respondent. We will also discuss the very important and fundamental issue of contraceptive use "masking" infecundity.

The analysis will be conducted on more than 160 DHS surveys fielded since 1990 (DHS Phases II – VI). To add further perspective on consequences of questionnaire design, we will also make limited and selective use of data from several other survey programs that have used measurement strategies that differ in important respects from the DHS (e.g. how self-reports of infecundity are obtained), namely the World Fertility Surveys (WFS) of the late 1970s and early 1980s, the Reproductive Health Surveys (RHS) conducted in Eastern Europe and Latin American from the 1990s to the present, and the PAPFAM surveys in the Arab region conducted from the mid-1990s to the present.

Analysis

The analysis will proceed in three stages.

In the first stage, using DHS data we will implement the alternative measurement strategies specified above, and make comparisons across region and country and across time within country. These comparisons will provide a first rough assessment of the validity and reliability of the four alternative strategies for measuring infecundity. Substantial cross-country variability, especially among countries

[1] The 5+ years ago criterion is used to distinguish infecundity from postpartum amenorrhea.

thought to have similar levels of infecundity, suggests invalid measurement. Substantial within-country variability is indicative of unreliable measurement.

We have not yet carried out such detailed comparisons, but we have calculated the alternative measures (including various combinations) for 161 DHS surveys. These are shown in the attached Table 1. (Note: the column labeling corresponds to the four alternatives specified above.) Mean percentages across the 161 surveys are as follows:

Mean Percentage of Women Infecund (n = 161 DHS surveys)

a. Self-report [#1]	5.5 %
b. Time since last menstrual period [#2]	6.5 %
c. Behavioral [#3]	10.0 %
d. Behavioral (calendar) [#4]	10.6 %
e. #1 and #3	12.7 %
f. #2 and #3	14.2 %
g. #1 and #2	8.8 %
h. #1, #2, #3	15.5 %
i. #1, #2, #3, #4	16.4 %

The important basic conclusion is that the choice of measure does make a difference empirically. The means in the above listing range from 5.5% to 16.4%. Certainly one can make a compelling argument for relying on self-report alone (mean = 5.5%), but also a compelling argument for using a blend of self-report and behavioral information (mean = 15.5%). The estimated prevalence of infecundity varies by ten percentage points on average between these two defensible alternatives.

In the second stage of the analysis, we will evaluate the alternative DHS estimates of infecundity against what are believed to be actual levels of the incapacity to conceive, as obtained from demographic analysis and biomedical research (Larsen and Menken 1989, Wood 1994, Leridon 2008). Age-patterns of infecundity will be a focus in this stage of the analysis.

In the third stage of the analysis, we will consider the implications of the alternative strategies for measuring infecundity for at least one other key reproductive parameter, namely unmet need for contraception. Note that the common algorithms for unmet need proceed by first setting aside women who are currently using contraception and then setting aside infecund women. That is, infecund women are not allowed by the algorithm to have unmet need for contraception, an entirely justifiable decision on conceptual grounds. But in practice, if one employs definitions #2 - #4 specified above, many women who are classified as "infecund" are non-users who state that they do not want another child (or want to

delay the next birth), i.e. women who would otherwise be classified as having "unmet need for limiting". The upshot is that a ten percentage-point variation (5.5% vs. 15.5%) in average levels of infecundity may have substantial and meaningful impact on the estimated percentages of women with unmet need.

Contribution to Knowledge

The DHS, WFS, RHS, and PAPFAM survey programs have collected a wealth of information on infecundity in more than one hundred countries and across multiple decades. There has been no recent effort, however, to take advantage of this accumulated body of data to ask how infecundity might most accurately be measured, or to use these data to generate a comprehensive portrait of variation in infecundity (by age, and across society). This research will contribute to the literature by examining with some care the sensitivity of the estimates to the various estimation strategies that have been applied to demographic survey data, and by providing updated country-specific estimates of the prevalence of infecundity.

Unmet need for family planning has recently been adopted as an MDG indicator. Before this occurred, for at least three decades levels and trends in unmet need have influenced the formulation of population policy, and in particular decisions to invest in family planning services, and unmet need has been used as one criterion for evaluating the success of such investments. Our preliminary analysis reveals that estimates of unmet need can vary dramatically as one employs alternative survey measures of infecundity. Hence the findings from this research will cast light on the validity and reliability of the unmet need indicator as presently constructed, and it will contribute to ongoing efforts to revise and standardize the indicator. With this research, we intend to contribute to improvement in one of the most widely-used indicators for family planning and maternal and child health policies and programs across the world.

References

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Table 1. Estimates of Infecundity (Percent of In-Union Women): Four Alternative Measures

[see text for alternative definitions]

	Infecundity Definitions									
	#1	**#2**	**#3**	**#4**	**#1, #3**	**#2, #3**	**#1, #2**	**#1, #2, #3**	**#1, #2, (#3/#4)**	Number Women
Country and Year										
Albania, 2009	6.6	7.1	5.2	0.0	10.4	11.5	9.7	13.4	13.4	5,001
Armenia, 2000	5.5	4.7	10.2	17.5	13.6	13.7	7.4	15.2	20.5	4,125
Armenia, 2005	8.3	6.9	12.5	21.7	17.2	16.8	10.6	18.9	24.9	4,044
Azerbaijan, 2006	11.1	7.7	13.3	0.0	20.4	18.6	12.8	21.5	21.5	5,269
Bangladesh, 1994	4.9	5.6	9.5	11.4	11.3	12.6	7.5	13.5	14.6	8,840
Bangladesh, 1997	4.9	6.4	7.9	10.5	9.7	11.8	8.0	12.6	14.3	8,307
Bangladesh, 2000	4.8	7.7	6.5	9.8	8.8	12.3	9.0	12.9	15.0	9,540
Bangladesh, 2004	5.6	9.3	5.7	8.9	8.9	12.9	10.2	13.4	15.4	10,436
Bangladesh, 2007	6.2	9.4	6.5	0.0	10.3	13.7	10.3	14.2	14.2	10,192
Benin, 1996	6.4	6.9	11.2	0.0	14.0	14.5	8.3	15.2	15.2	4,198
Benin, 2001	5.0	5.4	9.0	0.0	11.6	11.9	6.8	12.9	12.9	4,563
Benin, 2006	6.5	6.3	10.4	0.0	13.6	13.9	8.8	15.5	15.5	13,403
Bolivia, 1994	7.9	7.1	8.5	10.8	12.7	12.4	9.8	14.0	14.9	5,334
Bolivia, 1998	7.2	6.4	8.3	0.0	12.5	11.9	9.3	14.0	14.0	6,649
Bolivia, 2003	6.4	9.1	6.7	0.0	10.7	13.5	10.6	14.5	14.5	10,569
Brazil NE, 1991	5.1	3.8	8.1	10.2	10.4	10.7	7.2	12.3	13.6	3,541
Brazil, 1996	4.4	4.2	3.1	6.8	6.1	6.6	6.9	8.5	10.3	7,584
Burkina Faso, 1993	5.8	5.3	7.7	0.0	11.1	11.3	7.7	12.7	12.7	5,326
Burkina Faso, 1999	6.0	6.3	12.9	0.0	14.2	14.9	8.4	15.6	15.6	5,181
Burkina Faso, 2003	5.2	5.8	13.4	0.0	14.7	15.7	7.3	16.3	16.3	9,655
CAR, 1994	8.3	6.9	19.5	0.0	22.7	22.0	9.9	23.7	23.7	4,083
Cambodia, 2000	12.6	7.7	19.5	0.0	27.1	23.9	16.4	30.4	30.4	9,071
Cambodia, 2005	6.2	8.1	12.7	0.0	15.7	18.1	10.8	19.8	19.8	10,087
Cameroon, 1991	9.9	5.5	16.9	0.0	20.5	18.3	11.4	21.2	21.2	2,868
Cameroon, 1998	5.8	4.4	15.1	0.0	16.5	16.7	7.3	17.7	17.7	3,676
Cameroon, 2004	5.7	4.2	10.9	0.0	13.5	13.1	7.1	14.6	14.6	7,166
Chad, 1997	7.3	6.3	16.2	0.0	17.5	17.5	9.0	18.3	18.3	5,832
Chad, 2004	9.4	7.4	14.7	0.0	17.8	16.4	11.1	18.7	18.7	4,663
Colombia, 1990	5.7	5.3	5.1	7.6	8.5	9.1	8.7	11.1	12.2	4,450
Colombia, 1995	3.5	3.2	3.4	6.1	6.0	6.1	5.7	8.0	9.4	6,097
Colombia, 2000	3.7	5.7	2.0	5.4	5.0	7.3	6.7	8.0	9.8	5,935
Colombia, 2005	4.1	3.6	1.7	5.5	5.3	5.2	6.7	7.8	9.6	19,762
Comoros, 1996	4.4	5.7	17.1	0.0	18.4	19.4	7.0	20.2	20.2	1,634
Congo Brazzaville,	6.6	3.6	2.4	0.0	8.1	5.5	7.8	9.1	9.1	3,979

2005										
Congo D. R., 2007	8.6	7.9	10.2	0.0	15.9	15.4	12.6	19.2	19.2	6,622
Cote D'Ivoire, 1994	6.2	4.8	22.1	0.0	23.1	23.0	7.3	23.7	23.7	5,271
Cote D'Ivoire, 1998	5.6	3.5	13.4	0.0	14.8	14.5	6.3	15.5	15.5	1,863
Dominican Rep, 1991	2.8	6.1	7.6	8.7	8.8	11.8	7.1	12.5	13.3	4,083
Dominican Rep., 1996	3.5	3.6	5.9	7.9	8.1	8.6	6.6	10.6	12.3	4,983
Dominican Rep, 1999	3.5	9.0	3.7	6.5	5.9	11.1	10.0	11.8	13.5	728
Dominican Rep, 2002	3.3	9.0	4.9	7.0	6.7	12.7	10.0	13.2	14.2	13,996
Dominican Rep, 2007	2.2	10.1	3.6	0.0	5.0	13.0	10.8	13.4	13.4	15,417
Egypt, 1992	4.8	5.2	8.5	11.6	11.3	11.8	7.0	12.9	14.4	9,153
Egypt, 1995	5.5	5.9	7.8	13.3	10.9	12.0	7.0	12.5	15.9	3,104
Egypt, 2000	5.7	7.5	6.5	10.7	10.2	12.2	8.5	12.8	14.8	14,382
Egypt, 2003	5.0	7.0	5.3	8.9	8.6	11.1	8.5	11.9	13.6	8,445
Egypt, 2005	5.1	7.8	5.2	9.2	8.8	11.9	9.3	12.8	14.8	18,187
Egypt, 2008	4.0	6.8	4.6	8.6	7.7	10.8	7.8	11.3	13.6	15,396
Eritrea, 1995	6.0	9.0	15.0	0.0	16.4	18.0	10.3	18.5	18.5	3,371
Eritrea, 2002	4.5	6.6	15.6	0.0	17.1	18.0	7.9	18.8	18.8	5,733
Ethiopia, 2000	4.6	8.2	15.4	0.0	16.2	18.0	9.2	18.3	18.3	9,789
Ethiopia, 2005	4.6	9.9	13.5	13.4	14.3	17.9	11.2	18.3	18.1	9,066
Gabon, 2000	4.7	2.8	9.9	0.0	12.8	11.6	5.9	13.8	13.8	3,348
Ghana, 1993	5.9	4.6	11.1	0.0	13.2	13.3	7.5	14.4	14.4	3,204
Ghana, 1998	5.7	5.6	14.4	0.0	16.5	17.1	7.6	17.8	17.8	3,131
Ghana, 2003	5.0	5.9	12.1	0.0	14.3	15.6	7.5	16.5	16.5	3,549
Ghana, 2008	4.1	5.9	11.6	0.0	13.6	15.0	7.1	15.8	15.8	2,876
Guatemala, 1995	7.2	8.9	11.7	14.0	13.9	16.2	11.2	17.0	18.1	7,984
Guatemala, 1999	4.8	8.7	9.6	12.0	11.4	14.9	10.1	15.7	17.0	3,964
Guinea, 1999	7.5	6.4	20.8	0.0	22.5	22.6	9.7	24.0	24.0	5,561
Guinea, 2005	6.8	6.9	20.1	0.0	22.1	22.4	9.4	23.7	23.7	6,292
Haiti, 1994	6.9	6.7	15.7	0.0	17.1	17.7	8.5	18.3	18.3	3,113
Haiti, 2000	4.5	8.4	15.3	0.0	16.4	20.2	9.2	20.6	20.6	5,958
Haiti, 2005	4.6	7.5	11.1	0.0	13.0	16.2	8.7	16.8	16.8	6,323
Honduras, 2005	3.4	7.7	4.0	0.0	6.1	10.5	8.5	11.0	11.0	11,613
India, 1993	5.9	8.7	15.0	0.0	16.2	19.4	10.5	20.0	20.0	84,328
India, 1999	5.5	9.5	11.9	0.0	13.3	17.7	11.0	18.3	18.3	84,682
India, 2006	5.0	9.9	9.9	12.0	11.7	16.8	11.1	17.4	18.5	93,089
Indonesia, 1991	5.0	8.5	13.4	17.0	15.2	18.0	9.3	18.4	20.9	21,109
Indonesia, 1994	3.2	9.2	10.3	15.4	11.8	16.8	9.5	16.9	20.8	26,186
Indonesia, 1997	4.0	11.3	9.5	15.2	11.8	18.7	12.5	19.5	23.4	26,886
Indonesia, 2002	5.4	14.0	8.9	15.4	12.0	21.0	16.4	22.3	26.4	27,857
Indonesia, 2007	4.0	17.4	7.2	14.5	10.0	23.1	18.4	23.8	28.7	30,931
Jordan, 1990	4.6	3.4	6.7	9.2	9.1	8.9	6.2	10.6	12.1	6,168
Jordan, 1997	3.0	2.8	4.9	8.1	7.0	7.2	4.2	8.1	10.2	5,337
Jordan, 2002	4.6	2.9	5.3	9.2	8.6	7.6	5.5	9.4	11.3	5,706

Jordan, 2007	3.3	2.6	5.6	0.0	7.7	7.8	4.7	9.0	9.0	10,354
Kazakhstan, 1995	6.1	4.5	6.0	0.0	10.2	9.1	7.3	11.1	11.1	2,507
Kazakhstan, 1999	7.9	6.7	5.3	11.1	11.1	10.9	10.2	13.4	16.1	3,018
Kenya, 1993	4.7	6.2	10.2	0.0	12.0	13.9	8.6	15.1	15.1	4,246
Kenya, 1998	5.4	8.4	9.5	12.4	11.8	15.4	10.6	16.4	17.9	4,834
Kenya, 2003	3.9	8.0	7.1	9.3	8.8	13.3	9.5	14.0	15.3	4,919
Kenya, 2008	2.8	7.4	6.4	0.0	7.8	12.2	8.4	12.8	12.8	4,928
Kyrgyz Republic, 1997	7.3	4.6	4.6	0.0	9.3	8.1	8.7	10.7	10.7	2,675
Lesotho, 2004	3.3	7.8	6.4	0.0	8.8	12.9	9.1	13.8	13.8	3,709
Liberia, 2007	4.6	6.3	18.6	0.0	19.9	21.3	7.6	21.7	21.7	4,540
Madagascar, 1992	5.0	3.6	15.3	0.0	16.4	16.3	5.8	17.0	17.0	3,736
Madagascar, 1997	5.0	5.1	15.1	0.0	17.3	17.8	7.5	19.1	19.1	4,435
Madagascar, 2004	5.0	7.3	13.6	0.0	15.8	18.5	9.1	19.7	19.7	5,140
Madagascar, 2008	4.2	10.5	10.3	0.0	12.0	18.5	11.6	19.1	19.1	12,039
Malawi, 1992	8.2	5.5	13.3	0.0	16.3	16.6	10.7	18.7	18.7	3,492
Malawi, 2000	4.1	5.0	10.0	0.0	12.2	13.3	7.4	15.0	15.0	9,452
Malawi, 2004	3.1	6.2	7.9	8.8	9.1	12.2	7.6	13.0	13.5	8,312
Mali, 1996	4.9	5.7	16.7	0.0	17.6	18.2	7.2	18.8	18.8	8,222
Mali, 2001	4.1	5.4	14.6	0.0	15.6	16.6	6.7	17.2	17.2	10,723
Mali, 2006	5.6	6.2	15.8	0.0	17.2	17.9	8.2	18.9	18.9	12,365
Mauritania, 2000	9.2	6.3	17.4	0.0	22.1	19.3	12.2	23.4	23.4	4,541
Moldova, 2005	8.5	7.5	5.8	14.5	12.4	12.2	11.3	14.9	20.2	4,937
Morocco, 1992	4.4	4.2	10.1	12.1	12.2	12.2	5.9	13.3	14.4	5,118
Morocco, 2003	6.0	6.6	4.0	0.0	8.6	9.7	8.8	11.2	11.2	8,782
Mozambique, 1997	6.9	4.9	20.1	0.0	21.6	21.3	8.4	22.6	22.6	6,530
Mozambique, 2003	6.8	5.3	11.8	0.0	16.0	15.5	8.6	17.6	17.6	8,736
Namibia, 1992	4.6	7.7	12.6	0.0	14.8	18.0	10.4	19.6	19.6	2,259
Namibia, 2000	5.8	12.2	8.1	0.0	11.4	18.2	15.4	20.4	20.4	2,610
Namibia, 2006	3.4	12.4	5.7	0.0	7.8	16.6	13.6	17.5	17.5	3,451
Nepal, 1996	6.1	7.7	13.4	0.0	14.3	16.9	9.1	17.1	17.1	7,982
Nepal, 2001	4.4	8.1	9.5	0.0	10.7	14.8	8.7	15.0	15.0	8,342
Nepal, 2006	4.7	9.5	8.2	0.0	9.7	14.9	10.0	15.0	15.0	8,257
Nicaragua, 1998	4.2	4.9	5.6	8.9	8.2	9.2	7.3	11.0	13.2	8,045
Nicaragua, 2001	3.3	8.7	4.0	0.0	6.2	11.5	9.7	12.2	12.2	7,424
Niger, 1992	5.8	6.5	17.7	0.0	19.6	20.6	9.6	22.2	22.2	5,561
Niger, 1998	5.3	6.1	14.1	0.0	15.3	16.5	8.2	17.2	17.2	6,382
Niger, 2006	4.3	5.6	11.6	0.0	13.2	14.4	7.3	15.4	15.4	7,941
Nigeria, 1990	5.6	5.5	18.2	0.0	19.5	19.8	9.0	20.9	20.9	6,880
Nigeria, 1999	5.3	8.2	17.4	0.0	19.5	21.4	10.5	22.6	22.6	5,757
Nigeria, 2003	5.9	7.5	15.4	0.0	17.0	18.8	9.5	19.5	19.5	5,336
Nigeria, 2008	4.4	6.3	14.4	0.0	16.0	17.1	8.0	18.1	18.1	23,578
Pakistan, 1991	5.2	5.6	20.5	0.0	22.2	22.0	7.7	23.3	23.3	6,364
Pakistan, 2006	5.0	7.5	13.4	0.0	15.3	17.8	8.9	18.2	18.2	9,556

Paraguay, 1990	8.6	4.9	8.8	11.8	13.3	12.1	10.7	15.2	16.3	3,574
Peru, 1992	8.0	7.0	4.1	6.3	9.8	9.4	9.4	11.1	11.8	8,741
Peru, 1996	6.7	7.2	4.1	7.2	9.0	9.9	9.8	11.9	13.1	16,885
Peru, 2000	6.2	11.1	3.6	7.4	8.3	13.4	12.7	14.6	16.1	15,628
Peru, 2004	6.7	11.9	2.2	6.1	8.0	13.4	13.1	14.4	16.1	6,328
Philippines, 1993	5.8	4.8	11.9	16.3	14.8	14.7	7.5	16.2	19.1	8,961
Philippines, 1998	4.9	4.9	9.3	15.7	12.4	12.7	7.3	14.4	18.6	8,336
Philippines, 2003	6.0	5.0	11.1	17.5	14.8	14.7	8.4	17.0	21.0	8,671
Philippines, 2008	5.1	4.6	9.1	0.0	12.5	12.4	7.0	14.2	14.2	8,418
Rwanda, 1992	7.0	4.0	7.9	0.0	10.9	10.2	9.4	13.1	13.1	3,785
Rwanda, 2000	5.1	3.1	8.4	0.0	11.2	10.1	6.2	12.0	12.0	5,052
Rwanda, 2005	7.2	3.9	8.4	0.0	12.2	10.7	9.1	13.8	13.8	5,510
Senegal, 1993	5.2	4.6	17.4	0.0	18.5	18.6	7.3	19.4	19.4	4,450
Senegal, 1997	6.0	0.0	14.4	0.0	16.5	14.4	6.0	16.5	16.5	5,851
Senegal, 2005	4.2	5.7	15.0	0.0	16.3	17.5	6.8	18.0	18.0	9,866
Sierra Leone, 2008	6.4	10.7	21.3	0.0	24.2	27.5	13.5	29.3	29.3	5,525
South Africa, 1998	4.5	14.9	8.0	0.0	11.3	21.1	16.9	22.6	22.6	5,077
Swaziland, 2006	5.8	11.4	5.0	0.0	9.5	15.2	13.9	17.3	17.3	2,062
Tanzania, 1992	7.6	5.0	15.7	0.0	17.8	17.7	9.6	19.4	19.4	6,038
Tanzania, 1996	4.9	5.2	14.5	0.0	15.9	16.9	7.4	17.9	17.9	5,411
Tanzania, 1999	3.9	5.7	12.3	0.0	13.7	15.2	7.4	16.1	16.1	2,653
Tanzania, 2004	4.3	5.3	10.9	12.2	12.5	14.3	7.4	15.1	15.6	6,950
Togo, 1998	5.6	5.0	7.3	0.0	11.2	10.8	7.1	12.3	12.3	5,819
Turkey, 1993	6.8	4.7	6.2	10.1	10.7	9.7	7.7	11.5	13.4	6,271
Turkey, 1998	7.0	5.7	5.1	10.0	10.3	9.7	8.2	11.3	13.4	5,921
Turkey, 2003	6.3	6.7	4.0	8.5	8.9	9.8	8.2	10.8	13.0	3,902
Turkey, 2008	5.9	6.5	3.1	7.7	8.3	9.1	7.9	10.2	12.1	6,999
Turkmenistan, 2000	8.2	6.3	3.8	11.6	10.2	9.4	10.3	12.2	16.9	4,892
Uganda, 1995	4.5	3.0	10.9	0.0	12.3	12.4	5.7	13.3	13.3	5,136
Uganda, 2000	4.4	4.3	9.1	0.0	10.4	11.8	7.0	12.6	12.6	4,881
Uganda, 2006	3.8	5.6	8.2	0.0	9.4	11.9	7.5	12.6	12.6	5,337
Ukraine, 2007	11.7	6.3	6.3	0.0	15.3	11.9	12.5	16.0	16.0	4,116
Uzbekistan, 1996	3.6	3.7	7.7	0.0	9.7	9.8	4.8	10.6	10.6	3,102
Vietnam, 1997	3.1	3.8	3.7	5.3	5.6	6.5	4.5	6.9	7.7	5,340
Vietnam, 2002	3.2	4.1	2.7	5.1	5.1	6.3	4.8	6.6	7.9	5,338
Yemen, 1997	5.5	4.7	10.5	0.0	13.1	13.4	8.1	15.2	15.2	9,786
Zambia, 1992	6.3	3.9	10.3	0.0	13.8	12.4	7.7	14.9	14.9	4,457
Zambia, 1996	5.7	4.3	9.7	0.0	12.5	12.1	6.9	13.5	13.5	4,902
Zambia, 2002	4.4	3.9	6.4	0.0	9.1	9.2	5.9	10.4	10.4	4,694
Zambia, 2007	3.7	4.7	5.7	0.0	7.9	9.1	5.8	9.8	9.8	4,402
Zimbabwe, 1994	4.8	4.5	6.4	11.4	9.9	10.2	7.3	12.1	15.0	3,788
Zimbabwe, 1999	3.1	4.7	4.7	9.9	6.8	8.6	6.1	9.6	13.4	3,609
Zimbabwe, 2005	3.5	6.7	2.6	7.7	5.4	8.9	8.3	10.1	13.3	5,143

Column Mean:	**5.5**	**6.5**	**10.0**	**4.0**	**12.7**	**14.2**	**8.8**	**15.5**	**16.4**	8700.4
	#1	**#2**	**#3**	**#4**	**#1, #3**	**#2, #3**	**#1, #2**	**#1, #2, #3**	**#1, #2, (#3/#4)**	Number Women
	Infecundity Definitions									

Short Abstract

Infecundity is a fundamental reproductive component, with implications for other facets of reproduction and for psychological and social well-being. But measurement of infecundity via surveys is known to be a challenge. This paper provides a systematic overview of strategies for capturing infecundity using DHS data and the empirical implications of the alternative strategies, singly and in combination. DHS offers both attitudinal (self-report) and behavioral measures of infecundity; four alternatives are examined in this research. We implement these four alternatives in 160+ DHS surveys conducted since 1990. The primary focus is the differences in estimates among the alternative strategies. Cross-national differences and within-country trends over time provide further perspective on the validity and reliability of the alternatives. We also compare the estimates with assumed levels of infecundity by age in the demographic and biomedical literature. Finally, we consider implications of infecundity estimates for other reproductive indicators, specifically unmet need for contraception.