Infertility Service Utilization among Women aged 15-44 in the United States: 2002

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9/22/05

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ABSTRACT

Data from the National Survey of Family Growth are used to examine trends in the use of medical services for infertility among women aged 15-44 in the United States between 1982 and 2002. Preliminary analyses have shown that the percentage of women who had ever used infertility services climbed between 1982 and 1995, but then dropped in 2002. The proposed research will explore demographic and health explanations that may underlie the apparent decrease in prevalence of infertility. For instance, the decline may be related to the baby boom generation aging out of the late reproductive years, or it may be indicative of generally better reproductive health in the population. We examine data on diagnosis and type of service used to gain insight into the trends of infertility service utilization.

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Previous analyses have shown that women who pursue medical help for fertility problems are a highly selective group who are more likely to be married, older, more highly educated and more affluent (Chandra and Mosher 1994; Hirsch and Mosher 1987; Kalmuss 1987; Stephen and Chandra 2000; Wilcox and Mosher 1994). These characteristics of infertility service seekers are reflective of the cost of high end treatments which are prohibitively expensive for populations who are not well-educated, are less affluent, and may be members of a historically disadvantaged racial/ethnic group.

In this poster we will examine trends in the prevalence of infertility service utilization over time to detect overall patterns, and by major subgroups of women aged 15-44. Our primary focus is to examine the receipt of infertility services among women in the total population and for women who reported in 2002 that they were experiencing some fertility problem. We analyze correlates of service-seeking for women with current fertility problems as these women are the most likely to pursue medical help now or in the future.

MATERIALS AND METHODS

This analysis will utilize data from the 1982, 1988, 1995 and 2002 rounds of the National Survey of Family Growth (NSFG). Data from the 2002 cycle will be highlighted in the analysis as the data have been released recently and information on infertility services have not been examined in-depth to date. The NSFG is based on multistage probability samples of the civilian, the household population of women in the

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United States. All cycles of the NSFG have been conducted by the National Center for Health Statistics. Each of the six cycles of the NSFG to date has included women aged 15-44; black women were oversampled in all survey years and Hispanic women were oversampled in 1995 and 2002.

The NSFG has defined two measures of fertility problems: infertility and impaired fecundity. (For a full description of these two measures see Chandra and Stephen 1998.) In order to compare our results with the findings from earlier studies, we include women in this analysis if they fulfill the definitions for either infertility or impaired fecundity. They are referred to in this analysis as women with fertility problems or as "fertility impaired" women.

Although women who have reported fertility problems are the primary focus of the analysis, some tables will show distribution of the population of all women aged 15-44 for comparison purposes. The definition of having an infertility problem includes difficulties encountered by the woman and/or her husband or partner if she is married or is cohabiting. Thus, the respondents are women, but they are reporting about problems encountered by the couple if they are in a stable relationship. Women who are single report only about their own reproductive condition.

The proposed analysis will first present compositional differences over time in the populations of women who report having an infertility problem. Next we will examine the prevalence of various fertility-related conditions among all women and women with current fertility problems. Multivariate logistic regression models will be estimated to assess the joint effect of the independent variables on probability of receipt of infertility services.

Five-year age categories will be utilized except for the youngest age group because there are so few women in the sample below age 25 who know of an infertility problem. The youngest age group for our analyses was 15-29. The multivariate analyses will be further limited to women aged 22-44 because age 22 reasonably allows for all individuals in the analysis to have completed college. The logistic model will include individual level characteristics: age, parity, education, income, availability of health insurance in the past twelve months, and race/ethnicity to predict utilization of infertility services.

PRELIMINARY RESULTS

As seen in Figure 1, the percentage of women aged 15-44 who have ever used infertility services increased from 9 percent in 1982 to 15 percent in 1995, then in 2002 declined to 12 percent, as had been observed in 1988. Because a large cohort of baby boom women aged out of the late reproductive years between 1995 and 2002, 7.3 million women in the United States reported using infertility services, which was a decrease from the 9.3 million women in 1995 who reported using infertility services. This finding is not unexpected; Stephen and Chandra (1998) had predicted that even with steady rates of impaired fecundity, the actual number of women with impaired fecundity would decrease. It follows, therefore, that the number of women seeking infertility services would decline. In order to understand the dynamics of this finding, we now turn to a more detailed examination of the 2002 data.

To gain a better understanding of the use of infertility services it is helpful to distinguish between women who have ever received services and women who state that

they have a current infertility problem. As seen in Table 1, the percentage of women who have used services is highest for the oldest age group among women who have ever received services (19.2%) and in the 30-34 and 35-39 age groups for women with current problems (46.7 and 45.3% respectively). Thus, nearly half of women with a current infertility problem who are in their thirties have sought an infertility service.

A pattern of selectivity for service utilization is evident for all women as well as those with current fertility problems. Among women currently experiencing infertility, service usage is highest among better educated women. Half of all women with at least a college degree have sought services as compared with less than a fifth (18.6%) of women with less than a high school education. Nearly half (48.7%) of women with current fertility problems who are in the highest income category have sought services, but less than a quarter of women (22.4%) in the lowest income category have done so. Among all women and women with current problems, non-Hispanic white women had the highest percentage of utilization of services (13.8% for all women; 39.5% for women with current infertility problems).

We next present data (Table 2) on medical conditions that are related to infertility, both for all women and women with a current fertility problem. Data were collected on medical conditions experienced by the respondents as well as on their husband or partner. Note that women could report that they have experienced (or are experiencing) more than one condition, so the values do not add up to 100%. Problems with ovulation and menstruation are the most commonly cited condition for both groups of women (16.7 % for all women and 33.3% for women with current fertility problems). The second most commonly cited problem was ovarian cysts, followed by sexually transmitted diseases.

Endometriosis was cited by 5.8% of all women and 12% of women with a current fertility problem. Conditions such as blocked tubes, other tubal/pelvic problems, and pelvic inflammatory disease were cited by less than 10 percent of the women with current infertility problems. Male-related problems were mentioned by only 1.6% of all women and by 7.6% of the women with current fertility problems.

As seen in Table 3, among women with current fertility problems the most commonly sought service was advice. Tests could be for the respondent, her husband or partner, or both. (Note that because women could report having received more than one service, the percentages across specific services do not add to the total.)

Although receipt of all infertility service was higher for women in their thirties and forties than for the 15-29 age group, there was variation by age group by type of service. Artificial insemination was the only service in which the percentage was highest for the 40-44 year olds. Women aged 30-34 had the highest percentage using assisted reproductive technologies, which may reflect that success rates are highest for women in their younger reproductive years.

Childless women were more likely to use each of the services, except for help to prevent miscarriage, than were women who had already had a child. Women who were ever-married were much more likely to use all types of services than never married women. Women who were college graduates were more likely to have received all types of services than women without a college degree, and women in higher income group had higher receipt of each type of infertility service than women in the lower income group. Non-Hispanic whites were the most likely to have received each of the services, with the exception that non-Hispanic black women were more likely to have received medical

help to prevent miscarriage. Women with private insurance were the most likely to have
received services, and in fact were the only ones who received the assisted reproductive
techniques.

ADDITIONAL ANALYSES

In order to determine the odds of using infertility services, we will run a bivariate
model and multivariate logistic models for women aged 22-44. We will run three
multivariate models: all women with current fertility problems, ever-married women with
fertility problems, and non-Hispanic white women with fertility problems. This will
allow us to examine fertility service usage among increasingly select populations.
Variables to be included in the multivariate analysis include age at time of interview,
parity, marital status, education, health insurance, and race/ethnicity.

We will then conclude the poster with a discussion based on the major bivariate
and multivariate findings. We are curious to see if patterns of service utilization noted in
earlier NSFG surveys are evident with the 2002 data. We expect to find that marital
status, education, income, and availability of private health insurance continue to be the
main predictors of service utilization. Unfortunately we are not able to disentangle the
socioeconomic determinants of service use by type of service because of the small
number of women who have utilized certain services of interest such as assisted
reproductive technologies. We will put our individual level findings into context with
assisted reproductive clinic data and explain why our prevalence data do not match
period data produced by clinics.

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Table 1. Percentage of women aged 15-44 who have ever used infertility services: United States, 2002

Characteristic	Among all women	Among women with fertility problems
Age at interview		
15-29	4.9	20.7
30-34	17.7	46.7
35-39	17.3	45.3
40-44	19.2	39.7
Parity		
0	7.1	37.3
>=1	15.3	34.6
Parity and age		
0 births, 15-29	2.9	19.7
0 births, 30-34	17.3	59.1
0 births, 35-39	15.2	41.9
0 births, 40-44	29.1	56.8
>=1 births, 15-29	9.0	22.2
>=1 births, 30-34	17.8	39.8
>=1 births, 35-39	17.7	46.8
>=1 births, 40-44	17.5	32.4
Years of education#		
<12	9.2	18.6
12.0	13.1	35.6
13-15	17.4	42.1
>=16	17.2	50.1
Income at interview (as % of poverty)#		
<150%	9.2	22.4
150-299%	12.8	34.1
>=300%	17.6	48.7
Race/Hispanic origin		
Hispanic	8.2	28.5
non-Hispanic white	13.8	39.5
non-Hispanic black	8.4	25.7
non-Hispanic other	8.8	30.4

#Limited to women aged 22-44 at time of interview.
NOTE: These are weighted estimates.

Table 2. Percentage of women aged 15-44 who have ever received an infertility service, by type of condition: United States, 2002

Condition	All Women	Women with Current Fertility Problem
Problems with ovulation/menstruation	16.7	33.3
Ovarian cysts	14.6	25.8
Sexually transmitted diseases#	11.4	17.3
Endometriosis	5.8	12.0
Fibroid tumors/myomas in uterus	6.4	10.3
Pelvic inflammatory disease	5.1	8.8
Semen/sperm problems	1.6	7.6
Blocked tubes	1.3	5.0
Other tubal/pelvic problems	1.0	3.9

NOTE: These are weighted estimates.
Includes gonorrhea, Chlamydia, syphilis, and genital herpes.

Table 3. Percentage of women aged 15-44 with current fertility problems by specified infertility service and by selected characteristics
United States: 2002

Characteristic	Any Service #	Advice	Testing	Ovulation drugs	Tubes	Artificial Insemination ##	Assisted repro. Tech. ###	Medical help to prevent miscarriage
TOTAL	35.7	22.9	19.5	14.8	3.3	5.5	1.0	12.2
Age								
15-29	20.7	9.9	9.7	7.4	0.1	0.8	0.0	8.61
30-34	46.7	32.0	26.0	19.0	2.5	7.4	2.3	12.59
35-39	45.3	33.1	23.4	17.1	5.9	7.9	1.0	15.23
40-44	39.7	25.6	24.5	19.3	6.0	8.4	1.3	14.26
Parity								
0.0	37.3	24.8	23.2	16.6	3.5	6.8	1.1	11.05
>=1	34.6	21.6	17.0	13.5	3.1	4.6	1.0	12.93
Marital Status								
Never-married	14.6	5.3	2.8	1.8	0.0	1.4	0.0	8.49
Ever-married	43.4	29.3	25.7	19.5	4.4	7.0	1.4	13.5
Education####								
<college graduate	34.6	21.2	17.5	12.4	3.5	3.7	0.9	12.77
College graduate	49.1	35.6	32.5	26.6	3.9	12.7	1.8	13.28
Income at interview (as % of poverty level)####								
<300%	28.0	16.0	12.7	9.9	1.3	2.7	0.3	11.02
>=300%	48.7	34.3	31.0	23.0	6.2	9.8	2.1	14.26

Race/ethnicity

Hispanic	28.5	13.2	11.7	11.3	1.9	2.9	0.6	7.78
non-Hispanic white	40.2	28.0	25.1	18.2	4.3	6.8	1.3	12.63
non-Hispanic black	26.1	10.9	5.0	5.6	1.4	1.9	0.8	14.51
non-Hispanic other	25.7	16.6	10.1	6.7	0.0	5.2	0.0	12.51

Health insurance in last 12 months#####

None	21.9	9.7	7.4	5.9	1.4	0.0	0.0	8.74
Private	42.9	29.9	26.4	20.1	4.5	8.0	1.6	13.61
Medicaid	21.2	7.8	4.9	4.1	0.8	1.2	0.0	10.88
Other	24.8	13.2	8.2	3.6	0.0	3.1	0.0	8.78

\# Includes medical help to become pregnant, as well as medical help to prevent miscarriage; also includes other forms of intertility services not shown separately in this table.

\## Includes insemination with donor sperm or with husband's or partner's sperm, as well as other insemination techniques, such as intrauterine insemination.

\### Inclues in vitro fertilization, gamete intrafallopian transfer and other assisted reproduction techniques not shown separately.

\#### Limited to women aged 22-44 at time of interview.

\##### Includes insurance coverage based on military service.

NOTES: Infertility problem include infertility and impaired fecundity. All percentages are weighted estimates. Women can report more than one service.

Figure 1. Percentage of women who have ever used infertility services, United States: 1982-2002