

**Fertility treatments and the young women who use them:
an Australian cohort study**

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Abstract

Objective: To characterise the potential need for and use of fertility treatments in a population-based cohort of young Australian women.

Design, setting, and participants: Structured interviews with 974 members of a cohort constructed by tracing all female infants born at a single general hospital in Adelaide between 1973 and 1975.

Main Outcome Measures: Women's reported pregnancy history, difficulty becoming pregnant, and assistance sought to become pregnant.

Results: Of 657 women aged 30 to 32 who had sought pregnancy, 24% reported difficulty becoming pregnant, and 26% had lost at least one pregnancy. Ovulatory problems (16%) and male fertility problems (13%) were common among those with difficulty. Over half of the women who had difficulty conceiving (58%) sought assistance, largely from specialists (53%). Consultations, tests and education only were common (22%), as were IVF/ICSI (17%). Close to a third (28%) of those seeking assistance were treated only with clomiphene, as were two thirds (67%) of women with ovulatory problems.

Conclusions: In this study, almost a quarter of women in their early thirties reported difficulty conceiving, and over a quarter reported pregnancy loss. This suggests that a significant proportion of young women experience substantial difficulties becoming pregnant. Our findings highlight the need to continue to document the range of women's reproductive experiences and to monitor fertility and treatment-seeking trends.

Introduction

"Fertility treatment" refers to a range of procedures used to assist couples to become pregnant. Treatments vary in intensity and include testing and monitoring of ovulation and semen parameters, medical support of natural conception, and assisted reproductive technology (ART). ART includes additional techniques for the medical or surgical manipulation of gametes, zygotes, or embryos, including: ovulation induction (OI) with clomiphene citrate or gonadotropins; artificial insemination (AI); intrauterine insemination (IUI); *in vitro* fertilization (IVF); gamete intrafallopian transfer (GIFT); and intracytoplasmic sperm injection (ICSI) (Wang, et al., 2009). In Australia, fertility treatment is partly or wholly reimbursable under federal benefits schemes, without restrictions on age, number of treatment cycles, or existing family size. Australia's comparatively unfettered access to these services provides a unique environment for examining the use of fertility treatments.

In 2008, ART treatment was undertaken in approximately 3.3% of all live births in Australia and its use has been increasing by an average of 10% per year for the past 5 years (Wang et al., 2010). One reason for this may be that the number of couples deferring starting a family is increasing, with 14.4% of first-time mothers aged 35 years and older in 2008, compared to 9.1% in 1998 (Laws and Sullivan, 2009).

In 2008, according to the Australian and New Zealand Assisted Reproduction Database (ANZARD), 37% of autologous ART cycles (those which use a woman's own gametes, rather than donated ones) were undertaken by women 34 years and younger (Wang et al., 2010). Presumably, most of these couples have medical difficulties with fertility other than ovarian failure, which is rare in this age group (Morabia and Costanza, 1998). Although ANZARD offers considerable information about the per-cycle usage of ART, it supplies little information about use of ART at the individual level. There is limited information about the use of specific fertility treatments, including non-ART support and ovulation induction, which is not recorded in ANZARD unless insemination or IVF is also undertaken.

In a 2006 postal survey of women aged 28-33 years, the investigators of the Australian Longitudinal Study of Women's Health (ALSWH) found that 17% had tried unsuccessfully for 12 months or longer to become pregnant, of whom 72% had sought help or treatment (Herbert, et al., 2009). ALSWH asked participants whether they used IVF and whether they used "fertility hormones (e.g. Clomid)", but did not obtain further details. The need for accurate information about fertility treatment use has been highlighted recently by concerns about the safety of some of these hormonal treatments for the mother and baby (Elizur and Tulandi, 2008, Jensen, et al., 2009).

Using a cohort study designed specifically to investigate reproductive functioning and fertility of women in their early thirties, we present characteristics of those who experienced difficulty conceiving and those who sought treatment, circumstances underlying such difficulty, and type of intervention sought.

Materials and Methods

Setting

The survey was undertaken in a cohort constructed in 2005 by tracing women born from January 1973 to December 1975 at the Queen Elizabeth Hospital (QEH) in Adelaide, South Australia. The QEH, a general hospital, was at the time of the sampling frame for the cohort the second largest maternity hospital in the state and served an almost exclusively Caucasian middle-class population. The methods for establishment of this cohort have been described previously (March, et al., 2010). The broad aim of the cohort study was to assess intergenerational transmission of reproductive health problems. The study was approved by the University of Adelaide Human Research Ethics Committee.

Participants

From 2199 birth records, 2046 (93.0%) daughters were traced, of whom 62 were deceased or disabled (3.0%), leaving 1984 (90.2%), of whom 974 (49.1%) chose to participate. Birth outcomes of participants were similar to those of other female babies born in the same time period at the QEH in terms of birth weight, multiple births, birth order and country of origin of mother (data not shown). Compared to all QEH mothers in the same time period, a significantly greater proportion of mothers whose daughters participated in the study were in the highest quartile of area-based socioeconomic status (Socio-Economic Indexes for Areas Index of Relative Disadvantage (SEIFA) (Trewin, 2003)) but the magnitude of the difference was less than 1% (all QEH births, $n = 139$, 5.8%; interviewed daughters, $n = 65$, 6.7%; $p < 0.0001$).

Methods

All interviews were conducted by trained nurse-interviewers, usually face-to-face in the home of the participant. Those who lived out of state or in very remote regions were interviewed by telephone ($n=217$, 22.3%). As part of the reproductive histories, women were asked whether they had ever been pregnant, and if so, to provide details of all outcomes: number of live births, stillbirths, miscarriages, ectopic pregnancies, and terminations. For stillbirths, miscarriages and terminations,

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they were asked the year and duration of the pregnancy. Women were also asked if they had ever been diagnosed with polycystic ovarian syndrome (PCOS).

Women were asked a range of demographic questions including ancestry, parental birthplace, highest level of education, and current partnership status. The latter variable was divided into three groups: single (never married); engaged, married or de facto (cohabiting); and separated, divorced or widowed. Women were asked about various health-related behaviours, including smoking. Those who smoked more than one cigarette a day were classed as smokers.

Socioeconomic status (SES) was assessed by applying the 2001 standard SEIFA to the postcode of the participant's residence at the time of interview (Trewin, 2003).

Outcomes

Women who had ever been pregnant, including those pregnant at interview, and who reported one or more miscarriages or stillbirths and no live births were classified as having had only pregnancy loss. Any woman who reported three or more consecutive losses of intrauterine pregnancies before the 28th week of pregnancy was classified as having recurrent pregnancy loss in accordance with the guidelines published by the European Society for Human Reproduction and Embryology (Christiansen, et al., 2005).

Both those who had been pregnant and those who had never been but had tried to conceive, were asked whether they had ever had any difficulty getting pregnant, and if so, were asked to describe the difficulty. Women who reported having difficulty were asked whether they had sought help to assist in becoming pregnant and if so, were asked to describe the assistance.

Analysis

Based on their reproductive histories, women were categorised into four mutually exclusive groups: those who had never tried to conceive and never been pregnant; those had tried to conceive and never been pregnant; those whose pregnancies had all been terminated, who were considered only to have been unintentionally pregnant; and those who had been pregnant at least once without termination, who were considered to have chosen pregnancy (either before or after conception). Women in the “ever chose to be pregnant” or “ever tried to conceive, never pregnant” groups were deemed to have “sought pregnancy” and then further classified according to whether they had difficulty conceiving. The subgroup “ever difficulty conceiving” was then classified according to whether members had ever sought assistance for fertility.

Distributions of sociodemographic and reproductive characteristics were compared in the following pairs: only unintentionally pregnant vs. ever chose to be pregnant; never vs. ever tried to conceive, never pregnant; no vs. ever difficulty conceiving; and never vs. ever sought assistance.

Free-text descriptions were grouped into mutually exclusive categories. Difficulty categories included ovulatory problems (e.g. PCOS, irregular cycle), endometriosis, male fertility problems (e.g. irreversible vasectomy, low sperm count), female anatomic defect (e.g. bicornuate uterus, absent ovary), miscarriage, ectopic pregnancy, unknown cause, and other (e.g. thyroid problem, hyperprolactinemia, lesbian/social infertility). Intervention categories included consultation, tests, or education only, ART (IVF, IUI, ICSI), artificial insemination, medication only, surgery, and no intervention.

Group differences were assessed using chi-squared tests and Fisher's exact test where cells were expected to contain fewer than 5 members (Selvin, 1995).

Results

Of the 974 women participating, 671 (68.9%) had ever been pregnant (including 33 pregnant at interview), and 39 (4.0%) had tried without success to conceive. Nearly all participants were of European ancestry (95.1% European), and the median age at interview was 30.5 years (range 28.7-33.6 years). Table 1 describes sociodemographic and reproductive characteristics of study participants by conception status. Among women who had never been pregnant (n=303), those who had ever tried to conceive (n=39, 12.9%) were more likely to be currently partnered (87.2% vs. 41.7%, $p<0.001$), and were more likely to be overweight (69.2% vs. 47.3%, $p=0.01$), than those who had never tried to conceive (n=264).

Of the 671 (67.9%) who had been pregnant, 53 (7.9%) had terminated all their pregnancies. Compared with women who had ever chosen to be pregnant, women in the only unintentionally pregnant group were less likely to be currently partnered (47.2% vs. 75.4%, $p<0.001$) and more likely to have a university degree (32.1% vs. 17.0%, $p=0.02$).

Table 2 shows the characteristics of participants who had sought pregnancy (n=657, 67.5%). Nearly a third were smokers (30.8%). Thirty-nine women (5.9%) had never been pregnant, and a further 48 women (7.3%) had never had a live birth. Of the 618 who had chosen to be pregnant, 160 (25.9%) had experienced one or more pregnancy losses (n=259 miscarriages, n=10 stillbirths); 18.8% had lost one pregnancy (n=116), 3.2% had lost 2 (n=20), and 3.9% had had more than 2 losses (n=24).

Sixteen women (2.6%) met the definition of recurrent pregnancy loss.

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Table 2 also describes characteristics of those who had difficulty conceiving (n=159, 24.2% of those seeking pregnancy), of the subset who sought assistance (n=91, 13.9% of those seeking pregnancy, and 57.2% of difficulty group) and of those who did not seek assistance (n=67, 10.2% of those seeking pregnancy, and 42.1% of difficulty group). Those who had difficulty conceiving were more likely to be overweight (63.9% vs. 53.5%, p=0.03). Those who had difficulty becoming pregnant were more likely to have lost a pregnancy, (37.8% vs. 22.6%, one-sided p<0.001), to have lost all pregnancies (8.9% vs. 4.1%, one-sided p=0.03), and to have had recurrent pregnancy loss (5.9% vs. 1.7%, one-sided p=0.01) than those without difficulty.

Among those who had difficulty becoming pregnant, those who sought assistance to become pregnant were more highly educated (28.3% vs. 9% had a University degree, p=0.04), and less likely to smoke (19.6% vs. 46.3%, p=0.001) than those who did not seek assistance.

As shown in Table 3, of those who had difficulty becoming pregnant, 24 (15.1%) had never become pregnant and another 20 (12.6%) had never had a live birth. Many women with difficulties did not report or did not know the nature of the fertility problem (no reason stated: 76/159, 47.8%; unknown: 10/159, 6.3%). Of those who had been pregnant and described the nature of the difficulty, miscarriage was common, particularly among women who had never had a live birth (live birth 12.2%, no live birth 35.0%). Among those who had had a live birth, ovulatory problems and male fertility problems also featured (13.0% and 7.8% respectively).

Nearly three quarters (n = 117, 73.6%) of those who had difficulty becoming pregnant reported the amount of time they had tried to become pregnant. Of these, nearly a quarter (28/117, 23.9%) took less than twelve months to conceive. Fewer of those who sought assistance (n=32, 34.8%) reported the time elapsed before seeking assistance. Of these, just under a third (10/32, 31.3%) sought assistance within twelve months. Two of these were women who had previously been diagnosed with conditions precluding unassisted pregnancy.

Table 4 shows the type of intervention reported by those who sought assistance. Consultations, tests and education only were common (21.7%), as was ART (19.6%), most of which was IVF (16.3%). Over a third (41.3%) were treated with medication only; close to a third (28.3%) of those seeking treatment were treated with clomiphene only. Two thirds (66.7%) of women with ovulatory problems were treated medically. Medications used other than clomiphene included metformin, thyroid hormone, unspecified hormones, and unidentified medical treatment for hyperprolactinemia and for endometriosis.

The type of provider from whom assistance was sought was most often a specialist (including fertility clinic, or obstetrician/gynaecologist) indicated by 48 women (52.7%), followed by a general medical practitioner (GP) by 13 women (10.9%). The type of provider was unspecified for 28 women (30.1%), one woman reported assistance from a chiropractor, and one woman from a naturopath.

Discussion

In this population-based cohort of 30- to 32-year-old Australian women, a substantial minority (24.2%) reported difficulty in becoming pregnant. This figure is higher than self-reported infertility found among women 28-33 years old in the ALSWH (17.3%) (Herbert, Lucke and Dobson, 2009), and among adults of all ages in the 2006 National Fertility Study (NFS), a population-based telephone survey (Clark and Mackenzie, 2009). This difference may reflect differences in questioning around fertility, as our study asked about "difficulties trying to become pregnant", a more general question than the ALSWH and NFS items specifying the timeframe of 12 or months. This figure falls within the 6.6-26.4% range of lifetime prevalences of infertility found in resource-rich countries (Boivin et al., 2007).

The majority of those with difficulty (57.9%) sought assistance, despite the slight socioeconomic disadvantage suggested by the median SEIFA of 972 (slightly below the state median of 1009, but within 0.3 standard deviations of the national mean). This 57.9% is considerably lower than the 71.7% found in ALSWH, but higher than the 41% reported in the NFS data. However, though few variables are directly comparable between the two papers, ALSWH participants seeking pregnancy were more highly educated than our group (43% versus 18% with a University qualification), reflecting differences between national and local cohorts, sampling frames between studies, and, possibly, between modes of data collection (postal surveys and personal interviews). As we found that more-educated women with difficulties were more likely to seek care, this might well be the primary source of differences between our findings and those of ALSWH. In the global context, our findings were consistent with the average of 56.1% of infertile couples who sought medical care in resource-rich countries (Boivin et al., 2007).

Over half of the young women who reported difficulty did not report or did not know the particular problem underlying the difficulty. This may reflect a general increase in seeking care in anticipation of a reproductive problem among the "worried well". The most commonly reported difficulties, where problems were identified, were ovulatory problems, male partner fertility problems, and miscarriages. Pregnancy loss was widespread, with over a quarter of those who had become pregnant

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reporting loss, and over 5% losing all pregnancies. All measures of pregnancy loss were significantly higher among women who endorsed difficulty becoming pregnant, suggesting that for some women that expression may include difficulty carrying a pregnancy to viability as well as conceptional difficulties. Alternatively, the act of monitoring for conception may cause some women to notice a loss that might otherwise be mistaken for normal menstruation, and such monitoring may be more frequent among those with difficulties.

We found that most women seeking care were treated medically, particularly with clomiphene, rather than with invasive procedures. ALSWH found that 49.6% were treated with hormones or IVF. When our results are framed in those terms, they are very similar, with 47.8% treated with clomiphene only or IVF. Over half of our participants eventually saw medical specialists. This finding is roughly consistent with the 1998-2004 BEACH national study of general practice activity, which found that 45.2% female infertility problems were referred to gynaecologist, obstetrician, or IVF clinic (Charles, et al., 2005). A study of similar-aged women conducted in the United Kingdom, a nation similar to Australia in infertility prevalence (Boivin et al, 2007), IVF pricing (Chambers et al., 2009) and health care delivery system (Squires, 2009), found that half the couples diagnosed with infertility were offered IVF/ICSI as a first-line treatment, and a quarter were offered ovulation induction with clomiphene (Wilkes et al., 2009). It is possible that this higher rate of IVF use arises from differences in referral patterns, treatment guidelines, regulatory environment, or study design.

Amongst NFS participants, there was a broad lack of understanding about the factors that impact on fertility, such as a woman's age and lifestyle factors (Clark and Mackenzie, 2009). Our findings suggest that at least some of this may stem from a different understanding of "difficulty becoming pregnant" - the point at which couples seek care may vary substantially by circumstance. Some women sought or were referred to care before meeting the infertility criterion of 12 months' trying to conceive, with a few seeking care after just 5 or 6 months.

In 2010, changes to the Australian Extended Medicare Safety Net came into effect capping rebates to ART patients and so potentially increasing out-of-pocket costs to couples seeking assistance (Australian Government Department of Health and Ageing, 2009). In our study, disadvantage based on SEIFA score did not vary between those seeking and not seeking assistance, but education, a time-responsive individual SES measure, did differ. This suggests that patterns of fertility treatment choice are likely to change further in this country.

The strengths of this study are its prospective exposure measurement and the sampling frame, which was based on a population birth cohort rather than clients of infertility services. Our participants are
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broadly representative on a range of socioeconomic indicators of South Australian women of the same age group. Furthermore, our study was structured around examining reproductive health experiences, not specifically infertility treatment, to increase capture of information about women experiencing difficulties but who may not necessarily seek advice or treatment. All of these factors reduce the potential for bias associated with health/treatment seeking behaviour.

One limitation of this study is that the measure of infertility was based on self-reported difficulty conceiving without specifying the minimum duration of difficulty conceiving as 12 months. Although some women reported the length of time taken to conceive, this should be interpreted with caution, as this was not specifically asked of all women. Dick et al. (Dick, et al., 2003) examined differences in reporting of infertility, comparing general questions about problems conceiving with calendar-derived times taken trying to conceive. The results indicated that the general questions were highly specific (95%) but had reduced sensitivity (66%), suggesting that they may underestimate true infertility. This would suggest that our finding that a quarter of women aged between 30-32 years reported difficulty conceiving may in fact underestimate true difficulties, perhaps enhancing the significance of our results. Nevertheless, the lack of specification of a time frame means that we cannot estimate the prevalence of infertility using the standard definition, making comparability with other studies difficult. Furthermore, in cases where women had ever been pregnant, it was not possible to determine which pregnancies were difficult or had required assistance, meaning that infertility could not be classified as primary or secondary. Nevertheless, reported difficulty in becoming pregnant would appear to constitute a common health concern for young women.

Women who terminated all their pregnancies were, for the purpose of the present analysis, treated as unintentionally pregnant. This assumption includes women who sought pregnancy but terminated due to fetal anomalies or due to a change in circumstances. However, in both circumstances, this is likely to represent only a small number of women. In 2008, only 2.9% of terminations in SA were attributed to fetal reasons (Chan, et al., 2009). Similarly, some women who became pregnant and continued their pregnancies undoubtedly conceived unintentionally. It is difficult to estimate the number of women misclassified based on intention to conceive. However, for the present study it is likely that the denominator of women who sought pregnancy is overestimated, resulting in an underestimate of the proportion of young women having difficulty and seeking assistance in becoming pregnant. When women who terminated all pregnancies were included in the analysis, the findings did not change (data not shown).

Conclusions

The past few decades have seen a substantial decline in fertility in Australia, partly reflected by fundamental changes in the timing of fertility behaviour. Nevertheless, since 2001, the total national fertility rate has increased, as a result of higher fertility among women aged over 30 years (Australian Bureau of Statistics, 2009), and possibly because of the contribution of ART to birth rates (Habbema et al., 2009).

Our study identified that almost a quarter of women in their early thirties reported difficulty conceiving. As such, it is critical to continue to document women's reproductive experiences and monitor trends at a local and national level, in both fertility and fertility treatment seeking behaviour.

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Table 1. Sociodemographic and health characteristics of women by pregnancy status, N = 974.

Characteristic	Never tried to conceive, never pregnant	Only unintentionally pregnant	Ever chose to be pregnant	Ever tried to conceive, never pregnant
	N (%)	N (%)	N (%)	N (%)
All	264 (100)	53 (100)	618 (100)	39 (100)
Parental birthplace				
Both born overseas	93 (35.2)	13 (24.5)	160 (25.9)	10 (25.6)
Both born in Australia	106 (40.2)	24 (45.3)	307 (49.7)	21 (53.8)
Other combinations	65 (24.6)	16 (30.2)	151 (24.4)	8 (20.5)
Socioeconomic status				
Quartile 1 (most disadvantaged)	58 (22.4)	17 (32.7)	166 (26.9)	13 (33.3)
Quartile 4	79 (30.5)	18 (34.6) ^a	132 (21.4)	10 (25.6)
Education				
High school or less	58 (22.0)	18 (34.0)	274 (44.3)	9 (23.1)
Technical and further education	87 (32.9)	18 (34.0)	239 (38.7)	19 (48.7)
University degree	119 (45.1)	17 (32.1) ^a	105 (17.0)	11 (28.2)
Current partner status				
Single	148 (56.1)	25 (47.2)	95 (15.4)	3 (7.7)
Engaged/married/de facto	110 (41.7)	25 (47.2)	466 (75.4)	34 (87.2)
Separated/divorced/widowed	6 (2.3)	3 (5.7) ^a	57 (9.2)	2 (5.1) ^b
Body mass index ≥ 25.0 kg/m²	123 (47.3)	22 (42.3)	310 (55.2)	27 (69.2) ^b
Smoker	52 (19.7)	19 (35.9)	189 (30.6)	7 (17.9)

a. $p < 0.05$, compared with "Ever chose to be pregnant" group

b. $p < 0.05$, compared with "Never tried to conceive, never pregnant" group

Table 2. Sociodemographic and reproductive characteristics of women who sought pregnancy, by difficulty and assistance, N=657.

	Sought pregnancy	Sought pregnancy		Ever difficulty conceiving	
		No difficulty conceiving	Ever difficulty conceiving	Ever sought assistance	Never sought assistance
	N (%)	N (%)	N (%)	N (%)	N (%)
All	657 (100)	498 (100)	159 (100)	92 (100)	67 (100)
Parental birthplace					
Both born overseas	170 (25.9)	125 (25.1)	45 (28.3)	30 (32.6)	15 (22.4)
Both born in Australia	328 (49.9)	250 (50.2)	78 (49.1)	44 (47.8)	34 (50.7)
Other combinations	159 (24.2)	123 (24.7)	36 (22.6)	18 (19.6)	18 (26.9)
Socioeconomic status					
Quartile 1	179 (27.3)	131 (26.3)	48 (30.2)	27 (29.3)	21 (31.3)
Quartile 4	142 (21.6)	112 (22.5)	30 (18.9)	21 (22.8)	9 (13.4)
Education					
High school or less	292 (43.5)	211 (42.4)	72 (45.3)	38 (41.3)	34 (50.7)
Technical and further education	257 (38.3)	203 (40.8)	55 (34.6)	28 (30.4)	27 (40.3)
University degree	122 (18.2)	84 (16.9)	32 (20.1)	26 (28.3) ^b	6 (9.0)
Current partner status					
Single	98 (14.9)	82 (16.5)	16 (10.1)	6 (6.5)	10 (14.9)
Engaged/married/de facto	500 (76.1)	374 (75.1)	126 (79.3)	77 (83.7)	49 (73.1)
Separated/divorced/widowed	59 (9.0)	42 (8.4)	17 (10.7)	9 (9.8)	8 (11.9)
Body mass index ≥ 25.0 kg/m²	337 (56.1)	243 (53.5)	94 (63.9) ^a	42 (65.6)	52 (62.7)
Smoker	49 (30.8)	147 (29.5)	49 (30.8)	18 (19.6) ^b	31 (46.3)
Gravidity					
0	39 (5.9)	15 (3.0)	24 (15.1)	14 (15.2)	10 (14.9)
1	154 (23.4)	116 (23.3)	38 (23.9)	22 (23.9)	16 (23.9)
2	203 (30.9)	163 (32.7)	40 (25.2)	25 (27.2)	15 (22.4)
3+	261 (39.7)	204 (41.0)	57 (35.9) ^a	31 (33.7)	26 (38.8)
Parity					
0	87 (13.2)	43 (8.6)	44 (27.7)	24 (26.1)	20 (29.9)
1	211 (32.1)	163 (32.7)	48 (30.2)	32 (34.8)	16 (23.9)
2	228 (34.7)	182 (36.6)	46 (28.9)	25 (27.2)	21 (31.3)
3+	131 (19.9)	110 (22.1)	21 (13.2) ^a	11 (12.0)	10 (14.9)
Ever diagnosed with PCOS	43 (6.5)	11 (2.2)	32 (20.1)	26 (28.3)	6 (9.0)
Any pregnancy loss	160 (25.9)	109 (22.6)	51 (37.8) ^a	25 (32.1)	26 (45.6)
All pregnancies lost	32 (5.2)	20 (4.1)	12 (8.9) ^a	7 (9.0)	5 (8.8)
Recurrent pregnancy loss	16 (2.6)	8 (1.7)	8 (5.9) ^a	3 (3.9)	5 (8.8)

- a. $p < 0.05$, compared with "No difficulty conceiving" group
- b. $p < 0.05$, compared with "Never sought assistance" group

Table 3. Stated main difficulty becoming pregnant or reason for difficulty becoming pregnant among those who sought to become pregnant and had difficulty, N = 159.

	Ever pregnant	Ever pregnant	Never pregnant
	Live birth	No live birth	
	N (%)	N (%)	N (%)
All	115 (100)	20 (100)	24 (100)
No reason stated	53 (46.1)	7 (35.0)	16 (67.0)
Any ovulatory problem	15 (13.0)	0	2 (8.3)
Polycystic ovary syndrome (PCOS)	5 (4.3)	0	2 (8.3)
Other ovulatory problem	10 (8.7)	0	0
Endometriosis	3 (2.6)	3 (15.0)	0
Anatomic defect	5 (4.3)	0	1 (4.2)
Any male fertility problem	9 (7.8)	1 (5.0)	1 (4.2)
Male and female fertility problems	3 (2.6)	0	0
Male irreversible vasectomy	2 (1.7)	0	0
Other male fertility problem	4 (3.5)	1 (5.0)	1 (4.2)
Miscarriage(s)	14 (12.2)	7 (35.0)	--
Ectopic pregnancy(ies)	1 (0.9)	1 (5.0)	--
Undiagnosed/unknown cause	6 (5.2)	1 (5.0)	3 (12.5)
Other	9 (7.8)	0	1 (4.2)

5 Table 4. Use of fertility treatments among those who sought to become pregnant and had difficulty, N=92.

Type of intervention	N (%)
Consultation, tests, education only	20 (21.7)
Assisted reproductive technology (ART)	18 (19.6)
<i>In vitro</i> fertilization (IVF)	15 (16.3)
Intrauterine insemination (IUI)	2 (2.2)
Intracytoplasmic sperm injection (ICSI)	1 (1.1)
Artificial insemination	2 (2.2)
Medication only	38 (41.3)
Clomiphene without ART	26 (28.3)
Surgery	6 (6.5)
No intervention	2 (2.2)
Not specified	6 (6.5)



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