

## Demographic and Clinical Features of Patients with Subfertility

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### Abstract

**Aim and Background of the study:** Subfertility is an intricate health problem which is rising dramatically. Patient's demographic factors along with pelvic pathology significantly important for uprising trend. The aim of this study was to evaluate the demographic and clinical characteristics of patients with infertility specially identifying the ovulatory disturbance, tubal factors, pelvic adhesion and endometriosis by Laparoscopy. **Methods:** This retrospective study was conducted in infertility clinic of BIRDEM hospital, Dhaka, Bangladesh from May, 2007 to October 2007. The sample size was 100. **Result:** In this study, among 100 patients 68% had primary and 32% had secondary infertility. 55.9% were within 20 to 30 years age group and 44.1% above 30 years age in primary subfertility. 21.9% were within 20 to 30 years age group and 78.1% above 30 years age group in case secondary subfertility. 58% patients were house wife. 42% of patients were service holder they were teacher and other professional personnel. In this study majority (77%) of patients are from upper-middle class and middle class family. Out of all patients of primary infertility 58.8% had regular, 44.2% had irregular cycle 30% had scanty, 20% had menorrhagia and 29.4% had dysmenorrhea. Within secondary infertility group 87.5% had regular, 12.5% had irregular cycle 25% had scanty, 21.4% had menorrhagia and 75% had dysmenorrhea. In laparoscopy majority (55.0%) had normal ovary, 20.0% had cystic change with thick capsule in right ovary and 22% had in left ovary, 7.0% had endometriosis, 8.0% had adhesion, 10.0% had simple cyst in right ovary and 8% had in left ovary and rest could not be visualized. 79.4% right & 77.9% left fallopian tube patent in primary subfertility cases and 56.3% right & 59.4% left tube normal in secondary subfertility cases. Both fallopian tube patent in 62%, unilateral block 21% and bilateral block in 17% cases. In this study peritoneum was normal in 78% cases, 8% cases there was endometriosis and 14% cases there was adhesion of fallopian tube with the ovary, adhesion of uterus with intestine and also with bladder. In this study, Pouch of Douglas was normal in 77% cases, 7% had endometriotic deposits 16% had adhesion and obliteration of Pouch of Douglas. In this study 74% of patient had normal size of uterus, 3% had uterus smaller than normal size and 23% had bulky uterus. 83% patient had freely mobile uterus and rest had restricted mobility. **Conclusion:** From analyzing the findings, we recommend that awareness developing program about the factors affecting infertility should be taken. Laparoscopy is more convenient, conclusive & more precise for diagnosing the cause of subfertility. Early diagnosis and treatment should be encouraged among couple.

**Keywords:** Demography, Clinical feature and subfertility.

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## INTRODUCTION

Demographers tend to define infertility as childlessness in a population of women of reproductive age." The World Health Organization defines infertility as follows: Infertility is "a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse .[1] Primary infertility is infertility in a couple who have never had a child.

Secondary infertility is failure to conceive following a previous pregnancy. It's not only affects the couples' life, but also affects the healthcare services and social environment. [2] Childlessness causes disharmony and distress to many couples. Worldwide, 10 to 15% of couples experience fertility problems. Between 40% of cases are thought to stem from factors that affect the man.[3] The causes of infertility include

ovulatory failure, tubal damage, endometriosis, luteal-phase deficiency, etc.[4] In fact, the male is directly responsible in 35%, the female in 40% and both are responsible in 10%- 20% cases. The remaining is unexplained in spite of thorough investigations with modern technical knowledge. [5] It is also a strange that about 4 out of 10 patients of unexplained infertility conceive within 3 years with when we can exclude male factor, our aim should be to find out the cause of infertility in female. Female infertility may be associated with ovarian, tubal, uterine, cervical and immunological factors. In female substantial clue to etiology can be gained from careful history (along with detail menstrual history, previous pregnancy outcome and related complication.) and thorough general and systemic examination. The aim of the study was to evaluate the demographic and clinical characteristics of patients with infertility.

## METHODOLOGY & MATERIALS

This retrospective study was conducted in infertility clinic of BIRDEM hospital, Dhaka, Bangladesh from May, 2007 to October 2007. The

## RESULT

**Table-1: Distribution of the patients by age group (n=100)**

Age (in year)	Primary Infertility		Secondary Infertility		P-value
	n	%	n	%	
20-30	38	55.9	7	21.9	0.001
>30	30	44.1	25	78.1	

Out of all patients of primary infertility 55.9% were within 20 to 30 years age group and 44.1 within above 30 years age group. Within secondary infertility group 21.9% were within 20 to 30 years age group and

sample size was 100. Detailed information was taken before admission in Gynaecology outpatients department from both husband and wife. Then clinical examination was done. In cases of suspected thyroid disease or other endocrine abnormalities hormonal assays were done related to those abnormalities. Data collected from each individual subject, were recorded on a pre-designed data collection form. Collected data were compiled and analyzed using computer-based software, STATISTICAL PACKAGE FOR SOCIAL SCIENCE (SPSS).

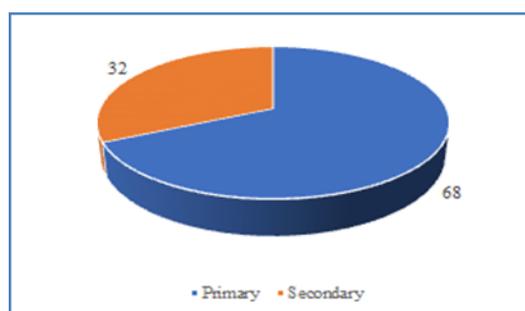
### Inclusion Criteria:

- Patients suffering from both primary and secondary infertility
- Age range of patients was 20-40 years

### Exclusion Criteria:

- Those patients whose husband had abnormality in semen analysis
- The patients whose age was above 40.

Statistically significant difference was observed in between infertility group in terms of age (p=0.001) (Table-1).



**Fig-1:** Types of infertility (n=100) Out of all patients 68% had primary and 32% had secondary infertility (Fig-1).

**Table-2: Demographic characteristics of study people (n=100)**

Characteristics		n	%
Occupation	House wife	58	58
	Teacher	12	12
	Others	30	30
Socioeconomic condition	Upper (>25000/year)	11	11
	Upper middle (15000-25000/year)	40	40
	Middle (5000-15000/year)	37	37
	Lower (<5000/year)	12	12

In this study 58% patients were house wife. 42% of patients were service holder they were teacher and other professional personnel. In this study majority

(77%) of patients are from upper-middle class and middle class family (Table-2).

**Table-3: Menstrual history of 1° sub fertility & 2° sub fertility (n=100)**

Menstrual history		Primary Infertility		Secondary Infertility		P-value
		n	%	n	%	
Menstrual cycle	Regular	40	58.8	28	87.5	0.004
	Irregular	28	41.2	4	12.5	
Amount of loss	Scanty	12	30	7	25	0.903
	Average	20	50	15	53.6	
	Excessive	8	20	6	21.4	
Dysmenorrhoea	Yes	20	29.4	8	75	0.647
	No	48	70.6	24	25	

In this study, out of all patients of primary infertility 58.8% had regular, 41.2% had irregular cycle 30% had scanty, 20% had menorrhagia and 29.4% had dysmenorrhea. Within secondary infertility group

87.5% had regular, 12.5% had irregular cycle 25% had scanty, 21.4% had menorrhagia and 75% had dysmenorrhea (Table-3).

**Table-4: Distribution of patients by laparoscopic findings of ovary (n=100)**

Findings	Left ovary		Right ovary	
	n	%	n	%
Normal ovary	55	55	53	53
Cystic changes with thick capsule (PCO)	20	20	22	22
Endometriosis	7	7	7	7
Adhesion	8	8	8	8
Simple cyst	10	10	8	8
Could not be visualized	2	2	2	2

In laparoscopy 55.0% patient had normal left ovary, 20.0% had cystic change with thick capsule, 7.0% had endometriosis, 8.0% had adhesion, 10.0% had simple cyst and rest could not be visualized. In

laparoscopy 55% patient had right ovary, 22% had cystic change with thick capsule, 7% had endometriosis, 8% had adhesion, 8% had simple cyst and rest could not be visualized (Table-4).

**Table-5: Distribution of the morphological changes of fallopian tube in cases of primary & secondary sub fertility (n=100)**

Laparoscopic evaluation	Primary		Secondary	
	Right	Left	Right	Left
Normal looking	54 (79.4%)	53 (77.9%)	18 (56.3%)	19 (59.4%)
Not visualized	0 (0.0%)	0 (0.0%)	2 (6.3%)	0 (0.0%)
Peritoneal adhesion	12 (17.6%)	14 (20.6%)	8 (25.0%)	10 (31.3%)
Hydrosalpinx	2 (2.9%)	1 (1.5%)	4 (12.5%)	3 (9.4%)

Among the patient with primary infertility fallopian tube was normal looking in 79.47% on right and 77.9% on left, peritoneal adhesion 17.6% on right and 20.6% on left and hydrosalpinx 2.9% on right and 1.5% on left. Among the patient with secondary

infertility- fallopian tube was normal looking in 56.3% on right and 59.4% on left, peritoneal adhesion 25% on right and 31.3% on left and hydrosalpinx 12.5% on right and 9.4% on left (Table-5).

**Table-6: Distribution of the patients by tubal patency test (n=100)**

Findings	Infertility		Total	P-value	
	Primary (n=68)	Secondary (n=32)			
Both tubal patent	48 (70.6%)	14 (43.8%)	62 (62.0%)	0.01	
Unilateral tubal block	12 (17.6%)	9 (28.1%)	21 (21.0%)	1	
	Right	4 (33.3%)	3 (33.3%)		7 (33.3%)
	Left	8 (66.7%)	6 (66.7%)		14 (66.7%)
Bilateral tubal block	8 (11.8%)	9 (28.1%)	17 (17.0%)	0.04	

Among the patient with primary infertility, both tubes were patent in 70.65% cases, unilateral tubal block in 17.6% cases and bilateral tubal block in 11.8% cases. Among the patient with secondary infertility,

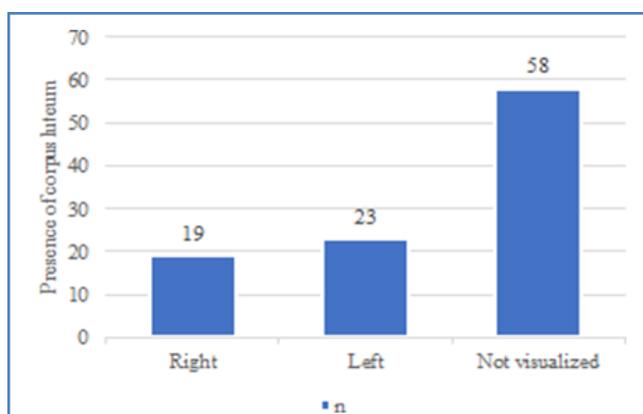
both tubes were patent in 43.8% cases, unilateral tubal block in 28.1% cases and bilateral tubal block in 28.1% cases (Table-6).

**Table-7: Distribution of the patients by laparoscopic findings of other structures (n=100)**

Laparoscopic findings	n	%
<b>Peritoneum</b>		
Normal	78	78
Endometriosis	8	8
Adhesion	14	14
<b>Douglas</b>		
Normal	77	77
Endometriosis deposits	7	7
Adhesion	16	16
<b>Uterus</b>		
Normal	74	74
Small in size	3	3
Bulky	23	23
<b>Mobility of uterus</b>		
Freely mobile	83	83
Restricted in mobility	17	17

In this study peritoneum was normal in 78% cases, 8% cases there was endometriosis and 14% cases there was adhesion of fallopian tube with the ovary, adhesion of uterus with intestine and also with bladder. In this study, Pouch of Douglas was normal in 77% cases, 7% had endometriotic deposits 16% had

adhesion and obliteration of Pouch of Douglas. In this study 74% of patient had normal size of uterus, 3% had uterus smaller than normal size and 23% had bulky uterus. 83% patient had freely mobile uterus and rest had restricted mobility (Table-7).



**Fig-2: Distribution of the patients by the presence of corpus luteum (n=100)**

In this study corpus luteum was seen 19% cases in right ovary, 23% cases in left ovary and 58% cases it was not visualized (Figure-2).

## DISCUSSION

In this study out of 100 infertile patients about 68 (68%) had primary and 32 (32%) had secondary sub fertility. This study was compared with that of Sinawat S. et al., [6] done in Thailand showed 72.03% had primary and 27.97 % had secondary sub fertility. Now more couples are seeking advice from infertility centers and do not hesitate, as they did in former times, to reveal their problem. [5] This study showed out of 100 cases 55 (55%) women were above the age of 30 years

and they had already passed the age of optimal fertility (25-29y) [7] when they were ready to have children and therefore created a problem as regard to fertility. In this study occupational status of infertile women was 42% service holder and 58% were house wife. The previous study conducted in the same institute revealed that 33% were service holder and 67% were house wife. This indicates that now women are more conscious about their carrier and so defer their child birth. Menstrual abnormalities are intimately associated with the etiology of infertility. Regular menstrual cycle indicates regular ovulation and irregular menstrual cycle indicates infrequent ovulation and so fertility impaired. In this study 68% women had regular cycle and 32%

with irregular cycle. Another study made by Ara. G [8] in 2003 showed that 82% women had regular cycle and 18% had irregular cycle. Normal looking right and left ovaries were 53% and 55% respectively. Cystic enlargement of one or both of normal ovaries is so common as to be regarded physiological. Simple cyst present 8% in right and 10% in left ovaries. In polycystic ovarian syndrome, patient has slightly enlarged and polycystic ovaries which have a smooth pearly white color and thickened capsule. There is anovulation. So, patient is sub fertile. [5] In this study, cystic changes with thick capsule were seen 22% in right ovary and 20% in left ovary. Similar findings were observed by Nessa M [9] in 2002. In 8% cases, ovaries of both sides were visualized, but had adhesion to adjacent structures. In 2% cases both sided ovaries could not be visualized due to adhesion. After ovulation, Graafian follicle becomes corpus luteum. It is a vascular structure, yellowish in color. It is identical by its punctum i.e. opening through which ovum come out. Detection of corpus luteum by laparoscopy is the surest sign of ovulation. In this study 19% of cases corpus luteum was seen in right ovary, 23% in left ovary and 58% cases corpus luteum was not visualized. It may be due to anovulation or adhesion or due to faulty technique. A normal fallopian tube is needed for ovum transport, fertilization and transport of fertilized ovum to the uterus. Any abnormality of fallopian tube interfere fertility. Laparoscopy currently regarded as the most reliable tool in the diagnosis of tubal cause of sub fertility. As laparoscopy visualizes morphological abnormalities of fallopian tube directly, it is generally accepted as the reference standard for determination of accuracy of the diagnostic tool for tubal pathology. Incidences of pathology of fallopian tube vary accordingly to sexually transmitted disease, post abortal and puerperal infection. In this study in primary infertility both tubes were found to be blocked in 48%, only one tube patent in 12% and both tubes were patent in 8%. In secondary infertility both tubes were blocked in 14%. Only one tube was patent in 9% and both tubes were patent in 9% cases. Similar findings were observed by Chowdhury S and Chowdhury T.A [10] in case of primary infertility but not in secondary infertility where tube blockage was found in 15% in the former and 17.5% in the later group. This finding is much lower than series by Collet M [11] where the study was done in Eastern Gabon in the "infertility belt" where the tubal occlusion was present in 82,8% cases in Africa. This high prevalence of tubal occlusion in Africa was probably due to pre-marital sexual intercourse and sexual promiscuity which in general play a major role in primary and secondary sub fertility. Tube was not visualized 2.9% on both side in case of primary sub fertility and 13.5% on both side in case of secondary sub-fertility. In this study, uterus was normal size in 74%, bulky in 23% smaller than normal in size in 3% cases. Normally uterus is freely mobile. Mobility becomes restricted in endometriosis, pelvic inflammatory disease, tuberculosis, pelvic operation

etc. In this study 85% cases uterus was freely mobile, in 17% cases mobility was restricted. Similar findings were observed by Nessa. M [9] in 2002. Endometriosis is seen in at least 15% of women investigated for infertility, if all grades are considered. Endometriosis is associated with pelvic adhesion that distorts pelvic anatomy, prevent normal tubo-ovarian apposition and encase the ovary. Implants can destroy ovarian and tubal tissue, although occlusion of tube is rare. 50% cases endometriosis causes dysmenorrhoea. [2] In this study 28% cases complained dysmenorrhoea. Endometriotic deposits in pouch of Douglas and in peritoneum were found in 15% cases and flimsy adhesion in 30% cases. Milingos S. et al., [12] in 2006 documented abnormal findings at laparoscopy in infertile patient with pelvic pain. At laparoscopy 76.7% of patients with pelvic pain were found with pelvic pathology, compared with only 42.6% of cases without pain. Omental -abdominal wall adhesions, advanced endometriosis, endometrioma with adhesion were significantly more frequent in cases with pelvic pain. The information regarding the pelvic organs can be obtained by laparoscopy. It is now used as a principal method of assessment of pelvic organs. It is an expensive and invasive procedure, which is done under general anesthesia. But laparoscopic evaluations are important for proper management of infertility.

#### Limitations of the Study

In our study, there was small sample size and absence of control for comparison. Study population was selected from one center in Dhaka city, so may not represent wider population. The study was conducted at a short period of time. The sampling was retrospective and there was no random allocation, so there is risk of selection bias.

#### CONCLUSION AND RECOMMENDATIONS

In this study, most of the study people were in the age group of 20-30 & secondary subfertility was more with increasing age (>30years). The study showed that Ovulatory factor especially PCOS affects 20-22% and endometriosis hampers the fertility accounts 15% which almost high light the real prevalence infertility in the world. Tubal pathology like tubal blockage, peritubal adhesion, hydrosalpinx were more prevalent in secondary subfertility, underlying pelvic inflammatory disease may be the main cause. From analyzing the findings, awareness developing program about the factors affecting infertility should be taken and early diagnosis by the help of Laparoscopy should be encouraged among couples.

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