violence against women. In general population, conception is expected to occur in 84% of women within 12 months and 92% within 24 months. Sub-fertile couples pass through a painful life with psychological stress and a social disgrace in our country. It is estimated that infertility affects 15% of couples. About 5% of male sub-fertility is correctable. Male sub-fertility has been neglected more than female sub-fertility worldwide, especially in developing countries including Bangladesh and is often referred to specialists for fertility care.

According to a study by Chain in Singapore in 2000, smoking, density of sperm, viability of sperm, etc., were found to be significant predictors for sub-fertility among men. However, very little studies have been done to identify the original causes of male infertility and in several reports it was found that the major part of male infertility is unexplained.

Materials and Methods
This is a prospective study carried out with infertile and sub-fertile couples treated in Dhaka CMH in the period from 01 March 2013 to 28th Feb 2014. Semen specimens were obtained from 100 male patients between 23 and 58 years of age. These patients attended the General Outpatient Department (GOPD) of CMH Dhaka. The history was taken from selected individuals and it includes personal, socio-economic, occupational, medical, surgical history and drug intake to find out risk factors for abnormal semen parameters. Results: In normozoospermia, mean and SD of sperm count, sperm abnormality, sperm motility were 63.98±5.05, 24.44±1.57 and 45.5±2.94 respectively. In oligozoospermia, the mean and SD of sperm count, sperm abnormality, sperm motility were 7.74±1.23, 41.1±3.78, 14.54±2.77 respectively. In azoospermia, the mean and SD of sperm count, sperm abnormality, sperm motility were absent. Conclusion: Here data statistically showed person with normozoospermia having good sperm morphology & motility than oligozoospermia and azoospermic subjects thereby causing male infertility which was responsible for hindrance in achieving pregnancy clinically. Using tight undergarments or working in hot atmosphere depresses spermatogenesis. Mumps orchitis permanently damages spermatogenesis. Bacterial or viral infection depresses the sperm count. Diabetes, malnutrition, heavy smoking reduces spermatogenesis. β-blocker, antihypertensive were likely to hinder spermatogenesis. The efferent ducts might be obstructed by infection like tubercular, gonococcal or by surgical trauma.

Keywords: Sub-Fertility, Sperm Count.

Number of Tables: 06; Number of References: 14; Number of Correspondences: 04
motility and vitality. In particular, sperm motility (percent of sperm movement) peaked after one day of abstinence in men with infertility problems. A new study shows that sperm from men with low sperm counts reached their peak condition after one day of abstinence. Data were collected through interview of couples who did not have child for last one year or longer even though they have had frequent unprotected sexual intercourse or couples had a child but now they are unable to procreate due to some unknown reason using structured questionnaire. Sampled size was 200 (100 infertile & sub fertile couple and 100 control subjects).

Data were processed and analyzed using Computer based SPSS (statistical package for social science) soft-ware for windows, version 16. Data presented on categorical scale will compared between groups with the help of Chi-square (X²) Test. Quantitative data were compared between groups using Student’s t-Test, multivariate logistic regression analysis and fisher’s exact test, as applicable. P value of less than 0.05 will be considered as significant.

Results

Table I shows that, in both case and control groups most of the respondents were in the 23-50 to 40 years’ age group; out of the 100 respondents each in case and control group, 66% of cases and 72% of controls were in the age group. Mean ± SD of age was calculated to be, (35.60±3.049) for cases and for controls (36.88±2.387). The p-value was 0.5976 for t-test between the means and 0.565525 for chi-square among the age groups, which means there was no statistically deference in age distribution between the cases and controls.

Occupation status of the respondents more than half (54.0%) of the cases were in service or office jobs, while controls counted 46 (46.0%). There was no statistically significant difference in distribution of occupation among the groups (p-value=0.5627).

Diabetes Mellitus [odds ratio= 2.35; 95%CI = 0.4382 to 4.6668] and history of mumps [OR = 3.69; 95%CI = 0.7469 to 18.2113] were prevailing among cases.

Table II shows that, there was statistically no difference between two group in duration of infertility (P=0.4754 for t-test and 0.68045 for chi-square). Both groups had a similar type of distribution of duration of infertility.

Table III shows that the incidence of STI was higher among the cases [odds ratio=3.13; 95% CI = 0.6158 to 15.8863]. Urethral discharge was the most occurring STI in both cases and controls.

Table IV shows that, There was none with a history of taking 6-Methyldopa as anti-hypertensive. there was slightly higher number of respondents among the cases taking H₂ Blocker [OR=1.102; 95%CI=0.5981 to 2.0305]; but there was no strong positive association.
Table IV: Distribution of the patients by their history of taking medications.

|          | Case       | Control    |
|----------|------------|------------|
| α-Methylldopa |           |            |
| No       | 100.0      | 100.0      |
| H₂ Blocker | 30.0       | 28.0       |
| Yes      | 70.0       | 72.0       |
| Total    | 100.0      | 100.0      |

Table V Shows that, the % of smoking among the cases was higher [OR = 1.71; 95% CI = 0.9713 to 3.0257]. The cases exceeded the controls in both duration of smoking and number of sticks per day. The difference of both duration (p=0.0366 for t=test and 0.0446 for chi-square) of smoking and amount of sticks smoked daily (p=0.024 for t= test and 0.000167 for chi-square) was statistically significant.

Table VI: Semen analysis parameters in different groups of patients.

| Duration  | Case        | Control     | t-test | p-value |
|-----------|-------------|-------------|--------|---------|
| 1-5 years | 14.0        | 19.0        | 2.6797 | 0.0366  |
| 6-15 years| 23.0        | 13.0        |        |         |
| >15 years | 11.0        | 3.0         |        |         |
| Mean±SD   | 10.49±3.783 | 7.5±3.342   |        |         |

| Number of sticks per day | Case | Control | t-test | p-value |
|--------------------------|------|---------|--------|---------|
| 5-10                     | 10.0 | 23.0    |        |         |
| 10-20                    | 21.0 | 8.0     |        |         |
| >20                      | 17.0 | 4.0     |        |         |
| Total                    | 48.0 | 35.0    |        |         |

| X² = 6.22; p-value = 0.0446 |
|----------------------------|

Table VI Shows results of semen analysis in different groups of patients. These patients are classified into three groups like Normozoospermia, Azoospermia, Oligozoospermia.

Table VI: Semen analysis parameters in different groups of patients.

| Patients       | N (n=59) | A (n=22) | O (n=19) |
|----------------|----------|----------|----------|
| Age (years)    | 33.5±5.8 (56%) | 31±6.9 (141%) | 39±6.6 (205%) |
| Volume (ml)    | 3.36±16 (6%) | 2.36±24 (11%) | 2.5±17 (13%) |
| Sexual Abstinence (days) | 4±1 (7%) | 4±2 (18%) | 4±1 (21%) |
| Semen pH       | 7.90±21 (13%) | 7.92±24 (36%) | 8.11±38 (43%) |
| Sperm count (10million/ml) | 65.98±5.05 (112%) | Nil (0%) | 7.74±1.23 (41%) |
| Sperm abnormality | 24.44±1.57 (41%) | Nil (0%) | 41.10±3.78 (216%) |
| Sperm motility | 45.5±2.94 (77%) | Nil (0%) | 14.54±2.77 (76%) |

N= Normozoospermia, A= Azoospermia, O= Oligozoospermia, n= Number of subjects.

Discussion

Combined military hospital (CMH), Dhaka is a renowned tertiary hospital in Bangladesh where this study were undertaken. Here 100 semen samples of male partners of sub fertile couples (normozoospermic as controls and 100 samples from male partners with abnormal semen) were analyzed in this particular study with the view to find out the risk factors of semen parameters.

During study most of the samples (case and control group) were collected from the age group between 25 years to 45 years. Among them 66% were case and 72% were control. Mean ± SD of age was calculated to be, (35.60 ± 3.049) for cases and for controls (36.88 ± 2.387). The p-value was 0.565525 for chi-square, which means there was no statistically difference in age distribution between the groups. A similar study was under taken in Eastern Nigeria, 1,110 Igbo males attending infertility clinic, where the age group selected was between 30-50 years.

About three-fourth of the participants in both cases (74.0%) and controls (72.0%) were Muslims. More than half (54.0%) of the cases were in service or office jobs, while controls counted (46.0%). There was no statistically significant difference in distribution of occupation among the groups (p-value = .5627). In both the cases and controls, respondents were basically from middle and lower social-economic classes. Chi-square calculates, p-value = 0.8923; which explains that there was no significant statistical difference in the social-economic classes.

There was statistically no difference between two groups in duration of infertility (p=0.4754 for t-test and 0.68045 for chi-square). Both groups had a similar type of distribution of duration of infertility. Out of the 200 respondents only 7 (3.5%) had previous marriage. Inability to re-produce was the cause of discontinuation of previous marriage. 96% cases and 97% controls were struggling to get a baby being persistent with the same partner. About two-fifth of the couples in both groups (42% case and 38% controls) had intercourse for 3 to 5 times per week. On an average both group had intercourse for about 3 times per week. There was no statistical significant difference in frequency of intercourse among the groups (p-value = 0.625 for t-test and 0.767206 for chi-square).

Diabetes Mellitus [odds ratio = 2.35; 95% CI = 0.4382 to 4.6668] was found statistically significant as a cause of semen abnormality and according to Delfing in 2007, Diabetes Mellitus has a negative impact in terms of sperm concentration and abnormal morphology with no difference in motility, many of these diabetic men had fathered children and the authors concluded that Diabetes Mellitus in itself was not a cause of sub-fertility.

History of mumps [OR = 3.69; 95% CI =0.7469 to 18.2113] were found to be prevailing among the cases. The incidence of STIs was higher among the cases [odds ratio = 3.13; 95% CI = 0.6158 to 15.8863]. Urethral discharge was the commonest occurring STI in both cases and controls.
A prospective case control study, conducted in Mongolia during the year 1993-2002, showed adjusted odds ratios of 3.4 for mumps orchitis and 2.3 for other orchitis. Gonorrhea was found, in that study as well, the most commonly reported STI. However as a predictor of azoospermia STIs had very high OR, being 5.6 in patients with Gonorrhoea and 7.6 in patients with other STIs.

There was none with a history of taking α-Methyldopa as anti-hypertensive. There was slightly higher number of respondents among the cases taking H2 blocker [OR = 1.102; 95%CI = 0.5981 to 2.0305]; but there was no strong positive association. But according to Peter N. Kolettis in 2003, use of the drug, H2 blocker-cimetidine can impair fertility. When inquired about alcohol consumption, nobody admitted of being alcoholic and nobody had past pelvic surgery history.

The percentage of smoker among the cases was higher [OR = 1.71; 95% CI = 0.9713 to 3.0257]. The cases exceeded the controls in both duration of smoking and number of sticks smoked per day. The difference of both duration (p=0.0366 for t-test and 0.0446 for chi-square) of smoking and amount of sticks smoked daily (p=0.024 for t-test and 0.000167 for chi-square) was statistically significant. According to a study done by Chia in Singapore in 2000, smoking, density of sperm and the viability of sperm were found to be significant risk factors for infertility among men. In a study in Turkey, cigarette smoking found to be negatively correlated with progressive motility of sperm (r= -0.1464, p=0.042). A study was performed on 395 outdoor patient under infertility department of the BIRDEM, the outcome of this study was obtained: Abnormal characteristics of semen parameters found among the cases were: oligospermia (42.0%), azoospermia (18.0%), asthenozoospermia (16.0%), teratozoospermia (13.0%), oligo-teratozoospermia (7.0%) and oligo-astheno-teratozoospermia (4.0%). No aspermia was found. Majority of the male in both groups were between 25 to 40 years of age group (66% case and 72% control).

Conclusion

In Conclusion, from the study under taken in CMH for a period of one year the following conclusions were obtained: Abnormal characteristics of semen parameters found among the cases were: oligospermia (42.0%), azoospermia (18.0%), asthenozoospermia (16.0%), teratozoospermia (13.0%), oligo-teratozoospermia (7.0%) and oligo-astheno-teratozoospermia (4.0%). No aspermia was found. Majority of the male in both groups were between 25 to 40 years of age group (66% case and 72% control). About three-fourth of the participants in both groups respondents were basically from middle and lower socio-economic classes. Statistically there was no difference between two groups in duration of infertility (P=0.475 and 0.68045). Out of total 200 respondents only 7 (3.5%) had previous marriage. On an average both group had intercourse for about 3 times per week and there was no statistical significant difference in frequency of intercourse among the groups (p-value=0.625).

Diabetes mellitus [odds ratio=2.35; 95% CI=0.4382 to 4.6668], history of mumps [OR= 3.69; 95% CI=0.7469 to 18.2113, history of STI [odds ratio=3.13; 95% CI= 0.6158 to 15.8863] may had strong association with abnormal semen parameters. Intake of H2 blocker [OR = 1.102; 95%CI=0.5981 to 2.0305] was not found to be significantly associated with abnormal semen abnormalities. Out of total 200 respondents only 7 (3.5%) had previous marriage. On an average both group had intercourse for about 3 times per week and there was no statistical significant difference in frequency of intercourse among the groups (p-value=0.625). Diabetes mellitus had very high OR, being 5.6 in patients with Gonorrhea and 2.3 for other orchitis. Gonorhea was found, in that study as well, the most commonly reported STI. However as a predictor of azoospermia STIs had very high OR, being 5.6 in patients with Gonorrhoea and 7.6 in patients with other STIs.

Conflict of Interests: None.

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