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# Factors of Infertility among the Males in Selected Hospitals of Dhaka City

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**Abstract**

***Background:*** *Infertility is a global health issue affecting approximately 8-10% of couples and has multidimensional problem with social, economic and cultural implications, which can take threatening proportions in countries with strong demographic problems. Reproductive health in Bangladesh focused mainly on women health and ignoring the role of men, in spite of the important role that men are playing in reproduction and fertility which impact his family and environment.*

***Objective:*** *To find out the factors of infertility among the males in selected hospitals of Dhaka city.*

***Methods:*** *A convenience sample of 112 medical records for males diagnosed with infertility in Shaheed Suhrawardi Medical College Hospital, National Institute of Kidney Diseases and Urology, Sher-E-Bangla Nagar, Dhaka, Fertility center Mohammedpur Dhaka, Infertility care and Research Center Mohammedpur Dhaka were retrospectively reviewed for the cause of their infertility. Four months duration of study from May 2016 to August 2016. After completion of data collection, the collected data was checked and verified on regular basis for accuracy, consistency and completeness. Data was edited and coded. The results were presented into the form of tables and figures. Data was processed in computer by using the software SPSS, version 22 and statistical analysis was done.*

***Results:*** *Male factor alone was accounted for 52% of infertility among couples of these 90 had primary infertility and 22 had secondary infertility. The mean duration of infertility was 4.98±3.99 years and the mean age for male cases was 33.5±7.24 years The most common causes among infertile men were, idiopathic infertility 36.6%, varicocele 32.1%, obstruction of the seminal tract 18.8%, and hormonal problems 5.4%. Least common causes found were, medication 1.8%, spinal cord injury 1.8%, cryptorchidism 1.8%, and testicular failure 1.8%.*

***Conclusion:*** *More than half of the infertile couples were from an idiopathic cause. Study results confirm that understanding about male reproductive function and the environmental factors that affect it is insufficient. Provide education to infertile men by doctors in charge about potential risk factors that may affect fertility and not just provide treatment because simple changes in lifestyle can improve fertility.*

**Keywords:** Infertility, Male

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**Introduction**

This chapter includes definition and types of male infertility, diagnosis of infertility in men, causes of male infertility, risk factors that are suspected to affect fertility in men, semen analysis values, study significance; study objectives; and finally the research questions.

Male infertility is a problem of the reproductive system, and the word infertility itself means no fertile, and that would be equivalent tosterility[1], sterility means that a man is totally unable to have a child.[2]The World Health Organization (WHO) and the American Society for Reproduction Medicine Practice Committee defines infertility as no conception after at least 12 months of unprotected sexual intercourse.[1,3]Infertility can be permanent (irreversible) or sub-fertility which means the probability of spontaneous conception may be decreased.[3] All men who are sterile would be considered infertile, but not all men who are infertileare sterile, because an infertile man can father a child with medical help or with simple change in his life style.[4]

A man is responsible in about 30% of infertility among couples, and contribute to infertility with woman in another 30-40%.[5] Infertility can either be primary or secondary; primary male infertility is when the man has never impregnated a woman, while secondary male infertility is when a man has impregnated a woman irrespective of the outcome of the 3 pregnancy.[3] Men with secondary infertility, in general, have better chance of future fertility.[3]Duration of infertility is defined as the number of months during which the couple has been having sexual intercourse without the use of any contraceptive method.[3] This indicator gives an important information about the couple's future fertility, if the duration of infertility of 3 years or less the couples have a better chance of future pregnancy, but if the duration has been longer, then there is a severe biological problem.[3] But in general couples tend to seek medical advice after a shorter duration of infertility.

The most important steps in diagnosis of infertile men are a careful history taking and a physical examination.[5] The past medical history of patients is very important because it contribute to the diagnosis in one quarter of cases of infertility.[3] Specific childhood illnesses may result in problems in the reproductive system like failing of testes to descend that result in cryptorchidism, post pubertal mumps orchitis (mumps accompanied with swelling of one or both testis), time of puberty, surgical history, therapeutic medications, and systemic diseases.[5]Physical examination is the second step in diagnosing abnormalities that causes infertility in men, measurement of height, weight, and blood pressure will give some information about systemic diseases.[3] Body hair distribution gives an indication of androgen production, breasts should be inspected to detect gynaecomastia (breast enlargement), examination.

Difficulties with sexual intercourse or ejaculation are identified in about 2% of couples who have fertility problem.[3] Sexual dysfunction can be as a result of either in adequate erection or in adequate frequency of sexual intercourse, if the average frequency of vaginal intercourse is twice or less per month it is inadequate.[3]Sperm antibodies may be found in the semen of both fertile and infertile men[6], but it is diagnosed as immunological cause of male infertility when 50% or more of motile spermatozoa are found to be coated with antibodies.[3] Unexplained infertility can describe 10 to 15% of infertile couples. If the patient has normal spermatozoa but has abnormalities in the physical or biochemical or bacteriological composition of the seminal plasma or increased number of white blood cells in semen then the patients diagnosed with isolated seminal plasma abnormalities.[3]

Congenital abnormalities include a history of testicular mal descent, karyotype abnormalities, and azoospermia (sperm concentration is 0 x106/ml) due to congenital agenesis of the vasa deferentia.[3]Acquired testicular damage is recorded when the abnormal spermatozoa are caused by parotitis with orchitis.[3] Varicocele is a dilation of the testicular veins within pampiniform plexus of the spermatic cord that holds up a man's testicles.[7]Varicocele may cause infertility if it associated with abnormal semen analysis [3], but the mechanism is unclear.[8]

Sexually transmitted diseases and male accessory gland infection (MAGI) can impair male fertility by increasing the reactive oxygen species, or by causing inflammation lesions of the epididymis, or urithritis, or urethral strictures, or ejaculatory disturbance, or by stimulating anti sperm antibodies (ASA).[3] The hypothalamus-pituitary endocrine system regulate the hormonal events that required to the normal testicular function. Hypothalamus stimulated the pituitary gonadotropins which are: Luteinizing Hormone(LH) stimulate the production of testosterone, and Follicle-Stimulating 12 Hormone (FSH) which stimulate the production of seminiferous fluid.[6]Normal levels of LH and FSH are necessary for maintenance of spermatogenesis, disorders of the pituitary or hypothalamus will cause inadequate gonadotropin stimulation of the testis and that will lead to problems with fertility.[6]

Idiopathic oligozoospermia is accepted if the sperm concentration is less than 20 x 106/ml but more than 0 x 106/ml and there is no other cause from the causes

mentioned above.[3] Idiopathic asthenozoospermia in this case the sperm concentration is normal but there is a low proportion of spermatozoa with progressive motility and none of the other causes is applicable.[3] Idiopathic teratozoospermia requires normal sperm concentration and motility but low morphology, and also none of the other causes is applicable. Idiopathic cryptozoospermia is diagnosed if no spermatozoa are found in the fresh semen sample, but few are found after centrifugation.[3]There is a strong evidence that most of the disorders of the male reproductive system such as testicular cancer; declining in semen quality; undescended testis; and hypospadius is of an antenatal origin as a results of disruption of embryonal programming and gonadal development during fetal life.[9] All these are symptoms of one underlying concept the Testicular Dygenesis Syndrome (TDS), TDS can also be caused by either genetic or environmental factors.[9]

Male infertility is the inability of a man to impregnate a woman after at least 12 months of unprotected sexual intercourse and male infertility can be either primary or secondary. WHO has proposed a guided classification for diagnosing causes of male infertility; there are many medical, iatrogenic, congenital, acquired, and idiopathic causes that can cause infertility in men. Semen analysis is crucial to recognize fertile and infertile men and at least two semen analysis is required to diagnose a man as infertile. Certain environmental, occupational, and lifestyle factors was discussed that are suspected to interfere with fertility in men and normal spermatogenesis. In Vitro Fertilization services (IVF), and talking to doctors responsible for treating patients with fertility problems. The researcher has come across the reality that there is a high number of infertility cases, especially those with male factors in recent years. So the researcher wants to conduct this study to assess the proportion of male factor alone among infertile couples and to investigate the causes of infertility among men that are diagnosed with infertility.

**Methodology**

This cross-sectional study conducted at Shaheed Suhrawardi Medical College Hospital, National Institute of Kidney Diseases and Urology, Sher-E-Bangla Nagar, Dhaka; Infertility Care and Research Center, Mohammadpur, Dhaka; Fertility Center, Mohammadpur, Dhaka. Four months of study period from May 2016 to August 2016. 112 married infertile men were included for the study sample.

Purposive sampling technique was used. After completion of data collection, the collected data was checked and verified on regular basis for accuracy, consistency and completeness. Data was edited and coded. The results were presented into the form of tables and figures. Data was processed in computer by using the software SPSS, version 22 and statistical analysis was done.

**Ethical consideration:**

All ethical issues related to the research involving patients/human subjects were addressed according to the guidelines imposed by BMRC (Bangladesh Medical Research Council).

- Permission from respective hospital.
- Respondents had full right to refuse and withdraw from the study at any time.
- Respondents had told that, the collected data was keep confidentially and used for the study purpose only.
- All the respondents were conducted with the prior consent of the respondent.

**Result**

This chapter presents the study results in accordance to the study objectives. It includes the demographic characteristics for the infertile groups; causes of male infertility; and seminal characteristics for infertile cases.

This study found that the total number of infertile men were 112 during the study period four months (From May 2016 to August 2016). There were 90 with primary infertility (a man had never impregnated any woman), and 22 of cases with secondary infertility (a man had in the past impregnated at least one woman irrespective of the pregnancy outcome).

**Table I:** D*istribution of the respondents according to demographic variables and type of fertility (n =112)*

| Variable | Primary infertility (n=90) | Secondary infertility (n=22) | P-value | Total (n=112) |
|---|---|---|---|---|
| | Mean ± SD | Mean ± SD | | Mean ± SD |
| Men age | 32.7±6.76 | 37.3±7.32 | <0.001* | 33.5±7.24 |
| Wives age | 26.6±5.13 | 31.0±5.38 | <0.001* | 27.3±5.43 |
| Marriage duration | 4.72±3.95 | 8.74±5.18 | <0.001* | 5.39±4.44 |
| Infertility duration | 4.72±3.95 | 6.27±3.95 | <0.001* | 4.98±3.99 |

Data were analyzed by Unpaired student t-test, *significant

The mean age of all infertile men was 32.7±6.76 years old ranged between 20-65 years. Men in the primary infertile group were significantly younger than men in secondary infertile group (33 versus 37 years; p <0.001). The mean age for wives was 27 years old, and wives of cases in primary group was significantly younger than wives of cases in secondary group. Marriage mean duration for primary and secondary infertile groups were 5 and 9 years respectively, the difference was statistically significant (p<0.001). The mean infertility duration was also significantly different between the primary (4.7 years) and secondary (6 years) groups (p<0.001).

**Table II:** *Distribution of the respondents according to demographic characteristics*

| Demographic characteristics | Primary infertility (n=90) Mean ± SD | | Secondary infertility (n=22) Mean ± SD | | P value | Total (n=112) | |
|---|---|---|---|---|---|---|---|
| | N | % | N | % | | N | % |
| Age group | | | | | | | |
| 26-30 | 37 | 41.1 | 2 | 9.1 | | 39 | 34.8 |
| 31-35 | 24 | 26.7 | 13 | 59.1 | | 37 | 33.0 |
| 36-40 | 19 | 21.1 | 6 | 27.3 | 0.007* | 25 | 22.3 |
| 41-45 | 10 | 11.1 | 1 | 4.5 | | 11 | 9.8 |
| Locality | | | | | | | |
| | | | | | 0.986 | | |
| Urban | 37 | 41.1 | 9 | 40.9 | | 46 | 41.1 |
| Rural | 53 | 58.9 | 13 | 59.1 | | 66 | 58.9 |
| Occupation | | | | | | | |
| Govt. service | 29 | 32.2 | 5 | 22.7 | | 34 | 30.4 |
| Private service | 33 | 36.7 | 3 | 13.6 | | 36 | 32.1 |
| | | | | | <0.001* | | |
| Business | 5 | 5.6 | 5 | 22.7 | | 10 | 8.9 |
| Teachers | 6 | 6.7 | 7 | 31.8 | | 13 | 11.6 |
| Others | 17 | 18.9 | 2 | 9.1 | | 19 | 17.0 |
| Religion | | | | | | | |
| Islam | 74 | 82.2 | 16 | 72.7 | | 90 | 80.4 |
| Hindu | 16 | 17.8 | 6 | 27.3 | 0.314 | 22 | 19.6 |
| Education | | | | | | | |
| Primary | 31 | 34.4 | 12 | 54.5 | | 43 | 38.4 |
| SSC | 18 | 20.0 | 6 | 27.3 | | 24 | 21.4 |
| | | | | | 0.132 | | |
| HSC | 22 | 24.4 | 2 | 9.1 | | 24 | 21.4 |
| Graduate & above | 19 | 21.1 | 2 | 9.1 | | 21 | 18.8 |
| Socioeconomic status | | | | | | | |
| | | | | | 0.181 | | |
| Lower middle | 44 | 48.9 | 10 | 45.5 | | 54 | 48.2 |
| Middle | 32 | 35.6 | 5 | 22.7 | | 37 | 33.0 |
| Upper | 14 | 15.6 | 7 | 31.8 | | 21 | 18.8 |

Note: Analysis was conducted using the Chi-squared test for all variables
*statistically significant at p<0.05

Table II showed the association of demographic characteristics infertility. The highest percentage of infertility (34.8%) was found among men who are less than 26 years old, followed by men aged from 26 to 40 (33.0%), while the lowest percentage (9.8%) was found among men who are 40-45 years old. According to data presented in table 2, the percentages of infertility cases in general decreased with age, Chi-square test showed a significant difference between primary and secondary male infertility and age groups (p=0.007). Primary infertility is higher in men less than 30 years followed by men who were between 25 to 35 years. While according to secondary infertility we noticed that the age group from 36 to 35 years was the highest age group followed by men aged 31-35years old.

Maximum (58.9%) were residents primarily in rural areas, 41.1% in urban areas. The percentages of primary and secondary infertility were highest in rural areas, other wise the percentages of secondary infertility in rural areas were comparable to that in urban areas. But statistical percentages were not significantly different (p=0.986).

According to occupation, private service made up the largest group (31.1%), followed by govt. service (30.4%), business owners (8.9%), teachers (11.6%) and others (17.0%). Service holders were most frequent among men with primary infertility.

Teachers, business and others were the most frequent among men with secondary infertility. Fisher's exact test showed a significant relation (p<0.001) between infertility types and male occupations.

Majority of the respondents were Muslim 80.4% followed by Hindu 19.6%, regarding education 38.4% completed primary level, 21.4% patients had SSC and graduate and above 18.8%. Maximum respondents come from lower middle class family followed by middle class 33.30% and upper class 18.8%. The association between primary and secondary infertile groups among religion, education and socioeconomic were not statistically significant (p> 0.05).

**Table-II:** *Distribution of patients by causes of male infertility*

| Causes of infertility | Frequency | Percentage (%) |
|---|---|---|
| Varicocele | 36 | 32.1 |
| Obstruction | 21 | 18.8 |
| Hormonal problem | 6 | 5.4 |
| Medication | 2 | 1.8 |
| Spinal cord injury | 2 | 1.8 |
| Testicular failure | 2 | 1.8 |
| Crytporechidism | 2 | 1.8 |
| Seminal abnormalities of unknown causes | 41 | 36.6 |
| Total | 112 | 100.0 |

In this study there were eight main causes for infertility in men, Table III presents the distribution of male infertility causes. The largest single cause during the study period was seminal abnormalities of unknown cause (36.6%). Beyond this, varicocele was the second largest cause and accounted for 32.1% from all causes, seminal tract obstruction (obstructive azoospermia) and hormonal problems were relatively common 18.8%, 5.4% respectively. However, medication (1.8%), spinal cord injury (1.8%), cryptorchidism (1.8%), and testicular failure (1.8%) were very infrequent.

**Table-IV:** *Distribution of male infertility according to age*

| Causes | 26-30 yrs. | | 31-35 yrs. | | 36-40 yrs. | | 41-45 yrs. | |
|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % |
| Unknown | 13 | 11.6 | 15 | 13.4 | 10 | 8.9 | 5 | 4.5 |
| Varicocele | 16 | 14.3 | 11 | 9.8 | 8 | 7.1 | 1 | 0.9 |
| Obstruction | 4 | 3.6 | 7 | 6.3 | 6 | 5.4 | 3 | 2.7 |
| Hormonal problem | 2 | 1.8 | 1 | 0.9 | 1 | 0.9 | 1 | 0.9 |
| Medication | 1 | 0.9 | 1 | 0.9 | 0 | 0.0 | 0 | 0.0 |
| Spinal cord injury | 1 | 0.9 | 0 | 0.0 | 0 | 0.0 | 1 | 0.9 |
| Cryptorchidism | 1 | 0.9 | 1 | 0.9 | 0 | 0.0 | 0 | 0.0 |
| Testicular failure | 1 | 0.9 | 1 | 0.9 | 0 | 0.0 | 0 | 0.0 |
| Total | 39 | 34.8 | 37 | 33.0 | 25 | 22.3 | 11 | 10.0 |

Table IV shows the distribution of male infertility causes among male age groups. In men less than 30 years old, percentages were much higher than other older age groups. Also we noticed that ratios gradually decreased with increasing age groups especially in cases of unknown and medical causes.

**Table V:** Distribution of male infertility according to occupation

| Governorates | Unknown cause | | Medical cause | | Accident | | Medication | |
|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | No | % |
| Govt. service | 14 | 12.5 | 17 | 15.2 | 3 | 2.7 | 1 | 0.9 |
| Private service | 16 | 14.3 | 10 | 8.9 | 7 | 6.3 | 1 | 0.9 |
| Business | 5 | 4.5 | 22 | 19.6 | 0 | 0.0 | 0 | 0.0 |
| Teachers | 2 | 1.8 | 1 | 0.9 | 0 | 0.0 | 0 | 0.0 |
| Others | 4 | 3.6 | 1 | 0.9 | 0 | 0.0 | 0 | 0.0 |

Distribution of male infertility causes by occupation in table 5 showed that workers, service holders, and business owners had the highest percentages in both unknown and medical causes. While for accidents we found that private service had the highest ratios. We also note that more than half of male infertility cases (45.5%) had a medical cause [varicocele, hormonal problems, cryptochidism, obstruction, and testicular failure] for their infertility, while 36.7% had unknown cause, 9.0% of cases had exposed to accidents, and 1.8% of cases taking medication that affects their fertility. The vast majority of male infertility cases had one cause for infertility, while only 5.0% had two or more than two causes.

Table 6 shows seminal volume, sperm concentration, and total sperm output according to infertility groups. Men with primary infertility had lower seminal characteristics compared to men with secondary infertility. For infertility type, Unpaired t-test shows a significant difference between type of male infertility and mean of sperm concentration ($p<0.05$). It was found that males with secondary male infertility had higher sperm concentration than men with primary male infertility. For the type of infertility and sperm output there was also a significant difference ($p<0.05$) in which males with secondary male infertility had higher sperm output number compared with males with primary male infertility, while between infertility type and semen volume there was no difference ($p=0.679$).

**Table VI:** *Distribution of Seminal characteristics by infertility status*

| Seminal characteristics | Primary infertility (n=90) Mean ± SD | Secondary infertility (n=22) Mean ± SD | p-value | All cases (n=112) Mean ± SD |
|---|---|---|---|---|
| Seminal volume (ml) | 3.2±1.67 | 3.4±1.88 | $0.679^{ns}$ | 3.3±1.71 |
| Sperm concentration ($x10^6$) | 4.85±5.2 | 6.1±5.4 | 0.010* | 5.07±5.3 |
| Sperm output ($x\ 10^6$) | 16.16±22.0 | 21.46±25.0 | 0.011* | 17.1±22.3 |

Unpaired student t-test *significant

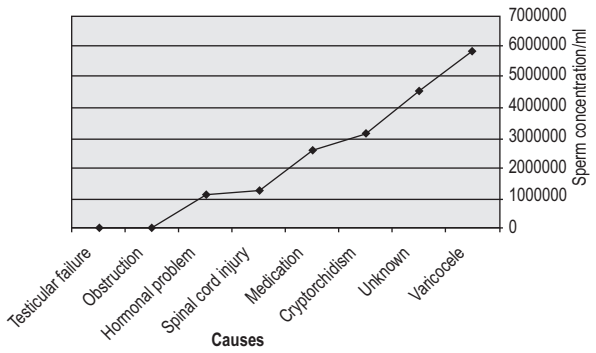


**Fig.-1:** *Mean of sperm concentration according to causes of male infertility*

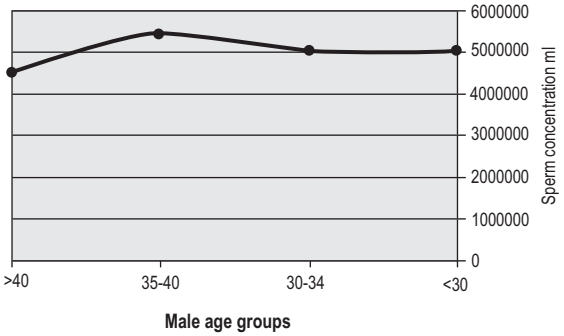


**Fig-2:** *Mean of sperm concentration according to male age group*

There was no significant differences between sperm concentration and all of the following; male occupation (p=0.524), type of locality (p=0.231), years (p=0.418), and governorates (p=0.694).

According to male age group there is no significant difference between age groups and any of the seminal characteristics. Figure 2 shows the mean of sperm concentration for each age group, the sperm concentration mean was nearly converged for all age groups. Men aged between 35-40 had the highest mean of sperm concentration followed by men aged between 30-34, while men over forty had the lowest mean of sperm concentration.

**Discussion**

In this chapter the study results will be discussed in term of proportion of male factor among infertile couples; demographic characteristics for infertile groups; male infertility causes and semen parameters. The results will be compared with other global and regional studies.

In present study, the age of infertile groups ranged between 26 to 45 years with manage of 33.5±7.24 years old, it was found that age group less than thirty years old had the highest percentages of infertility (35%) and this may due to early marriage when the couples get married at young age and failed to conceive 60 they seek treatment early even before a year. Men from primary infertility group were significantly younger than men in secondary infertility group (mean age was 32.7±6.76 versus 37.3±8.32 years) because men from the secondary infertility group already had children at the beginning of their married life (when they are young), but sub sequent, they exposed to factors that disrupt their fertility and that may happened later at older age. The mean duration of male infertility was 2.39 years, this finding come close to the findings in each of Bangladeshi study 4.7 years[10],Mongolia 4.9 years[11], and in Sudan the infertility duration was 5.2 years.[12] Couples with a duration of 3 years or less have a better chance of future spontaneous pregnancy, while if the duration of infertility has been longer, this indicates a severe biological problem.[3] The mean infertility duration in our study was significantly different between the primary (4.72years) and secondary (6.27 years) groups, secondary infertile groups had longer infertility duration and this may be due to the following reasons; primary infertile group seek treatment early (at the beginning of their marriage) because they failed in trying to conceive, while for secondary infertile groups since they already had a pregnancy or children they will not think that a problem has occurred and affected their fertility so they will seek treatment after a long period of trying to conceive.

According to occupation, private service made up the largest group (32.1%), followed by govt. service (30.4%), business owners (8.9%), teachers (11.6%) and others (17.0%). Service holders were most frequent among men with primary infertility. Teachers, business and others were the most frequent among men with secondary infertility. Fisher's exact test showed a significant relation (p<0.001) between infertility types and male occupations. This group of men may exposed to great level of stress as occupational stress negatively correlated with the proportion of normal sperm.[13] Because they usually work in jobs that require great efforts, like in industrial and construction jobs, these types of work presents with an increase infertility rates because of greater exposure to stress[14]and they were most likely to be exposed to physical and chemical hazards at the work place. The second largest group is service holders, as they work in offices so their work requires them to set for long time. A study suggests that setting for long time increased scrotal temperature and affect the sperm quality.[15]

In the present study, causes of infertility among men were in agreement with the previous reports, with two exceptions: first the proportion of idiopathic infertility was in the general population ranged between 20-30%[16] but in this study it was higher. Second, the proportion of men with obstructive azoospermia was also higher than other studies.

Male infertility in this study was mainly due to idiopathic infertility, which accounted to about 36.6% from all male infertility causes. The large percentages of men with idiopathic infertility were service holders, but there was no information about the nature of their working, and their working environment and its effect on their fertility in this study. Certain environmental, occupational, and lifestyle factors can affect the sperm quality in men with idiopathic infertility. Cases with idiopathic infertility had a mean of sperm concentration less than 5 x 106 which is very low. The large percentage of idiopathic infertility was in men less than thirty years old, this age group is the most widely used of modern technology. Modern technology can threaten the men fertility, like using cell phones for long time will reduce the number of live sperm[17], also using laptops for long time[18]and adoption of certain styles of clothing (wearing tight under trousers)[15,19]will increase the scrotal

temperature and reduce the sperm quality. Industrialization, environmental pollution, use of chemicals, and exposure to hazardous materials can affect male reproductive health.[20]Further more, stress can decreased semen parameters in men[21,22], men exposed continuously to different types of stress (political and economic), and so they expected to have poorer semen quality compared with other populations. The effect of war on semen parameters has been reported in a Lebanese study, the only parameter that was lowered during the war was sperm concentration.[23] Varicocele was the second clinical cause in this study which affect32.0% of men, this percentage is similar to that in Brazil (34.3%).[24] And it is less than the findings in each of the following; Spain (17.9%)[25]; Siberia (11.3%)[20] and Kenya (5%)[26]. Varicocele is not associated with infertility despite abnormal seminal fluid characteristics.[6] In our study, men with varicocele had the highest mean of sperm concentration (5.88 x106) compared with other causes, and it may cause reduced fertility by increased scrotal temperature and leading to decrease semen quality. Obstruction of the seminal tract was seen in 18% of our cases. This ratio is higher than the results of other studies, in Brazil 10.3% of cases had obstruction[24], 8.4% in Mongolia[11], and in WHO study for 8500 couples it was less than 2%.[16] Higher proportion of obstructive azooeprmia among infertile men indicates that we have large proportion of congenital defect than other countries which results in obstruction of sperm transport .WHO recommends for men with sperm concentration below 5-10m/ml to be screened for structural abnormalities of sex chromosomes andautosomes.[3] In our study the majority of cases had semen concentration below 5 x 106/ml, the abnormality of chromosomal defects increased with the severity of semen concentration, since 48% of the study cases had a medical cause for their infertility so genetic counseling is important especially for couples attending to use assisted reproductive treatment.

**Conclusions**

The proportion of primary male infertility was 90 and 22 of cases had secondary male infertility, primary infertility was higher in younger men (26-30 years), while secondary infertility proportion was higher in men aged between 36 to 40 years old. Seminal abnormalities of unknown cause (idiopathic infertility) was the largest single cause of male infertility, followed by varicocele, obstructive azoospermia, hormonal problems, spinal cord injury, cryptorchidism, and testicular failure. Males with secondary infertility had higher sperm concentration and sperm output than men with primary infertility, however the majority of male infertility cases had semen concentration below 5 x 106/ml.

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