CHAPTER I
INTRODUCTION

“What lies behind us?
and what lies before us
are small matters
compared to
what lies within us?”

1.1. Back Ground of the Study

Since the beginning of history the phenomena of reproduction has been the essence in the continuity of human race. In planning a life together, most of the couples have a vision about how their life should be, and most of them wish to have children of their own for the future life. When fertility fails, the couples become psychologically depressed; some may feel frustrated and feel guilty; whereas some get angry to their fate and blame each other for the failure. Instead couples can begin to view themselves constructively rather than viewing their fertility as failure.

Carcio (1999) has explained that the probability of becoming pregnant during each cycle of menstruation is 25 per cent in normally fertile couples. The cumulative pregnancy rate during a 12 months period is 85 per cent. He further explained that after 12 months of unsuccessful pregnancy attempts, a cause should be explored because the likelihood of being normally fertile is reduced to only 15 per cent.

Different definitions of infertility are used in clinical practice as well as in epidemiological and demographic research. A study by Larsen (2005) assessed whether the definition makes a difference for estimates of the prevalence and socio demographic differentials of infertility and whether one definition would be applicable in both research and clinical practice. Cross-sectional study design was used. Community-based sample of 1,125 women aged 20 to 44 years were the participants. Similar levels and socio
demographic characteristics of infertile women were obtained from asking the question “How long have you tried to get pregnant?” and from secondary data collected in a birth history that included date of marriage, date of last birth, current contraceptive use and whether the woman wants another child. The infertility definition made a difference. The World Health Organization definition based on 24 months of trying to get pregnant is recommended as the definition that is useful in clinical practice and research among different disciplines.

The consequences of infertility are manifold and can include societal repercussions and personal suffering. Advances in assisted reproductive technologies, such as In Vitro Fertilization (IVF), can offer hope to many couples where treatment is available, although barriers exist in terms of medical coverage and affordability. The medicalization of infertility has led to a disregard for the emotional responses that couples experience, which include surprise, disbelief, anger, isolation, distress, loss of control and stigmatization. Partners may become more anxious to conceive. Marital discord often develops in infertile couples, especially when they are under pressure to make medical decisions.

In India motherhood is highly valued and childlessness has devastating consequences for women because the blame for infertility is squarely laid only on the woman. There is a need to highlight to the public, the fact that infertility is a shared problem where the causative factor can be present in the man, in the woman or in both.

1.2. Biological Aspects of Infertility

Infertility affects 15-20 per cent of all couples who are trying to conceive. The causes are many and varied. Sometimes no cause is found and sometimes multiple causes are found or the causes are unexplained for 10-15 per cent of cases. The problem may be associated with male factor infertility (35-40%) or female factors (40%) or both. (Angard 1999 and Speroff, Glass and Kase 1994 as cited by Carcio 1999). Male factors affect the quality and quantity of the sperm whereas female factors may include hormonal
disturbances that may cause anovulation or problems within the reproductive system that may interfere with transportation of the egg or sperm. Age is also becoming an influencing factor for both men and women.

WHO epidemiological studies (as cited in Infertility Vs Family Planning, Health Action 2000) quoted the prevalence rates for infertility in India as 3 per cent in primary and 8 per cent in secondary infertility. The article further explained that in India, data from various community-based studies on childlessness from different States show that between 5 to 8 per cent of the women reported childlessness as one of their gynecological problems. Childlessness varies across the States. While Haryana and Assam showed an infertility rate of 1.4 per cent Andhra Pradesh showed an infertility rate of 4.4 per cent. The estimated rate of infertile couples in India is approximately 17.6 million.

No consolidated statistics for the country is available on the causes of infertility; however compilation of studies from various hospitals (Wadia Maternity Hospital & Cama Alibless Hospital, Bombay; KG Medical College, Lucknow; JN Medical College, Aligarh) shows that the most common cause of female infertility is tubal factor, 18 to 52 per cent in Cama and Wadia respectively. WHO Multicenter Studies of Indian males show that 73 per cent of male infertility had no demonstrable causes, which is comparatively less in Africa (46%) and developed (49%) countries. Varicocele as a cause was found to be less in India (2.2%) in comparison with Africa (20%) and other developed countries, which is 11 per cent (Myths and Facts, Health Action 2000).

Many factors may cause infertility. What is often deemed to be a relatively simple process – the union of egg and sperm to produce a pregnancy is actually an extremely complex process. The process can go awry at one or more of these steps. The causes of infertility can be related to hormonal mechanisms, reproductive tract anomalies, poor coital practice, decreased semen parameters, egg quality and presence of any co-existing medical conditions. Research studies by Speroff (as cited in Angard, 1999) shows that among female problems, the most common factors for infertility are tubal and uterine
pathology (40%); ovulatory dysfunction (40%) and unexplained infertility or unusual problems such as anatomic, genetic or autoimmune (20%).

Obtaining a thorough and detailed history is essential for making an accurate diagnosis. Some couples may be extremely comfortable disclosing all types of information in front of each other; others may have a need to discuss some topics privately. Infertility is unique in that it involves the collective history of two individuals who may have separate issues of confidentiality. It is important to recognize and respect these differences and create an environment in which both partners can express their concerns freely. It is often helpful to recognize the difficulties the couple may have already faced before seeking medical care. They may come filled with a range of emotions which include denial, anger, confusion, disappointment, frustration, anxiety or depression. They may have been experiencing stress in their marriage, conflicts with friends and family members or struggle with religious or moral concerns about seeking evaluation and treatment.

An evaluation is warranted for couples who have not been able to conceive despite 12 months of unprotected intercourse if under the age of 35 or 6 months if older. A woman who has never been pregnant or a man who has never impregnated a woman is considered to have primary infertility. Secondary infertility is a condition in which a woman has been pregnant at least once and had not been able to conceive again.

Why are so many couples seeking medical intervention in this so very private part of their lives? The reasons are many and varied. One reason is that the men and women of today are putting off starting a family until their careers are stabilized or until they have built that comfortable nest. However at that point fertility potential may have begun to decline. Advancing age particularly in women affects fertility.

It is well documented that there is diminished fecundity with increasing age. A woman reaches her maximum fertility potential at age 24. By the age of thirty fertility potential begin to decline and by age 35 the decline is accelerated. Pregnancy is almost
impossible after age 45. This is due to variety of factors. Oocyte factors are mainly responsible. Some data suggest that uterine factors related to diminished endometrial receptivity may also play a role.

The most likely cause of age related infertility is a lower number of residual follicles in the ovary and the poor quality of the follicles remaining. The number of follicles progressively decreases throughout a woman’s life span from a high of 6 to 7 million during early fetal development to a few hundred by menopause. This decline in ovarian reserve may be accompanied an unresponsiveness of the remaining follicles to gonadotropin stimulation. This in part may be due to the fact that the better follicles are used earlier during the reproductive years leaving the less responsive follicles for use during a woman’s late thirties and forties.

The exact effect of weight on infertility is unknown. However it may account for some women with otherwise unexplained infertility. Women engaged in strenuous physical exercise have a high incidence of menstrual irregularity with anovulatory cycles because exercise decreases gonadotropins and increases prolactin. Obesity can also play a significant role in anovulation because obesity is associated with hormonal abnormalities, elevated serum estradiol and elevated levels of androgens.

Restoration of body weight to near ideal body weight and normal exercise patterns will often restore fecundity without other forms of therapy. Ideal body weight should fall between 95% and 129% of predicted ideal body weight. When it falls outside of these limits reproductive function seems to be impaired.

Only two decades ago clinicians and scientists begin to work with human gametes for the purpose of treating infertility. The In Vitro handling of the gametes of lower animals had been done for many decades in the veterinary world, but human gametes seem to require far greater care, both in the laboratory and in ethical thought. The first human birth following IVF occurred after years of hard work and dedication by the parents and a
team of physicians and scientists, and resulted in the birth of Louise Brown in England in 1978. Interest and respect for this landmark achievement traveled quickly to all parts of the world, for after only 20 years, hundreds and thousands of children have been born to loving homes using IVF technology. Regulation of this technology is perhaps more strict than for any other field of medicine.

The performance of IVF requires a team of physicians and scientists well versed in female reproductive physiology and gamete biology. The husbands and wives are instructed in the use of injectable medicines like gonadotropins, such that when administered to the women multiple eggs will develop. After careful monitoring of the ovarian stimulation, the eggs are retrieved and placed in a petri dish. To that dish sperm are added. After less than a day of incubation most of the eggs are observed to be fertilized. After another day a 2-6 cell embryo is observed. Several of these embryos are then placed into the uterus with hope that there will be implantation. One would then hope for an uncomplicated pregnancy and delivery of a healthy infant. The performance of IVF is demanding in terms of clinical expertise and patient co-ordination to achieve multiple high quality oocytes. Thus IVF is relatively expensive financially.

1.3. Psycho-social Aspects of infertility

Some people have difficulty believing that infertility is a physical problem. In a sense, they are right. Infertility is not only a physical ailment, but also a psychological and social problem. The psychological and emotional impacts and problems of infertility are often just as important as the physical components. Infertility frequently results in anger, depression, anxiety, and feelings of worthlessness. The blame may be directed at the person's body for being “inadequate”, or they may blame their partner, their doctor or may feel they are being punished for something they did in their life.

Since, in most cases, infertility and sexual intimacy and sexual behavior are linked, intimacy often becomes one of the first areas complicated by infertility. What was once spontaneous and pleasurable becomes a "problem to be solved". One of the
difficult components of infertility is dealing with the uncertainty about outcomes and the challenge of having to decide when to move on to a different treatment or when to stop infertility treatment and look into adoption or other options.

Our society is generally seen as one that places a high value on couples bearing children and consequently may be less than supportive to those who cannot fulfill this expectation. The psychological care of those who offer to donate eggs or sperm for the treatment of others is also important.

The following quotes were taken from men and women struggling with infertility:

"Things that were personal and private and special between my husband and I are no longer. I feel like a failure because I can't give my husband another child and I feel like I'm not as much of a woman because my body can't/won't do the things it is supposed todo."

"I have become numb. It's difficult to sometimes balance trying to stay positive without getting my hopes up. It's almost as If I go around my daily chores on automatic, without thinking, without feeling, wake up, go to work, come home, be depressed, go to bed, wake up and the whole cycle starts again. I don't look forward to anything. I don't care about vacations, promotions. Just numb. I try to put up a front so that it won't be such a drag to be around. I don't think I will ever be the same."

"Being a parent and having a family was always a part of the picture for us. We were going to be parents. That's part of how I understood myself and my wife. And now, it may not happen. I'm a husband but I'm not a father. So who is I now, and who is my wife, and are we really a family--can we be, without kids?"

"I've been on this road for over two years. It's the most stressful thing I've ever dealt with. The insecurities are bleeding into EVERY part of my life. I feel like I'm losing myself piece by piece day by day. I feel left behind as everyone around me has started and some completed their families. I feel broken and defective. I can't find the strength
that I've relied on for so many other low points in my life."

"Infertility has been the worst experience of my life. I'm not even sure it's worth everything I've been through at this point. I want a baby, but I miss the woman I used to be. I just don't know how to become her again."

"Trying to conceive has brought my faith in God to an all time low. I don't know if God exists or not and I don't really care. I haven't learned any life lessons. I haven't become a stronger person, more loving or more faithful. I have become something quite the opposite and I don't see myself getting any better."

"I am just tired. Tired of hurting. Tired of hoping. Tired of that terrible high school feeling of being “dumped” every month. I was more hopeful than usual this month. You'd think I would have learned better by now. I used to be such a smiley happy person. I don't even feel like me anymore."

"I do believe in God, however, my faith has been rocked. There is no way to say it hasn't. We see so much gloom and doom in what people can do to their own children and we sit here trying and praying desperately for a baby to love and take care of. I cannot pray any more. I have found that when I try to pray I just stop. I hope that God can understand and help me get past these feelings of failure and loss."

"I have lost my faith in God and I didn't want to. I wanted to believe. I can't anymore. Why me? Why all of us? Why every month has to be so hurtful? Painful. Debilitatingly sad. Why hurt my husband, a loving and kind man who ADORES children, more than any man I've ever seen? He is so good and kind and God has given him a wife who cannot DO THIS! He cries with me at every period. And he tries to peel me off the floor every time and tell me he just KNOWS it's going to happen. When I know it will never. Not without majorly expensive medical miracles. We are not rich by any stretch of the word. This nightmare has made me into a jealous and not-nice-to-be-around person. I
too, used to love to be around my friends and their babies/families. Now, I don't even talk to half of them anymore because .......... because I'm THIS WAY now. I'm miserable. Even when I'm" happy", it's fake. "

A study by Organon found:

- The majority of women surveyed (61%) report making sacrifices in order to become pregnant. These include sacrificing a carefree relationship with their husband (70%), emotional stability (69%), a spontaneous sex life (64%), financial stability (56%) and personal freedom (52%).
- Some of the most common emotions women experience due to infertility include depression (77%), anger (72%) and anxiety (56%).
- Sixty nine per cent of women surveyed find that scheduled sex is somewhat to very burdensome, where intercourse becomes a chore and results in loss of intimacy.
- Forty per cent of respondents said someone other than their husband/partner was their greatest source of support, and more than one quarter (26%) felt their husband/partner could have been more supportive. Nearly 3 in 10 women (28 %) did not feel they and their husband/partner shared the same level of commitment and dedication to getting pregnant.
- Seventy one per cent of infertile women find it burdensome that friends and family frequently ask when they are planning to have children.
- Fifty two per cent of respondents report that their insurance covers only some or none of the cost of infertility treatments, leading to financial pressures.
- Forty per cent of women surveyed were willing to make a career sacrifice such as putting their career on hold (30%) or declining a promotion that required travel (25%); just eight per cent would encourage their husband/partner to change jobs for a more flexible schedule.

To evaluate the hypothesis that infertility may result in a decrease in quality of life and an increase in marital discord and sexual dysfunction a study was conducted by
Monga et al (2004). The burden of infertility is physical, psychological, emotional, and financial. Couples seeking treatment for infertility were asked to complete standardized validated questionnaires assessing quality of life, marital adjustment, and sexual function. Couples seeking elective sterilization served as the control subjects. The Marital Adjustment Test scores for the women of the infertile couples were significantly lower than the scores of the controls (P=0.01); however no difference was noted in the men. A trend toward lower Quality-of-Life Scores was noted in women (P=0.09) but not in the men of infertile couples. No statistically significant impact on sexual functioning in women was noted; however, the men in the infertile couples had lower total International Index of Erectile Function Scores (P=0.05) and Intercourse Satisfaction Scores (P=0.03). Women in infertile couples reported poor marital adjustment and quality of life compared with controls. Men may experience less intercourse satisfaction, perhaps because of the psychological pressure to try to conceive or because of the forced timing of intercourse around the woman’s ovulatory cycle.

Several authors have discussed about the concept of stress as an etiological factor related to infertility. The mechanisms in this interaction are not yet known, but different ways in which psychological stress reactions might influence reproduction have been suggested. These are: by disturbing the secretion of gonadotropins; by local effects of catecholamine on the uterus and on the functions of the fallopian tubes; by immunological processes that can disturb implantation; and by influencing behaviour like drug addiction, alcoholism and sexual problems. The stress caused by infertility itself might also further diminish chances of having child irrespective of the primary cause of the infertility.

A video film on treatment of infertility, pregnancy, delivery was used as an emotional stressor, to identify the psychological and hormonal responses of 30 infertile women to this specific emotional stressor. The endocrinological response, i.e., the time courses of prolactin, cortisol and testosterone was not of the same level as expected in the phase of menstrual cycle, but varied with their trait anxiety level. It showed that the probability of conception is lower in women with a high trait anxiety. It is suggested that
psychological phenomena as anticipation, mental assimilation and reflection could explain these findings and it should be taken into account when investigating the anxiety. It is suggested that psychological phenomena such as anticipation, mental assimilation and reflection could explain these findings and it should be taken into account when investigating the infertility (Demyttanaere 1998).

To examine the association between urinary levels of the stress hormones adrenaline, noradrenalin and cortisol during treatment with self reported stress, a multicentre prospective cohort study was conducted on 168 women entering their first cycle of IVF/ICSI. From each participant nocturnal urine samples were collected; pre treatment, before oocytes retrieval and before embryo transfer to assess hormonal concentrations. Additionally two questionnaires were administered before starting the treatment to measure anxiety and depression. A significant positive correlation between urinary adrenaline concentrations at baseline and embryo transfer and the scores on depression at baseline were found. In women with successful treatment lower concentrations of adrenaline was found in comparison with unsuccessful women. The results suggest that the adrenal hormone could be one of the links in the complex relationship between psycho-social stress and outcome after IVF/ICSI. (Smeenk et al 2005).

Infertile couples spend many years in medical treatment in pursuit of becoming pregnant. Boivin (1995) studied the relationship between amount of treatment failure and personal and marital distress. Three groups of women (n=91) with varying amounts of treatment failure experience were compared on measures of general and infertility related distress and marital distress was found to be curvilinear. The group that had moderate amount of treatment failure experienced the most distress, whereas the distress level of those without or with a high amount of treatment failure experience was comparable. The results also showed that the relationship between amount of treatment failure and distress was independent of age, years of infertile or years in treatment.
Abbey, Halman and Andrews (1992) studied the psychological, treatment and demographic factors related to the perceived stress that infertile women and men experience. For both women and men, stress was significantly positively correlated with treatment cost and number of tests, and treatments received; stress was negatively correlated with the confidence that one will have a child and perceived control. For women only, attitudes about infertility treatments, importance of children and social support significantly related to perceived stress. For men only, income, number of physicians seen, self-attributions of responsibility also significantly related to perceived stress.

Boivin and Takefman (1995) have identified that pattern of differences between the non-pregnant and pregnant group on stress and biological factors indicate that stress is related to InVitro Fertilization (IVF) outcome. The authors further explained that the relationship between stress and IVF outcome remains speculative. Differences between prospective and retrospective stress ratings may reflect women’s attempt to cope with the strain of the waiting period.

1.4. Health Behaviour in Infertile Women

Infertility is not an absolute condition. The ability to conceive varies with each cycle, environmental circumstances and treatment options. Women may find themselves increasingly despairing at the thought of never becoming pregnant. Social events loom as infertile women begin to dread social occasions. They may also get isolated from family members and work colleagues.

Over the last 40 years, there is marked progress in the development of interventions available to couples having fertility problems. This progress is followed by criticism and debate concerning the moral and ethical issues involved in the use of these interventions. The use of artificial insemination with donor sperm was criticized at that time for its possible negative effects on the husband’s ability to properly raise and care for the resultant child. But then increased research resulted in the availability of more
highly technical and varied interventions. These techniques and their acronyms, such as In Vitro Fertilization (IVF) and Gamete Intra Fallopian Transfer (GIFT) are making their way into everyday conversation. Their appropriateness, acceptability and ethical implications are discussed by many individuals and organizations. Whereas little empirical research has been conducted to explore about what the infertile couple think about these interventions and how acceptable these interventions are to them. The current research included finding out the attitude of infertile women to the various opinions available including surrogacy and adoption.

Further the cost of infertility treatment may also cause economic burdens and influence the utilization of treatment options and continuing the advised treatments. It may add on to strain the spousal and family relationships. The cost of treatment and level of family support may cause stress and alterations in the treatment seeking behaviors of infertile couple.

Some of the patient versions were like this:

"I hate it all now. Hate it. I don't believe in any of it. It's all a fluke and if you're not one of the lucky ones, you're damned. It's got nothing to do with God or faith or being a good person and getting what you give. It's all luck. I hate myself for BEING so hateful. How cruel. How damn cruel all of this is.... so cruel."

"I also have become withdrawn; don't enjoy being around people, am very critical, negative and just want to be alone. I used to love being sociable and even hate talking on the phone now, to anyone. I have to force myself to talk to friends and to pretend I am my old self. I am beginning to think I am losing my mind and have figured out that it's been since I started really trying to get pregnant."

Sandelowski, Harris and Holdfitch-Davis (1989) view the path to parenthood as a tortuous process in which patients first assess the emotional, physical and financial resources available; then they negotiate and manage multiple dead-ends and setbacks.
Most patients have the immediate goal of having a child, but also an ultimate goal of exiting the maze without regrets for techniques they might have tried.

Although a link between psychological stress and infertility are still discussed, there is increasing evidence that stress, as such, is unlikely to result in infertility but that individual coping mechanisms, the extent of support, level of optimism and resilience are important confounding factors. Recently, the focus shifted from individual psychopathology to more holistic models of understanding. Models including biological, psychological and social aspects were developed and these were based on the premise that infertility in most cases has physical causes; that there are medical interventions to treat it (biological aspects), there are individual reactions to infertility such as depression and anxiety (psychological aspects) and there are social implications such as the stigma and taboo associated with infertility (social aspects). As a result, various psycho-social interventions were adapted to help and support individuals and couples experiencing infertility. These include crisis intervention, grief and bereavement approaches, and cognitive behavioural, solution-focused and psychodynamic approaches.

One of the major current challenges in the provision of medical treatment for infertility is the inclusion of psycho-social counselling. For many years, counselling has been perceived to be less important or necessary only in cases where couples suffer severely. The research abstracts presented above has summarized some of the psycho-social implications of infertility and its treatment experiences by most couples.

Given this broad range of implications, it is vital for all couples to be able to access counselling. Counselling can contribute to improving the psychological and social health and counselling can thus help to minimize drop-out rates. Couples who can manage the emotional challenges infertility entails are more likely to carry out the number of treatment cycles that are recommended from a medical viewpoint.

There is increasing evidence that a behavioral treatment approach might be efficacious in the treatment of emotional aspects of infertility and may lead to increased
conception rate. Domar, Seibel and Benson (1990) have found that a behavioural treatment program based on the relaxation responses showed statistically significant decrease in anxiety, depression and fatigue as well as increase in vigor. In addition 34 per cent of these women became pregnant within 6 months of completing the program. These findings established a role for stress reduction in the long-term treatment of infertility.

A person with negative perception will also have negative thoughts. Negative thoughts lead to negative beliefs, which are more often irrational. These negative beliefs in the long run affect a person’s mental health as well as physical health.

Thus the understanding of bio-psycho-social aspects of infertile women and their treatment seeking behaviour can help health care personnel to design successful interventions to reduce stress, promote healthy adaptation and prevent them moving towards avoidance and denial.

Organization of the Report

Further aspects of the study are presented in the following 5 chapters.

Chapter II – Review of literature
Chapter III – Statement of the problem, objectives, operational definitions, assumptions and the conceptual framework.
Chapter IV – Methodology is presented which includes research approach, design, setting, population, sample and sampling technique, data collection tools description, validation and reliability of tools, pilot study, data collection procedure and plan for data analysis.
Chapter V – Results and discussion is presented in terms of descriptive and inferential statistics.
Chapter VI – Summary, conclusions, implications, recommendations are presented.