CHAPTER II
REVIEW OF LITERATURE

This chapter deals with systematic scrutinization of information, which is relevant to the present study. The review of literature has been divided into 2 parts.

Part A : Literature related to the counseling and yoga on stress and coping among infertile women

Part B : Literature related to conceptual framework based on Roy’s Adaptation Model.

Part A  2.1 Literatures related to

2.1.1 Women and Infertility

2.1.2 Women and Infertility Stress

2.1.3 Coping style adapted by the Infertile Women

2.1.4 Counseling for Infertile Women on Coping Strategies

2.1.5 Yoga and its Therapeutic Use for Infertility Women during IVF Treatment

2.1.6 Review on Methodology

Part A: Literature related to the counseling and yoga on stress and coping among infertile women

2.1.1 WOMEN AND INFERTILITY

Definition of Infertility

Prasanna Kumar Deka (2010) stated that 24 months of trying to get pregnant by woman are recommended as the definition for infertility. This is useful in clinical practice and research among different disciplines.
Ulla Larsen (2005) Moshi infertility survey conducted from November 2002 to March 2003 classified clinical definitions of infertility as the ‘absence of conception after 12 months of regular, unprotected intercourse’. The samples of 1,125 women were included for analysis. Six definitions of infertility are derived as follows in table -2

<table>
<thead>
<tr>
<th>Definition</th>
<th>Survey Question</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self – report of infertility</td>
<td>“Have you ever had problems of getting pregnant?”</td>
<td>Respondents’ own perception (a lifetime measure).</td>
</tr>
<tr>
<td>Unprotected intercourse for at least 2 years</td>
<td>“Since when have you been having intercourse without using contraception or trying in any way to delay or avoid getting pregnant?”</td>
<td>Assumptions that a sexually active, non contraception woman will conceive. No mention of trying to conceive. Current status at survey measure.</td>
</tr>
<tr>
<td>Tried to conceive for at least 2 years</td>
<td>“How long have you tried to get pregnant?”</td>
<td>Measures following the WHO (2) recommendation (current status at survey measure).</td>
</tr>
<tr>
<td>Subsequently Infertile</td>
<td>Estimated from information about date of last birth, date of first marriage or union, and current use of contraception.</td>
<td>No birth at least 5 years subsequent to last birth or marriage, if childless (5). A woman is considered fertile if she reports contraceptive use at survey date (current status measure)</td>
</tr>
<tr>
<td>Subsequently infertile and wanting a child</td>
<td>Estimated from information about date of last birth, date of first marriage or union, current</td>
<td>As above, but confirming that the woman wants another child, or a child if childless (current status measure)</td>
</tr>
</tbody>
</table>
use of contraception, and the question “would you like to have another child?” if childless, “would you like to have a child?”

| Childlessness | Estimated from information about duration of first marriage or union, parity, and current use of contraception. | An approximation of primary infertility (a lifetime measure). |

Gnoth (2005) gave a common definition of sub–fertility and infertility as it is very important for the appropriate management of infertility. Sub fertility generally describes any form of reduced fertility with prolonged time of unwanted non-conception. Infertility may be used synonymously with sterility with only sporadically occurring spontaneous pregnancy prospect is the time of unwanted non conception which determines the grading of sub fertility. Most of the pregnancies occur in the first six cycles with intercourse in the fertile phase (80%). After that serious sub fertility must be assumed in every second couple (10%)

WHO (2004) recommends 24 months of unprotected intercourse as the proffered definition because in clinical practice it is important to initiate treatment as early as possible, where as in epidemiological research it is important to reduce the number of false positives. Holas (2002) study discussed multidimensional problem of relationship between infertility and psychopathological factors based on the psychogenic model and secondary to the illness model.
All over the world infertility has affected an estimated 10%-15% of couples of reproductive age. They further state that the stress of the non-fulfillment and wish for a child has been associated with emotional consequences like anger, depression, anxiety, marital problems and feelings of worthlessness among the couples.

**Prevalence of Infertility women**

Benagiano (2006) described Global perspective of infertility in the general population. He further states that infertility affects 7% – 8% of all couples; in Europe the prevalence of infertility has been estimated at around 14%; women of 30 years of age or younger, the probability of pregnancy has been decreased to about 40% .

The World Health Organization (WHO) estimates, that approximately 8%-10% of couples experience some form of infertility problem. On a worldwide scale, this means that 50-80 million people suffer from infertility. However, the incidence of infertility may vary from region to region. In France, 18% of couples of childbearing age said that they had difficulties in getting conceived. Ulla Larsen (2005) showed the prevalence of infertility by using definitions. The findings showed that infertility was statistically and significantly higher as shown in the table –3

<table>
<thead>
<tr>
<th>Definition of infertility</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Report of Infertility</td>
<td>10.3 %</td>
</tr>
<tr>
<td></td>
<td>8.4 – 12.2</td>
</tr>
<tr>
<td>Unprotected intercourse for atleast 2 years</td>
<td>12.1 %</td>
</tr>
<tr>
<td></td>
<td>9.4 – 14.8</td>
</tr>
<tr>
<td>Tried to conceive for atleast 2 years</td>
<td>6.9 %</td>
</tr>
<tr>
<td></td>
<td>5.2 – 8.6</td>
</tr>
<tr>
<td>Subsequently infertile</td>
<td>11.5 %</td>
</tr>
<tr>
<td></td>
<td>9.2 – 13.7</td>
</tr>
<tr>
<td>Subsequently infertile and wanting a child</td>
<td>5.5 %</td>
</tr>
<tr>
<td></td>
<td>3.9 – 7.1</td>
</tr>
</tbody>
</table>
Incidence of Infertility women

The incidence of infertility in men and women is almost identical. Infertility is exclusively a female problem in 30-40% of the cases and exclusively a male problem in 10-30% of the cases. Problems common to both the partners are diagnosed in 15-30% of infertile couples. After a thorough medical investigation, the causes of the fertility problem remain unexplained in only a minority of infertile couples (5-10%).

Physiology of fertility problems

Research suggests that at least 85% of fertility problems are physiologically caused. But there is new evidence that the mind also plays a crucial role.

Diagnosis of infertility

Department of health (2004) reported that the diagnosis of infertility is always stressful. Some women may already know or suspect that they are infertile. The following factors can emotionally influence couples; having been diagnosed as infertile, uncertainty about the success of fertility treatment, grief associated with infertility diagnosis, feelings of losing control, loss of self-esteem, financial strain, marital stress, sexual pressure and family pressure.

Yael Benyamini (2004) identified various difficulties experienced by infertile women. A cross-sectional survey study was performed among two hundred and forty-two women undergoing evaluation and treatment of fertility problems at the initial stages of treatment by administering infertility distress and well-being scales. The result revealed twenty-two difficulties from infertility treatment. The experience of difficulties was related to more distress and lower well-being. The study concludes that the list of difficulties identified could assist health care providers and psychosocial
counselors in identifying misperceptions of difficulties that present in communication gaps between patients and providers and between patients and spouses. When diagnosed with infertility, many couples feel helpless and loss of control over their body or their life plan. Infertility can be a major crisis because the important life goal of parenthood is threatened. Most couples are accustomed to planning their lives. The experiences have shown them that if they work hard they can achieve it. Infertility is more traumatic for women as motherhood is considered an essence of female role and identity. Social and psychological issues of couples involved in infertility treatment require education and support to cope with anxiety because these procedures are stressful, time consuming and expensive.

Thus infertility can create feelings of physical and social inferiority that can overshadow all other personal and social values. As the numbers of women seeking infertility services are increasing (Stephen and Chandra, 1998) and the need for nursing expertise in this area is expanding proportionately.

However, not all stress faced by infertile couples is emotional or psychological. The infertility treatment physically stressful due to blood tests; injections; hysterosalpingograms, inseminations and surgery can be painful, awkward, and embarrassing. Thus, there is considerable financial stress too and this is especially acute for poor patients. Infertility treatment is expensive. Many patients drop out of treatment because they cannot afford it.
Causes of Infertility

Physical Problems

Leboeuf – Yde (2006) study investigated the relation between heights, body mass index, intellectual capacity, coping in relation to stress and type of education with back problems and ill health. The result showed that the associations between heights, body mass index, intellectual capacity, coping in relation to stress and type of education with back problems and ill health were weak to moderate. There were strong association between coping and back problems and ill health.

Maternal Age

Khayata (2003) identified the factors affecting the quality of life by using structured questionnaire. The factors identified were mainly mood-related to women who were above 30 years and with polygamous marriages. The results highlighted the importance of counseling and continuing support for infertile women to improve their quality of life.

Allison Styne (2002) stated that improved IVF success and greater use of donor oocytes have resulted in higher percentage of births in women ≥ 40 years of age. Mukul (2002) described the poor pregnancy outcome is independently associated with both advancing reproductive age and increased weight at conception.

Gender

Rashidi (2008) study examined health related quality of life among 514 women and 514 men through cross sectional study. The findings revealed that male patients had better health – related quality of life compared to women who showed poorer physical health – related quality of life; less educated younger women to be at
risk of sub – optimal health – related quality of life. The finding suggests that infertility women should be provided support to improve their well being.

Eileen Mary Conway’s (2002) study related to retrospective questionnaires review showed that there were gender differences in couples reported reactions to infertility. The vast majority of the women discussed that they were in more grief reactions than their partners and most frequently said their responses to discovering an infertility problem were surprise and acceptance.

**Occupation**

Christensen (2005) analyzed the association of coping responses with infertility and occupational social class. The data were collected from 1169 women who were about to begin assisted reproduction treatment. The coping measure was developed from an adaptation of Lazarus and Folkman's Ways of Coping Questionnaire. The measure was developed in four categories: active-avoidance coping; active-confronting coping; passive-avoidance coping; meaning-based coping. These subscales were later confirmed by factor analysis. Occupational social class was measured in a standardized way. The logistic regression analyses showed that women from lower social classes used significantly more active-confronting coping, more meaning-based coping. Due to the significant social differences in coping with infertility the study suggests that the elements of coping may be learned from one's social network and reference group.

**Stress Hormone**

Nakamura (2008) reviewed all epidemiological studies published between 1980 and 2007 that tested the association between stress and impaired reproductive success. The study outcome describes an evidence of biological immune - endocrine
disequilibrium in response to stress and mediators involved in stress trigger to reproductive failure. Epidemiological evidence showed positive correlation between various pregnancy failure outcomes with pre-conception negative life events and elevated daily urinary cortisol.

Smeenk (2005) examined the associations between urinary levels of the neither stress hormones adrenaline, nor adrenaline and cortisol during treatment among 168 women entering their first cycle of IVF / ICSI treatment. The result showed that women with successful treatment had lower concentrations of adrenaline at oocyte retrieval and lower concentrations of adrenaline and nor adrenaline at ET, compared with unsuccessful women. The findings suggest that adrenal hormone may have the relationship between psychosocial stress and outcome of IVF treatment.

Wilson (2002) highlighted on the effect of chronic stress on the hypothalamic pituitary adrenal cortex and on the reproductive cycle. The study on stress of infertility treatment concludes that there was moderate association between stress during IVF treatment and outcome of the treatment. Research suggests that at least 85% of fertility problems are physiologically caused. But there is new evidence that the mind also plays a crucial role. A study done in 1993 by reproductive biologist, Samuel Wasser gives a clue about how stress may affect fertility. Wasser gave a battery of psychological tests to 38 women. He found that women whose infertility was caused by hormonal changes showed much higher levels of stress, than those whose partners were found to be infertile or whose infertility problem may be due to the anatomical problems, like blocked fallopian tubes, etc. The problem of infertility due to hormonal changes may be because of the hypothalamus, a part of the brain that
controls the flow and timing of reproductive hormones, which is sensitive to tension. Stress can affect the way the hypothalamus orchestrates the hormones.

2.1.2 WOMEN AND INFERTILITY STRESS

Definition of Stress

Stress is a kind of pain which affects the body and mind. Stress has been the source of much conceptual confusion and has been defined several ways. Stress has been conceptualized as an event (a distressing circumstances external to the person) and as a response (the disturbance of a person’s normal state).

A psychological model argues that stress is determined neither by events nor by response variables. The experience of stress is a product of factors: the perceive meaning of an event and a self-appraisal of the adequacy of coping resources. Chronic stress has been defined as a set of related events and conditions that persist over time and that are perceived to threaten important social roles or “domains”. – Christopher, 1999.

Prevalence of Stress

American Psychiatric Association (2004) survey reported that two thirds of Americans were likely to seek help for stress and 50% were concerned about the level of stress in their everyday lives; 44% of them were between 18 and 29 year old, and 46% of them were 30 to 49 year old; 40% were women and 35% were men.

Stress in Women

Cleveland Clinic Foundation, (2009) stated that stress can involve a recent change or a daily pressure. Stress happens to everyone and can be motivating and
productive or negative and destructive. Tension and anxiety, as well as depression, are frequent emotional consequences of stress.

Bjorn, J. Oddens (1998) survey involving 281 patients awaiting assisted reproduction treatment at five centers in three countries, and 289 population controls, were investigated whether the patients had experienced more negative emotional feelings and negative emotional impact during periods when they were attempting to conceive as compared with the controls, and whether there was any difference in their well-being at the time of consultation. The study was performed in the context of burden of fertility problems. The survey was carried out using questionnaires of the self-administration type. Women with fertility problems reported higher prevalence of negative emotions than the controls. They reported more changes in inter partner relationships (either negative or positive). Sexuality was negatively affected among them. One in four (24.9%) of women had scores indicating depressive disorders as compared with only 6.8% of the controls. Current well-being was even more markedly affected in women with previous unsuccessful in-vitro fertilization (IVF) experience. The ‘infertility’ life event was perceived as severe by both patients and controls. Both prior to consultation and during diagnosis and treatment, women with fertility problems had a higher prevalence of reported negative psycho-emotional experiences than women without fertility problems.

**Diagnosis of Stress**

Cooper (2007) Study determined the effect of perceived infertility – related stress on IVF outcome. Fertility Problem Inventory was used among all couples undergoing first cycle of IVF between 2002 and 2005 years. The results found that couples who conceived during their first cycle of IVF had significantly higher
measures of need for parenthood and loss of sexual enjoyment compared with couples who did not conceive. Couples who achieved ongoing pregnancies had higher scores on measures of a negative view of a child free lifestyle, need for parenthood, and total stress than those who did not.

Infertility is the inability to naturally conceive, carry or deliver a healthy child. The inability to conceive children is experienced as a stressful situation by individuals and couples all round the world. The consequences of infertility are intolerable and can lead societal repercussions and personal sufferings.

Mahlstedt (2007) have reported that infertility conflicts are common and women exhibit negative emotions such as anger, hostility, isolation, feeling blamed, feeling unsupported, feeling misunderstood, feeling that one's spouse is not equally committed to having children, worrying about a possible breakup of the relationship, and actions such as blaming of husband and wife. Study further conveyed that the attitudes, emotions, cognitions, and fantasies are variables that influence the course and outcome of a conflict.

Alice Domar (2000) revealed that infertile women express higher levels of distress than fertile women, with distress peaking between the 2nd and 3rd year. The purpose of this study was to determine whether group psychological interventions could prevent this surge. One hundred and eighty-four women who had been trying to conceive between 1 and 2 years were randomized into a cognitive-behavioral group, a support group, or a control group. All experimental participants attended a 10-session group program. Participants completed psychological questionnaires before treatment and again at 6 and 12 months. The cognitive-behavioral and support participants experienced significant psychological improvement at 6 and 12 months compared
with the control participants, with the cognitive--behavioral participants experiencing
the greatest positive change.

Counseling on psychological and sociological implications of infertility on the
female infertile partner is well recognized from the minute FPI realize that they have
difficulty in having a child, every step they make in the pathway to achieve this dream
can add to their emotional turmoil and financial and physical strain. Infertility, its
investigation and treatment can cause significant stress.

Prevalence of Stress in Infertility Women

Nobel (2005) stated that depression in women is the leading cause of disease
related disability among women. Epidemiological studies have shown that the life
time prevalence of a major depressive disorder in women (21.3%) is almost twice that
in men (12.7%). The biological process were thought to be the predisposing factors
for women to depression including genetically determined vulnerability, undue
sensitivity to such hormonal fluctuations in biological systems may cause depression.
Psychological events such as role stress, victimization, sex specific socialization,
internalization coping style, and poor social support system have been considered as
contributing factors for women to develop depression. Reproductive cycles such as
infertility, miscarriage, oral contraceptives, and hormone replacement treatment have
been reported to cause depression.

Burden of the Disease

Women attending infertility clinic perceive stigma which is associated with
reduced disclosure to others, leading to lower social support and higher distress.
Drosdzol (2009) identified infertility influenced severity of anxiety and depression
between infertile couples (206 women and 188 men) and fertile couples (n = 190)
measured by the Beck Depression Inventory and Beck Anxiety Inventory. Among infertile women 35.44% scored above the cut-off for severe symptoms of depression, compared with 19.47% of fertile women. With regard to anxiety there was a significant total prevalence among infertile women i.e. 15.53% with a time-frame of 3-6 years. The investigator concluded that the risk factors of depression and anxiety in infertility would be being female sex, age over 30 years, lower level of education, lack of occupational activity, diagnosed male infertility and infertility duration of 3-6 years.

Ozkan (2006) has done a study which determined the prevalence, severity and predictability of psychiatric symptoms of infertile women and the effects of infertility on marital and sexual relationships. A semi-structured interview form, symptom checklist, Beck Depression Inventory, State-Trait Anxiety Inventory and the Maudsley Marital Questionnaire were administered for 50 infertile women and 40 healthy women as a control group. The study result revealed that depression, anxiety and strength of psychological symptoms were significantly higher in the infertile group. Relationship and sexual difficulties also appeared as infertility-related stress. The report concludes that special attention must be given to identify psychiatric problems in infertile women.

Depression is considered as one of the main psychological disorders associated with infertility. Depression may play a significant role in the life of infertile individuals, their infertility treatment follow-up and in their hopefulness for the future; it may also influence the intensity and continuousness of the mutual relationship of the affected couple.

Araoya (2003) projects infertility as a social problem. The study found that the major cause of infertility in Africa was infection – sexually transmitted diseases, post
abortal and puerperal sepsis and those who seek solution for infertility from traditional doctors and faith healers were without success. The consequences of infertility - marital disharmony lead to divorce, women were often blamed for the infertility and men engage in polygyny in an attempt to have children, couple find difficulties in managing infertility problem. The study suggested following preventive measure and counseling service at every stage of the management. The burden of infertility is physical, psychological, emotional, and financial. Infertility may result in a decrease in quality of life and an increase in marital discord and sexual dysfunction.

Most literature on infertility treatment has dealt with the infertile women’s bio-psychological reactions, the impact on the couples' relationships and the influence of social support on infertile couples.

**UPDATED PROJECTIONS OF INFERTILITY IN THE UNITED STATES:**

**1995 – 2025**

Elizabeth Hervey Stephen (1998) showed the projected number of infertile women aged 15 to 44 years, every 5 years from 2000 to 2025 from 10,847 women. The data were used from cycles of 5 of the National Survey of Family Growth conducted by the National Center for Health Statistics. Population projections prepared by the U.S Bureau of the Census used as the base population for 2000 – 2025. Prospective demographics projections were used to estimate the number of infertility women. The result showed that number of women experiencing infertility would range from 5.4 – 7.7 million in 2025, with the most likely number to be just under 6.5 million.
Table 4 shows projected number of civilian, non institutionalized women aged 15 – 44, United States: 2000 – 2025

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Projected number of civilian, non institutionalized women by year ($\times 10^6$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>59.495</td>
</tr>
</tbody>
</table>

Table 5: The estimated percentage of infertile women, United States: 2000 – 2025

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Estimated percentage of infertile women by year</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 – 24</td>
<td>6.433</td>
</tr>
</tbody>
</table>

Dimensions of the Infertility Stress

Social Concern

Hollos (2009) quotes infertility to be problematic; the need for a woman to have a child remains basic. Motherhood continues to be defined as an individual woman's treatment in the community, her self-respect and her understanding of womanhood. Motherhood is a phase where an individual woman gets treatment well from the society, gains self– respect and better understanding of her own womanhood.
Lund (2009) states that anticipated support and perceived appreciation as well as perceived negative aspects of social relations among infertility women and men were the determinants for the incidence of severe depressive symptoms in unsuccessful fertility treatment. A prospective cohort study of consecutively recruited 695 participants (355 women and 340 men) measured severe depressive symptoms with Mental Health Inventory 5 from Short-Form 36, functional aspects of general social relations and of infertility-specific social relations. The study reported that 15% of women and 6% of men with unsuccessful treatment reported severe depressive symptoms at T2. Among men, low emotional support, low appreciation and high excessive demands from the partner were significant determinants of the incidence of severe depressive symptoms. Among women and men, low appreciation from the family, many conflicts and high excessive demands from family, friends and neighbors were significant determinants of severe depressive symptoms.

Monga (2004) states that among women seeking infertility treatment, 83% of them reported feeling of societal pressures to conceive. The marital adjustment scores were significantly lower than the scores of the controls (P = 0.01) women scored lower quality of life (P = 0.09). The study also reports that women in experimental group reported poor marital adjustment and quality of life compared with controls.

Cwikel (2004) described three types of relationships were hypothesized between psychological factors and infertility. These include: psychological factors, risk factors of subsequent infertility, and experience of the diagnosis and treatment of infertility that causes subsequent psychological distress; a reciprocal relationship exists between psychological factors and infertility.
Jacky Boivin (2004) examined the separate and joint effects of male and female fertility problem (FP) stress and the source of stress (e.g., personal, social, marital) on treatment outcome. The prospective, epidemiological cohort design approach was used in fertility clinics in Denmark. 818 (Eight hundred eighteen) couples who were about to begin a new course of treatment were administered FP stress inventory at the start of the treatment, and the treatment outcome was evaluated 12 months later. The study results identified that the stress due to fertility problem was associated with a poor treatment outcome in women (pooled within-groups [WGr] correlation, WGr = .517) and men (WGr = .392) with the effect significantly more highly indicated in women ($z = 3.19$, $P < .001$). Fertility problem stress arising in the personal and marital domain showed greater associations with treatment outcome than fertility problem stress from the social domain. Logistic regression indicated that women who reported more marital distress required more treatment cycles to conceive (median 3) than women who reported less marital distress (median 2) (odds ratio [OR] = 1.20: Model $\chi^2(3) = 77.21$, $P < .001$). The findings provide an evidence that infertility-related stress has direct and indirect effects on treatment outcome.

Krueger (2000) study on cross sectional design recruited 64 women during IVF at infertility specialist in Illinois and Wisconsin. The result revealed that the social constraint scale for spouse, family and friends were significantly correlated with the global index of distress ($r$’s ranged from .251 to .421, $p < .05$). The correlation with depression ranged from .299 to .301 ($p < .05$).
**Sexual Concern**

Khademi (2008) evaluated the sexual dysfunction in 100 infertile couples using sexual function questionnaire (SFQ). Among them only 7% of women scored within normal range in all five dimensions. The prevalence of female sexual dysfunction was highest and lowest in arousal-sensation (80.2%) and orgasm (22.8%) domains, respectively.

Marin (2003) performed a prospective study to assess the frequency of intercourse before pregnancy and during the 1st trimester among sixteen infertility women and control women. Results revealed that both groups experienced a significant decrease in intercourse frequency during the first trimester (p<.01).

Domar (1999) identified the impact of stress on reproductive life and on self-esteem. Many men and women reported feeling less masculine or feminine after a diagnosis of infertility. Research has shown that women going through infertility rated themselves as having higher levels of depression and low self-esteem than women as going through cancer treatment.

**Marital Relationship**

Holter (2006) assessed infertile couples’ short-term emotional responses to their first IVF treatment (the women’s and men’s emotional reactions and their experiences of the marital relationship at different stages of the first treatment) and to the outcome of the IVF treatment. The study was part of a prospective, longitudinal study where 117 couples participated. The women and men answered questionnaires separately concerning psychological and social factors at three occasions: before, during and 1 month after treatment. The findings reported that women’s and men’s emotional reactions related to first IVF treatment were dependent on whether they achieved a pregnancy or not. Those who failed to become pregnant rated their emotional well-
being was worse, whereas those who became pregnant rated their emotional well-being better than before the treatment was started.

It was also reported by Boivin (1995) that marital distress showed a main effect on reactions to infertility ($F=6.71, p<.01$). The tuckey post hoc test also indicated that the moderate treatment failure group experienced more distress than either no or high treatment failure groups. The relationship of infertile women with her husband, family members, friends and relatives may be trained. It may be because of marital maladjustment. This stress may lead to impotence (Christopher, 2000). Infertility can affect a couple’s relationship with other family members who have become pregnant when they themselves have failed. Infertility impacts the marital relationship, husbands of infertile women engage in extra-marital affairs and are likely to experience sexual dysfunction manifested as erectile dysfunction, ejaculatory disorders, loss of libido and a decrease in the frequency of intercourse.

Repokari, L. (2007) examined the impact of ART on marital relationships and the roles of life stressors, infertility and treatment characteristics in predicting marital relations were also evaluated. 367 couples with singleton IVF/ICSI pregnancies and 379 couples with spontaneous singleton pregnancies as control were included in the study. Women and men were assessed when the child was 2 months (T2) and 12 months old (T3). They further reported stressful life events at T2 and depression in pregnancy. The results of the study revealed that No between-group differences were found in marital satisfaction and dyadic cohesion. Dyadic consensus was deteriorated from T2 to T3 only among control women. Sexual affection was low among control men at T2 and stressful life events decreased it further. Depression during pregnancy predicted deteriorated marital relations only in control couples. Several unsuccessful
treatment attempts were associated with good dyadic consensus and cohesion among ART women. Spontaneous abortions and multiple parity predicted poor marital satisfaction in ART women, whereas long duration of infertility and multiple parity predicted poor marital relations in ART men. The Result concludes that successful ART does not constitute a risk for marital adjustment. The shared stress of infertility may even stabilize marital relationships.

**Family Stress**

Taipei (2008) in their phenomenological study design explored the family stress among hospitalized women receiving infertility treatment with ovarian hyper stimulation syndrome. Colaizzi's approach was used to analyze the data. Five themes emerged from the study, namely, the stress of 'carrying on the ancestral line', the psychological reactions of the couple, disordering of family life, reorganization of family life and external family support. The results demonstrated that the experience of family stress involve impacts that range across the domains of individual, marital, family and social interactions and there is a need to cope with these when the wife is hospitalized for moderate to severe ovarian hyper stimulation syndrome. Study finding suggests that nurses should supply information on infertility treatment and assist couples to cope with their personal and family stress.

**Factors that emotionally influence women diagnosed as infertile**

**Uncertainty about the success of infertility treatment**

Olivius (2004) investigated the reason for discontinuing from the IVF to be psychological burden in 26%, poor prognosis in 25% and other reasons in 7%. The study concluded that an unexpectedly high percentage of couples discontinued the treatment before the three cycles. Majority of these discontinuations were due to
psychological stress. Findings suggest that this information need to be kept in mind when counseling patients during treatment.

Houmard (2000) identified that the overall pregnancy rate was 6.0% per cycle (n=173 patients, n=413 cycles). The age range of the patient was 24 – 47 years mean ± SD = 37.6 ± 1.6) with 7% noted to have ovulatory dysfunction. Pregnancy rates varied with patient’s age: clinical pregnancy rates of 2.7%, 6.7%, 6.0% and 2.5% were seen in women ≤ 34, 35 -37, 38 – 40 and ≥ 41 years, respectively      (p<.05 for ≤34 vs , ≥41).

Grief associated with infertility Diagnosis

Rajkhowa (2005) did a study to identify the major factors that influence the decision to discontinue IVF treatment among 1510 couples who had undergone IVF treatment at Nine Wells Hospital and Medical Schools at Dundee and Scotland, between January 1995 and December 2001. The couple’s response rate was 55% (732/1327) with 183 questionnaires returned as address were unknown. A total of 515 couples had discontinued treatment at the time of response, with 266 (52%) having achieved a live birth. Achieving a live birth was the single reason given for discontinuation. Those who did not conceive gave a combination of reasons such as lack of personal and/or National Health Service funding as cited by 23% of couples. Lack of success and psychological stress were reported as factors by 23% and 36% of couples respectively. These two factors are very strongly associated (P < 0.001), both being reported by 18% of couples with a reciprocal increase in those quoting lack of success and psychological stress as reasons for discontinuation with increasing number of attempts (P < 0.0005). Changes in personal circumstances were reported by 30% and <10% gave general discomfort or advice from medical staff as reasons.
Fido (2004) examined the psychological status of 120 Kuwaiti infertile women and age-matched samples of 125 healthy pregnant women were taken as a control group. Hospital Anxiety and Depression Scale (HADS) was used. The result revealed that infertile women exhibited significantly higher psychopathology in all HADS parameters in the form of tension, hostility, anxiety, depression, self-blame and suicidal ideation. The illiterate group attributed the causes of their infertility to supernatural causes, such as evil spirits, witchcraft and God's retribution, while the educated group blamed nutritional, marital and psychosexual factors for their infertility. Faith and traditional healers were the first treatment choice among illiterate women, while the educated women opted for an infertility clinic for treatment. Childlessness resulted in social stigmatization for infertile women and placed them at risk of serious social and emotional consequences. The result reports that the prevalence and severity of psychological distress in infertile Kuwaiti women indicates that the evaluation programs were successful in dealing with infertility. It highlighted the need for psychobiological support to be included in establishing a community-based intervention strategy to educate people about infertility and to give guidelines for treatment.

**Feeling of Losing Control**

Verberg (2008) did a study to identify the role of the treatment strategy applied, and potential other factors that influence the decision of couples to discontinue treatment. The incidence of drop-out from IVF treatment and factors related to drop-out were studied in a cohort of IVF patients aged <38 years embarking on IVF treatment either with a mild or a standard treatment strategy for a planned maximum number of treatment cycles. Of the 384 couples who were studied, 17% dropped out of IVF treatment. The physical or psychological burden of treatment was the most
frequent cause of drop-out (28%). The application of a mild treatment strategy (mild ovarian stimulation along with the transfer of a single embryo) significantly reduced the chance of drop-out (hazard ratio (HR) 0.55; 95% confidence interval (CI), 0.31–0.96). Indian Society of Fertility Association defines womanhood and motherhood, and infertility is stigmatized. Women face a lot of pressures to produce a biological child, and go through all kinds of treatments, including the expensive ART.

**Loss of Self-esteem**

Lowyck (2008) did a cross-sectional study among 68 women who were starting their first IVF treatment at the Leuven University Fertility Centre of the University of Leuven, Belgium. All women were administered self-report measures assessing the self-criticism and dependency, negative life events, psychological well-being, relationship satisfaction, and relationship and sexual concerns. The study result reveals that the high self-criticism was negatively associated with psychological well-being ($r = –0.63, P < 0.001$) and relationship satisfaction ($r = –0.29, P < 0.05$), and positively associated with relationship ($r = 0.39, P < 0.01$) and sexual ($r = 0.37, P < 0.01$) concerns. High dependency was negatively associated with psychological well-being ($r = –0.30, P < 0.05$), not significantly associated with relationship satisfaction and relationship concerns, and positively related to sexual concerns ($r = 0.31, P < 0.05$).

Hart (2002) quotes infertility touches all aspects of a person’s life. It affects feelings of self, their relationships and their life perspectives. Couple experiencing ongoing stress for a long period may create issues of guilt, anxiety, tension within the relationship, and feelings of depression and isolation. The implication of the study
revealed that dealing infertility is an opportunity for clinical specialties in psychiatric mental health nursing.

**Financial Strain**

Rapoport-Hubschman (2009) prospective study assessed the coping strategies of eighty-eight women (88) undergoing IVF treatment before IVF treatment had began at Infertility and IVF unit in a university-affiliated tertiary medical center. Of 88 women participating in the study, 23.9% became pregnant; in the male and female factor infertility groups, the EFC strategy of "letting go" was positively and significantly associated with pregnancy. Women’s age, cause of infertility, and number of cycles, the relative risk for pregnancy by "letting go" was 1.88 (95% confidence interval 1.1-3.2). These findings support the notion that in the context of a low-control situation such as IVF treatment, women who tried to be active in control may pay a higher price in terms of pregnancy probabilities.

Jenkins (2005) article overviewed on the influence of ethnicity and socio economic status on the use of infertility services. Although underserved groups are disproportionate at risk for infertility in the US, they are also likely than middle – to – high – Socio Economic Status Caucasians to seek medical treatment for this problem. Barriers to their use of infertility treatment include lack of knowledge, lack of financial resources and cultural norms. It was identified that it was very important for the nurse to be aware of the cultural and religious values while counseling women with infertility with regard to assisted reproductive technology. Robins (2000) examined the demographic variables of infertile women by race and economic factors. The study assuming that the incidence was uniformly distributed among races
(p<.05), stated that lower income women were more likely to have tubal ligation than with higher income.

**Sexual Pressure**

Department of health (2004) reported that the stress could theoretically interfere with pregnancy through direct hormonal effects, or indirectly by impairing a couple’s capacity to have effective sexual intercourse or to follow the complex instructions and sexual prescriptions involved in medical treatment. However, the major focus of mental health care for infertility couples is to help them cope with the emotional impact of infertility treatment.

**Family Pressure**

Chang (2008) study explored infertile women’s experiences from the couples’ perspectives and the results identify the overall stresses that the family faces. Five themes emerged from the study, namely, the stress of ‘carrying on the ancestral line’, the psychological reaction of the couple, a disordering of family life, reorganization of family life and external family support. The results demonstrated that the experience of family stress impact on the domains of individual, marital, family and social interactions and there is a need to cope with these when the wife is hospitalized for moderate to severe ovarian hyper stimulation syndrome. The findings indicated that nurses should provide infertile couples with family centered perspectives that are related to cultural family value. The study suggests that nurses should supply information on infertility treatment and assist couples to cope with their personal and family stress.
**Partners Communication**

Boivin (2005) identified coping strategies and communication strategies as predictors of fertility problem 12 months after the start of fertility treatment. A prospective, longitudinal cohort design with 816 randomly allotted women who were beginning fertility treatment with a 12-month follow-up was selected for the study. The data were collected based on self-administered questionnaires measuring communication with partner and with other people, coping strategies: active-avoidance coping, active-confronting coping, passive-avoidance coping, meaning-based coping, and fertility problem stress. The study results concluded that difficulties in partner communication predicted high fertility problem stress (odds ratio for women, 3.47, 95% confidence interval 2.09-5.76; Active-avoidance coping (e.g. avoid to be with pregnant women or children, turning to work to take their mind off things). It was a significant predictor of high fertility problem stress. Women either medium or high use of meaning-based coping was significantly predicted with low fertility problem stress in the personal and marital domain. The study concludes that how and where to intervene with fertility patients in order to reduce their stress after medically unsuccessful treatment.

**Pregnancy Outcome**

Psychological variables, such as anxiety and depression, may have a negative impact on IVF outcomes, but the evidence remains inconclusive. De Klerk (2007) study determined whether pretreatment or procedural psychological variables in women undergoing first IVF cycle affect the chance of achieving a live birth from that cycle among 391 women with an indication for IVF at two University Medical Centers in Netherlands between February 2002 and February 2004. The pretreatment anxiety and depression were measured with the Hospital Anxiety and Depression
Scale. The Daily Record Keeping Chart was used to measure negative and positive affect before treatment and daily during ovarian stimulation. The study result showed that women who expressed less negative affect at baseline were less likely to achieve live birth ($P = 0.03$). After one IVF cycle, women who received a standard IVF strategy were more likely to reach live birth delivery than those who received a mild IVF strategy ($P = 0.002$). A male/female indication for IVF was associated with a higher chance of achieving term live birth than a female only indication ($P = 0.03$). An age, duration of infertility or type of infertility was not independent predictors of live birth. The study finding suggests that the relationship between psychological parameters and IVF success rates is more complex than commonly believed. The expression of negative emotions before starting IVF might not be always detrimental for outcomes.

Lovely (2003) examined the effect of stress on pregnancy outcome among 42 women who underwent ART procedures during 18 month period. In controlled clinical study stress was measured subjectively by administering patient questionnaires and biochemically by examining urinary excretion of cortisol and 26 – sulfactory – melatonin (6 -SM), and the primary metabolite of melatonin and a marker of peripheral stress response. The results of the study reveals that neither self-ratings of acute anxiety, nor total daily 6 –SM value, nor cortisol levels were associated with pregnancy outcome in women. Study concludes that bio – medical markers of stress failed to support a deleterious effect of stress on pregnancy outcome. Subjective measurement of stress levels did not differ between women who became pregnant than those did.
Psychiatric Disorders among women with Gynecological Morbidity

Browin (2003) study stated that gynecological morbidity rate is high in patient with low educational level, low in patient with high educational level.

![Psychiatric Disorders among women with Gynecological Morbidity](image)

Figure 1 Psychiatric disorders among women with Gynecological morbidity

Other Factors

Petrelli (2002) study noted women exposed to pesticides and pesticides workers had an increased risk of spontaneous abortion. Pesticide has the ability of modulating or disrupting endocrine system.

Klonoff - Cohen, H. (2005) done systemic review focuses on the effects of female and male life style habits (specifically: smoking, alcohol and caffeine use, and psychological stress) on the reproductive endpoints of IVF (i.e. oocyte aspiration, fertilization, embryo transfer, achievement of a pregnancy, live birth delivery, and perinatal outcomes, e.g. low birth weight, multiple gestations). The evidence of results revealed that smoking has a negative influence on IVF outcomes, whereas for stress, the evidence is suggestive but insufficient due to the heterogeneity of studies.

2.1.3 Coping Style Adapted by the Infertile Women

Prevalence of Coping in Infertility Women

Phromyothi, V., and Virutamasen., P. (2003) determined the factors for anxiety level of infertile couples during the treatment of in vitro fertilization and
embryo transfer. Women were found to have a slightly higher anxiety than men. The determinant factors of anxiety found were the side-effects of the infertility treatment, inadequate time to consult with the physician/nurse, the outcome of the infertility treatment, possibility to possibility of not succeeding/infertility cannot be treated and the process of the diagnostic procedures accordingly. Around 4% of all couples remain involuntarily childless. These people often experience insufficient social support, which further aggravates the distress symptoms such as physical health problems, anxiety, depression and complicated grief. This study investigates the association of coping style and the degree of satisfaction regarding social support from primary support groups with distress symptoms of involuntarily childless individuals.

**Factors influencing Coping in Infertility Women**

**In Vitro Fertilization Treatment**

Gleicher (2000) study collected information regarding IVF treatment practice served from 1993 to 1999 that covered 350,000 lives (1993) to over 800,000 (1999) for seven years. Study result showed that the proportional utilization of IUI and IVF cycles remained basically stable between 1993 and 1995. During that period only approximately 12 – 15% of all treatment cycles were involved IVF. By 1996, the proportional presentation of IVF cycles started to increase and became even more balatant between 1997 and 1999, with the single most striking increase taking place in 1999. By that point, IVF cycles represented approximately 35% of all treatment cycles, representing at 133% increase in relative utilization over IUI.
Duration of Infertility

Verhaak (2006) did a study to gain more insight into long-term psychological adjustment to IVF in women. A prospective cohort study with 298 women entering their first IVF treatment cycle (including ICSI) were asked to complete the standardized psychological questionnaires before the start of the treatment, just after the last treatment cycle, and 6 months and 3–5 years after the last treatment cycle. The anxiety and depression were found at follow-up to return to baseline levels following treatment not resulting in a live birth, after an initial increase during treatment.

History of IVF treatment

Boivin (2010) documented the course of anxiety, depression, positive affect and coping during the waiting period before a pregnancy test result in fertility treatment. Using a daily record-keeping chart designed for fertility treatment, 61 women undergoing IVF were monitored daily for emotional reactions (e.g., anxiety, depression and positive affect) and coping during 7 days of active treatment (stimulation), 7 days of waiting to find out whether a pregnancy was achieved (waiting) and 4 days of reacting to the pregnancy test results (outcome). The stimulation stage of treatment was characterized by positive affect with a lesser degree of anxiety, whereas the predominant emotions in the waiting stage were a combination of positive affect and anxiety symptoms versus depression. From the pregnancy test day onwards, the predominant emotion was depression. There was a significant increase in coping activity between the stimulation and waiting stages, with variable effects across coping strategies.
Unsuccessful IVF treatment

Cote-Arsenault (2007) followed the co-relational study among 82 women after their pregnancy loss (PAL) to understand the patterns of threat appraisal, coping, and emotional states. Threat appraisal was correlated with assigned fetal personhood and gestational age of past loss. Pregnancy anxiety, reported at moderate levels on average, decreased over time; threat appraisal, coping, and other emotions were stable across pregnancy. Coping did not mediate these effects, but relative coping was correlated with emotional status as theorized, with problem-focused coping used more than emotion-focused coping. Women find pregnancy after loss was stressful and a threat and this appraisal remain across pregnancy.

Verhaak (2007) reviewed 706 articles and reported that all articles paid attention to emotional aspects of IVF treatment of which 27 investigated the women’s emotional adjustment with standardized measures in relation to norms or control groups. The findings indicated that women starting IVF were slightly emotionally different from the norm groups. Unsuccessful treatment raised the women’s levels of negative emotions, which continued after consecutive unsuccessful cycles. Further describes that treatment induced stress is considerably related to threats of failure.

Verhaak (2005) has done a prospective study on emotional adjustment before, during and after consecutive fertility treatment cycles. Total of 148 IVF patients and 71 partners completed self-report questionnaires on anxiety, depression, personality characteristics, meaning of fertility problems, coping, marital relationships and social support at pre-treatment. Women showed an increase of both anxiety and depression after unsuccessful treatment and a decrease after successful treatment. Findings
suggest to carry out early identification of women at risk as well as need prepare tailored made interventions.

Siedentopf (2001) study examined the possible connection between mood state among 100 patients during IVF / ICSI treatment and pregnancy rate. Study used the standardized Leipziger Stimmungsfragebogen (LSB), a visual analogue – scale for free indication of mood state and social support questionnaires. The result revealed that per oocyte pick up 32 women became pregnant (32.7%), than 58 women who did not (59.2%). The findings further explored that lower rating on the balance – scale signifies higher pregnancy rates. There was no significant relation shown on the visual analogue – scale as well as on the LSB – scales grief, activity and fatigue. And there was no correlation between age and mood state as well as between social support and pregnancy rate.

Alice Domar (1999) couple often asked their stressful experience of infertility. Women often stated that their stressful lifestyle, job, working schedule may be detrimental to their success at achieving pregnancy. After having attempted conception without success, or having experienced miscarriage, most patients experienced loss, grief, sadness, anxiety, depressive feelings and sometimes a sense that their lives are out of control. They worry that they may never experience pregnancy, childbirth or parenthood.

Women dropped out from IVF treatment

Brandes (2009) analyzed a consecutive cohort of 1391 couples, referred to secondary care hospital between January 2002 and December 2006. Discontinuation rates were studied at six stages. Stage I: immediately after first visit, Stage II: during diagnostic workup, Stage III: after finishing diagnostic workup but before treatment,
Stage IV: during or after non-IVF treatment, Stage V: during IVF, Stage VI: after at least 3 cycles of IVF. Reasons to discontinue and spontaneous pregnancy rates after discontinuation were secondary outcomes. The study findings revealed that there were 319 couples were dropped out of fertility care, 76.8%, [95% confidence interval (CI): 72.2–81.4] on their own initiative and 23.2% (95% CI: 18.6–27.8) on doctor's advice. Main reasons for dropout (%, 95% CI) were ‘emotional distress’ (22.3%, 17.7–26.8), ‘poor prognosis’ (18.8%, 14.5–23.1) and ‘reject treatment’ (17.2%, 13.1–21.4). The spontaneous ongoing pregnancy rate after discontinuation was 10% (6.7–13.3). About half of the couples stopped before any fertility treatment was started and one-third stopped after at least one IVF cycle. The main reasons for withdrawal were emotional distress and poor prognosis. Reducing drop-out rate is crucial to further improve the efficacy and cost-effectiveness of IVF treatment. An important factor determining the risk of drop-out is the burden of the treatment strategy.

Fileto (2005) explored the experiences of 92 couples, who had unsuccessfully undergone one or more IVF cycles at a university clinic, with 3 – 8 years following their last failed attempt. Regarding the long term experience of couples, men experiences psychological problems and having adopted a child; whereas women experiences mainly related to problems of self – image, psychological problems, loss of hope, and having adopted a child. Women showed a strong association with adoption and less intense association with psychological problems and loss of hope.

Alan (2004) reported that a large percentage of patients discontinue infertility treatment despite a reasonable prognosis and that cover the costs. Study suggests that intervention need to be based on the multidisciplinary, including improved treatments, simpler protocols, more effective teaching, and increased psychological support.
Domar (2004) also supported above concept that many reasons are there which are equal to emotional reasons for giving up fertility treatment.

Lee (2000) has revealed that brief stress management support groups for couples were more useful for those who undergo in vitro fertilization treatment. He realized that “The ART (Assisted Reproductive Technology) appears to have a profound psychological effect on participants and he suggests the “psychological counseling, can help patients with the intense demands of treatment, complex ethical decisions about number of eggs to implant or use of donor gamete, and cope with disappointment of failed outcome.

Professor Berga (2000) said that 'it is quite possible that there are many individuals who could benefit from stress reduction in terms of infertility therapies'. She suggests that larger scale study may confirm earlier results and has very strong evidence for offering stress reduction as an effective therapy for a significant group of infertile women.

**Coping Style adopted by Infertility Women**

**Problem Solving**

Panagopoulou (2006) cross-sectional study examined the effects of coping among infertility related and non infertility stress on pregnancy outcomes after IVF treatment at Fertility clinic in Greece. The psychosocial measures were used on the day of embryo transfer among three hundred forty-two women (342). The success rate of pregnancy was (79) 23.3%. There were no statistically significant differences between women who became pregnant and those who did not in terms of duration of infertility, causes of infertility, previous IVF cycles, and infertility related or non infertility related stress. The only factor that was significantly associated with
pregnancy outcome was emotionally expressive coping (adjusted odds ratio, 1.272; 95% confidence interval, 1.06-1.52). Women who coped by expressing their emotions were less likely to get pregnant than women who did not. Waiting for a pregnancy test during fertility treatment can be particularly stressful because distress and intrusive cognitions about the nature and implications of the result can reduce quality of life.

**Distraction Coping**

Bayley (2009) study examined attachment, appraisal, coping, general well-being, infertility-related stress and relationship satisfaction questionnaires completed by 98 women and 64 men. The findings report that attachment anxiety was associated with well-being in women via appraisal of infertility as a loss and use of self-blame and avoidance (SBA) coping. Attachment anxiety was also linked with infertility-related stress through SBA. In men, attachment anxiety was associated with well-being and infertility-related stress again via SBA coping. Attachment anxiety and avoidance were related to lower relationship satisfaction in women. The study concludes that attachment patterns link to couples' relationship satisfaction and are associated with adjustment via appraisal and coping. Identification of such patterns may assist in identifying need and tailoring cognitive interventions to individuals.

**Acceptance Coping**

Bar - Hava (2001) examined the correlation between various coping strategies and sexual functioning with the success rate of pregnancy among 102 women. 96 women interpreted infertility in positive way, and active coping strategies were found to be positively associated with sexual functioning, while there was a significantly (p<.05) adverse influence of planning and self– restraint. Being sexually active during the IVF treatment period was positively correlated (p<.05) with the likelihood of conception and
adaptive coping strategies. Study defines “Sex Marital Therapy” as an individual relationship between coping strategies & sexual functioning in IVF patients. Swan (2000) defined the term “marital quality” to the degree of understanding, satisfaction, decision making, trust and role functioning among the couples.

**Denial Coping**

Simpson (2007) investigated that whether infertility has (i) strengthened the marriage and brought the partners closer together among people beginning fertility treatment and (ii) communication and coping strategies as predictors of marital benefit 12 months later. A prospective cohort design was used among 2250 couple beginning fertility treatment and a 12-month follow-up. Data were based on self-administered questionnaires measuring marital benefit, communication, and coping strategies. The result shows that 25.9% of women and 21.1% of men reported high marital benefit. Among men medium use of active-confronting coping (e.g., letting feelings out, asking others for advice) and use of meaning-based coping were significant predictors for high marital benefit. Having the infertility as a secret, difficult marital communication, and using active-avoidance coping (e.g., avoid being with pregnant women or children, turning to work to take mind off things) were among men significant predictors for low marital benefit. The findings concluded that fertility patients frequently experience marital benefit. The implication of study is nurse can provide information about where to intervene with male fertility patients in order to increase their marital benefit after medically unsuccessful treatment.

Adolfson (2004) identified the guilt and emptiness, women's experiences of miscarriage. The phenomenology has been used with 13 women from Southwest Sweden to uncover their lived experience of miscarriage. Study concludes that when
miscarriage occurs it is not an egg, an embryo, or a fetus they lose, it is their child. They feel that they are the cause of the miscarriage through something they have done, eaten, or thought. They feel abandonment and they grieve for their profound loss; they are actually in bereavement.

**Religious Coping**

Cha (2001) has done a study on “Does prayer influence the success of IVF–embryo transfer” among Korean infertility patients and American, Canadian & Australian prayer groups. IVF patients who were prayed for had, significantly higher Implantation and pregnancy rate 50% vs. 26% (p=.0013).

**Supportive Coping**

Gibson (2002) study determined the relationship between the use of social coping resources, growth-fostering relationships, and the amount of infertility stress reported by 83 infertile women. The mean age for the women was 34 years, with 45% being in the 30–34 year old range, 29% in the 35–39 year range, 16% being in the 27–29 year range, and 10% being over the age of 45. The majority (55%) of the participants reported having a college education, with 29% having completed a graduate degree. Eight percent reported a high school education only, and 7% reported completing post-graduate school. In regard to income, 42% reported incomes above $99,000, 10% between $90,000 and $99,000, 10% between $80,000 and $89,999, and 10% between $60,000 and $69,999. Overall, 83% reported primary infertility status, and 17% reported secondary infertility status. Participants were asked to identify sources of social support, specifically the gender of a peer sought for support and the type of community group they looked for support. The majority of the participants chose a female peer (92%), while only four participants
(5%) chose a male peer, and 4% indicated no preference. Community preferences for social support included: work (46%), religious group (24%), school (16%), support group (4%), volunteer activity group (1%), hobby group (1%), or no choice (8%). The findings indicate that both social coping resources and growth-fostering relationships contribute significantly to the variance in infertility stress, with infertility stress decreasing as social coping resources increase.

2.1.4 COUNSELING FOR INFERTILE WOMEN ON COPING STRATEGIES

Definition of Counseling

Counseling is one person helping another, as they talk person to person, helping a client make a decision or solve a problem; through counseling one enables patient to make choices that suit them. Counseling is notoriously imprecise term, used to describe a wide range of function performed by an equally wide range of Individuals – Blyth, 1995.

Counseling is described by Monika Malhothra (2004) specialist as one person helping another, as they talk person to person. Helping a client make a decision or solve a problem, is counseling. Though counseling, one enables patients to make choices that suit them. Competent, caring counseling is to 1. show that they understand and care about them and build trust; 2. give them useful, accurate information means to them; 3. help them make their own choices, based on clear information and their own feelings, situation and needs; 4. help them remember what to do. Study concludes that good counseling helps clients make healthy choices. So they can use stress management strategies longer and more effectively. Proper counseling regarding infertility problem and coping is important in improving women’s coping ability rate and increase their chance to become pregnant.
Stammer (2002) article described interdisciplinary psychological counseling design offered solution – and resource – oriented and avoids psychopathological problems. Couples were supported during physical problems as emotional crisis and aided them to lead their life without biological child.

**Uses and Effect of Counseling**

The way a person appraise an event is the psychological key to understanding coping efforts and the nature and intensity of the stress response. The appraisal of a stressor is the processing and comprehension of the stressful situation that take place on many levels. Specifically, it involves cognitive, affective, physiological, behavioral, and social response. Macklon (2007) evaluated the effect of psychosocial counseling intervention for first-time IVF couples among two hundred sixty-five couples admitted to an IVF treatment programme at the Erasmus MC. The intervention consisted of three sessions with a social worker trained in Experiential Psychosocial Therapy: one before, one during and one after the first IVF cycle. Distress was measured everyday during treatment by the Daily Record Keeping Chart. Depression and anxiety were measured before and after treatment using the Hospital Anxiety and Depression Scale. The result shows that there is no significant group differences found. The study results did not support the implementation of counseling intervention for all first-time IVF couples. The low response rate suggests that there is little perceived need for psychosocial counseling among couples during the first IVF treatment cycle.

The above view was supported by Yashodamma (1997) and she identified psychosocial problems experienced by infertile couples. She found out all 40 couples (100%) had severe psychosocial problems: 1.Regarding self esteem and marital
quality, majority of couples 53 (66.3%) had moderate psychosocial problems; 2. Regarding social adjustment most of couples, 75 (93.8%) and all 80 (100%) couples had mild psychosocial problems and anxiety and sexual satisfaction respectively. Thus study concludes that women were more affected with these problems with low self-esteem, poor social adjustment, low marital quality and sexual problems. She recommends that it is better to provide a counselor’s service as it is essential for infertility clinic.

All licensed IVF clinics in the United Kingdom are required to offer their patients counseling before proceeding with treatment. However couples do not have to accept offers of counseling if they do not feel it would be helpful. Mandatory counseling may be viewed as an unnecessary infringement of the liberties of the person participating in the program. Different countries have different legislation governing the provision of counseling for assisted conception treatment. The Human Fertilization and Embryology Authority (HFEA) code of practice in the UK sets out that implication, support and therapeutic counseling should be available to couples in all licensed UK IVF centers.

However, counseling of infertile women is often supported by clarification of life goals. Thus counseling focuses on context for support, advice and guidance rather than as a vehicle for change. (Applegarth, 1999) or as a place where individuals can be given an “opportunity to explore, discover and clarify ways of living more satisfyingly and resourcefully” British Association of Infertility Counselors (1999) also describe the type of counseling used for infertile couple.
**Types of Counseling**

Connolly (1993) study investigated the efficacy of a non-directive counseling intervention given to couples undertaking their first cycle of in vitro fertilization (IVF) treatment. Couples were randomly assigned to either control group who were given information about the treatment programme, or to an experimental group who were given the same information plus three sessions of counseling before, during and on the day of confirmation about the pregnancy outcome of the first treatment cycle. Psychological assessments were made at three points in the treatment process. The results showed well adjusted coping with treatment and dropped level of the anxiety. The study concluded that counseling compared to information alone did not enhanced reduction in levels of anxiety or depression.

**Approaches of Counseling**

Noorbala (2008) conducted their study to determine the factors affecting depression in infertility couples and the impact of a psychological intervention before or during infertility treatment. A cross-sectional study with 638 infertile couples assessed for depression, 140 couples with a member who had a Beck Depression Inventory (BDI) score of 17 or higher were randomized to receive psychological treatment either before or during infertility treatment. The study results concluded that 48% of women and 23.8% of men found depression during initial period before intervention. The mean SD Beck scores fell from $18.7+/-9.7$ to $10.7+/-5.8$ ($P<0.001$) in the groups were psychologically treated before they received infertility treatment. The study concludes that the psychological intervention was found very useful in alleviating depression in infertile couples before they received infertility treatment.
Lancastle (2008) established brief coping intervention (positive reappraisal coping intervention, PRCI) for women waiting for an IVF pregnancy test to redefine the waiting period. 55 women were randomly assigned on the day of embryo transfer. Women read either 10 statements in a PRCI (n = 28) or 10 statements in a positive self-affirmative (positive mood) intervention (PMI; n = 27) twice daily for 14 days between embryo transfer (T1) and the pregnancy test (T2). This was compared with the PMI, at T2 and evaluated the practicality, acceptability, perceived benefits and endorsements of PRCI. This was rated as more helpful and suitable for the situation, help women to feel more positive and better sustaining efforts to cope. Pregnancies after perinatal loss are known to be anxiety-filled. Stress in pregnancy and the response to it is often seen as anxiety and depression, giving rise to known negative consequences for obstetric outcomes, parenting and infant behaviors. They have reported fluctuating emotions in response to events in their subsequent pregnancies.

Bartlam (2000) study explored the role of telephone counseling for couple experiencing fertility problems. Study examined the first nine months evening telephone counseling service offered by National Fertility Association. The result suggests that there was significant demand for such services. Secondly qualitative analysis also was performed among the counselors. The key themes were generated from the interviews concerning gender and culture, supervision and training, counseling process issues, boundaries and managerial issues.

Bitzer (1999) has done a study to determine the effect of counseling on stress management during emotional crisis during IVF treatment. The patient centered communication interventions were followed. Psychosocial problems during diagnostic workup and treatment; detection and management were identified as the
barriers by the couples. Findings conclude therapeutic interventions helped couples to cope with the unfulfilled wish for a child. Hunt (1997) study quotes the counseling on cognitive therapy to be widely accepted as an important approach to treat depression with infertility problems. Counseling in reproductive medicine has tended to focus on bereavement theory.

**Ethical Issues in Counseling**

Wischmann (2009) study describes about the history of couples attending infertility counseling. Questionnaires pertaining to socio-demographic factors, motives for wanting a child, lay aetiology of their infertility, dimensions of life and partnership satisfaction, and a complaints list were completed by 974 women and 906 men. Of those who indicated as, 'no counseling' (358 women and 292 male partners) and 'taking up counseling' (275 women and 243 male partners), were compared. The results indicated that the couples with stressful life events were found in the counseling group. For women taking up counseling, psychological distress, in the form of suffering from childlessness and depression as well as subjective excessive demand (as a potential cause for infertility), was higher in comparison to women not counseled. The higher level of distress for men in the counseling group was indicated by relative dissatisfaction with partnership and sexuality and by accentuating the women's depression. Study results concluded that the infertile couples seeking psychological help are characterized by high levels of psychological distress, primarily in women. The women's distress seems to be more important for attending infertility counseling than that of the men.
Policies in Counseling

Schuth (1991) stated on 1st October 1990, that German legislation requires compulsory counseling of an infertility couple before artificial insemination on the medical and psychological aspects. A successful counseling shall enable the couple to take decision and help in coping with psychosocial stress of sterility and its consequences.

Counseling on Stress Management

Counseling within Infertility

A woman suffering from infertility faces complex issues of biological, psychological, social and ethical domains. Discussion of these issues in counseling is often beneficial for women with infertility.

Concepts of Counseling

Counseling for infertility issues can help couples improve their decision making ability, cope with loss and grief and gain insight into the complex psychological issues of assisted reproductive technology and third party reproduction. From a psychological point of view infertility is often a tough condition to cope with during treatment and before pregnancy is achieved, feelings of frustration or loss of control usually experienced by the infertility couple are likely to be the exacerbated. So, management of infertility includes both the physical and emotional care of the people. Therefore, support from physician, nurses and all people involved in treating the infertile couple is essential to help them cope with various aspects of the condition. Offering counseling contact with other infertile couple and patient association can help outside the medical treatment. Alice Domar (1999) recommends counseling for infertility issues can help couples and individuals improve their
decision making ability, cope with loss and grief and gain insight into the complex psychological issues of assisted reproductive technology.

**Goals of Counseling**

Counseling provides support and clarification of life goals, context for support, advice and guidance than as a vehicle for change. Individual is given opportunity to explore, discover, and clarify ways of living more satisfyingly and resources fully – British Council of Association of Infertility Counseling, (1999). Coping with Infertility stress can be extremely difficult for the family and friends of the couple going through infertility.

Katz (2001) reported that "ego”s defenses obviously buffer the individual from threat with great efficiency" and even to block expected biochemical reactions. Study indicates that adequate methods of coping include humor, anticipation, rationalization and philosophy is needs to be maintained. The basic aim of counseling is to ensure that the patient understands the implications of their choice of treatment, the patient receives adequate information and emotional support, and that they can cope in a healthy way with the consequences of treatment.

Jung (2007) examined the effectiveness of Psychotherapeutic counseling and pregnancy rates in in-vitro fertilization. Investigator identified that the patients in IVF support group met twice a week in the early morning to coincide with blood draws and procedures. They felt the group helped to decrease stress, and the social support was highly valued, with strong bonds formed quickly, wanted to share their situations. After the intervention the identified themes were isolation, comparing notes about procedures, impact of infertility on their marriages, feelings of inadequacy and
jealousy of fertile couples, coping with family insensitivity, sadness during the holidays, questioning of faith and anger at God.

De Liz (2005) conducted Meta analyses to evaluate the efficacy of group and individual/ couple psychotherapies on the reduction of negative emotional symptoms and possible promotion of pregnancy. The result showed that group and individual / couple psychotherapy brought decreased level of anxiety.

Patient centered care would be focused on psychosocial aspect of care with an aim to facilitate communication between nurse and patient, to provide good basic relationship, formerly integrated in medical treatment and professionally involved in providing primary treatment. On the other hand the counseling is based on the expected care from all team with an aim to ensure that people being treated are understood as individuals, patient feel comfortable seeking support and initiating counseling, integrated with emotional care in their exchange with patients, professionals involved in providing counseling and psychotherapeutic intervention should be qualified personnel – Kameter, 1988.

The purpose of counseling is to explore, understand and resolve issues arising from infertility and infertility treatment to clarify ways of dealing with the problem more effectively, considering the needs of the patient and any other person who might be affected by treatment process and the decision that have to be made. The same concept was emphasized by Wischmann (2004) who stated that psychological point of infertility couples appear rarely symptomatized, some of them do need psychological counseling. The concepts of psychosomatic problem due to infertility problems were elicited through various researches in Germany. The “counseling network for
infertility in Germany” gave hints on how to conduct counseling and curative treatment in the case of infertility.

Counseling may depend upon the situation of the patient (e.g., married, single), treatment desired (e.g., embryo donation, surrogacy), decision making regarding continuation of treatment or termination of treatment. Council addresses the issues outside of the treatment context and discusses alternative parenthood – adoption. Katja Hammerli (2009) proved that psychological interventions improve mental health and pregnancy rate among infertile patients. A total of 21 controlled studies compared the efficacy of psychological interventions. The findings indicated that no significant effect for psychological interventions regarding mental health (depression: ES 0.02, 99% CI: –0.19, 0.24; anxiety: ES 0.16, 99% CI: –0.10, 0.42; mental distress: ES 0.08, 99% CI: –0.10, 0.51). Nevertheless, there was evidence for the positive impact of psychological interventions on pregnancy rates (RR 1.42, 99% CI: 1.02, 1.96). Concerning pregnancy rates, significant effects for psychological interventions were only found for couples not receiving ART. The author suggests that even with the negative effects on mental health measures, psychological interventions were found to have improved some patients’ chances of becoming pregnant.

Schmidt (2005) evaluated the patient’s education program focused on improving communication and stress management skills among couples with fertility treatment. 37 couples were selected for the study. The effectiveness regarding communication and infertility-related stress was assessed by questionnaires immediately before (time T1) and after the intervention (time T2). Seeking of information and professional support was assessed at 12-month follow-up (time T3).
The study response rates before intervention was 93.2%; after the intervention was 85.1%. Hammarberg (2003) follow up study identified women’s stressful experience of assisted reproductive technology including decision making to try ART, starting treatment, waiting for result after a scan, having oocyte collection, the 2 weeks of wait after embryo transfer and unsuccessful outcome of the treatment. Study further describes based on the findings that nurse needed to review the literature that may enhance extensive clinical practice in ART program. The finding suggested that strategies may have to use help to reduce stress and improve the well being of women undergoing ART treatment.

Tasks of Counseling

The task of counseling includes 1 Information gathering and analysis, 2. Implication & decision making counseling, 3. Supportive counseling and 4. Therapeutic counseling. Information counseling is that information provided by the counselor about the medical aspects of treatment. Mori (2009) studied on supportive stress management for women undergoing the early stages of fertility treatment. A cluster-randomized controlled trial was used to determine the effect of a support program for the stress management of women undergoing fertility treatment to reduce stress related to infertility and treatment. 96 women in the study group and 44 women in the control group were selected using cluster randomization for the study. The women in the study group were asked to continue stress management home workout for 3 months. Women in the control group were given only the booklet. The primary outcomes were the risk ratios of "depression" and "anxiety" according to the Hospital Anxiety and Depression Scale. The secondary outcomes were "health status" from the Medical Outcomes Study Short-Form 36-item Health Survey (SF-36) and "satisfaction" from the Visual Analogue Scale. The study results reveal that there are
no differences in the incidence of depression and anxiety between the study and the control groups. The study concludes that positive effects of the support program were observed on two subscales of the SF-36 in the subgroup.

Shimazu (2006) examined the effects of single-session, small-group stress management program on knowledge about stress, coping skills, and psychological and physical distress. The result described that favorable intervention affects knowledge about stress and coping skills \((p<0.001\text{and } p = 0.012, \text{respectively})\) and adverse effect on psychological distress \((p= 0.022)\). The findings conclude the single-session stress management program was effective in improving knowledge about stress and coping skills.

Schmidt (2005) evaluated patient education program focused on improving communication and stress management skills among couples in fertility treatment. 37 couples were selected for the study. The effectiveness regarding communication and infertility-related stress was assessed by questionnaires immediately before (time T1) and after the intervention (time T2). Seeking of information and professional support was assessed at 12-month follow-up (time T3). The study response rates before intervention was 93.2%; after the intervention was 85.1%. The study results estimated the bi-directional changes in communication, e.g., changes from talking often to talking less frequently and vice versa. More intervention participants started to talk often with their partner about infertility and its treatment after the intervention compared to those who stopped to talk often. Among women marital benefit was increased significantly. Diamond (2005) recommends psycho education to normalize women’s profound sense of trauma or loss. Results showed that the observation and therapeutic success strongly support the usefulness of the concepts of reproductive
trauma, the role of complicated grief and the importance of identifying problems able to help cope effectively with treatment.

Salakos (2004) study analyzed the psychological / emotional needs of 235 women while undergoing IVF treatment through cohort study. Results showed that the psychological support and the scientific information provided during IVF program were insufficient. Study shows that 59.3 women received medical information and 32.5% emotional support. The received information was varied with education, age and origin. Finding suggests that emotional support and information need to be provided by the infertility clinic.

Therapeutic counseling within infertility there is often a natural progression from support counseling to therapeutic counseling. Several mode of therapeutic counseling have been developed recent years providing a variety of counseling modalities at individual, couple and group and interventional strategies. Therapeutic counseling can focus on reflection of individual problem, acceptance of the situation, meaning and impact of infertility, including grief work; work on alternative life and self-concepts for the future. The development of coping strategies focused to minimize the distress, problem and conflict solving, and for specific issues such as sexual, marital and other interpersonal problems. The more general therapeutic counseling can comprise supportive, coping –oriented and problem solving strategies.

The theoretical framework of the counseling model can describe in the literature including psychodynamic psychotherapy, cognitive behavioral technique, solution – focused psychotherapy, crisis intervention and process- experiential grief counseling. Facchinetti, F. (2004) study findings indicates that CBT is useful for decreasing the level of distress in patients submitted to IVF – ET treatment.
Techniques of Counseling

Many counseling techniques are used to help a person who is in distress. In one case, one may predominantly use one technique in another. They may use more than one in any combination. Nurse can plan the combinations depending on the individual, family and the problems. The lists of counseling techniques are 1. Ventilation, 2. Explanation, 3. Reassurance, 4. Diversion by physical and mental activities, 5. Recreation, 6. Improve the problem solving skills 7. Encourage Health Defense Mechanism 8. Suggestion, 9. Reinforcement, 10. Get support from significant others and 11. Change of the attitude and life style.

Nermin Gurhan (2007) evaluated the effectiveness of counseling provided by nurses on depression and coping strategies of infertile women undergoing In vitro fertilization. A comparative study design with 67 women was selected for the study. Of the 67 women who were interviewed, 30 were accepted under control group, and 37 were included in the study group. The study group women were given counseling in addition to routine nursing care services, including group education and individual interviews about treatment and coping strategies. The Beck Depression Inventory and Jalowiec's Coping Strategies Form were used for measurements. The study concluded that all the women both in the study and the control group had used emotional coping and had moderate depression prior to the study and there was no statistical significant difference between the comparison and study groups before or after the counseling with respect to depression and coping strategies.

Bodenmann (2007) assessed the effectiveness of marital distress prevention program among couples by examining how marital quality, especially marital competencies such as dyadic coping, could be improved by means of Couples Coping
Enhancement Training. The study consisted of 59 couples in the intervention group and 59 couples in the control group. The study results conclude that it is possible to improve marital quality, especially marital competencies after attending coping enhancement training program.

Poehl (1999) reviewed the literature about the acceptance of psychotherapeutic counseling (PSITCO) and its influence on pregnancy rate was reviewed. The study comprised 1156 consecutive patients (Mean age, 33.3 years) and 1736 in In Vitro Fertilization (IVF) cycles. The patients who gave consent for follicle puncture were reported that several methods of psychological support during IVF - embryo transfer treatment were psychotherapy, hypnotherapy, relaxation and physical perception exercises. The results revealed that forty – two and 3% to 10% of patients rejected PSITCO, 17. 8% had already received PSITCO, and 10.4% were willing to undergo PSITCO. The acceptance of PSITCO had no relevance on pregnancy rate. The cumulative calculation of pregnancy rates showed that up to 56.4% of women who had undergone PSITCO conceived. In patients who were planning to undergo PSITCO, the pregnancy rate was 41.9%. Concerning the cumulative pregnancy rate, this study showed that patients who accepted or underwent PSITCO had a higher pregnancy rate than those who did not avail themselves of this possibility. Study concludes that sterility specialists to consider psychological therapy as an essential aspects of IVF.
2.1.5 YOGA AND ITS THERAPEUTIC USE FOR INFERTILE WOMEN DURING IVF TREATMENT

Definition of CAM

Joseph (2002) insists on alternative and complimentary healing practices, according to NCCAM, CAM - it is defined as those practices not commonly included in or used by conventional medicine. 7 categories of CAM are defined and subdivided into practices. The classifications are (1) Alternative medical system (2) Mind–body interventions (3) Energy therapies (4) Manipulative and body based methods (5) Energy therapies (6) Special diet therapies (7) Phyto therapy or herbalism. Yoga is classified under mind body interventions. Mind body interventions are considered cultural, symbolic, social and contextual in the approach.

Forms of CAM

WHO (2005) states Ayurveda and yoga practices approximately dates back to 7000 years. These systems have survived due to their strength and efficacy and have taken care of the health needs among the people. The Indian government has recognized the codified traditional systems of medicine such as Ayurveda, Siddha and Unani as well as non drug therapies such as yoga and naturopathy in to the main health care stream practice. Dossey (2000) states selected interventions that are often used in specialties of nursing are prayer, meditation, counseling, guided imagery, health promotion guidance, journaling, therapeutic touch, healing presence and massage. Encouraging options for herbal medicine, manual health alternative systems of medical practices and many other complimentary caring and healing modalities facilitate the goal of healing.
Benefits of CAM

Maida Taylor (2001) in the article on alternative medicine in gynecology states women, as gate keepers for health care and spending in households, often are pivotal to decision making in the use of complementary and alternative health practices. Women are also more likely to use integrative medical services than men. Women often have chronic health problems, disorders that respond poorly to conventional allopathic methods of treatment. Vague and often refractory problems like weight gain, constipation, memory deficits, stress, depression, arthritis, insomnia and headache are sources of frustration in general medical practice, these receive detailed, in-depth consideration in alternative medical system.

CAM in infertility

Women who are experiencing the devastation of infertility are finding hope in a simple, self applied acupressure. Researchers from Emory University showed that infertile women resumed ovulation after twenty weeks of psychotherapy to reduce stress levels. However, relief need not take that long. Bar-Hava (2005) assessed whether bed rest following embryo transfer (ET) procedure contribute to the implantation process and pregnancy rate. A prospective study was conducted among four hundred and six women undergoing controlled ovarian hyper stimulation and IVF in IVF unit of an academic medical center at Israel. The findings revealed that 406 women counseled during the study period, 167 preferred immediate ambulation and 239 opted to stay in the unit for 1 hour’s bed rest. There were no significant difference between the groups in mean patient age, number of embryos transferred, and other variables of the assisted reproductive technique cycles. Pregnancy rate did not differ between the groups: 41 out of 167 (24.55%) in the immediate ambulation group and 41 out of 239 (21.34%) in the bed – rest group. The result concludes that
immediate following the ET procedure has no adverse influence on the ability to conceive.

**National Policies on CAM**

Gandhi (2005) in their report on Republic of India presented for WHO global atlas of traditional complementary and alternative medicine quotes that Indian Government in 2002 made a major decision to adopt an independent policy on AYUSH. Ayurveda and Yoga are emerging in the international area due to global demand in holistic approaches. Approximately 70% of the population used traditional systems of medicine in primary health care needs. 21 states in India have a separate department for AYUSH. A research Council for Research in Yoga and Naturopathy CCRYN has also been established. AYUSH is well documented, regulated and utilized in India. Priority has been given to scientific validation. The infra structure available for yoga in India are at 8 hospitals with 150 beds and 65 dispensaries.

**Yoga as CAM and therapeutic uses**

Chan (2006) has done a randomized controlled trial study on effectiveness of psycho-social group intervention for reducing anxiety among 227 women undergoing first cycle of in vitro fertilization treatment. Study used the Eastern Body – Mind Spirit group intervention on anxiety – reduction of Chinese women undergoing IVF. The result showed that the intervention group had a significant drop in state Anxiety mean score following intervention, but there were no significant increase in the pregnancy rate. The study concluded that the Eastern Body – Mind Spirit group intervention approach effectively reduces the Anxiety level of women undergoing IVF treatment. The result of the study compared the control group with the intervention group women who had a significant drop in state anxiety. Findings
concluded that Eastern Body – Spirit group intervention approach had effectively reduced anxiety level of women undergoing IVF treatment.

**Yoga on stress**

Susan (2003) recommended that relaxation techniques can relieve anxiety and stress. Women with increased levels of anxiety and nervous tension often needed to develop more effective ways of dealing with day to day stresses. The everyday pressures that women with a healthy emotional balance handle easily can be overwhelming for women whose anxiety responses are easily triggered. Such stress can include riding in an elevator, being in crowds, going to the dentist, or any situation, place, or person that sparks a woman's emotional charge. Often these charged issues evoke anxiety, fear, or upset feelings. Moreover, significant lifestyle changes death of a loved one, divorce, job loss, financial problems and major changes in personal relationships can be almost impossible to handle when a woman is already feeling anxious and tense. Being unable to cope with stress effectively can also damage a woman's self esteem and self confidence. A woman with anxiety episodes may feel a decreasing sense of self-worth as her ability to handle her usual range of activities diminishes. Life stresses themselves don't necessarily change, so how a woman copes with them can really make the difference. Domar (2000) study gave the additional information from same study above. Women who participated in the groups had decreased psychological distress, whereas the control group experienced increased distress over time.

**Yoga in Coping**

Jeffrey Goldberg (2008) reported that the coping with Infertility- Guided Imagery for infertility, the stress of conceiving, all the way through pregnancy and
the labor and delivery process: Guided Imagery for Infertility and Pregnancy Loss. The desire to have a baby is considered as one of the strongest emotions women may ever experience. For some conception occurs quickly and almost effortlessly, for others the journey towards pregnancy can be long, frustrating and very confusing. So much has changed in the field of infertility. Infertility is a difficult concept as the woman often feels that she is out of control although, trying her very hardest. Stress is a very strong emotion. The use of guided imagery C.Ds. has been showed effective and helpful to thousands of women. The maternal need is one of the strongest desires a woman has as well as the maternal bond. The next, is protecting and loving her newborn and keeping him or her safe, protected and loved. Even though after the birth of the baby, the mom and baby are "no longer connected" as one, they will always be connected in heart and soul.

Yoga in Infertility Women

Khalsa (2003) stated that Yoga is an adjunct to infertility treatment. The use of Complementary and Alternative Medicine (CAM) is becoming increasingly popular in the United States. Yoga and meditation can help women who are experiencing the challenges of infertility. The practice of meditation and relaxation can help to increase the clarity of their mind, maintain healthy body chemistry and give patients the patience to undergo the rigors of infertility treatments. When (women) one understands yoga they can attain physical relaxation and can feel better about the body itself and begins to treat the body with more respect. This understanding can lead to healthier lifestyle habits as well as increased sensitivity regarding symptoms and body processes. Body-mind therapy may ease anxiety of IVF. A holistic form of group counseling can help to calm some of the anxiety in women waiting to undergo In Vitro Fertilization (IVF). Researchers in Hong Kong researched on "body-mind-
spirit" form of group support eased anxiety levels in a group of women about to undergo IVF. The authors used breathing exercises, yoga and meditation to improve their sense of physical, emotional and spiritual well-being and therefore make them more resilient to the effects of anxiety. Chan, C. H. (2005) developed eastern body–mind–spirit group intervention to help infertile women in the Chinese population cope with the distress arising from IVF treatment. Study adopted bio–psycho–social–spiritual health model. Study results shown and reflected that the eastern body–mind–spirit approach could enhance the holistic health of IVF women.

**Physiology of yoga**

Coilter (2004) investigated on the twenty healthy volunteers who performed three different types of exercises with respect to cross–sectional comparison:1. Recitation of hexameters, 2. Controlled breathing and 3. Spontaneous breathing. Each exercise was divided into three successive measurements: 15 minute baseline measurement (S1), 20 minutes of exercise, and a 15 minutes effect measurement (S2). The study findings revealed that the synchronization was high indicating prominent cardio-respiratory synchronization. The controlled breathing exercise showed cardio-respiratory synchronization to a lesser extent and all resting periods (S1 and S2) have even fewer cardio-respiratory synchronization. During spontaneous breathing, cardio-respiratory synchronization was minimal and hardly observable. The results were largely determined by the extent of a low–frequency component in the breathing oscillations that emerged from the design of hexameter recitation. The study concluded that the recitation of hexameter exerts a strong influence on Respiratory Sinus Arrhythmia (RSA) by a prominent low–frequency component in the breathing pattern, generating a strong cardio-respiratory synchronization.
Deepak (2002) analyzed the implication of meditation on Neuro-physiological mechanisms inducing “meditative effect”, “efferent attenuation”, “sensory attenuation” and “cognitive restructuring” in varying degree of combinations to produce the “meditative effect” during different types of meditations. Using hypothetico – deductive approach, it is possible to generate a neural model for explaining the “meditative effect”. Primarily meditation is produced by disengaged association cortices driven by thalamus or other older group of reticular nuclei. Secondarily, there may be involvement of some more phylo-genetically older structures depending upon depth and types of meditation. This model explains induction, maintenance and long – term effects of meditation.

**Yoga on Psychological Changes**

The recognition of the distressing character of infertility diagnosis and treatment has led to the development of several psychosocial interventions for infertility couples. Brown (2005) quotes yogic breathing as a unique method for balancing the autonomic nervous system and influencing psychological and stress-related disorders. Yoga technique enhances well being, mood, attention, mental focus, and stress tolerance. Health care providers play a crucial role in encouraging patients to maintain their yoga practices. Acharya Anoop (2005) quotes that the main benefit of Sukhasana posture is a vehicle for Pranayama, eliminates exhaustion and fatigue after strenuous work; Shavasana (pose of tranquility) is the best for relaxing the muscles of the body including spine.

**Yoga in Mood Disorders**

Lee (2007) has done a study to examine the effectiveness of a meditation-based stress management program in patients with anxiety disorder. Patients with
anxiety disorder were randomly assigned to an 8-week clinical trial of either a meditation-based stress management program or an anxiety disorder education program. The Hamilton Anxiety Rating Scale (HAM-A), the Hamilton Depression Rating Scale (HAM-D), the State-Trait Anxiety Inventory (STAI), the Beck Depression Inventory, and the Symptom Checklist--90-Revised (SCL-90-R) were used to measure outcome at 0, 2, 4, and 8 weeks of the program. The study results concluded that meditation-based stress management group showed significant improvement in scores on all anxiety scales (HAM-A, P=.00; STAI state, P=.00; STAI trait, P=.00; anxiety subscale of SCL-90-R, P=.00) and in the SCL-90-R hostility subscale (P=.01). The study findings on depression measures were inconsistent, with no statistical significant improvement shown by subjects in the meditation-based stress management group compared to those in the education group. The meditation-based stress management group did not show significant improvement in somatization, obsessive-compulsive symptoms, and interpersonal sensitivity scores, or in the SCL-90-R phobic anxiety subscale compared to the education group. The study concludes that a meditation-based stress management program can be effective in relieving anxiety symptoms in patients with anxiety disorder.

**Yoga in Healing**

Arambala (2001) explored the physiological correlates of a highly practiced Kundalini yoga mediator. Thoracic and abdominal patterns, heart rate, occipital parietal electroencephalogram, skin conductance level and blood volume pulse were monitored during pre baseline, meditation and post baseline periods. Visual analysis of data showed a decrease in respiration rate during the meditation from a mean of 11 breath/ minute for the pre – and 13 breaths/ minute for the post baseline to a abdominal / diaphragmatic breathing. There was also more alpha EEG activity during
the meditation (M=1.71 micro V) compared to the pre – (M=.47 micro V) and post baseline (M=.78 micro V) periods and an increase in theta EEG activity immediately following the meditation (M=.62 micro V) compared to the pre –baseline and meditative periods (each with M = .26 micro V). These findings suggest that a shift in breathing patterns may contribute to the development of alpha EEG and those pattern need to be investigated.

TREATMENT FOR MENTAL DISORDERS

Life Style Changes

Czamara (2002) determined whether a 10 week yoga practice of postures, breathing, and relaxation can increase a person’s strength, balance, functional flexibility, and mental and physical quality of life. A sample of 16 volunteers was recruited from a community – based yoga center. A quasi – experimental, one group within subject control, pre- post test design was used for this study. Data were analyzed at the significance level of p<.05 for one group pre-and post-test of two data sets. The first set generating physical performance data of five tests. The second set, a survey measuring mental and physical health. The Mann – Whitney showed significance at the p<.05 for the mental components of the questionnaire. This study suggests that even a relatively short (10- weeks) program of yoga will results in improvements of lower limb strength and self-perception of mental well – being of community – dwelling adults (mean age = 46.81) who are novice yoga practioners.

Traditional Nurses Role

Shu-Hsin (2003) has done experimental study to assess the effectiveness of nursing crisis intervention among infertile women attending an IVF-ET treatment program. In the experimental group, infertile women completed and answered a
questionnaire and received nursing crisis intervention which includes 1. Viewing video explained on therapeutic process of IVF-ET, 2. Self-hypnosis and muscle relaxation training, and 3. Provision of cognitive-behavioral counseling. The women in the control group were only interviewed using the same questionnaire and at the same time as the experimental group. The women in the experimental group perceived a positive effect of the nursing intervention in relieving their psychosocial responses. The findings suggested that the nursing crisis intervention could be helpful in nursing practice for nurses when dealing with infertile women attending IVF treatment programs.

**Conventional Therapies**

Freizinger (2000) study revealed the impact of group psychological interventions on pregnancy rates in infertile women. The Infertile women in a support group that included yoga, relaxation and imagery had significantly higher pregnancy rates than a control group, and higher rates of spontaneous pregnancy than a standard support group. Everyone has a different way of reducing stress. The following are some things which can help a great deal. Some of these techniques can be followed during the treatment process: Vacations, Music, Sports, Visualization, Humor, Hobbies, Friends, and Prayer and Meditation.

**Other Interventional Model**

Lemmens (2004) in Leuven University Fertility Center developed body–mind marital group intervention to help infertility couples cope with the distress related to infertility. The study concluded that although the first clinical impressions about the usefulness of the body - mind group program in fertility clinic seen promising, further research is needed to assess its effectiveness.
Alice Domar (1999) has demonstrated through research that the effects of CAM in alleviating stress can improve a woman's sense of control, self-esteem, general well-being, and chance of fertility. Relaxation and guided imagery allow the women with infertility to work on the emotions of trying to conceive.

Cognitive Behavioural Therapy

McNaughton–Cassill (2002) assessed the efficacy of brief couples support groups during IVF treatment. 26 couples participated in bi-weekly. Cognitive behavioral model was used to help couples process their feelings and cognitions about the impact of infertility on their life and explore their expectations about their future options for becoming parents. Couples were asked to anonymously evaluate the efficacy of the group after they had completed their IVF cycle. The study used Cognitive behavioral techniques as independent variable and Beck Depression Inventory, Anxiety Inventory, and Life Orientation Test as dependent variables. The result showed that women attended group sessions significantly less anxious after the IVF treatment than before cycle (p < .001). The results of the study reported that the group helped them deal with the stress of infertility and they valued the social bonds they formed with other group members. Conclusion of study suggests that brief focused group therapy, offered while couples are undergoing IVF, is an effective way to help people deal with the stress of infertility treatment.

2.1.6 REVIEW ON

Methodology

Kuppusamy (2003) in Indian setting used CCL scale to assess the coping strategies used by the caregivers to deal with their stress of care giving. Revathy (1986) modified the tool for college students. Latha Venkatesan (2002) had used this
scale to assess the physical, emotional, social, sexual, rejection of child free life and need for parenthood reactions of infertile women. Rammohan (2002) used CCL scale to assess the coping strategies used by the primary care giver of 24 patients with schizophrenia attending outpatient department of psychiatry, NIMHANS.

Christopher (2000) Women's perceptions and experiences were focused among involuntarily childless Indian women/couples seeking In Vitro Fertilization (IVF). The sample was drawn from consenting clients of clinics in two major Indian cities (New Delhi and Mumbai). The result from his in-depth interviews revealed that infertility is deeply feared, their status and security were affected, and they experienced stigmatization and isolation. Author further said that since IVF couple received inadequate information/counseling, the success rates are low, and IVF process is physiologically, emotionally and financially stressful. So author suggests that practice of integration of infertility services into the state's reproductive health programme and disseminating information on infertility and to offer effective counseling on coping with psychosocial/sexual problems is essential. Typical emotional reactions towards unsuccessful treatment include depression, anxiety, poor self image and feeling of unfulfilment. Research suggests that at least 85% of fertility problems are physiologically caused. But there is new evidence that the mind also plays a crucial role. The study found out that women feared on their status, security, stigmatization and isolation. The finding of the study reports an average internal consistency of .93, retest reliability of 0.83. Alpha internal consistency was .77 and .93 in the typical and recurrent stress data sets respectively.

Christopher (1999) developed an instrument to evaluate perceived infertility-related stress by conducting prospective study among 1,153 women and 1,149 men.
The participants’ infertility-related stress was assessed by written questionnaire based on Fertility Problem Inventory. The women from the study described greater global stress than men and specifically higher stress in social concerns, sexual concerns, and need for parenthood. Social, sexual, and relationship concerns related to infertility were more effective predictors of depression and marital dissatisfaction than expressed needs for parenthood or attitudes toward child-free living. The study recommends that the Fertility Problem Inventory can provide a reliable measure of perceived infertility-related stress and specific information on five domains of patient concern. Study further expressed that the patterns of infertility-related stress differed depending on gender, fertility history, and infertility diagnosis. Among women receiving IVF treatment, social, sexual, and relationship concerns appeared as central to current distress. The nursing implication on the instrument of the counseling interventions can be targeted on these domains to offer maximal therapeutic benefit.

Rao, Subbakrishna and Prabhu (1989) described ‘coping’ as the behavior, or the things that people do to reduce stress. How people cope with stress may be more important than the frequency or severity of stress. The test and retest reliability for one month period is 0.74 (p<0.01). Alpha for the total scale is .86.

**Related Study Variables and Study Design**

Lowyck (2008) undertook cross-sectional study of 68 women starting their first IVF treatment at the Leuven University Fertility Centre of the University of Leuven, Belgium. The study results that High Self-Criticism was negatively associated with psychological well-being (r = -0.63, P < 0.001) and relationship satisfaction (r = -0.29, P < 0.05), and positively associated with relationship (r = 0.39, P < 0.01) and sexual (r = 0.37, P < 0.01) concerns. High Dependency was negatively
associated with psychological well-being \( (r = -0.30, \ P < 0.05) \), not significantly associated with relationship satisfaction and relationship concerns, and positively related to sexual concerns \( (r = 0.31, \ P < 0.05) \).

Garzaro (2007) undertook study among 156 infertile couples (recruited at intake) and 80 fertile couples, to evaluate the degree of psychopathology using Hamilton Anxiety Rating Scale (HAM-A), Hamilton Depression Rating Scale (HAM-D), and Anger Expression [State–Trait Anger Expression Inventory (STAXI)]. Among them 156 infertile couples were then subdivided into groups based on the cause of infertility (‘organic’, ‘functional’ or ‘undetermined’). The result revealed that the differences in the degree of psychopathology between ‘organic’ and ‘functional’ infertile subjects and fertile controls. In women, logistic regression identified three variables which are able to predict the diagnosis subtype; these variables are HAM-A, HAM-D, and tendency toward Anger suppression. In men, anger did not emerge as a predictor for diagnosis, whereas HAM-A and HAM-D did. Study concludes that the ‘functional’ infertile subjects of this sample showed particular psychopathological and psychological features.

To support the above study Peterson (2003) examined congruence between partner’s perceived infertility-related stress and its relationships to marital adjustment and depression in infertile couples. The purpose of this study was to explore the impact of congruence (e.g. agreement) between partner’s perceived infertility-related stress and its effects on depression and marital adjustment. Couples referred for infertility treatments at University-affiliated teaching hospital completed the Fertility Problem inventory (FPI), the Beck Depression Inventory (BDI) and the Dyadic Adjustment Scale (DAS) 3 months prior to their first treatment cycle. The
findings of the study showed that females reported significantly higher levels of infertility-related stress than males on each of the five sub-scales and on the composite measure of Global Stress. Majority of females reported a higher mean global stress score compared to males ($t=12.4$, $p< .01$); higher mean scores for depression than males ($t=9.2$, $p < .01$) and a greater percentage of score in the depressed range of the BDI ($\geq 10$) when compared to males (21% vs 9% respectively).

Eileen Mary Conway (2002) said that all patients reviewed and reported bereavement reactions in relation to their impaired fertility. Women reported more of these reactions than did their partners and at subsequent interview often reported feeling lonely and isolation in the face of male partners who managed their reactions in a more silent and guarded manner, frequently telling no one about the problem.

It is known that infertility treatments are very stressful for infertility couples. The infertility stress has been identified as after having attempted conception without success, or having experienced miscarriage. The couple’s relationships with family and friends may become strained, and social isolations is not uncommon – Reed (2001). Having the concern to overcome the existing evidence of incidence and prevalence rate of infertility problems, Hynes (1992) studied on the effects of coping among 100 infertile women and 73 female controls. The psychological well being of infertile women after a failed IVF attempt were studied. They completed three measures of psychological well being (depression, self-esteem and self-confidence) on two occasions, coinciding with the beginning and end of IVF treatment. The results showed that IVF women were more depressed and had lower self esteem than controls prior to the treatment cycle and both before and after the treatment cycle they were less self confident.
Uses of FPI and CCL

Brennan (2006) study examined the emotional impact of partner's perceived infertility-related stress and its effects on depression and marital adjustment in infertile men and women. Couple completed the Fertility Problem Inventory (FPI), the Beck Depression Inventory (BDI), and the Dyadic Adjustment Scale (DAS) 3 months prior to their first treatment cycle. The study findings showed that men and women perceived equal levels of social infertility stress and higher levels of marital adjustment when compared to men and women who perceived the stress differently. The couple’s agreement over relationship concerns and the need for parenthood was related to female depression.

Psychiatric Nurses Role

Florence (2010) in her survey observed emotional reaction experienced by women as anxiety (12.7%), depression (5.2%) and reduced libido (6.7%). The author used semi-structured interviews, to express emotions in addition to anger, feelings of devastation, powerlessness, sense of failure and frustration. Women were observed for anxiety for 6%. Although all the 10 women interviewed confirmed they were anxious; only 4 of their partners were reported to be sad or anxious. Regarding successful clients' perception of nurses' role revealed that nurses carrying out basic nursing procedures, communicating, educating about investigative and treatment procedures, providing emotional support by listening, encouraging, reassuring and being empathetic. Further this study illuminates the emotional reactions of infertile clients. Study recommends fertility nurses can provide emotional support through communication and there is a need for additional and continuous training for nurses employed in fertility settings.
Sandi (2002) stated that nursing care should include teaching information related to the duration and severity of symptoms experienced in the luteal phase following gonadotrophin treatment. Stephenson (2002) insisted on nurse counseling to women with a history of recurrent miscarriage in respect to perceived pain, prior to an endometrial biopsy (EB).

**B. CONCEPTUAL FRAMEWORK**

The conceptual framework for this study was derived from Lazarus stress-coping and adaptation model which was designed by Richard Lazarus (1984). The main focus of his classical work was on stress, appraisal and coping. He focuses on what happens inside a person’s mind. He defines stress as a particular relationship between the person and the environment that is appraised by the person and as taxing or exceeding his or her resources and endangering his or her well being. In this study female infertile partner undergoing infertility related treatment are considered to experience of stress. The effects of the stress are presented in the stress, coping, and adaptation model. This system model has 4 components; (1) Antecedents to the stress, (2) Stress, (3) Coping and (4) Adaptation.

In this model, antecedents or precursors are the response state to the stressors. First, there is a person–environment relationship that changes throughout the stress experience. In this many factors are involved in the person- environment relationship. The second antecedent is in the female infertile partner’s cognitive appraisal of the risks and benefits of the situation, which mediates or moderates the interpretation of its meaning. It is an appraisal of the relationship that determines the manifestations of stress and the potentials for coping. Let’s first discuss the female infertile partner -environment relationship.
PERSON-ENVIRONMENT RELATIONSHIP (INTERACTION OF INFERTILE WOMEN WITH ENVIRONMENT) INFERTILE WOMEN:

An infertile woman brings to any interaction with a set of values and beliefs that are developed over a life period after she was identified as infertile from the investigation procedure. These values are based on cultural, ethnic, family and religious tradition that forms her beliefs about the world. An infertile woman’s underlying values and beliefs shapes her decision about the significance of her present problematic situation (inability to produce a child for her husband). Therefore what is important to husband may not be to wife.

VALUES AND COMMITMENTS:

When infertile woman’s values calculated on the outcome from every month’s menstrual cycle, infertile woman is likely to be committed to activities directed towards that outcome. According to Lazarus, the commitment to a goal is an important factor in the stress response.

PERSONALITY BEHAVIOR PATTERNS:

Infertile woman brings out not only their values, beliefs and goals to any situation but also their behavioral characteristics. Some infertile women tend to avoid new experiences and situation they happen to face it, where as others embrace them. Ways of interacting with the world develop in each infertile woman from every stage of their life. These behaviors become patterned over a period so those infertile women spontaneously respond to events with a particular behavior pattern.

THE ENVIRONMENT:

Next, examining the interaction of environmental factors are critical to the infertile woman –environment relationship, the external environment is
conceptualized as everything outside women, including physical surroundings and social interaction. The crowding situation, noise of children playing, is happening to see their friends with their children while shopping, function and neighbors children are the physical aspects of the environment. Social aspects include living arrangements like living with in-laws (joint family system or extended family system), relatives, and friends and personal contacts at the time of party, marriage celebration of pregnancy, birthday party. Unique interactions occur daily between the infertile woman, physical and social aspects of the environment.

**SOCIAL NETWORK:**

Infertile women live within a social network consisting of linkages among a defined set of women with whom they have personal contacts. A social identity is developed and maintained within this social network. A social network can increase an infertile women’s resources, enhances the ability to cope with change. Each woman’s social network is slightly different. Larger the network, the more the support available to the women. Hence networks are better able to respond in times of stress and crisis and provide emotional support to women in distress.

**SOCIAL SUPPORT:**

One of the important functions of the social network is to provide social support, positive and harmonious interpersonal relationship and interactions that occur within the social relationships. Social support is a process, and the social network is the structure within which the social support occurs. Social support serves in three functions.

1. Emotional support contributes to woman’s feelings of being cared for or loved.
2. Tangible support provides a woman with additional resources.
3. Informational support helps women view situations in a view light.

Social support should be viewed as a dynamic process that is in constant flux and varies with life events and health status.

A woman has a large, complex social network but little social support. The following behaviors are manifestations of social disruptor.

1. Expressing negative feelings and emotions.

2. Disagreeing with or discounting the appropriateness of a woman’s opinion or values.

3. Discouraging woman from openly expressing her feelings.

4. Withholding advice or blocking woman’s access to useful information.

5. Consuming woman’s material resources.

6. Conveying information that makes woman feel isolated.

DEMANDS AND CONSTRAINTS:

Within the social network are external and internal demands and personal and environmental constraints. Internal demands are generated by physiologic and psychological needs. Some external demands, such as crowd of children in the school, children playing noisily, meeting the friends with their children during shopping, family trip, attending family function and neighbors, others such as behavioral and role expectations are imposed by the social environment. Personal constraints include internalized values and beliefs of repeated enquiry and questioning on “nothing”, “When are you going to start your family?”, “When are you going to invite us for your child’s birthday party?”, and hearing statements like “do not allow her to start program since she does not any issue”, You do not come in front of us when we are going for good occasions”. Environmental constraints are finitive resources, such as money and time that are available to women.
SOCIOCULTURAL FACTORS:

Cultural expectations and role strain serve as both demands and constraints in the experience of stress. If woman violates cultural group values due to unwomanhood to meet role expectation of growing next generation of their family, stress occurs.

LIVE EVENTS:

In 1967, Holmes and Rahe presented a psychosocial views of illness by pointing out the complex relationship between life changes and the development of illness (Holmes and Rahe, 1967), they hypothesized that women become ill after they experience life event changes. For more frequent the changes, the greater the possibility of them becoming sick, not all events have the same impact.

APPRAISAL:

Physiologic stress caused by tissue trauma is not the same as psychological stress, which involves thinking and feeling. The meaning of the women-environment situation is evaluated or appraised for its risks and benefits.

SOURCES OF STRESS:

Adjustment to change is stressful. Many events in life produce woman with stress reactions. Emotional discomfort due to internal conflict and fear of family members, divorce, marital separation, remarriage, sexual dissatisfaction, marital disharmony and causes for infertility are stressful events. Change in the health of a family member, marital reconciliation, increased arguing with spouse, sexual difficulties, change in financial state, mortgage, trouble with in - laws are stressful. The changes in the living conditions and personal habits such as changes in work, residence, recreation, religious activities, social activities, sleeping habits, and eating
habits cause stress. Even personal achievements, stopping of menstrual cycle, positive pregnancy result are stressful. These personal stressors can affect one’s present job (process of infertility treatment) performance. In addition to the personal stressors, there are many sources of stress at the place of treatment. Traveling long distance and spending time by waiting in the queue are highly stressful. Personal readjustments such as changing role or responsibilities of working towards the achievement of a child, spending more time in treatment process, and problems with husband or doctor are stressful. Even outstanding achievement of treatment process is stressful. Poor hospital conditions; side effect of medications, straining with treatment; time pressures, responsibility for other commitments; role ambiguity and conflicts; conflicts with doctors, team members, and peer group adjustments; restrictions; little participation in decision making; over or less concern, uncertainty of result outcome are stressors common in treatment process.

Women faces stress with investigation procedure and treatment process situation; repeated treatment cycles involving physical and mental strain; knowledge on how to cope with different stages of process and the consequences of treatment result; reporting to team members; communication problems among team members, consultant, families, and other relatives; and awareness of the coping strategies available during their stressful situation. A hospital is one of the most stressful environments. Infertile women often needlessly increase their own stress. The difference between demands that woman place on themselves or perceive from others and the resources they perceive is available to meet the demands they place on themselves. Type A women sets high standards, are comparative and put themselves under constant time pressure. They are even very demanding of themselves in leisure
and recreation activities. Type B women are more easily going and relaxed. They are less competitive and more likely to accept situations than fight them.

STRESS RESPONSE:

Stress is impossible to avoid. It is a nonspecific response of the body to any demand. There are two types of stress: (1) eustress, a positive force that adds excitement and challenge to life and provides a sense of well-being and (2) distress, a negative force caused by unrelieved tension that threatens effectiveness. Whether one will experience eustress or distress largely depends on the women’s perceptions, physical activity or inactivity, mental activity or inactivity, sound nutrition, and meaningful relationships. A stressor is anything an individual perceives as a threat. Stressors produce a state of stress by disruption homeostasis. There are three stages in the stress response. First, alarm reaction is the mobilization of resources to confront the threat. Second, in the resistance stage, there is a large increase in energy consumption. Once the reserve energy has been used, the body needs time to recover and to replenish the supply. When stress continues for long periods of time, the energy is used but not replaced and the third stage, exhaustion results. Consequently, unrelieved stress interferes with one’s physical and mental well-being. After the stress event, the body returns to a state of equilibrium. Stable periods for bodies to restore adaptive energy allow one to meet new stressful situations.

SYMPTOMS OF STRESS:

Numerous symptoms indicate that stress is becoming distress. High stress levels of stress accumulated over several months are likely to result in physical and psychological reactions. The amount of stress manifests symptoms varies, depending on factors such as heredity, habits, personality, past treatment experiences and
previous crises and coping mechanisms. Well educated, intelligent, creative in management are at high risk for burnout. They may become highly perseverance but get little accomplished, negative experience, chronic fatigue, feel they do not want to continue their treatment, take increasing amount of sick time, become negative, blame and criticize each other (couple), engage in backbiting and grievance about their husband.

**STRESS CONTROL / MANAGEMENT:**

The nurse manager can prevent and control burnout through counseling by setting personal and professional goals, establishing priorities, practising good coping and relaxation techniques, improving her self esteem by obtaining the skills she needs, and using support systems. Values clarification is a useful activity. Value should be chosen freely from alternatives with thoughtful consideration to the consequences of each alternative. They should be cherished and shared with women who come for the similar treatment procedure. The value should be integrated into one’s life style, and actions should be consistent with the values. Goal setting Goals should be consistent with one’s values and one should consider goal alternatives. To do this, she considers why a goal is desired. She may want a child for recognition or for generation growth reason. If the childbearing is not forthcoming, one may receive coping through relaxation. Generation growth might be generated through adoption. The achievement of stress free life through different approaches increases flexibility and decreases stress caused by unmet goals. Stress avoidance and regulation In reappraising situations, one should avoid troublesome experiences. The frequency of stress inducing experiences should be minimized. Every change takes energy, therefore during periods of high stress, routines and habits should be maintained as much as possible. One should be cautious about moving and starting a new strategy at the
same time one is getting a diverse. Unnecessary changes should be prevented during periods of high stress. Deliberately postponing some changes helps one deal with unavoidable change constructively and reduces a need for multiple adjustments at one time. However, increasing positive sources of tension that foster growth such as learning relaxation techniques can help offset the deleterious effect of negative tension.

Time Blocking is the setting aside of specific time for adaptation to a stressor. To reduce the stress from having been promoted to a management position, one could set aside time for learning about the management of stress or for observing investigator. This helps to ensure those concerns addressed and tasks accomplished. It decreases anxiety, time urgency, and feelings of frustration. Time management helps to control stress. Much time can be conserved when one knows value system and acts consistently with it, set goals, and plans strategies for accomplishment of those goals. One can also use organizers such as action list and calendars to plan good use of one’s time in relaxing them. Assertiveness When infertile woman asserts herself, they increase self esteem and reduce anxiety, thus reducing stress. As with time management, assertiveness involves thinking through goals and acting consistently with her values through the use of effective coping style and by setting limits on their attempt on their goal. It involves stating what she wants and how she feels, making request, taking compliments, handling put – downs, and setting limits. An assertive woman makes eye contact with peers, stands straight, sits in an open, listening posture, and speaks in a clear voice. Assertive women choose for themselves and achieve desired goals through self-enhancing behavior that reduce stress.
Feeling pause are useful. Woman should take time to identify feelings, label it, distinguish between thinking and feeling, and then should determine whether the feeling is appropriate for the problem and decide how to express the feeling in a safe and appropriate way. Feelings can be expressed in “I feel” messages rather than “you” messages that blame husband. She can fantasize about how she would like to handle the particular situation or problem better the next time. Negative feelings may be counteracted with something pleasant activity such as exercise, hobbies, music, television, or talking to a friend. Feelings can also be experienced through reading a book, watching a movie, or listening to someone. Inner shouting is the process of shouting to oneself “I feel…” inside their head the woman blurts the feeling out spontaneously rather than saying it quietly. Anger should be viewed as a symptom. Pains would be focused on to help her to take responsibility for feelings of hurt and humiliation.

Anchoring are associated feelings that are initiated either by an event or by the memory of the event. Anchors may be social, sexual, relationship, childfree life and need for parenthood problems that stimulate positive or negative feelings. Anchor work most accurately and should be done when she desires to bring back pleasurable feelings. Thought stopping helps to get rid of negative thinking. Excessive rehearsals in the minds of negative past events are unhelpful thoughts that waste time, reduce self esteem, and encourage maladaptive behavior patterns. To prepare for thought stopping she should think of beautiful pleasant experiences: a sunrise, a waterfall, a flower, a pet, favorite music, background, holding hands. Sorting is choosing the interpretation of an event. Woman can have an optimistic or pessimistic interpretation of events. Is the glass half full or half empty? They become aware what they think and therefore can make her happy or miserable. To be happier and fun loving, she should
focus on the positive aspects of situation / experiences. By changing the way of thinking she can change the way she behaves.

Compartmentalization of thought is the deliberate decision to think negative thoughts at specified times of the day. During the allotted time, she thinks about her worry, guilt, or jealousy. She cannot allow herself to think these thoughts at other times of the day. Environmental changes can be designed to reduce stress. This may be as extreme as changing place, residence or as minor alterations as painting a room in a favorite color or adding a picture, candle, or basket. The short time inconvenience of remodeling may be worth the long-term stress reduction. Temporary changes in home set up, number of members in the family can add variety and stimulation. Humor related to an attitude towards life is most likely to reduce stress. There is a cluster of qualities that characterize this frame of mind including flexibility, spontaneity, unconventionality, shrewdness, playfulness, humility, and irony. These are qualities that can be developed. Flexibility is the ability to examine all sides of the issues. She should try to look at a situation / problem from several different viewpoints, she should develop ability to swing from one mood to another mood quickly. Centering helps to reduce stress by bringing the mind and body comeback into balance. With left-sided dominance, intuitive, esthetic, and creative functions are reduced under stress. To center herself, she is put her tongue on the centering button, which is about a quarter of an inch behind the upper front teeth. Other activities that seem to balance the two hemisphere of the brain includes reading a poem in a rhythmic fashion; listening to a person with a soothing voices; listening to classical music.
Good nutrition helps to maintain the body for full functioning. Eating a balanced diet, taking a vitamin supplements and drinking plenty of water is very important. Although improving eating habits may not prevent stress, it is one way to maintain the level of fitness needed to fight stress. Exercise regular; vigorous exercise can also help her withstand chronic stress. Aerobic exercise elevates the heart rate during and for a period after the exercise. The range of elevation necessary to produce an aerobic effect is from 60 % to 80% of the maximal heart rate the person can achieve, which is calculated at 220 minus the person’s age in years. Jogging, cycling, and swimming are particularly good aerobic. Sleep is also important for dealing with stress. Sleep needs decrease with age, and people. To foster a good night’s sleep, the day’s activities should be tapered off before getting ready for bed. Regular exercise promotes deep sleep. Yoga there is numerous yoga steps which are best for relaxation. Practice abdominal breathing for 5 – 10 minutes once or twice a day while sitting position is beneficial. Massage can relieve tension; provide a passive form of exercise, and foster tactile communication. It stimulates relaxation and flexibility. Self massage can be done from a chair. It can be done as a full-body massage or to a part of the body that is particularly tense. Poetry reading or writing is useful in reducing tension, particularly if depressed. Poem can be read in a one – one or group meeting. Discussions about the meaning can help verbalizes feelings. Soft classical music can help release feelings and emotions and bring about relaxation. Bath water is a relaxant. Woman should fill the bathtub with water as per the tolerance (better to have lukewarm water) and immerse herself up to her neck for about 15 minutes. Support systems are synergetic. She can accomplish more through support groups than alone. Support groups provide a feeling of being accepted, valued, loved, and esteemed and a sense of belonging. In addition to providing emotional support, help provide a social
identity and are a source of information services and material aid. There is several type of support system. Usually, the family, peer support, they are composed of who have had similar experiences, have adjusted, and want to share their insight.

It is important that counselor take excellent care of their own well-being. They can function at their best if they are healthy. The counselor help protect infertility women from undue stress. Infertile woman may be taught about identification of stress symptoms and management. Series of assessment has to be done to evaluate the effective application of stress management strategies and referral services can be provided if necessary. Investigator monitored stress and coping level on the 14th day of treatment and 28th day of treatment period and adaptation level can be achieved to the wellness state through psychological wellbeing and social functioning. If they were not maintained in positive way they would develop decreased self esteem, decreased confident and social dysfunction may lead to maladaptation. So again the investigator need to consider them for counseling session, has to be conducted as per infertile wish.

**COPING WITH STRESS:**

It is possible for female infertile partner to work out a plan to lessen the effect of stress and cope more productively with unavoidable situation. This would involve:

- Planning ahead to reduce last minute hurrying and confusion.
- Enjoying treatment process in a relaxing atmosphere.
- Employing regular pattern of exercise, this could lead to a satisfaction involvement in a leisure pursuit and fit body into the bargain.
- Develop hobby which is relaxing and pleasurable to balance the stresses of a heavy day.
• Resolving to master the techniques of muscular and mental relaxing, resulting in a more peaceful state of mind and renewed energy be emphasized that relaxation is an active pursuit, and cannot be achieved passively. It requires discipline and single-mindedness but it is ultimately rewarding.

• Obtain adequate rest and sleep.

• Being assertive and honest removes “bottle up” and magnifying feelings.

• Evaluating and setting realistic goals and giving self – congratulation on their own achievement supply the positive reinforcement.

• Commitment to self activity, family or other important areas of life.

• Control or belief that she can influence what happens in her world.

• Challenge or eagerness for change and constant flow of new positive experience. A combination of these positive characteristics would indeed effect a productive and satisfying existence for the infertile women, husband, and family by and large.

STRESS, ADAPTATION AND NURSING:

As the link between stress, adaptability, and preventive health becomes better understood, direct nursing intervention as stress management for assisting the client to adjust to ever changing life situations may become a unique framework for nursing science. A general understanding of stress and adaptation is necessary to be able to carry put the nursing process adequately. Until the situation can be thoroughly investigated, the counselor must rely on generalized background knowledge of patterns of daily living and “normal” bio-psycho-socio-cultural limitations. Validation of the meaning of the situation is important, since each woman will respond differently to the same problem. In assessing the stress state, evaluating the tress, and investigating the ensuing behaviors, the nurse counselor can develop her plan of care
based on women’s need. The counselor must also have concern on potential stressors, since their effects may be prevented through planned counseling session. Through careful observation, the nurse counselor can compare the individual’s behavior with previous levels of functioning and with the bio-psychosocial norms. After doing this, the nurse counselor can infer the women’s ability to cope with the existing stress state. With all of this information at hand, counselor plan counseling session to help solve identified problem areas. In this manner it becomes possible for the counselor to decrease the intensity, duration, and scope of the stress experience, by which they can promote the integrative functioning of the women. The counseling and yoga on stress management provided here is directed toward the re-establishment of pre-stress state functioning. Counseling sessions strive to conserve energy, maximize existing coping behavior, explore alternatives, and mobilizes resources for dealing with stressful experiences. Practicing five steps of yoga exercises such as titali asana, spinal flex, pranayama, meditation and shavasana help woman to have healthy cognitive ability to perform everyday tasks peacefully and relaxly. The ultimate goal of counseling is to cater to the need of each infertile woman and formulate specific objectives of counseling based on the particular problems identified during their IVF procedure. The objectives are also dependent on the characteristics of the stress experience and the women’s adaptive responses. Counseling session can center on alleviation of the effect of stressors and offering protection from exposure to stressors. Counseling on stress management should be designed to assist the women in problem solving processes. To cope, it is often necessary to seek assistance in the identification of focal problems, understand the existing coping mechanisms, and apply new alternatives. Depending on the circumstances, the nurse counselor may intervene directly on behalf of the women. At other times, it may be appropriate to alter the
client’s actions, or to seek to change goals. The nurse counselor can also provide information on alternative behavior and help the women follow new coping behavior. These responses provide feedback for the model. If the individual is experiencing discomfort between two choices, the counselor might intervene and attempt to help the women make a decision. Incorporating the concepts of stress and adaptation strategies into nursing practice can increase the relevance and effectiveness of counseling on stress management. Use of knowledge and technical skill can prevent, reduce, remove, or balance the stress that the infertile women encounters.