CHAPTER 1

Introduction

Human beings, both male and female experience body changes throughout their lifetime. Many of these changes are mainly due to varying levels of hormones in the body, which occur at different stages of life. Accordingly, menopause is a normal but one of the major transitional periods in the life of every woman. It is one step in a long, slow process of reproductive aging (National Institute on aging, 2002).

Since the International Conference on Population and Development (ICPD) held in Cairo in 1994, the concept of ‘reproductive health’ has occupied the central place in the field of health, illness and medicine. ‘Reproductive health’ is defined as “the ability of women to pass through the reproductive years and beyond with dignity and successful childbearing and to be free of gynaecological disease and risk” (Zurayck, 1994, cited by Hutter, 1998, p.1/emphasis added). United Nations define reproductive health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity in all matters relating to the reproductive system and to its functions and processes” (UNO, 1994, cited in Wang and Pillai, 2001, p.231/emphasis added). Many researchers and policy makers have emphasized that the
real reproductive health framework should go beyond the narrow confines of family planning to encompass all aspects of human sexuality and reproductive health needs during the various stages of women’s lives (Sai and Nassim, 1989) and directs care to men and women throughout their changing needs in the life cycle (Fathalla, 1994). All the above definitions and comments emphasize the equal importance to be given to different aspects of reproductive health ‘from menarche to menopause’.

However, even after 12 years of Cairo conference, ‘reproductive health’ is more confined to the concept of child-bearing only. All over the world and more so in the developing countries, the attention is focused primarily on topics like family planning, unwanted pregnancy, onset of puberty, fertility and mortality. Many women are not served and many reproductive health problems are not addressed as most of the programmes have recognized women only as mothers. There are wide gaps in knowledge regarding the levels, determinants and consequences of reproductive health (Pachauri, 1994). Multidisciplinary research is needed to systematically examine these complex problems, including ‘menopause’ and to design appropriate and locally relevant interventions for improving women’s reproductive health. Currier, more than 100 years ago noted that ‘menopause’ lacks scientific attention, which still awaits answer (Currier, 1897, cited in McKinlay and McKinlay, 1973). McKinlay and McKinlay, in their annotated bibliography (1973) mention
that, of the two problems of research on menopause, one has been the failure to develop a consistent and relatively objective definition of menopause, and of the population 'at risk' to symptoms associated with the event. Maoz et al. (1977) underline the need for a multi-factorial, biological, sociological, psychological and anthropological approach to the problems of menopause.

Earliest known references to menopause have been very scarce. Medical interest in menopause increased considerably in mid 19th century and in 1930s people started describing it as a 'deficiency disease' and in 1970s medicalization of menopause was complete (Singh et al., 2002). The concept of menopause got its importance only after 1981. A report of the World Health Organization's Scientific Group that held in December 1980, says that there are virtually no data on the age distribution of menopause and no information on its socio-cultural significance in the developing countries. Further, the Scientific Group made some specific recommendations that WHO sponsored research should be undertaken to determine the impact on health service needs of the rapidly increasing numbers of postmenopausal women in developing countries; uniform terminology should be adopted by health care workers with regard to menopause; uniform endocrine standards should be developed which can be applied to the description of peri and postmenopausal conditions and diseases; and descriptive epidemiological studies of age at menopause.
should be performed in a variety of settings. It recommended giving attention to population-based studies of menopause, age at menopause and transition to postmenopause. It further stresses that symptoms of menopause have to be evaluated from the perspective of normal populations and not just selected clinic groups (WHO, 1981). Further, WHO Report, based on its meeting on 'Research on the Menopause in the 1990s' held in Geneva in June, 1994, says that despite the previous recommendations made in 1981, little is known about issues relating to menopause in the developing world and almost all the research to date has been devoted to women in developed countries. It further says that the findings from developed countries about menopause, its problems and their treatment may not be generalized to women living in other parts of the world. Hence, it emphasizes the necessity for gaining information on women in the developing world (WHO, 1996).

In spite of these recommendations, there are hardly few studies done in developing countries including Asia, focusing on the socio-cultural differences regarding menopause and its various aspects. Studies in India on menopause are very few and there are almost no studies on rural population. Here is an attempt to understand the phenomenon of menopause from the "emic" perspective in a rural setting. In this endeavour, the medical-anthropological point of view as delineated by Leiben (1973) has been found to be more appropriate. Lieban (1973)
says, "Medical anthropology encompasses the study of medical phenomena as they are influenced by social and cultural features, and social and cultural phenomena as they are illuminated by their medical aspects". It is in this line that the present study aims to contribute to a certain extent in filling the gaps in the knowledge as pointed out by Maoz et al. (1977) by understanding the socio-cultural influences on menopause and the impact of menopause on the socio-cultural aspects of the rural women.

A French physician coined the term 'menopause' in 1821 (Singh et al., 2002), which is derived from the Greek word 'menos' means 'month' and 'pause' means 'to stop' - which refers to the 'Final menstrual period' (FMP) (India Parenting, 2003). Medical dictionary (2003) describes 'menopause' as 'cessation of menstruation in the human female occurring usually around the age of 50' (Dorland's Illustrated Medical Dictionary, 2003/p.1128). Sometimes the phrase, 'the change of life' and the word 'climacteric' are also simultaneously used to refer to 'menopause' (National Institute on Aging, 2002; Margo lese, 2003). But 'menopause' refers to 'the time at which menstruation ceases' and 'climacteric' is 'the period of transition when a woman passes from the reproductive to the non-reproductive years of her life' (Planned Parenthood, 2003). Medical dictionary describes 'climacteric' as 'the syndrome of endocrine, somatic and psychic changes occurring at the time of menopause in female'
Several biomedical studies indicate that the cause of menopause is "burning out" of the ovaries. The aging of the ovary begins even before birth when a progressive decline in the number of primordial follicles compresses. The percentage of growing follicles increases substantially at puberty and is maintained throughout reproductive life and declines in the climacteric period (India Parenting, 2003). The reproductive organs like uterus, ovaries and fallopian tubes gradually shut down until the periods end and such women can no longer get pregnant. Female sex hormones like estrogen and progesterone are produced in sub-critical quantities for a short time after menopause, but over a few years they reduced to almost zero. These hormones are important for keeping the vagina and uterus healthy as well as for normal menstrual cycles and for successful pregnancy. Estrogen also helps to keep bones healthy and to keep good cholesterol levels in the blood (National Institute on Aging, 2002). Estrogen may also affect a woman's sexual desire. Prior to menopause, the ovaries make more than 90 percent of the estrogen in a woman's body. Other organs including the adrenal glands, liver, kidneys and fat cells also make small amounts of estrogen. Hence, women continue to have low levels of estrogen even after menopause.

A review of the studies done on menopausal symptoms, phases of menopause, age at menopause and after-effects of menopause
demonstrates that variations occur in all these aspects not only due to biological and environmental factors but also due to the socio-cultural milieu of the populations in different parts of the world. Following is a detail overview of the menopausal transition studied in different parts of the world.

1.1 Menopausal symptoms

During menopausal transition, as there will be a lot of fluctuation in the hormone levels, women may experience many symptoms and conditions. A variety of physiological changes take place in the body; some of these are the result of cessation of ovarian function and related menopausal events and others are a function of the aging process (Goodman et al., 1977, cited in O’donnell, 1982; WHO, 1996). WHO (1996) report based on several studies done in different parts of the world, classified the symptoms of menopause into vasomotor symptoms, urogenital atrophy, irregular menstruation and other symptoms.

Under vasomotor symptoms, ‘hot flashes’ (also called hot flushes) and ‘night sweats’ are the major symptoms. Wentz (1988) describes ‘hot flashes’ as a sudden feeling of heat in the face, neck and chest, associated with diffuse or patchy flushing of the skin, profuse perspiration and frequently with palpitations. The feeling of heat initially centred in the upper part of the body, spreads upwards and downwards throughout the
body. It is associated with a feeling of discomfort and lasts about 3 minutes. ‘Night sweats’ are the night-time manifestation of hot flashes experienced during the waking hours. ‘Insomnia’ or ‘sleeplessness’ is often cited as menopausal complaint, but usually occurs secondarily to the disruption caused by the night sweats or due to frequent urination (Erlik, 1981). The prevalence of hot flashes associated with the menopause varies in different cultures as it is reported to be 0 percent in Mayan women, 10-22 percent in Hong Kong women, around 17 percent in Japanese women, 23 percent in Thai women, 45 percent in North American women and up to 80 percent in Dutch women (WHO, 1996). Hence, there are variations in terms of prevalence of hot flashes and inconsistencies about timing of peak flash rate. However, overall, flashes and sweats are more commonly reported by European and North American women than in other populations.

After the menopause, women are subjected to urogenital atrophy wherein, the vaginal mucosa becomes drier and thinner. This may lead to ‘dyspareunia’ or painful sexual intercourse. On the other hand, some women feel freer and sexier after menopause and relieved that pregnancy is no longer a worry (National Institute on Aging, 2002). However, the association between these two factors is not yet well established (WHO, 1996). In addition to the above symptoms, urinary problems are common during menopausal transition. Again the relative contribution of
menopause and aging of tissues to these problems is not yet assessed (WHO, 1996). Symptoms of ‘urgency of micturition’ (difficult to hold urine long enough to get to the bathroom), ‘dysuria’ (painful urination), ‘nocturia’ (a need to get out of bed to urinate several times during night) or ‘stress incontinence’ (urine leakage during exercise, sneezing, coughing, laughing, lifting or running) are reported to affect many women during and after the menopausal transition.

One of the first signs of menopausal transition is a change in the woman’s periods. Many women become less regular; some have a lighter flow than normal; others have a heavier flow and may bleed a lot for many days. Periods may come less than 3 weeks apart or the bleeding may last more than a week. There may also be spotting between periods. In Egypt, most of the women found to get ‘oligohypomenorrhea’ (infrequent menstruation with small quantity of blood) before reaching menopause (Ismail et al., 1998).

The symptoms discussed above like vasomotor changes, urogenital atrophy and irregular menstruation have distinct physiological manifestations, but there are other symptoms which though are associated with menopause but are not specific to this phenomenon only. These symptoms are presumed to be psychological or socio-cultural in origin (WHO, 1996). The frequently mentioned symptoms under this group are chronic headache, backache, chronic fatigue, hypertension,
gastritis/indigestion, weight gain, depression, irritability, palpitations, lack of energy, fluid retention and difficulty in concentrating. Some women may find that their bodies change around the time of menopause. With age, waist thicken, muscle mass is lost, fat tissue may increase, skin may get thinner, wrinkles and acne may arouse. Some others can feel joint and muscle stiffness and pain, and few others may have memory problems or decreased cognition as they feel difficulty in thinking clearly (Mikhail and Ragheb, 1996; George, 1996; Marcus, 1999; Silberstein, 1999; Kumar, 2002).

Without going into systematic classification as it has been done by WHO (1996), the following studies demonstrate the variation of all these menopausal symptoms experienced by women in different population of the world. Kaur et al. (2004) found the diminished acuity of vision as the most commonly reported menopausal symptom and hot flashes were reported by 17 percent of the women in their study in North India. In a population-based study conducted in Egypt, Sayed et al. (2000) found that out of 302 women above the age of 40 years, about 83 percent reported the experience of climacteric symptoms and of them 58 percent said they were severe. Headache, night sweats, dizziness, irritability, hot flushes, depressive moods, bone and joint pains and insomnia were the most frequent symptoms reported. About 75 percent of women experienced hot flushes and 62 percent reported night sweating.
Vasomotor symptoms were more frequent in the perimenopausal women, while atrophic urogenital symptoms were most frequent in the postmenopausal women. Women of urban population had more frequent and severe vasomotor symptom. In a study of Kwawukume et al. (1993) conducted on 152 Ghana women, the major symptoms at menopause were tiredness (79.9 percent), sleeplessness (71.9 percent), palpitations (63.7 percent), weight gain (61.8 percent), hot flashes (56.5 percent), and irritability (56.5 percent). Rizk (1998) conducted a survey to investigate the prevalence of climacteric symptoms among 742 women who had attained natural menopause, in United Arab Emirates. More than half of them reported at least one climacteric symptom. Most common were hot flashes, reported by 47 percent of them. In a clinic based study of Kirchengast (1992) done on 110 postmenopausal women in Vienna, Austria, hot flashes, weakness, breast tension, urine loss, mood changes, headache, palpitation, vaginal dryness, sleeplessness and loss of libido were found to be the major menopausal symptoms. Kandil et al. (1999) reported that menopausal women experience irritability, tiredness, palpitation, hot flashes, sleeplessness and headache in that order based on their study done in Egypt. Irritability was the most dominating feature of menopause while hot flash was the most disturbing symptom at menopause in their study. Mishra and Kuh (2006), conclude based on their longitudinal study on British women that perimenopausal women
show a decline in both physical and psychosomatic health compared to premenopausal women, while perceptions of adverse change appeared to ease or stabilise in the transition to postmenopause and beyond. A study was conducted by Odum et al. (1999) in Nigeria, in which postmenopausal bleeding was the commonest complaint followed by hot flashes and sweating. In that study none complained about dyspareunia or loss of libido. The authors say women had less information on symptoms of menopause because of lack of knowledge and cultural influences on the perception of people. Similarly Mashiloane (2002) says, based on his study conducted in Africa that, actual menopausal symptoms were commonly experienced; yet the women had the poor understanding of them. Donovan (1951) (cited in McKinlay and McKinlay, 1973), observed a consistent variability in reporting of symptoms between interviews at different times with the same woman.

The influence of fluctuation of hormones varies from one woman to another and hence the appearance of symptoms also varies (Currier, 1897, cited in McKinlay and McKinlay, 1973). One woman might have troubled by many symptoms, other might have felt a new sense of freedom and energy and another woman may not be aware of a change at all. A woman may have one, some or none of these symptoms. This variation is normal. A gradual decrease of estrogen allows the body to slowly adjust to the hormone change, but in some women a sudden
decrease in estrogen level occurs, causing severe symptoms. Symptoms can be very unpredictable and disturbing if a woman does not know that they are related to menopause. A woman's experiences during menopause may also be influenced by other life changes such as children leaving home, changes in domestic, social and personal relationships, changes in identity and body image, divorce or widowhood, retirement, increased anxiety about illness, aging and death or loss of friends, loved ones and financial security, increased responsibility for aging parents, anxiety about loss of independence, disability or loneliness.

Many studies have tried to investigate the cause (other than hormonal imbalance) for the menopausal symptoms. Currier (1897) (Cited in McKinlay and McKinlay, 1973) mentioned within a society-'highly bred', 'civilized' women and 'those with many troubles and ills' appeared to be the main sufferers of these menopausal symptoms. Rogers (1956) (cited in McKinlay and McKinlay, 1973) opined that woman is 'forced to retire from her primary activity of caring for her children', and views that as time of conflict for which most women are not prepared. Saunders (1932) (cited in McKinlay and McKinlay, 1973) argued that the 'prevalent belief that fullness and completeness of young womanhood depends on the menstrual activity' and the menopause negates this concept. Sicher (1949) (cited in McKinlay and McKinlay, 1973) called menopausal symptoms as 'she-shock' and advocates preparation for
growing old as lack of preparedness is hypothesized as a causal factor in the appearance of symptoms. Donovan (1951) (cited in McKinlay and McKinlay, 1973) found emotional stress symptoms only among those women who have a past history of emotional problems. Farrell (1948) (cited in McKinlay and McKinlay, 1973) said psychological complaints of women are not hormonal, but occur with a long history of such complaints and the estrogen therapy relieved the physiological symptoms most often and the relief was partial for the emotional disorders during an observational study of Shorr (1942) (cited in McKinlay and McKinlay, 1973). In a study of Kirchengast (1992) fertility was positively associated with severity of menopausal symptoms. Even though higher number of pregnancies increases estrogen secretion during menopause, many menopausal symptoms should not be very severe in theory since the higher estrogen levels abate severity. Yet the somatic and psychological stress of large family size appears to offset any advantages of higher estrogen levels induced by subcutaneous fat. Hence, many of these symptoms can not be directly attributed to the menopause, as though the changes in hormone levels can cause these symptoms, many socio-cultural aspects which are taking place in the life of woman can also lead to these symptoms. Whatever the cause or circumstance, the conditions women experience before and after menopause are very real and sometimes need medical attention.
More important than these immediate symptoms of menopause are the effects of hormonal changes on many organ systems of the body. The most extensively studied of these are the cardiovascular and the skeletal systems. Both are adversely affected by the inevitable aging process as well as by postmenopausal hormonal changes. During this stage, heart disease risk may grow due to age-related increases in weight, blood pressure and cholesterol levels and due to loss of bone tissue, bones may become weak and it may cause osteoporosis.

The review of the studies cited above on symptoms of menopause indicates that most of the information on symptoms of the menopause has been obtained from populations in industrialized countries. WHO (1996), report says that prevalence of menopause-related symptoms among women in developing countries is not well known and the sparse data available from these countries suggest that menopausal symptoms are not universal and intermixing of biology and culture produces different effects in different parts of the world.

1.2 Phases of menopause

The terms used to describe the various nodal points surrounding the menopause have not been consistently defined and applied, despite the recommendations made in 1980 by WHO Scientific Group on Research on the Menopause (WHO, 1981; WHO, 1996). A workshop on
Menopause held in Finland during July, 1985 also highlights the problems and issues in the definition of menopausal status (Kaufert et al., 1986). Reports on the menopause published since then have continued to use a variety of definitions, which has made it difficult to compare their findings.

WHO Scientific group defines natural menopause as the permanent cessation of menstruation resulting from the loss of ovarian follicular activity. It is recognised to have after 12 consecutive months of amenorrhoea, for which there is no other obvious pathological cause. Menopause occurs with the final menstrual period (FMP) which is known with certainty only in retrospect a year or more after the event. An adequate independent biological marker for the event does not exist. Though menopause is natural for most of the women, sometimes it can also be induced. For instance, removal of the uterus (hysterectomy) or removal of both the ovaries (oophorectomy) surgically or through radiation or chemotherapy will make the periods stop which is called as induced menopause.

WHO report further says that the term perimenopause should include the period immediately prior to the menopause (when the endocrinological, biological and clinical features of approaching menopause commence) and the first year after menopause. National Institute on Aging (2002), describes perimenopause as the time when a
woman's body is closer to menopause. At this time, a woman’s periods may become less regular and she may start to feel some of the menopause symptoms such as hot flashes and night sweats. It can be a stop-start process that may take months or years. Perimenopause usually begins about 2 to 4 years before the last menstrual period. It lasts for about 1 year after the last period of woman. Planned Parenthood (2003), says that perimenopause may begin as early as 35 years of age and for most women, perimenopause will last two or three years, though for some it lasts as long as 10 or 12 years. Women in perimenopause have reduced fertility but they are not infertile. Although menstruation may be sporadic, pregnancy can happen. In case of Induced menopause, menopause begins immediately with no perimenopause.

The term *menopausal transition* refers to the period before FMP when variability in the menstrual cycle is usually increased (WHO, 1996) and the average duration of menopausal transition among women of USA is found to be 3.8 years (McKinlay, 1996). WHO Scientific Group describes *premenopause* as the term often used ambiguously either to refer to the one or two years immediately before the menopause or to refer to the whole of the reproductive period prior to the menopause. The group further recommends that the term be used consistently in the latter sense to encompass the entire reproductive period up to the FMP. According to the description of premenopause by India Parenting (2003),
some symptoms may begin to occur in this phase, as there is little
disruption of the ovarian function but the menstrual cycle remains regular
during this phase. If menopause is reached naturally or surgically before
the age of 40, it is called early or premature menopause (WHO, 1996).

Postmenopause follows menopause and lasts the rest of woman’s
life. The time after menopause is called postmenopause. Once there have
been no menses for 12 months, the postmenopause phase is said to have
been entered. WHO defines postmenopause as dating from the FMP,
regardless of whether the menopause was induced or spontaneous (WHO,
1996). Once the body of woman has completed the changes and she has
not had periods for 12 months in a row, she is said to have passed through
menopause (Margolese, 2003). Women are considered as postmenopausal
if they have more than 12 months amenorrhea in most of the studies and
reports (Frere, 1971; Mahadevan et al., 1982; Kaufert and Gilbert, 1986;
Misra and Saseendran, 1988; Kirchengast, 1992; Ismail et al., 1998;
Sayed et al., 2000; Chowdhury and Alam, 2000; National Institute on
Aging, 2002; Mishra and Kuh, 2006). However, sometimes women are
considered as postmenopausal, if they have not menstruated for 5 months
(Lindquist and Bengtsson, 1978) or 6 months (Rizk, 1998) or 9 months
(Frommer, 1964).

Further, while categorizing the women into different phases of
menopause, many studies have considered only two phases, as
premenopause (period before menopause) and postmenopause (the period after 12 months since the last menstrual period). Very few studies have tried to categorize the premenopause phase further. Kaufert and Gilbert (1986); Mishra and Kuh (2006), classified women as perimenopausal if they had menstrual bleeding in the last 12 months, but not in the last 3 months or with less regularity and as premenopausal if they had regular menstrual bleeding. In the study of McKinlay et al. (1972), women who had menstruated within the last 3 months were categorized as premenopausal, however the intermediate group of women who had menstruated within the last year but not in the 3 months prior to the survey as menopausal. Few studies have defined premenopause and perimenopause based on the regularity of the menstruation only (Sayed et al., 2000) and some others have defined women as premenopausal, if they have menstruated during the last 2 months and if they have not menstruated during this period, they are classified as perimenopausal (Lindquist and Bengtsson, 1978). On the other hand, Topo and Hemminki (1995), in their study conducted in Finland, categorize the women as preclimacteric, climacteric and postclimacteric, based on the perception of women themselves. As mentioned by WHO (1996), the above discussion clearly indicates the variation in the terms and definitions of various phases of menopause in the studies conducted so far on menopause.
In the present study, the definitions given by WHO (1996), form the basis to understand the menopausal transition among the women of Krishnapur. All those women who have not got their menstrual periods during last one year are considered as *postmenopausal* women; women who felt some changes in their menstruation, either in the frequency of menstrual periods or in the flow of bleeding are defined as *perimenopausal* women; those who have regular menstruation are considered as women *prior to menopausal transition* (PTMT). The definitions given by WHO (1996) and those used in this study, for different phases of menopause are described below in Fig. 1.5 and Fig. 1.6 respectively.

**Fig. 1.5: Diagrammatic representation of different phases of menopause**
(Source: WHO 1981, 1996)

- Final Menstrual Period (FMP) (Menopause)
  - Menopausal Transition
  - Postmenopause
  - Perimenopause
  - 12 months

**Fig. 1.6: Diagrammatic representation of different phases of menopause defined in the present study** (Source: WHO 1981, 1996 / Italics added)

- Final Menstrual Period (FMP) (Menopause)
  - Menopausal Transition
  - Postmenopause
  - PTMT
  - Change in Menstrual periods
  - 12 months
1.3 Age at menopause

The majority of the studies done on postmenopausal phase have depended upon retrospective interviews which are vulnerable to profound bias, memory lapse and difficulty in distinguishing complete cessation from extended amenorrhoea (Gray, 1976; Mulder 1989). So, it is very difficult to get reliable data on age at menopause compared to that of menarche. Hahn et al. (1997) examined the reliability of reported age at menopause in the United States and found that women with hysterectomy report their age at menopause more reliably than those who attained natural menopause and reliability declines with time since menopause. Aristotle referred to age at menopause being 40 years (Singh et al., 2002).

Many studies have tried to estimate mean age at menopause in different countries and in different cultures in the last 3-4 decades.

Studies conducted in European and American countries estimated the age at menopause between 50 to 52 years (Treloar 1971, United States, 49.5 years; McKinlay et al. 1972, England, 50.8 years; Villadsen et al. 1985, A Danish Island, 50 years; Fischl 1992, Central Europe, 50-52 years; Drife 1997, Scotland, 50 years). Studies conducted in Africa estimated age at menopause to be around 48 to 51 years (Frere 1971, Johannesburg, 51.44 years and 50.70 years; Okonofua et al. 1990, Nigeria, 48.4 years; Kwawukume et al. 1993, Ghana, 48.05 years;
McMaster et al. 1997, Zimbabwe, 50.5 years; Odum et al. 1999, Nigeria, 49.8 years; Kandil et al. 1999, Egypt, 49.03 years; Sayed et al., 2000, Egypt, 50.84 years; Mashiloane 2002, South Africa, 49 years). The findings of the studies conducted in Asian countries indicate a wide range of variation in the age at menopause, as few studies estimated age at menopause among Japan, Taiwan, Indonesia, Pakistan and United Arab Emirates women, between 47 to 50 years (Agoestina and Vankeep 1984, Indonesia, 48 years; Chow et al. 1997, Taiwan, 49.5 years; Osei-Hyiaman et al. 1998, Japan, 49.61 years; Yahya and Rehan 2003, Pakistan, 49.0 years; Rizk 1998, United Arab Emirates, 47.3 years), whereas those done in China and Philippines estimate the figure between 44 and 45 years (Goodman 1985, Philippines, 44 years; Zhu 1997, China, 44.8 years). Very few studies have tried to analyse the mean age at menopause in India and most of them estimate the figure between 44 to 48 years. In 1980, Singh and Ahuja analysed the reproductive performance of Punjabi women between the age 35-55 years and estimated the mean age at menopause as 44.6 years. Sharma and Hiramani (1985) carried out a study in Dharmasala and surrounding villages with the objectives of estimating the reproductive span of the Brahmin and Chaudhari females and found mean menopausal age as 46.98 years and 45.84 years respectively for the two groups of women. Randhawa et al. (1987) studied age at menopause in Himachal Pradesh and found mean age at
menopause as 43.55 years in that area. Kriplani and Banerjee (2005) estimated age at menopause as 47 years among the women in northern India. Mahadevan et al. (1982) estimated mean age at menopause to be 38.6 years among those attained menopause in Andhra Pradesh, India. In an analysis done by Verma (1993) mean age at menopause is found to be 43.9 by probit model and 44 years by using logit model among the women of Goa.

Some studies have tried to analyse the menopausal age in terms of its median. In American and European countries it is found to be around 51 years (Stanford et al. 1987, United States, 51.1 years; Brambilla and Mckinlay 1989, United States, 50.7 years; Luoto et al. 1994, Finland, 51 years). In Africa the figure is estimated to be around 48 years (Okonofua et al. 1990, Nigeria, 48 years; Kwawukume et al. 1993, Ghana, 48 years; Noreh et al. 1997, Kenya, 48.28 years). In accordance with that of mean age at menopause, median also showed the declining trend in the studies conducted in Nepal and India as they estimated it between 46-48 years (Beall 1983, Nepal, 46.8 years; Sidhu 1986, India, 46.20 years; Kriplani and Banerjee 2005, India, 48 years). However, when we compare mean and median age at menopause from the studies that have estimated both, not much difference can be seen between the two figures (Okonofua et al., 1990; Kwawukume et al., 1993; Rizk, 1998 and Sayed et al., 2000).
Few researchers have tried to estimate the range of age at menopause in their study population. It is recorded between 37 years and 56 years among US women (Treloar, 1972); 37 to 60 years in Nigeria (Odum et al., 1999); 40 to 59 years in UAE (Rizk, 1998); 45 to 54 years among Malaysian women (Arshat et al., 1989); in Kandwa city of India between 35 to 55 years (Saini, 1980) and between 27 to 50 years in Andhra Pradesh, India (Mahadevan et al., 1982).

Further, it is significant to understand the trends in age at menopause. Many studies have found a secular trend in the age at menopause (Boldsen and Jeune, 1990; Do et al., 1998; Varea et al., 2000). However the study of Bengtsson et al. (1981) did not support the theory of increased menopausal age with time.

Based on the review of the findings of the above studies we can say that on an average, women reach menopause between 45 to 50 years. However few women may experience menopause early say at 30-35 years or sometimes it may be delayed up to 60 years. Age at menopause is high among European and American women followed by African women and age at menopause is comparatively very low among Asian women in general and among Indian women in particular.
1.3.1 Factors influencing age at menopause

The review of the studies done so far clearly indicates that women reach menopause at different time period in different cultures and in different countries and within the same culture or country. Hence, it is significant to know why this variation occurs and what factors determine this variation. The factors considered by the previous studies can be classified into two broad categories as environmental factors and genetic factors. Environmental factors can be further divided as socio-economic factors, reproductive factors and food and health related factors. Hence, the influence of all these four categories of factors on age at menopause is reviewed in this section.

1.3.1.1 Socio-economic factors

Many studies did not find significant variation between age at menopause of rural and urban women. In a study of Brambilla and Mckinlay (1989) age at menopause did not vary with location of residence. Similarly, in a study of Kono et al. (1990) the mean age at menopause in urban and rural women was not significantly different. Randhawa et al. (1987) also found that rural and urban residence had no discernible effect on age at menopause. Further Okonofua et al. (1990) also could not establish a relationship between menopausal age and place
of residence. However, Ismail et al. (1998) found a significant relationship between age at menopause and residence.

For higher levels of socio-economic status in general and that of education, occupation and income in particular, higher age at menopause was found in many studies. In a study of Randhawa et al. (1987) women of higher socio-economic status found to have later onset of menopause. Similarly in a study of Kandil et al. (1999) women with low socio-economic level found to have early menopause in Egypt. Economic condition of women was found to have a determining role in getting menopause even in a study of Saini (1980), which was done among Muslim women of Kandwa city, India. In a study of Ismail et al. (1998) also, significant relationship was found between age at menopause and socio-economic status. Multivariate analysis done by Stanford et al. (1987) also indicated a significant relationship between high socio-economic status and menopausal age. In a study of Noreh et al. (1997), age of menopause varied with socio-economic conditions and education. In a study of Do et al. (1998) differences in age at menopause between social, occupational and educational groups were statistically significant. For higher levels of education, occupation, income and self-rated social class, higher age at menopause was found. Brambilla and Mckinlay (1989) conducted a multivariate analysis among U.S. women in which age at menopause varied with education and income. Delgado and
Hurtado (1992) based on their survey of the literature, report that there is evidence to show that the duration of the reproductive age of women of low socio-economic level ranges between 20 and 23 years in comparison to the 30 years for women with higher socio-economic status.

However, Arshat et al. (1989) did not find any effect of socio-economic status on the onset of menopause among Malaysian women.

1.3.1.2 Reproductive health related factors

Several studies have tried to relate age at menarche, earlier menstrual pattern as regularity and frequency of menstruation, marital status, parity, duration spent in amenorrhoea and breast-feeding, and use of oral contraceptives with age at menopause. Many studies have tried to relate age at menarche and age at menopause and significant association is observed between the two aspects (Ismail et al., 1998; Varea et al., 2000; Hardy and Kuh, 1999; Do et al., 1998). Earlier age of menopause was observed for those women who had late age of menarche and onset of menopause was observed late for those who had got their menarche earlier in these studies. However, age at menopause was not found to be correlated with age at menarche in other studies (Treloar, 1971; Okonofua et al., 1990; Goodman et al., 1978; Van Noord et al., 1997).
It is observed that women with short menstrual cycles or irregular periods enter menopausal transition earlier than those who have regular periods (Stanford et al., 1987; Hardy and Kuh, 1999; Kandil et al., 1999).

Further, the influence of marital status of women on age at menopause is analysed and it is observed that spinsters get menopause earlier than married women (Kandil et al., 1999). Nulliparous women found to enter menopause earlier than parous women (Kandil et al., 1999; Do et al., 1998; Hardy and Kuh, 1999).

Further, age at menopause is found to be significantly related to parity (Ismail et al., 1998; Rizk, 1998; Jeune, 1986; Neri et al., 1982; Stanford et al., 1987; Luoto et al., 1994; Hardy and Kuh, 1999; Noreh et al. 1997) and foetal loss (Varea et al., 2000). However, some studies did not find any relation between age at menopause and number of children (Okonofua et al., 1990; Randhawa et al., 1987; Goodman et al., 1978; Kirchengast, 1992). Higher the number of children the longer will be the duration spent in pregnancy, amenorrhoea and breast-feeding. Higher the duration of amenorrhoea during the reproductive years, higher will be the age at menopause (Neri et al., 1982). This is further supported by the fact that women who had not breastfed had an early menopause as reported by Kandil et al. (1999), whereas Goodman et al. (1978) found no significant relationship between age at menopause and months breastfed. On the other hand, Mahadevan et al. (1982) in their study conducted in Andhra
Pradesh, India reported that increased parity is one of the major determinants of early menopause.

Women who had not used contraceptive pills had an early menopause in the study of Kandil et al. (1999) and Rizk (1998). However, Brambilla and Mckinlay (1989), and Hardy and Kuh (1999) did not find any relationship between age at menopause and use of oral contraceptives.

1.3.1.3 Food and health related factors

Studies have been conducted to see the influence of various health behavioural factors like food-intake, obesity, health problems, alcohol consumption and smoking on age at menopause. IPPF Biomedical workshop on fertility in middle age says that the main reason for low age of menopause among women of developing countries compared to that of European women is nutritional factors (Anonymous, 1979). Lack of significant amounts of phytoestrogens in the diet is considered as one of the reasons for 2 years earlier onset of menopause among Bangladeshi women than US women (Anonymous, 1997). Further, Jansen (1984) also reports that very poor nutrition appears to lower the age at menopause in India and Papua, New Guinea. In a study conducted by Mahadevan et al. (1982) in rural Andhra Pradesh, major determinants of early menopause were poor health status, low haemoglobin and protein levels and
pathological conditions as infections of bacteria, fungi and viruses. Kandil et al. (1999) found diabetic women entered menopausal stage earlier in their study conducted in Egypt. Saine (1980) also says the age at which women get menopause varies depending upon their health condition on the basis of the study done in Kandwa city of India.

Daniell (1978) reports obesity is associated with age at menopause. He further says that, it seems likely that the delayed menopause of obese women is related to the production of estrogen by adipose tissue which can transform an adrenal steroid with little estrogen activity into esterone, a potent estrogen. Further, Neri et al. (1982) found a straight correlation between obesity index and age at menopause. Similarly Kirchengast (1992) analysed the data on postmenopausal women to determine whether a relationship exists between body shape and menopause. His discussion says that fat distribution increases sex hormone levels which along with the changes in hormone levels induced by pregnancy, probably delays menopause. The more pregnancies a woman experienced the larger her body shape became. Thus, multiparous women had more subcutaneous fat. However, Adena and Gallagher (1982) say obesity does not affect the distribution of age at natural menopause among Australian women by logistic regression analyses. Noreh et al. (1997) found that age of menopause varies with height, weight and skinfold thickness in their study conducted among rural western Kenyan women. Ismail et al.
(1998) conducted a study in Egypt and it was found that mean age of menopause is significantly related to weight and BMI of women but not related to their height. Further, Brambilla and Mckinlay (1989) found that age at menopause do not vary with height and weight of women.

Adena and Gallagher (1982) did logistic regression analyses in their study conducted in Australia in which alcohol intake and regular use of aspirin and other analgesics, sedatives, tranquilizers or anti-depressants did not affect the distribution of age at menopause. However, mean age at menopause of women who smoke is lower than that of other women (Lindquist and Bengtsson, 1978; Kandil et al., 1999; Mattison and Thorgerisson, 1978; Andersen et al., 1982; Brambilla and Mckinlay, 1989; Neri et al., 1982; Jick et al., 1977; Luoto et al., 1994; Do et al., 1998; Kriplani and Banerjee, 2005). The studies discuss that cigarette smoking may contribute to early ovarian insufficiency which may lead to early or precocious menopause. Those who did not smoke tended to be heavier than those who smoked. Hence, it is possible to attribute differences in menopausal age between smokers and non-smokers either to increased amount of adipose tissue (delays menstruation) or the toxic effects of smoking (contributes to early menopause). Daniell (1978) reported habitual cigarette smoking is associated with an earlier natural menopause. He further analysed to determine whether early menopause was independently related to both, smoking habits and lack of obesity.
The study reports that smoking and obesity were found to be independently associated with age at menopause. However, Okonofua et al. (1990) could not establish any relationship between menopausal age and smoking in their study conducted in Nigeria.

1.3.1.4 Heredity / Genetic factors

The analysis done by Varea et al. (2000) indicates of an association between the age at menopause of mothers and their daughters. A research report published in “Daily University Science” website, by referring the article published in Europe’s leading reproductive medicine journal “Human reproduction” says that the age at which a woman reaches menopause is 85 percent genetically determined (University Science Report, 2001). According to this research article, the team of Dutch researchers carried out a study and concludes in that report that a woman with a family history of early menopause is likely have an early menopause and thus early reproductive failure. According to them a woman with one or more first-degree relatives with a history of early menopause is more likely to experience the same for herself. Further, a population based survey conducted by Rizk (1998) in UAE also showed significant association between median age at menopause with that of the mother and older sister.
Hence, the review of studies done so far indicate that the age at menopause is lowered by smoking, poor nutrition, poor health condition nulliparity and low socio-economic status.

1.4 Management of menopause

Menopause is a natural and expected part of a woman's development. Unlike in most of the non-western cultures, the women of western cultures perceive menopause as a health problem and efforts are made to find out ways and means of reducing and eliminating symptoms that accompany menopause. The therapies for symptoms and conditions associated with menopause are usually categorised as Hormone Replacement Therapy (HRT) and Non-Hormonal Therapy.

Use of hormones in treating a variety of menopausal symptoms though started in 1930s (Sevringhaus, 1935) was not being used extensively till 1970s (Sonkin and Cohen, 1968) and these have been recommended and are being used extensively in some societies very recently (WHO, 1996). In perimenopause, some doctors may suggest birth control pills, especially if a woman is having problems with very heavy, frequent or unpredictable menstrual periods. This medication will make the periods more regular and may also help with symptoms like hot flashes (National Institute on Aging, 2002). However, birth control pills can hide the arrival of menopause. In menopause, doctors may suggest
taking estrogen and progesterone which is known as Hormone Replacement Therapy (HRT). HRT involves taking estrogen plus progestin. Estrogen alone or ERT (Estrogen Replacement Therapy) is given for those women who have had the uterus removed. However, estrogen plus progestin is given for such women with a uterus. Because progestin, when used with estrogen, help to reduce the risk of uterine cancer. These hormones can be taken in a variety of forms such as pills, skin patches, creams or vaginal inserts, depending on a woman’s needs. HRT or ERT may relieve menopause-related symptoms such as hot flashes and reduce the loss of bone. However, hormone based therapies have their own risks. It should not be used as a long-term therapy. Taking HRT increases the risk of heart disease and stroke. It also increases the risk of breast cancer and blood clots. But it appears to decrease the risk of colon cancer. Scientists are still studying the effects of HRT - the final answers are not yet available. Use of HRT for relief of menopausal symptoms varies from culture to culture as it is estimated to be 80 percent in Taiwan (Chow et al., 1997), 20 percent in UAE (Rizk, 1998), lesser than that in Egypt (Ismail et al., 1998; Sayed et al., 2000) and Africa (Mashiloane, 2002) and not reported by any woman in India (Kaur et al., 2004; Singh and Arora, 2005).

Non-hormonal therapies include herbal treatment, Chinese medicine, homeopathy, aromatherapy, diet, exercise and education. Diet
is one of the most important keys to help menopause. Lesser menopause symptoms are experienced in countries where the cultures prescribe mostly the vegetarian, high fibre, low fat diet, eliminating the use of caffeine, alcohol and nicotine. Exercises like yoga, aerobics and regular walks help to minimize and eliminate menopausal symptoms. Education about the menopausal process is the first defence against menopausal symptoms through which women are better prepared to handle menopause. However, many times women try to manage these problems either by taking over-the-counter drugs, self prescribing or doing nothing (Mikhail and Ragheb, 1996) especially in developing countries.

1.5 Sexuality and Menopause

As said by Kumar (2002) and Planned Parenthood (2003), menopause is nature's original contraceptive. However, as mentioned earlier, menstruation may be unpredictable for some time toward the end of perimenopause. Perimenopausal women are predominantly sexually active and some women still have ovulatory cycles (Siddle, 1989). Report of IPPF Biomedical workshop on fertility in middle age by Anonymous (1979) says that in Europe 5 percent of births occurs to women over 35 years. Hence, even during irregularity of menses, precautions are to be taken to avoid conception. Aging increases the incidence of certain genetic disorders and congenital morbidity associated with pregnancy in
middle age and hence, contraception is very much advised. Chen and Ho (1999) evaluated contraception among climacteric Chinese women and found IUDs and Barrier methods were primarily used by these women. Hence, women in western countries use contraceptives during perimenopause to avoid pregnancy and this question does not arise in other parts of the world.

Understanding sex during and after menopause has been found to be important because it throws light on the marital discord which may arise during a particular phase of life. Menopause brings a radical change in the sexual relationship of man and woman. Women experience a marked decline in her sexual interest leading to a decrease in her sex drive because of sudden physiological changes. With menopause and reduction in the secretion of hormones estrogen and progesterone in the body, there will be decrease in the flow of blood in the vagina. Because of this, walls of vagina will become thinner and they will loose their elasticity in some women. These factors cause some discomfort while having sex. There may be irritation and infection too, causing serious aversion towards sex. Thus most of the women totally lack interest in sexual activities and become withdrawn which may not be liked by men. Such a woman gradually starts harbouring a feeling in her mind that with menopause she has stepped into old age and that she is no longer attractive and interesting to her man. The man too links the lack of
interest on his wife's part to menopause. Male partners too develop some sexual problems when the woman reaches menopause, usually psychological. Thus, menopause in most of the developed world is believed to be a cause in the decrease in sexual activity. McMaster et al. (1997) did a qualitative analysis in Zimbabwe and the report says there is a widespread belief in some African cultures that sexual intercourse is no longer possible after menopause. Menstrual periods are considered to cleanse the body from semen. If women intercourse after menopause, it is believed that semen will remain in the body and produce bloating and then death. The authors opined that this belief is likely to indirectly protect women from menopause-related sexual problems as painful sex due to the decrease in vaginal lubrication. In the study of Mahadevan et al. (1982) conducted in India, higher proportion of women who have reached menopause reported that they have completely ceased sexual relations with their husbands compared to that of premenopausal women. An increased proportion of men did indulge in extramarital sexual relations where their wives had attained early menopause. Hence, the authors opined that as a result of early menopause, men are more likely to be dissatisfied sexually with their spouses and look elsewhere and this leads to family quarrels between husband and wife. As remedial measures to this, authors highlight the importance of counselling and education on sex and married life to the couple and they also suggest an increase in the
age difference to 5 or more years between the couple, so as to avoid conjugal problems in the latter part of the reproductive period. Chowdhury and Alam (2000) based on their ethnographic study in Bangladesh, feel that physical relations between husband and wife change for majority of women after menopause and identify decreased libido after menopause, old age and the feeling that sex is inappropriate when children in the family grow up as the reasons for such change. However, no emotional or behavioural change is observed in their spousal relationship after menopause. In Uttar Pradesh, India, also women reported lack of sex urge after menopause which had lead to sexual dissatisfaction among the husbands (Misra and Saseendran, 1988).

Some of the studies hold a different view in this regard. Anonymous (1979), Odum et al. (1999) and Chen and Ho (1999) have not seen such problems in their studies, where it is said that though there is drop in the level of estrogen, the testosterone convert itself into estrogen and the women still continue to have the same vigour and vitality for sex. Sexual desire is often diminished during symptoms of perimenopause but it is often restored when these conditions subside. In Lahore, Pakistan, as high as 72 percent of women reported increase in libido, 6 percent reported decrease in libido and 24 percent mentioned no change in their sexual desire after menopause (Yahya and Rehan, 2003). Even a report published in Research in reproduction (Anonymous, 1979)
says sexual behaviour seems to be correlated more with biological than with chronological age. It further says that psychological factors are important in modifying the sexual and social expectations of women at climacteric. In a study conducted by Odum et al. (1999) in Nigeria, none of the women studied, complained of dyspareunia or loss of libido. Dillaway (2005) based on a qualitative study in United States concludes that postmenopausal women enjoy sex more than ever before because they could engage in this activity without the hassles of contraception and menstruation. Further, Chen and Ho (1999) did a study on sexuality among climacteric Chinese women and found that women of higher socio-economic status and higher level of education were at a lower risk of decreased sexual functioning. Menopause is the stage when no ovulation takes place in the woman's body and this is related to her reproductive cycle and not to her sex drive. Being attractive or not is also not related to sex drive and thus there is misconception in the mind that menopause is the end of sex life and it has to be cleared.

These diagrammatically opposite views on sexuality and menopause, though do not reach to a final conclusion, lend immense scope to examine the relationship between the characteristics of the populations studied with their sexuality and menopause.
1.6 After-effects of menopause

After-effects of menopause have a very significant bearing on the health status of the postmenopausal women. Menopausal women were found to be more anaemic compared to premenopausal women (Mahadevan et al., 1982). Quite often the problems like bone fractures, ischemic heart disease and psychological symptoms like anxiety, depression and memory loss have been noticed among these women. This is evident from several studies which have been done in different parts of the world. Ismail et al. (1998) conducted a study in Egypt to identify problems of menopause, in which more than one-third of them had genital and/or urinary troubles. Some of them had abnormal ECG tracings, mostly in the form of ischemia. In the study of Chow et al. (1997) conducted in Taiwan, large proportion (68 percent) of menopausal women reported lower back pain. Other symptoms included fatigue, decreased memory, vaginal dryness, hot flashes, insomnia, loss of libido, dry skin and depression. After menopause the prevalence of hypertension and coronary heart disease became high. Bone mineral density decreased markedly and about 20 percent of women above 65 years experienced vertebral fractures. Noreh et al. (1997) also list major clinical symptoms of rural menopausal women in Kenya as vasomotor symptoms, genitourinary symptoms, osteoporosis and increased incidence of bone
fractures, ischemic heart disease, psychological symptoms of anxiety, depression and memory loss. Chowdhury and Alam (2000) conducted a study in Dhaka district to understand the health conditions of menopausal women. The findings of the study say that women are in poor health after menopause and they attribute that fact to menopause itself. However, they are not very precise about their health needs. There is lack of awareness regarding menopause and its sequela. Thus women or their husbands seek cures for the problem and in the process waste resources, even sometimes subjecting the women to harmful treatment.

Various studies indicate that there are two periods in a woman’s life during which the likelihood of getting breast cancer is particularly high. One is during the onset of puberty and the other is decade surrounding menopause. Delayed menopause is frequently associated with breast cancer (Mirra et al., 1971; Cutler 1962; Chindavijak and Martin’s, 1999), whereas women with delayed menopause are less prone to osteoporosis (Osei Hyiaman et al., 1998). Jacobsen et al. (1997) found an adverse effect of early menopause on ischemic heart disease mortality in their study. It is the deficit of estrogen during this stage which promotes atherosclerosis. Cooper and Sandler, 1998 and Snowdon et al., 1989, have observed an association between age at menopause and mortality as women who experienced natural menopause before age 40
and women who report menopause at 55 years or more are slightly at higher risk of death due to the problems mentioned in the foregoing.

1.7 Knowledge and attitude toward menopause

Little research has been conducted on women’s attitudes towards menopause (Dege and Gretzinger, 1982). Every woman experiences the menopausal transition but the attitudes of women towards menopause vary from culture to culture. Menopause gives a new lease in their life—physically, emotionally, sexually and spiritually in most of the non-western cultures. Those women show lot of enthusiasm about becoming free of their concerns about pregnancy and menstruation like premenstrual symptoms, childrearing responsibilities, worries about unintended pregnancy and the gender-role stereotypes associated with youth.

As mentioned by Flint (1979), among various immigrant groups in Israel and Arab women, menopause is not viewed as a middle age crisis, and women go through it without problems. George (1996) reports, based on his study conducted in a Kerala fishing village in India that women believed menopause to be natural and a positive development as it made it easier for them to go on their selling rounds without personal hygiene difficulties. The author opined that women had positive attitude towards menopause as they had continuity in their primary identity as fish sellers.
and this role is facilitated by menopause. In an Anthropological study, “A cross-cultural exploration of the end of the child bearing years”, Flint (1979), described the effect of the freedom that a culture accords to its menopausal women. Indian women of Rajput caste are released from the bonds of purdah at menopause and they mingle freely in the society of men (cited in O’donnell, 1982). So also the women in South Africa found to have a positive attitude towards menopause as they said it was culturally and socially acceptable (Mashiloane, 2002). Women’s Studies Project (1998) of Family Health International (FHI) reports that in Bolivia, one-third of the postmenopausal women expressed relief in no longer being at risk for pregnancy and menstruation. Around 27 percent of respondents described menopause as a natural, inevitable part of life and 46 percent reported menopause had made no difference to their lives. Many women cited positive benefits such as freedom from illness and menstrual-related pain and a regaining of physical strength. Women of Uttar Pradesh, India also took menopause positively and welcomed it as they had no desire to have more children (Misra and Saseendran, 1988). Majority of the women in Chandigarh, India did not experience any tension on attainment of menopause and most of them welcomed it in a study of Kaur et al. (2004) and Singh and Arora (2005). Pakistani women also showed a positive attitude towards menopause (Yahya and Rehan, 2003). Wambua (1997) explains that perceptions of menopause in Africa
vary not only by culture but also by the woman's reproductive history. For women with multiple births, menopause is likely to be welcomed as an end to childbearing under conditions of limited fertility control technology. For childless women, however, menopause often marks the onset of a period of emotional depression.

However, women of some other cultures, especially in western societies dread reaching menopause. They feel they will become unattractive, lonely, helpless and useless after menopause. They may mourn the loss of their fertility and youth. Many also face increased responsibilities and declining health. Flint (1979), opines that in American culture where youth is the ideal, both menopause and aging are viewed in a negative manner. Young women regard it with fear and loathing and even physicians, who are mostly male, do little to support menopausal women (cited in O'donnell, 1982). Maoz et al. (1970) finds majority of the women with negative attitudes towards the menopause in Israel. As Wambua (1997) mentions, since menstrual flow is commonly viewed as a cleansing process that keeps a woman healthy in African culture, the cessation of menses is associated with ill-health. He further says that postmenopausal vaginal bleeding is viewed as a sign of witchcraft, leading many women who in fact have ovarian, cervical or endometrial cancers to delay seeking medical care.
Thus, women's attitudes vary according to age, culture or amount of knowledge about menopause but not according to social class, marital status or parity (Dege and Gretzinger, 1982). As culture conditions the way menopausal women view themselves, their attitudes and treatment seeking behaviour as regards to menopause, the physicians need to consider physical, psychological along with the cultural dimensions while addressing menopausal problems. This will help in facilitating the women with menopausal problems to pass through and adapt to the changes and continue to live well and healthy through these transitions. Reaching menopause can be an opportunity to reassess life's goals and can be a new beginning - a gateway to personal growth.

The knowledge and awareness regarding menopause also vary from culture to culture. In a study of McMaster et al. (1997) conducted in Zimbabwe, when the periods became irregular, 42 percent of the women perplexed by their symptoms, 39 percent understood almost immediately that they were reaching menopause and 19 percent understood after speaking with other women. Mashiloane (2002) did a study in South Africa and says most women knew about menopause and half of them obtained the information related to it from family members, friends and the rest others from their general practitioner, hospital or local clinic. However, Mbarutso (1992) reports Rwandan menopausal women live in an illusion of pregnancy and after two years of amenorrhoea women
worry about the delivery of foetus and they think foetus is transformed into rock and express their concerns at a gynaecologic visit. Kearns (1982) also mentions lack of knowledge on various aspects of menopause among the women of Papago tribes of United States.

The review on all these aspects of menopause clearly indicates that there is vast variation in knowledge and attitude towards menopause, as well as experiences and management of menopausal transition from region to region and culture to culture. Hence, a comprehensive and holistic understanding of menopausal transition can not be gained without taking into consideration the social and cultural characteristics of the population in question.

1.8 Rationale of the study

For our grandmother and great-grandmother, life expectancy was shorter. Reaching menopause often meant that their life was nearing an end. But this is no longer true. Dr Annie Evans, a specialist in women's health from the Bristol Royal Infirmary, said: "One hundred years ago the average age of the menopause was 47, but the life expectancy of British women was only 49. Now women become menopausal at just over 50 years old but life expectancy is nearer 80, so we can expect to spend 25 to 30 years in the postmenopause" (BBC News, 2003). The number of postmenopausal women in the world will rise from 467 million in 1990 to
1.2 billion by 2030 (World Bank, 1993; Hill, 1995). Most of the increase in numbers will occur in developing countries. In 1990, 40 percent of the postmenopausal women lived in industrialized regions and 60 percent lived in developing countries. By 2030, the proportion of postmenopausal women living in industrialized regions will decline to 24 percent and 76 percent will be living in developing regions according to the cited World Bank projection. Postmenopausal women make up a relatively small proportion of the population in developing countries (5-8 percent), whereas in industrialized countries they make up over 15 percent of the total population. By 2030, the proportion of postmenopausal women in the total population is expected to increase everywhere. Sulak has made a mention in 1996, in this regards that “In the next 20 years, more women will experience perimenopause and menopause than ever before since they comprise the baby boomer generation” (Sulak, 1996/p.85). Sengupta, (2003), estimates that in India by the year 2015, the number of postmenopausal women will increase to 130 million. Thus, there is going to be a considerable increase in the number of postmenopausal women. Their problems, health issues will also become visible and conspicuous. These problems are not only due to biological and physiological reasons but also due to socio-cultural background of the women which interacts with these biological and physiological factors. Menopause is experienced in different ways in different cultures. Hence, socio-cultural
aspects become significant in the emergence of issues and problems of menopause. Developing world is significantly different from developed world as there is lot of cultural variation. Because of low literacy and low socio-economic condition, women of developing world present a varying picture of the menopausal phenomenon. It is essential that for a comprehensive and meaningful understanding of conditions of menopausal women, appropriate focus needs to be given not only to the biological and bio-medical dimensions but also to the socio-cultural dimensions of menopausal women. Hence, an attempt has been made here to understand menopausal transition in rural North Karnataka with the following objectives and methodology.

1.9 Objectives of the study

The main objective of the study is to build an in-depth socio-cultural understanding of the transition of women into menopause.

The specific objectives of the study are;

1. To understand the "emic" perspective of menopause and means of getting knowledge on menopause

2. To analyse the menopausal phases as classified bio-medically and also by the women

3. To determine the age at menopause and factors influencing it
4. To understand the “emic” perspective on timing of menopause and its reasons

5. To find out the symptoms and disorders experienced by the women during menopausal transition

6. To understand the association of these symptoms with menopause and other factors as well as the management of these symptoms

7. To know about the after-effects of menopause on health, nutrition, sexual relationship, family-life and social-life of women

8. To analyse women’s way of communicating about their menopausal status to “significant others” and their reaction to it.

1.10 Methodology

WHO, 1996 report says that in menopause research, the most highly regarded studies use descriptive, analytical epidemiological methods and controlled clinical trials. Descriptive studies include retrospective, cross-sectional and prospective research designs. Cross-sectional way of studying women is best suited in the present context, because of its greater reliability over retrospective designs and comparatively simple and less expensive than the prospective designs (WHO, 1996). The report further says that in this type of design, both premenopausal and postmenopausal women are to be included and upper and lower age boundaries are to be set roughly equidistant from the
expected mean age at menopause. The main types of qualitative methods
used in research on the menopause are in-depth interviews and
ethnographic studies. In most of the earlier studies on menopause, usually
women were interviewed individually but the use of focus groups is also
increasing. It further recommends that the questions to be asked by the
interviewer may be structured but the responses are not. The choice
between qualitative and quantitative research designs depends on the
nature of the research problem. However, a combination of two or more
methods, including the qualitative and quantitative methods is
particularly more valuable when the research is being done in settings
where little is known about social and cultural context of the menopause.

The above guidelines given by WHO Scientific Research Group
have been taken into consideration, while formulating the research design
of the present study. Since ethnographic enquiry provides a scope to
combine the qualitative and the quantitative understanding of the
phenomenon from a holistic perspective, a detailed investigation was
conducted in Krishnapur (pseudonym) village which is located in the
north-west part of Karnataka, between June 2004 and September 2005.

The review of earlier work indicates that very few studies have
been done so far on menopause in India and particularly no such study
has been undertaken in Karnataka state. Due to familiarity of the region,
the study area was restricted to Dharwad taluka of Dharwad district in
North Karnataka. Dharwad taluka has 118 villages altogether. To get a significant number of women in each of the phases of menopause, villages having larger population were preferred over smaller villages. This would also help to study the influence of recent changes and developments in rural areas as usually larger sized villages have better educational, health and transportation facilities. Out of 9 such villages of Dharwad taluka, Krishnapur was selected randomly for the present ethnographic investigation. Krishnapur is about 14 Kms away from Dharwad city, towards north and lies in the north-west part of Karnataka.

The present study would be contributing to understand one of the important components of reproductive health of women of North Karnataka for whom many national and state level studies estimate poor indicators in terms of education, economic status, health, reproductive health and utilization of health services (NFHS-II, 1998; RCH, 1998).

Both quantitative and qualitative research methods have been adopted to collect the information. It took one month to get familiarise myself to the village community and to learn the rural and local slant of Kannada, the language of the people. After building the rapport with the villagers, a census of Krishnapur was done between July and September 2004. As people were reluctant to talk about their personal and sensitive matters initially, the field investigation was started with the census, to collect the background characteristics of individual and households like,
age-sex composition, socio-economic aspects and fertility aspects. During the census, 588 households were listed in Krishnapur and 3059 people, including 1609 males and 1450 females were enumerated from these households.

As menopause is a biological phenomenon which occurs among women at specific time period, it was necessary to concentrate further on the women of specific age group. The second phase of field work was mainly focused on the women between 30-54 years. The census helped to identify the women between the age group 30-54 years and to get closer further with these women. As we have discussed in the earlier sections, the age at which natural menopause occurs is between the age 45-55 years for women world wide (WHO, 1996) and between 44 to 47 years for Indian women (Singh and Ahuja, 1980; Sharma and Hiramani, 1985; Randhawa et al., 1987). Any study on menopause cannot ignore the phase of menopausal transition which usually occurs for 2- 4 years for most of the women, but some times it lasts as long as 10-12 years (National Institute on Aging, 2002; Planned Parenthood, 2003; McKinlay, 1996). WHO (1996) suggests, upper and lower age boundaries are to be set roughly equidistant from the expected mean age at menopause so as to include both premenopausal and postmenopausal women in the study group. Initially it was decided accordingly to include women of age 35-54 years, by keeping 10 years age range from the expected age of
menopause. During the field investigation in Krishnapur, I came to know that some women have attained menopause or experienced menopausal symptoms in the age range of 33 to 34 years also. Hence, the lower age limit was further reduced by 5 more years, so as to, not to miss-out any such woman who is in the menopausal transition. The upper age limit of 54 years was decided, as almost all women had attained menopause by this age. Hence, the age group 30 to 54 years was considered as the most ideal to undertake the study with the earlier stated objectives in a rural setting in Karnataka.

On the whole 431 women were identified in this age group while conducting the census of Krishnapur. Out of these 431 women, only 399 women have been taken in to consideration in the present study. Out of 431 women identified initially, two women died during the period of field study - one woman by heart attack and another woman was suffering from diabetic problem; two women were physically disabled - one was mentally retarded and other was hearing impaired. Hence, these women were not included in the present study. Thirteen women permanently left the village and 6 women were temporarily out of village. Only one woman refused to participate and it was very difficult to contact 8 women because of their busy daily schedule. Hence, the remaining 399 women formed the focus of detail ethnographic investigation. Since, several studies have shown a close relationship of menopause with nutritional
status and anaemia, an attempt has also been made to measure the nutritional status and anaemic level of these women through standard biomedical techniques i.e., by measuring Body Mass Index through their height and weight, and by measuring anaemia through blood haemoglobin level (International Obesity Task Force, 2000; Anonymous, 1986; Godkar and Godkar, 2003). The interviews with these 399 women were conducted between February and June, 2005. Most of the interviews were done when the women were alone or when female age-mates were present. Sometime presence of age-mates helped as it facilitated the involvement of women and thus lead to detail discussion on menopause related matters.

In addition to the interviews, case studies were of great help to get into the depth of matters related to menopause, to understand personal problems and feelings of women. Focus group discussions (FGDs), with both women and men, were also done in order to know additional information on certain aspects and to understand the perceptions of women and men in a group. I could able to conduct 10 FGDs (7 with women and 3 with men) throughout my field investigation. After few individual interviews, I myself got more familiarized with the women and hence, women showed much interest to gather in a group and to talk about menstruation and menopause related aspects after sometime. All the FGDs were tape-recorded including taking the notes.
Informal discussions with political and religious leaders, school teachers, local doctors, elderly men and women, anganwadi teachers, ‘Spandana’ volunteers (an educational campaign launched by University of Groningen, The Netherlands in collaboration with the Population Research Centre, Dharwad and Family Planning Association India, Dharwad branch, in 2000 to enhance the reproductive health status of men and women in Rural Dharwad. Activities of Spandana started in 2003 and ended in 2005, in Krishnapur, Hutter et al., 2002; Rajeswari et al., 2006) and Self Help Group (SHG) leaders of Krishnapur helped to get detail information about the village and women, especially during the initial stage of my field work. Religious leaders and political leaders were of great help to understand such aspects as caste hierarchy, inter-caste relationships, village economy and amenities like transportation, health centre, panchayat, available in the village. Elderly men and women made it clear as to where and how exactly Krishnapur and its people have changed now, compared to their times. Local doctors were of great help to understand the health related aspects and treatment seeking behaviour of people of Krishnapur in general and that of women during their menopausal transition in particular. As these local doctors are easily available or accessible to them, people of Krishnapur more often visit them for matters related to general health. SHG leaders and comparatively better educated - both married and unmarried- young girls
helped during the entire field investigation, especially while introducing myself to women of Krishnapur and while doing census and while arranging for FGDs. My earlier involvement in 'Spandana' project also helped to gain the confidence of village leaders and women group leaders. Participation in certain ceremonies, festivals, fair and accompanying women even when they are at work in the agricultural field helped in establishing close contact with the women. Longer duration of field investigation, prior knowledge and familiarity with the people and their local language and being a woman helped me to a great extent to earn the confidence of women of Krishnapur and get into the depth of their personal and sensitive matters for gaining a comprehensive understanding of the menopausal phenomenon. The ethnographic data thus collected has been analysed by using CSPro, DataPro and SPSS statistical packages. The overall analysis and discussion of this research study has been presented in the following 8 chapters.

The first chapter attempts to introduce the topic of investigation in the background of several earlier studies. The phenomenon of menopause is discussed in terms of its phases, symptoms, age of attainment and after-effects. The review on all these aspects of menopause clearly indicates a vast variation in all these aspects in terms of different region and culture. This chapter also presents the objectives of the present study along with the methodology adopted.
As the present investigation is ethnographic in nature, the details about the rural setting - geographical location, climatic condition and settlement pattern - and people with the various demographic and socio-economic characteristics, religious practices, beliefs and notions and inter-caste interactions have been presented in the second chapter as a broader background to the detail discussion of menopause subsequently. Information about the village and people is dealt here under the subheadings like background of the village, demographic profile of the people, socio-economic aspects and socio-cultural aspects.

Since, the present ethnographic investigation is on the phenomenon of menopause and as it occurs to the women of certain age group, the women between the age group of 30-54 years form the focus of the third chapter. Understanding various characteristics of women helps in constructing an integrated picture of their menopausal transition and its various linkages. Background characteristics of women as well as their husbands, socio-economic characteristics, reproductive matters like menarche, marriage, fertility, contraceptive use, and health and nutrition related factors like food-intake, anaemia, obesity and health problems of women are dealt in this chapter.

The fourth chapter encompasses the phases of menopause. It tries to relate and compare the menopausal phases as defined by bio-medical model with those identified by the women of Krishnapur. In addition to
The main focus of the fifth chapter is on the timing of menopause and the age at which women attain menopause. It tries to link the women's assessment of timing of menopause with that of the age at which they attain menopause. Preference of women about the timing of menopause has also been discussed. The age at menopause is estimated using life-table technique and the analysis of its differentials by linking to various socio-economic factors, food and health related factors and reproductive factors.

The sixth chapter outlines the menopausal symptoms and their management. The symptoms and problems as perceived by the women during menopausal transition have been analysed and discussed by categorising them as irregular menstruation, vasomotor symptoms, urogenital atrophy and other symptoms. The association of these symptoms with menopause and other factors has also been noted here. This chapter also discusses the management of these symptoms and problems.

The seventh chapter deals with the postmenopausal life as it tries to analyse the after-effects of menopause on health, food-intake, interpersonal relationship and sexual relationship of women. It also tries
to find out how women make their menopausal status known to others and how these “significant others” react to it.

Finally, the eighth chapter summarises the entire findings of this ethnographic study. While drawing conclusion, the policy implications have also been discussed in this chapter based on the findings of the study.