CHAPTER-II
REPRODUCTIVE HEALTH IN RURAL SCENARIO

In the light of the literature found on the subject based on the works of many scholars, the present study has been reviewed under the following headings.

1. Menarche
2. Miscarriages
3. Reproductive Health
4. Pregnancy
5. Late Pregnancy
6. Abortion
7. Defective Child Birth
8. Menopause
1. Menarche

Human body passes through the developmental cycle: Birth, childhood, adolescence, adulthood, elderliness. Our body shows changes accordingly. With this some social and mental changes do take place. While considering the physiological changes development of gonads (sex glands) is an important stage.

*A J Sing (2006)* investigated ‘Place of Menstruation in the Reproductive Lives of Women of Rural North India’. Reproductive health of Indian women was conducted in two primary health centre areas of rural north India. The study reveals that mean age at menarche was 15 years. Majority of women had strong beliefs about effect of diet on menstruation. Most of them considered menstruation a dirty act and indulged in various taboo behaviors. Initial reaction was of fear/apprehension at menarche in majority of girls. They have been concluded that women in rural north India still hold transitional beliefs regarding menstruation.

*Ooman (2000)* has been studied the lack of menstrual and personal hygiene is also found to be associated with (Reproductive Tract Infection-RTI) RTI's. In addition, there are socio-economic and cultural determinants of (Reproductive Tract Infection) RTI's. Studies have shown a strong association between women's livelihood, work and their reproductive health.

*Gupta and Jain (1998)* in their study found that only 65.8 per cent girls had information about the onset of menses before it started (this study included only school and college-going girls, who are likely to have
better access to information either from peers in school/college or mothers). The studies conducted in different parts of the country indicate mother and peers as the major source of information on menstruation (Gar et al. 2001; Gupta and Jain 1998; Narayan et al. 2001).

**Chandrika and et.al (2014)** studied age at menarche and menopause among the Yanadi women of Nellore district, Andhra Pradesh. The study reveals that the maximum number of Yanadi women attained menarche at the age of 13 (36.8 %) and 14 years (27.3 %). The age of menopause among the Yanadi women ranges from 38 to 51 years. Most of the Yanadi women reach menopause at the age of 44 years (20.00%). The differences in age at menopause in different population may be influenced by genetical and environmental factors. Malnutrition low socio-economic factors, rural residence, family size etc. may be attributed to the possible reasons for determining the menopausal age of women.

**Tanner, 1990; Wheeler (1991)** study reveals that menarche sexual maturation in girls is manifested explicitly by menarche, is the scientific name for first menstruation. Menarche typically happens around 10-12 years universally. But age range is wide. Preceding menarche, pubic hair and breast development, under arm hair appears. These are known as secondary sexual symptoms. Most girls take about 3 to 4 years to complete this sequence, although this, too, can vary greatly, from 1-5 years.
All girls experience menarche after the peak of the height spurt, a sequence that is adaptive. Nature delays menstruation until girls body is strong enough for successful child bearing. As an extra measure of security, for 12 to 18 months following menarche, the menstrual cycle often takes place without an ovum being release from the ovaries. However, this temporary period of sterility does not apply to all girls, and it cannot be counted on for protection against pregnancy (Tanner, 1990). This is followed by marriage, employment, and menopause. Along with this one has to deal with real life events.

Age at menarche, the beginning of menstruation, is believed to be influenced by a number of factors including body composition, physical activity and nutritional status. Age at menarche is greatly influenced by participation in sports. It is viewed as an excellent physiological marker of adolescent maturation. It has been observed that the average age at menarche has been reducing in the past few decades. Most sources agree that the average age at menarche in girls in modern societies has declined through the degree and remains subject of controversy.

Menarche age varies from population to population. It is influenced by various factors, which are both genetic as well as exogenous. The factors affecting age at menarche are nutrition, diseases, body composition, physical activity, psychological stress and place of living. Most of the exogenous factors are related to nutrition directly or indirectly.
Ersoy et al. (2005) studied the factors affecting the relation between the menarcheal age of mother and daughter. Their results suggested that the menarche occurs earlier in the daughters and their mothers. The correlation between the menarcheal age of the girls and their mothers persists under all circumstances except in obesity. The mother’s menarcheal age is good predictor of the daughter’s menarcheal age in non-obese girls.

Lakshmi, et al. (2006) studied menarcheal age in three endogamous Vysya populations, Arya Vysya, Thrivarnika and Kalinga Vysya. It had been observed that there was a decrease in mean menarcheal age with moving down in social hierarchy. Further, among the three population groups of Andhra Pradesh which had been studied at different times, decrease in mean menarcheal age had been found which show a secular trend.

Sharma et al (2006) determined the age at menarche in two caste groups from rural areas of Jammu. The study reveals that there is no difference in the mean age at menarche between rural Brahmin and Rajput girls. The mean age at menarche for both groups was 13.85.

Chandraprakash has been studied that menarche is a physiological and developmental phenomenon significant in the life of a female. It occurs between the ages of 10 to 16 years. Study suggests that menarche tends to appear earlier in life as the social, nutritional and economic condition of society improves. There is paucity of information about menarchial age in hilly regions of Uttarakhand. Therefore, this research
was undertaken to determine age of menarche and its variation with geographical, seasonal and nutritional status. This study was carried out through a questionnaire in 450 girl students between age 17-26 years at Uttarakhand Forest Hospital Trust, Medical College, Haldwani, India.

*Acharya A (2006)* studies Nutritional Status and Menarche in Adolescent Girls in an Urban Resettlement Colony of South Delhi. In this study they find out that the rate of under nutrition amongst adolescent girl was very high (74%). The nutritional status was associated with age at menarche. The higher the nutritional status, the lower is the age at menarche.

*Tabassum Khatoon (2011)* conducted the research on Age at menarche and affecting Bio-Social factors among the girls of Lucknow, Uttar Pradesh. In this article the author has been find out that the age at which first menstrual bleeding occurs in female, i.e menarche is viewed as an excellent physiological marker of adolescent maturation. This study was conducted among 150 adolescent girls in the age group of 10 to 19 years, randomly selected from urban & rural government schools of Lucknow. 75 girls from each school were selected. Girls were studied about their socioeconomic status, weight, height, place of residence. Out of 150 cases studied 108 cases were having menstruation, most frequent age of menarche being 13 years when 32 cases (29.63%) had its onset. The lowest age was 8 years and highest was 15 year. Mean age at menarche was found to be \(12.43 \pm 1.49\). There seems to be definite
association of various factors which modify the age at menarche like socio-economic status, body mass index, place of residence.

*Amrita Bagga (2000)* investigated that ‘Age at menarche and secular trend in Maharashtrian (Indian) girls’. They have been studied age at menarche of 366 Maharashtrian Brahmin, Maratha and Scheduled Caste girls. In this paper two hypotheses relating menarcheal age to physical growth were compared. Results indicated that both measurements, the height (the indicator of skeletal maturity), and the weight (the indicator of fat accumulation), were positively correlated with age at menarche. The well known phenomena of children achieving greater size and maturing earlier as manifested by menarche in girls and the secular trend in the age at menarche are well demonstrated in the present study on the Maharashtrian girls of Pune city. The lowering of age at menarche at an average rate of about 6 months per decade in the last three decades in the present study, as compared to 3-4 months in some countries of Europe, North America and several parts of the world, reflects upon the now improved socio-economic, nutritional and general health conditions in India as compared to these countries where similar standards were achieved much earlier. My study also had similar results where compared to the studies which I have quoted here.

2. Miscarriages:

A number of causes are responsible for miscarriages and the following studies revealed is also had similar results.
M. Rajasekhar, et.al (2013) has been studied the Cytogenetic Study of Couples with Miscarriages. The study reveals that miscarriages are sporadic and are thought to result from genetic causes that are greatly influenced by parental chromosomal abnormalities. The researchers studied two hundred and ten couples to look for the prevalence of chromosomal abnormalities in couples with history of recurrent miscarriages. Karyotyping analysis was done by peripheral blood culture and GTG banding. Chromosomal aberrations were found in 8.57% patients: Numerical abnormalities - 0.95%, Structural abnormalities – 2.87% and polymorphic variants -4.76%. However, seven new balanced translocations detected in these patients have not been reported elsewhere in the literature. Couples whose carrier status was ascertained after two or more miscarriages have a low risk of viable offspring with unbalanced chromosomal abnormalities. Therefore, genetic counseling including karyotype is a prerequisite to identify risk factors in couples with recurrent miscarriages.

Sinha, (1986) investigated women age at marriage, abortion, miscarriages and still births. In the North-Eastern region, the age at marriage was found to be relatively high whereas it was relatively low in the central region because of the influence of Hindu culture. It was further observed from research investigations that the frequency of abortions, miscarriages, and still-births were found to be much higher in younger mothers below the age of 19 years. The major life threatening complications for very young mothers were pregnancy induced high
blood pressure, anaemia and difficulty in delivery due to disproportion between the pelvic-size and the head of the baby.

3. Reproductive Health

*Mahrnood Fathalla, WHO (1988)* report describes the concept of reproductive health has been defined as "a state in which people have the ability to reproduce and regulate their fertility; women are able to go through pregnancy and childbirth safely; the outcome of the pregnancy is successful in terms of maternal and infant survival and wellbeing; and couples are able to have sexual relations free from fear of pregnancy and contracting diseases".

*Ndong et al. (1999)* states, "reproductive health generally has been synonymous with women's health.

*Singh et al. (1995)* studied the extent and nature of reproductive health problems, and the action taken for prevention/management of these problems in rural area of district Ambala, Haryana. It was concluded that community-level reproductive health education should take place and that round-the-clock services should be available in rural areas to deal with maternal emergencies. In addition health worker should be trained to prevent and treat gynecological complaints.

*Mari Bhat (2002)* in his study “maternal Mortality in India: An update, present estimates for maternal mortality for India from two indirect procedures, the sisterhood method and a regression method enrolling sex differentials in adult mortality and compares them with estimate available from other sources. The sisterhood method is applied
to the data collected in a human development survey that covered all rural areas of India in 1994, while the latter method is applied to the data on mortality and fertility rates from Indian sample registration system. The level of maternal mortality for the early 1980 implied by the sisterhood method is found to be about 15 percent lower than the estimate from the same period derived from the method that uses the data on sex differentials in adult mortality. The study also discusses the socio-economic differentials in maternal mortality implied by the sisterhood data and spatial and temporal variation in material mortality derived from the regression method.

*Bhatia et al (2003)* in their extensive research in Karnataka state, found that married women experiences a heavy burden of reproductive morbidity. In more than half the cases of illness, a health practitioner was consulted and in about three quarter of the times private practitioners were preferred for consultations. From these results, they come to the conclusion that improvement is requires in the private sector providing healthcare services.

According to W.H.O. "Family Planning can favorably influence the health, development and well being of the family and has a striking impact on reduction of infant and child mortality rate" WHO report series no. 600, Geneva, 1976 pp.36). Female education is said to influence infant and child mortality in several ways. The first is through birth spacing. Better educated women are more likely to practice birth control methods than less educated women (Cochrane, 1983).
Edwards et al (2000) studied women’s knowledge and attitude towards contraceptive effectiveness and adverse health effects of women in Oxford. The result showed that women tended to overestimate the risks and underestimate the effectiveness of hormonal contraceptives. They were resistant to interference with their bleeding patterns and weight.

Mishra et al. (1995) presented a report based on the findings of the baseline survey of family planning programme in Agra district in UP. Family planning knowledge was universal, but knowledge of specific methods was limited, 66 percent in urban and 47 percent in rural areas had ever used contraception. Current use was higher among the better-educated women and higher caste Hindus. Major reasons for unmet need are identified as future plans for contraceptive use, dislike of existing methods, lack of services, 109 Opposition by husbands or family members and menopause. Many reported a belief that family planning methods would result in complications.

These studies could establish the fact that a significant proportion of women who used a contraceptive method, particularly female sterilization and IUD suffer from various illnesses (Bhatia and Cleland, 1995).

Sowmini and Sharma, tried to find out the association between IUD use and female sterilization with reproductive morbidity among women in Kerala. The high prevalence rate of contraceptive use in the state in comparison with other states of the country was one of the reasons for selecting Kerala for their study area (Sowmini and Sarma,
2004). They noticed that the morbidity conditions such as reproductive tract infections, dysmenorrheal and menorrheal are more among the users of IUD. Again, women who have undergone sterilization are more prime to report menstrual problems especially dysmenorrheal. The chances of morbidity increase with the duration of contraceptive use for IUD and female sterilization.

*Rajaretnam* (1998) studied socio cultural determinants of contraceptive method choice in Goa and Kerala. These study indicated that though Goa and Kerala are almost equally forward in respect of many socio-cultural aspects as compared with most other states of India, contraceptive use was relatively low in Goa (48 percent) and high in Kerala (63 percent) but the proportion of users depending on reversible and traditional methods was high in Goa (36 percent) and low in Kerala (24 percent). In both states, socio cultural factors like education of women and Christianity play a major role and economic factors play no significant role in the choice of traditional and reversible methods. On the other hand, the choice of sterilization methods depended largely on the number and sex composition of living children of the couples and not on their socio cultural and economic conditions.

*Asha A. Bhende* (1991) conducted study on the determinants of contraceptive practices of 2,376 currently married women in the age group 15-44 in Jamshedpur in 1984 considering the variables such as age and duration of marriage, infant or child mortality, religion, education and occupation highly affected the choice Work and Health of methods. Even
though the place of employment had a significant effect, husband's occupation does not have any effect on the acceptance. But this study has been done in an industrial town of Jamshedpur and it did not consider the rural-urban differentials in the usage. The housing conditions and other economic characteristics are not much dealt with in this study.

The study was conducted by Rathi and Kothari (2003) to investigate whether there exist a correlation between mother's occupation and the child's creativity. The effective sample comprised of 80 children of age range 10-14 years who were selected employing purposive sampling techniques. The four occupations identified for the mothers were doctors, teachers/lectures, clerks and housewives. The tool used was the verbal test of creative thinking by Baquer Mehdi. The data was treated with one-way ANOVA. Significant differences were obtained with respect to originality.

Patel and Khan (1996) studies women suffer from reproductive morbidity due to their 'culture of silence'. They are reluctant to discuss their problems with either anyone at home or with a health provider.

Joshi in 1997 studied women's marital sexual experience conducted in villages in Padra and Baroda taluka. It was found that some were married at the onset of teen age and so never ever had any information about what are marriage, sexual relationship as well as menstruation. Parents of respondents were very strict during those days and never allowed girls to go out unescorted. Talking regarding menstruation even with their mother was never entertained.
About one-third of the total disease burden among women aged 15 to 44 years in the developing countries is linked to health problems arising out of pregnancy, childbirth, abortion and reproductive tract infections (*World Bank, 1993*).

*Boom and Reddy (1986)* studied the timing of marriage and child bearing appears more recently to be undergoing changes towards the direction of longer delays as revealed by a study done in India.

*Dwivedi (1992)* studied the effect of socio-economic variables in explaining the level of adoption of various family planning services in India based on family welfare programme reports in 1987. An analysis by using path analysis techniques revealed that literacy and per capita income played a dominant role in motivating couples for accepting sterilization. The per capita income exerted maximum direct effect on the use of conventional contraceptives.

4. Pregnancy

Most pregnant women in rural areas continue to work while pregnant and resume work soon after delivery. The absence of timely medical care, inadequate diet and heavy workload often result in complicated pregnancies and high maternal mortality rates.

In India use of pregnancy related services is largely considered unnecessary as pregnancy is regarded as being a ‘natural’ phenomenon (*NFHS-1, 1997*).

*Richa Chandraker, et.al (2009)* conducted the study of the pregnancy related women reproductive health, infant and child mortality
and nutritional status of mother and under five children among Dhur Gond tribal community of Mahasamund district of Chhattisgarh. The study reveals that high percentages of mother had not taken ante-natal checkup (51.72%), tetanus injection (41.38%) and iron and folic acid tablets (56.32%) during pregnancies. 94.83 percent deliveries performed at home and 57.47 percent birth were done mainly by untrained dai (traditional birth attendant’s). Infant and child mortality rate was 5.92 and 4.28 per 100 live births respectively. 47.12 percent of mothers were undernourished (BMI <18.5 kg/m2) and all the children were suffered from malnutrition.

_Talamanca (2006)_ revealed that occupational risk like stress, physical pressure and experience has created adverse effect on health of pregnant women workers.

_Shaila Bhardwaj,et.al (2010)_ studied ‘Reproductive Health Profile of the Scheduled Caste and Scheduled Tribe Women of Rajasthan, India’. A total of 600 subjects were collected. The age at marriage, age at gauna (second marriage) and age at 1st conception was found to be relatively higher among SC women as compared to ST women. It was also found that the SC women had relatively better educational status than the ST women and better reproductive health profile as adjudged by contraceptive used, place of child deliveries, antenatal care and consumption of vitamin/iron pills during pregnancy.

_Amtul Waris (2013)_ conducted research on ‘Gender gaps and Women’s Empowerment in India’. The study reveals that health
discrimination against women in India starts early and is evident in the skewed sex ratio of 933 women to 1,000 men (world average: 990:1,000). Maternal mortality in India is the second highest in the world and close to 125,000 women die due to pregnancy and pregnancy-related illnesses every year. In rural areas, 60% of girls are married before the age of 18, and 60% of married girls bear children before they are 19.

_Vatta (2003)_ in her study “Awareness about the problems in pregnancy” found that 73.3 per cent of respondents acknowledge nausea and vomiting as the major problems of pregnant women. The results were almost similar in the post test (86.6 per cent) and retention test (73.3 per cent). Other problems like heart burn, anaemia, tetanus, abortion, high blood pressure, cramp in muscles and constipation were mentioned by more or less one-third of the respondents. Regarding the preventive measures, the respondents knew that the women should be immediately taken to hospital. Post test and retention test results indicate that they gained as well as retained knowledge about bed rest and medicine to be given to patient to get relief from the pain immediately.

_Pallikadavath and others (2004)_ made an attempt to examine factors associated with antenatal care in rural areas of north India. They also attempted to investigate the access of those factors to specific critical components of care. They also brought out differences in the pattern of services received via health facilities and home visits. There was significant under-utilization of nurse/midwives in the provision of antenatal services and doctors were often the lead providers. The average
number of antenatal visits reported in this study was 2.4. Higher socio-economic status is associated with increased chances of receiving an antenatal check-up, and of receiving specific components including blood pressure measurement, a blood test and urine testing but not the obstetric physical examination, which is however linked to ever-use of family planning and the education of women and their husbands. Thus, pregnant women from poor and uneducated backgrounds with at least one child are the least likely to receive antenatal check-ups and services in the four large north Indian States. Basic antenatal care components are effective means to prevent a range of pregnancy complications and reduce maternal mortality.

Agarwal and others (2006), in their study reveal the prevalence of anaemia during pregnancy. The lactation was significantly lower as disclosed in the National Family Health Survey 1998-1999 when compared to earlier surveys. The contributing factors found on multiple regression analysis for anaemia in pregnancy and lactation are: literacy, occupation and standard living index of the study women; their awareness about anaemia, its prevention by regular consumption of iron folate tablets and increase in food intake. Maternal height, age at marriage, parity and foetal loss also contribute to hemoglobin level. There are interstate differences; lower fertility, higher literacy and better diet were observed in Himachal Pradesh as compared to that of Haryana. The literacy and nutritional status of women in Tamilnadu is lower than that in Kerala. The remaining 3 states have poor fertility, lower social living
index and nutritional status with 90 per cent women being anaemic during pregnancy and lactation. Low prevalence of severe anaemia in Orissa as compared to Assam greatly owes to availability and consumption of iron folate tablets. The antenatal services in the first trimester and checkup by a doctor, along with availability and consumption of iron folate tablets over 3 months in all the States has influenced hemoglobin levels.

5. Late Pregnancy

*Shubha R. Phadke (2011)* study entitled ‘Late termination of pregnancy for fetal abnormalities: The perspective of Indian lay persons and medical practitioners’. For this study one hundred and fifty lay persons and 120 medical practitioners were examined. The study reveals that More than two-thirds of the lay persons and majority (85.8%) of clinicians felt that Late Pregnancy should be allowed for fetal conditions with poor prognosis. At least 70% of lay persons felt that Late Pregnancy should be legalized for severe fetal abnormalities. For potentially treatable conditions, continuation of pregnancy in late gestation was the preferred option. For lethal malformations like anencephaly and disorders requiring lifelong treatment like meningomylocele and thalassemia major, majority of clinicians (86.7%, 69.2% and 55.8%, respectively) and lay persons (65%, 51% and 25%, respectively) had the opinion that termination of pregnancy can be offered at any gestational age.
6. Abortion

Aruna Meka et al. (2006) studied recurrent spontaneous abortion (RSA), Habitual Abortion or Habitual Miscarriage is the loss of 3 or more consecutive pregnancies before the 24th week of gestation. RSA occurs chiefly due to either a problem with the pregnancy or when there is a problem in the environment where it implants and further development occurs. 10-15% of women with recurrent early pregnancy loss have congenital uterine abnormalities. The role of infections, hormonal imbalances, nutritional deficiencies, and grief has been studied but the results are contradictory from one study to the other suggesting a need of further study. Genetic basis of RSA is poorly understood. Single gene mutations, polygenic, and cytogenetic factors are all found to show association with RSA. In approximately 2-4% of couples with recurrent pregnancy loss, one partner will have a genetically balanced structural chromosome rearrangement. This review looks into the various factors associated with RSA in the West and in the work done in this area in India. It also emphasizes on the need for an appropriately designed framework to study the various aspects of RSA.

Shveta Kalyanwala (2010) investigated abortion experiences of unmarried young women in India. Eighty-three percent of women realized they were pregnant within the first two months of their pregnancy and 91% within the first trimester. Eighty-four percent decided before the end of the first trimester to have an abortion, but only 75% obtained one in this period. One in six participants said that pregnancy...
had resulted from a nonconsensual sexual encounter, and such reports were more frequent among those who obtained a second-trimester abortion. Women who were older or who had more schooling had a decreased likelihood of having a second-trimester abortion, whereas those who lived in rural areas, those who did not receive full support from their partners and those who reported a forced encounter had an increased likelihood of having a late abortion.

7. Defective Child Birth

Most of the research studies in the area of child health which deal with socio-economic-demographic factors, have analyzed their link with incidence of infant mortality and mortality of children under five years of age, prevalence of diseases in children under five years of age, and general child health status.

Birth defects represent a group of neglected childhood conditions where children are born with a physical or mental disability, or with a chronic medical condition like the hemoglobinopathies or bleeding disorders. Caused by genetic and environmental interactions, single gene disorders or chromosomal anomalies, birth defects have high social costs, as there are no government health services for patients affected with these conditions in India.

_Pune Public Health Conference (2013)_ stated that globally, birth defects affect 2 to 3% of births. With 27 million births in 2010, 500 000 to 800 000 pregnancies may have been affected annually in India each year. Birth defects are responsible for pregnancy loss and early neonatal
mortality. Their impact on early neonatal mortality indicators are unknown.

Mothers' education is likely to influence their scientific knowledge, attitude and practice regarding different aspects of child health, which in turn, may determine the health and survival status of their children. Educated mothers are able to read health related literature and interact and learn about child health, from health personnel at the health centers. Through these activities they are likely to obtain information about more health related resources compared to their illiterate counterparts.


Mukherji (1988) with reference to a study in West Bengal stated that in incidence of infant 21 mortality, educational attainment of mothers played the most important role.

Patel Z.M (2005) studied ‘Birth Defects Surveillance’. 17,653 consecutive newborns were examined and diagnosed at a maternity hospital by pediatricians and geneticists. The study reveals that amongst 17,653 births 328 (1.8%) were stillbirths. Malformations were highest in this group. Polygenic traits accounted for 45.1% while chromosomal etiology was found in 4%. A genetic basis was found in 65.4% of cases.
8. Menopause

Menopause is the other end of menstrual life of women. It is the last menstruation. Menopause is a major turning point in woman's life. Approaching menopause involves process of change- and every woman experiences that this transition is unique and in individual ways.

*Brerre de Beusmart (1842)* was the 1st to discuss about menopause and according to him, it is the termination of reproductive phase of life in women.

As per the *WHO technical report series 670*, the term menopause is defined as the permanent cessation of menstruation resulting from loss of ovarian follicular activity. Women are considered to be menopausal if menses have ceased because of removal of both ovaries along with uterus or for women with intact uterus, menses have ceased at least for a period of one year period after the age of 40 years (Rocenberg et.al 1993).

*Khan, C.G, et.al (2005)* carried out research on Age at Menopause and Menopausal Transition: Perspectives of Indian Rural Women. The age of women between 30 to 54 years are interviewed. The mean age at menarche is found to be 12.9 years. 19 % of these women had experienced one or the other types of foetal losses among which 6 percent of them had at least one still births, 12 percent of them experienced spontaneous abortions and 4 percent of them had undergone an induced abortion. of the women in the age group 30-34 were not yet experiencing the menopausal transition and half of the women in the age group 35-39 years were in premenopause. By 40-44 years one-third of them reached
menopause and this proportion increased to more than two-third during 45 to 49 years. Majority of them entered menopause between 46-47 years. The mean and median age at menopause are found to be 41.6 and 42 years respectively. Among 111 postmenopausal women only, 49.5 percent (55 in number) reported that they had experienced some changes in their menstruation before reaching menopause and rest others reported that their menstruation stopped all of a sudden without any changes.

Doyel Dasgupta (2014) carried out research on Somatic Symptoms among the Bengali speaking Hindu menopausal women of Eastern India. A total number of 371 women (30-55 years) were selected as study participants and they were divided into two groups on the basis of their age of attainment of menopause. The results showed that barring the dizziness and faint, rest of the somatic symptoms has frequently reported by both the menopausal groups. Multivariate analysis showed that socio-demographic and reproductive variables seemed to be the significant factors of menopausal symptoms.

Khokhar, K.K (2012) investigated age at onset of natural menopause in working Punjabi women of Jalandhar and compares it with other Indian populations. The study reveals that the youngest women to experience natural menopause was 34 years old and the oldest one was of 54 years. 5.28% women had undergone premature menopause (before 40 years), whereas, 11.32% women had their menopause at later stage (after 50 years-delayed menopause). Age at Menarche among women is between 11 and 16 years and there is no association between age at
menopause and age at menarche and Body Mass Index (BMI). The age at menopause among working women of Jalandhar is lesser as compared to not only many Indian populations but also other Punjabi populations.

Mahinder Kaur amd et.al (2009) studied the age at natural menopause among rural and urban Punjabi Brahmin females of Roop Nagar district (Punjab). The study was conducted of 870 Brahmin females (rural=450, urban=420), ranging in age from 40 to 70 years. Mean and median age at menopause of rural females is 48.22±2.47 years and 48.98±1.12 years respectively, while among urban females it is 49.30±2.80 years and 50.12±1.15 years, respectively. These findings indicate that urban Brahmin females experience menopause at a later age as compared to their rural counterparts. The mean age at menopause of rural as well as urban females is found to be earlier than their median ages at menopause. Punjabi Brahmin rural and urban females of the present study exhibit a slightly later age at menopause for females having early menarche.

Pathak, R.K and et.al (2010) studied ‘Age at Menopause and Associated Bio-Social Factors of Health in Punjabi Women of Chandigarh’. The study was conducted on 564 Punjabi women of Chandigarh, ranging in age between 40-60 years. Out of these, 288 women who had attained natural menopause form the subject of present investigation. The mean age at natural menopause was found to be 47.91(± 3.16) years. The mean ages at menopause among early and late menopausal groups were 41.04 and 51.05 years, respectively.

The mean age at menopause is 51, but some women are in their 30s and others in their 60s. Most are 40 to 58. Average age at menopause hasn't changed for several centuries, despite increasing life expectancy.

The women viewed menopause as just a change of life from one stage of their life to another stage, which is accompanied with physical changes moving them from their ability to conceive to loss of the ability. Many of the women perceived these physical changes as positive liberating them from a monthly menstrual period.

Earlier, women were considered asexual after menopause. Today, the stress is on the greater potential for sexual enjoyment, since menstrual problems and the fear of pregnancy no longer impede women's sexuality. However, if physical problems like vaginal dryness lead to dyspareunia, women will cease to enjoy sex, in spite of a change in attitude. In their own experience, the authors (Krishna & Shah) in 2004 found that menopausal women suffering firm vaginal dryness or dyspareunia willingly discuss this topic only if the physician initiates it. Estrogens with progestine supplement are the therapy of choice for menopausal dyspareunia. The addition of a vaginal estrogen cream and a caring attitude on the part of the physician are both excellent adjuvants.

As stated by Mohile (2003), menopause is a physiological endocrinopathy occurring due to cessation of ovarian function. Clinically,
menopause is a retrospective diagnosis. When a woman has not menstruated for twelve months, then she is said to have reached menopause. Pre menopause is the period of five years before and on year after menopause. The first two years of menopause are sometimes designated as early post menopause. Menopause can be natural or surgical. Worldwide the age of natural menopause is between 45 and 55 years, the mean age being 50. In Indian women, it is 43.5 to 48.5 years. Life expectancy at birth has more than doubled in the last fifty years. It has increased from around 30 years at the time of independence to 61 years in 1992-96. Hence large number of women will reach the age of menopauses and many will have more than 20 years of post-menopausal life. The number of women in the post-menopausal age of 50-59 years is projected to increase from 36 million to 2000 to 63 million in 2020. As ovarian function stops, a variety of physiological changes take place. Many of them are due to estrogen deficiency and some are due to ageing process. No two women react to menopausal changes in the same way. The social, cultural background, emotional and physical health and her beliefs about menopause play an important role on her acceptance of this change in her life. That she is now no longer likely to have a conception could be a relief to some and a nightmare leading to depression to some. The stoppage of monthly bleeding that interferes with her work may be a welcome event to some, while to others this may mean a loss of femininity. As stated further the estrogen deficiency symptoms may cause some short term as well as long term problems.
The short-term problems may be related to peri and postmenopausal uterine bleeding abnormalities, genital symptoms, vasomotor symptoms, urinary symptoms and psychological symptoms. The long-term problems may be related to genital problems, neurological symptoms, osteoporosis, sarcopenia, cardio-vascular effect, ophthalmic effects, dentition effects, skin and hair effects and thromboembolic phenomena and varicose veins. Nagar (1997) aimed at finding out the perception of middle-aged women regarding menopause and its impact. A sample consisted of 30 married women in the age range of 39 to 52 years residing in Baroda city. A positive correlation was found between the physiological and socio-psychological problems associated with menopause. The results of the study indicated that women reported problems like backache, increased headache, hot flushes and sleep disturbances, sadness, impatience, lack of concentration, decrease in memory and nervousness. Most of the women perceived their spouses, friends and mother-in-law as supports during stressful situations due to menopause. Majority of the women sought professional help for physiological problems associated with menopause.

According to Varley et.al., in 1976 the term, menopause refers to absence of menstruation for three months following some menstrual cycles in the preceding year. The post-menopausal female has had no periods for twelve months. Before this stage many cycles may be an ovular and During in 1969 recorded an incidence of 12% in women aged 41 to 45 years.
Bharadwaj JA (1983) investigated the 'Age and symptomatology of menopause in Indian women'. For the purpose of this study menopause was defined as spontaneous cessation of menstruation for at least one year. Four hundred and ninety five women who had reached natural menopause were interviewed for the study. Three hundred and seventy of them were women who attended medical outpatient department of the K.E.M. Hospital for minor complaints. They belonged to the lower socioeconomic group (Group I). One hundred and twenty five women belonging to higher socio-economic group (Group II) were friends and relations of the investigators. They were interviewed by home visits. The questionnaire elicited information on: age, age at menopause, age at menarche, history of dysmenorrhoea, number of children, whether surgical sterilization had been done and the presence or absence of "menopausal symptoms". The reproductive period was calculated from the age at menarche and the age at menopause. Blood pressure was recorded in 390 of these women. Data on 495 women (370 of Group I and 125 of Group II) was available for age at menopause, on 476 women (370 of Group I and 106 of Group II) for parity, and on 390 women (310 of Group I and 80 of Group II) for all other parameters. The findings of this study is age of women from Group I was 54.26 ± 8.68 years and that of women from Group II was 58.18 ± 9.26 years. shows that there was a significant difference between the two groups as far as the age at menopause and parity are concerned. The women in Group II reached menopause later and had fewer children than women in Group I.
Doyel Dasgupta (2009) studied the 'Menopausal Problems Among Rural and Urban Women From Eastern India'. The present study sought to examine variations in menopausal characteristics between rural and urban women and the ways in which these characteristics could be predicted from differential socio-demographic variables related to the residential status. Data on socio-demographic variables, reproductive history, and menopausal symptoms were collected from 180 postmenopausal women (rural 110; urban 70) belonging to the Bengali-speaking Hindu ethnic group of eastern India. Bivariate analyses confirmed rural-urban differences in menopausal age and in the reporting of menopausal problems (e.g., vasomotor, psychosomatic, psychological, and urinary problems). Multivariate analyses revealed that rural-urban residential status and duration of breastfeeding of child were significant predictors of age at menopause. Residential and literacy status, duration of breast feeding of child, and husband’s awareness about the menopausal status of spouse were significant predictors of some of the menopausal symptoms.

Suwarna, M. (2012) conducted research on ‘A Community Based Study on Perceptions about Menopausal Symptoms and Quality of Life of Post Menopausal Women in Bangalore Rural’. The study reveals that the mean age at menopause was 49.7 years. 56.92% of the menopausal women felt firmly that they were affected by menopause in negative manner. Most frequent menopausal symptoms were aching in muscle and joints, feeling tired, poor memory, lower backache and difficulty in
sleeping. The vasomotor and sexual domains were less frequently complained when compared to physical and psychological domains.

**Donald, C. (2011)** studied Post Menopausal status of rural women in Vadodara District of Gujarat. They have been collected relevant information from 147 respondents, the mean age was 58.32 (48-68) years, while the mean age of inception of menopause was 47.74 (44.84-50.64) years. Labor work (n=37, 25.2%) was the most common occupation. Among all the respondents, 98.5% belonged to social class 4 or below, 18.4% were widow and 40% were below poverty line (BPL). 74.8% were not literate and 42.9% were dependent on their children for daily living. Rural post-menopausal women in India suffer many social disadvantages which could make them more vulnerable to experience more frequent and more severe of menopausal symptoms.

**Sagdeo (2011)** Studied the 'Menopausal Symptoms: A Comparative Study in Rural and Urban Women'. This study was carried out on 500 females in the age group of 40-60yrs to find out average age of menopause in rural and urban women and associated menopausal symptoms & its awareness & prevalence. The study reveals that, the percentage of all menopausal symptoms is more in urban women as compared to rural cases. Commonly observed symptoms' are hot flushes, joint & muscular discomfort and physical & mental exhaustion. However women don't come out with sexual problem much both in rural and urban. The symptoms are at peak during 45-55 years and after 55 years severity decreases. However the urinary symptoms and heart discomfort are more
in > 55 years in urban women. Though the urban women are consulting physician for menopausal problems still percentage is very less. On the other hand rural women don't come out with their problems.

The study was conducted by Bansal and Thaker (2005) to determine age and perception of menopause as well as prevalence of various menopausal symptoms amongst underprivileged women of Ahmedabad. A questionnaire was used as a tool for data collection from 100 menopausal underprivileged women in Sheth V.S. General Hospital. The results showed that 29.5% suffered from joint pain, poor memory and fatigue, 25% had irritability, 22.7% had urinary symptoms, 18.18 % had hot flushes, 6.81% dysparunia, 4.54% leucorrhoea and anxiety and 2.27% had post menopausal bleeding. For the respondents background 62.2% were illiterate and mean age for menopause was 41-45 years. 93.18% women had not taken any treatment and none knew about pap's test and self-breast examination. The researcher concluded that uneducated and under privileged women are unaware of their right to health care and protection, as some did not realize the need to consult doctor for their menopausal problems. They also realized the need for educating females for cancer prevention tests.

Chaudary (2005) conducted a study in Ahmedabad on postmenopausal women for evaluation of osteoporosis. Average age of menopause was 46.7 years and subjects were +4 years (those who passed menopause 4 years back). Results showed severe osteoporosis were found in women from age 60 and above, most of them with moderate
osteoporosis and majority required surgical treatment with added risk of surgery and anesthesia.

According to Mishra, Henery and Kapoor (2003) the menopausal condition is not only related with dyslipedemia and cardio-vascular problems but also with bone health problems, especially osteoporosis. Postmenopausal osteoporosis is the result of low peak bone mass and/or increased pre-and post-menopausal bone loss. The latter is primarily caused by estrogen deficiency. The reduction in bone mass eventually leads to deterioration of micro-architecture of bone tissue and thus to reduce bone quality. The HRT is not only beneficial in the treatment of post-menopausal dyslipedemia but also in the treatment of post-menopausal osteoporosis. This is a cross-sectional study between pre-menopausal and postmenopausal ladies. Women of control group (pre-menopausal) ladies are selected randomly and the women of experimental group (post-menopausal) are taken from contacts in hospitals, various clinics of Bilaspur city, Raipur city and Bhilal Nagar randomly. They were given different types of therapy and the effect was assessed. The HRT was found most significant for the correction of the very condition. So, we can conclude that age related and premature surgical menopause, both are related to high serum levels of Ca and hypercalciuria, thus reduced bone through various mechanisms. The resultant osteoporosis is resistant of supplementation with Ca and Vit. D, only after treatment with hormone replacement therapy [HRT], a significant improvement in osteoporotic condition was noted in the study group.
According to *Krishna and Shah (2004)* earlier, women were considered asexual after menopause. Today, the stress is on the greater potential for sexual enjoyment, since menstrual problems and the fear of pregnancy no longer impede women's sexuality. However, if physical problems like vaginal dryness lead to dyspareunia, women cease to enjoy sex, in spite of a change in attitude. As authors found that menopausal women suffering form vaginal dryness or dyspareunia, were willing to discuss this topic only if the physician initiates it. The author also suggested that estrogens with progestin supplement were the therapy of choice for menopausal dyspareunia. The addition of vaginal estrogen cream and a caring attitude on the part of the physician were both excellent adjuvant.

*Agrawal (2005)* in Vadodara conducted a study to see the effect of Menotab* as an alternative branch medicine in post- menopausal syndrome. For the purpose 105 women with post-menopausal syndrome were selected and were divided into two groups of which group-I was given _Menotab-A_ and group II was given _Menotab-B_. 70 women, 35 from each group who completed the study were evaluated. The results showed that in both the groups the improvement in psychological symptoms was better than the physical ones. Subjective symptomatic relief and fall in serum FSH and serum LH was more in group I. No major side effects were noted in either of the group. It can be concluded that for a series of physical and psychological symptoms, grouped under a common heading of post-menopausal syndrome, menotab is an option
worth trying for the treatment in the women hesitant in accepting the conventional HRT.

_Patni (2005)_ conducted a study in Jaipur to see the effect of treatment of induced menopause in patients who had completed treatment of different female genital cancers. 50 females in the age group of 45 and 55 years were given the indicated treatments and followed up for one year. The change in estrogen deficiency symptom score was noted at six month and one year, and change in BMD values at end of one year. The results showed that 66.66% patients showed 75-100% improvement in symptoms in both CEE as well as combination treatment. BMD showed 4-11% improvement in patients and there was higher rise in BUD with combination treatment as compare to women taking single treatment. The researcher concluded that it is mandatory to maintain the quality of life of treated cancer patients taking into consideration various parameters.

_Shah (2005)_ studied 100 patients in peri-menopausal age group of 40 years and above in Ahmedabad city. For dysfunctional uterine bleeding (DUB) complains otherwise healthy women do not accept surgery at mid forties and hormonal therapy have side effects as well is not beneficial for long-term. So lesser invasive method, of thermal balloon ablation proved to be effective and popular. The overall success rate was found to be about 95%.

According to _Krishna and Shah (2004)_ , estrogen deficiency affects the physical and mental health of the woman at menopause. From the earliest vasomotor symptoms to the psychological effects, the drying of
the vagina and the skin and to the subsequent sexual and urinary problems, estrogen deprivation follows a pattern of well-defined chronological symptoms. Prompt hormone replacement therapy of early climacteric symptoms will lead to better patient compliance for the long-term therapy necessary for the prevention of complications later in life.

The studies reviewed pointed out an interesting feature of menopause which could be quoted as follows:

M -- Menses Case  
E -- Estrogen Falls  
N -- Neurology Disables  
O -- Ovaries Fail  
P -- Palpitations Disturb  
A -- Amenorrhora Ensures  
U -- Uro-urgency Manifests  
S -- Sleep Lacks  
E -- Eyesight deteriorates

_Bang et al.1989; Bhatia et al.1997; Datta et al.1980; Koenig et al.1996; Kumar et al.1995_ research has shown that reproductive health outcomes in India are poor in general, but particularly in less developed regions such as the northern state of Uttar Pradesh. Maternal mortality is unacceptably high: the national maternal mortality ratio was estimated at 437 deaths per 100,000 live births (IIPS, 1995), and in Uttar Pradesh the number was considerably higher, at 599 deaths per 100,000 live births (Tsui et al.1998). Community-based studies conducted in various regions
in India have all shown that the prevalence of reproductive and maternal morbidity among women is very high.

Male Menopause

Male menopause is the more commonly-used term for andropause, or age-related changes in male hormone levels. It’s also known as testosterone deficiency, androgen deficiency, and late-onset hypogonadism. Male menopause is considered a slowing of testosterone production for men in their 50s or older and is often affiliated with hypogonadism, as both conditions deal with lowered testosterone levels and have similar symptoms.

Symptoms of Male Menopause

Male menopause can cause physical, sexual, and psychological problems, which typically worsen as a man gets older. Symptoms include:

- Depression
- Insomnia or difficulty sleeping
- Increased body fat
- Reduced muscle mass
- Gynecomastia (development of breasts)
- Low energy
- Feelings of physical weakness
- Decreased bone density
- Erectile dysfunction
- Reduced libido
- Infertility
- Decreased motivation
- Lowered self-confidence
- Feelings of depression or sadness
- Difficulty concentrating

**Treating Male Menopause**

Unless male menopause is causing you severe hardship or disrupting your life, you’ll probably go through the lowered testosterone period without treatment and chalk it up to the aging process. The biggest hurdle in treating male menopause is talking to your doctor about your symptoms, as most men are often too intimidated or shy to discuss sexual-related topics.

Treating the depression aspect of male menopause can make the most significant impact on improving the condition and your quality of life. Treatment can include antidepressants, therapy, and lifestyle changes. The most common type of treatment for male menopause is making healthier lifestyle choices. These include:

- eating a healthy diet
- regular exercise
- getting adequate sleep
• reducing your stress

Morals et al. (2007) have described male menopause as a misnomer and suggested a new term 'androgen decline in aging males', whereas some others preferred the term 'partial androgen decline in aging males'. The different terminology notwithstanding, what is obvious is that, although this androgen-related phenomenon had been largely neglected in the past, it is now receiving increasing attention in the literature, largely from works reported from developed countries.

Munish Ashat (2011) investigated about the male menopause. Out of the sample size of 757 men, subjects from the urban area (323; 43.1) were more in contrast to that of the peri-urban (41; 31.9) and slum areas (393; 259). Maximum number of patients belonged to the age group of 40-49 years (342; 26.3), followed by those in age group 60-69 years (141; 18.6). It was found that awareness about the term andropause was found only among 17 (2.2%) subjects, whereas the knowledge of a syndrome synonymous to that of menopause in females was even less 7 (0.9%) patients positive for andropause were found to increase with increase of age (40-49; 35.7, 50-59; 81.2, 60-69; 96.5). Only 123 (11.4%) had an idea about the treatment of andropause. The keenness to resort to treatment or seek medical advice was shown by 355 (47.3%). Subjects in the age group of less than 60 years resorted to injections (15; 4.7) and transdermal patches (6; 1.09) as testosterone-replacement therapy. Herbal
medicines were especially taken by those subjects in the age group 60-70 years, (74.3%; 101).

Nidhi.G (2010) have been studied on ‘Male menopause: Myth or reality’. The study reveals that the medical profession has long debated the existence of male menopause. Male menopause is a distinct physiological phenomenon that is in many ways akin to, yet in some ways quite different from female menopause. There occurs progressive but individually variable decline of serum free testosterone levels at a rate of 1% per year after age 40. It is estimated that 20% of men aged 60–80 years have levels below the lower limit of normal.