CHAPTER-1
INTRODUCTION
"Just as a bird could not fly with one wing only, a nation wouldn't march forward if the women are left behind" – Swami Vivekananda

A study of the chronicles would reveal that the status of women has witnessed various ups and downs in the society. There is no denying the fact that" The hand that rocks the cradle rules the world" The effectiveness of this hand could be augmented so as to bring about a revolution change for the betterment of the future society. While in some eras, women were only passive onlookers, yet in other periods their role was glorified. According to Varahamihira, "Women is a jewel created by the Almighty".

For a nation to be healthy, strong and productive, the nutritional status of vulnerable population especially the expectant women must be good because the diet of a woman during pregnancy is one of the most important factor in achieving a successful outcome of pregnancy in terms of a healthy baby and maintenance of her own health. The pregnant woman's diet and state of nutrition is likely to affect the child's birth without any complications. (Belavady, 1974). Therefore, it is important to know about pregnancy, its relationship with health, diet and nutrition. All these factors are discussed in the following paragraph.
Concept of Pregnancy:-

Pregnancy is the period in the life of an adult woman for about nine months when the fetus i.e. the unborn baby grows inside her body. To support the growth of the fetus, certain physiological changes take place in the woman's body. The fetus takes all the nutrients required for its growth from the mother's body by the placenta. Hence, pregnancy is a period of morphological, anatomical and physiological changes that is accompanied by high nutritional demands.

Knowledge of Nutrition:-

The science of nutrition had its beginnings in the late 18th century with the discovery of the respiratory gases and especially the studies on the nature and the quantification at energy metabolism by Lavoisier, a Frenchman, after referred to as the "Father of the Science of Nutrition". During the 19th century, many chemists and physiologist added important information on the need for protein and some minerals such as calcium, phosphorus and iron. Knowledge of vitamins has been gained in the 20th century which has been added much value in comparison of all the preceding centuries.

According to Robinson W.D. (1966) "Nutrition is the science of foods, the nutrients and other substances therein; their action, interaction and balance in relationship to health
and diseases and care, absorbs, transports, and utilizes nutrients and disposal of their end products. In addition, nutrition must be concerned with social, economic, cultural and psychological implications of food and eating.

The word 'nutrient' is used to specify dietary constituents such as carbohydrates, proteins, fats and oils, vitamins, minerals etc.

"Nutritional status is the condition of health of the individual as influenced by utilization of the nutrients. It is determined through correlated responses obtained by a careful medical and dietary history and physical examination" (Caliendo, 1970).

The critical and unique place that pregnancy occupies in the chain of women's life has health and social importance of individual's family and society as a whole. In the social set up of Indian family, women are nutritionally most neglected section. Strong gender biases have been found to exist in food distribution within the family. Women face food deprivation and also an absolute vis-a-vis their energy expenditure. Besides the fact that pregnancy in all races of women involves considerable physiological stresses. In this segment of women, pregnant women of any section of population therefore, form the high-risk group from the nutritional point view.
In developing countries including India, the diets of pregnant women are qualitatively poor and quantitatively inadequate. Malnutrition during pregnancy is reflected in high incidence of premature birth, low birth weight of babies and consequently high neonatal mortality. Reports on infant mortality rate in India (67.0/1000 lives) and other developing countries in comparison to developed countries like U.K. (7.0/1000 lives) and USA (7.0/1000 lives] is shown in Table 1.1. Similar is the situation for maternal mortality rate is also shown in Table-1.2, respectively.

Table No.: 1.1 Birth rate, infant mortality rate and under five mortality rate of some selected developing and developed countries (2005).

<table>
<thead>
<tr>
<th>Countries</th>
<th>Crude Birth Rate per 100 Population</th>
<th>IMR per 1000 live births</th>
<th>Under Five Mortality Rate per 1000 live Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>24</td>
<td>67</td>
<td>93</td>
</tr>
<tr>
<td>Pakistan</td>
<td>36</td>
<td>83</td>
<td>107</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>29</td>
<td>51</td>
<td>77</td>
</tr>
<tr>
<td>Thailand</td>
<td>18</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>17</td>
<td>17</td>
<td>19</td>
</tr>
<tr>
<td>China</td>
<td>15</td>
<td>31</td>
<td>39</td>
</tr>
<tr>
<td>Switzerland</td>
<td>9</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>UK</td>
<td>11</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>USA</td>
<td>15</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Singapore</td>
<td>10</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Japan</td>
<td>9</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>
Table No.: 1.2 Maternal mortality rate (2005).

<table>
<thead>
<tr>
<th>Country</th>
<th>Rate per 1,000,000 Mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>33.1</td>
</tr>
<tr>
<td>Denmark</td>
<td>15.6</td>
</tr>
<tr>
<td>Finland</td>
<td>42.3</td>
</tr>
<tr>
<td>England</td>
<td>25.9</td>
</tr>
<tr>
<td>Australia</td>
<td>32.7</td>
</tr>
<tr>
<td>India</td>
<td>253.0</td>
</tr>
</tbody>
</table>

These data emphasizes the need for every mother to be physically, mentally and emotionally healthy to ensure that babies born to them are an asset to the nation. Women owing to the physiological needs of pregnancy are particularly vulnerable to nutritional problems during this period as manifested in high mortality rates and poor nutritional status. The diets of expectant women are grossly inadequate in calories, protein, iron, folic acid and calcium (Tandon et al., 1988). Maternal malnutrition presents additional risk to the developing fetus with far reaching effects on succeeding generation leading to high mortality, low birth weight babies, permanent brain damage and other defects.

Issues can vary with variation on socio-economic strata and the researcher due to shortage of time and funds could not
plan to carry out the research on all the three strata i.e. Upper class, Middle-class and Lower-class. Majority of the Indian population fall under the middle socio-economic strata. Hence, it was decided to restrict the present research work only to the working and non-working pregnant women of middle-class in Kanpur city.

**Concept of middle-class:**

Society is divided into classes or groups of people joined together from motives of common interest, common ways of behaviour, and common traits of character. Each such class forms a hierarchy of status according to the varying quality of social prestige and power expressed through the standard of living, nature of occupation and wealth.

The term middle-class is much used and since most of us, without the aid of a specialist, understand what we mean when we use it in our everyday conversation.

Middle-class simply means the class which is of middle socio-economic status. This is the group that is the greatest sufferer, most active and commands the social, political, economical and cultural set up of the country. It is the backbone of the society and the nation at large. The women of middle class
have come out of the four walls of the home and served the upper class. They have secured employment in the industrial set up and in technical field. They have felt the need of coming out from their homes in search of a suitable job. There is a great variation in the life-style and the diet pattern between working and non-working pregnant women of middle-class family. This may be due to the variation in their economic strata. A difference of income produces a hierarchy of prestige and lifestyle according to variations in size.

Income is, in fact, a means to the creation of wealth. Status in the pure sociological sense, denotes only position vis-a-vis others in terms of rights and obligations.

Middle-class socio-economic status is decided from the income of the family ranging between Rs. 15,0000 to 30,0000 per annum (Planning Commission of India, 2001).

The following analysis of the Indian middle-class, consisted in the main of the following groups:-

1. The body of merchants, agents and proprietors of modern trading firms, including active partners and directors exclusive of those at the top, connected with wholesale trading, manufacturing of financial concerns.
2. The bulk of salaried executives, such as managers, inspectors, supervisors and technical staff employed in banking, trading and manufacturing, businesses owned privately or otherwise.

3. The higher salaried officers of a wide group of institutions and societies ranging from the chambers of commerce, and other trade associations to political organisations, trade unions, philanthropic cultural and educational bodies.

4. The main body of civil servants, excepting those at the top beyond the ranks of secretaries, to government and judges at high courts, but including those of the other public services, such as agriculture and education, public works, transport and communications.

5. The members of the principal recognized professions, salaried or otherwise, such as lawyers and doctors, lecturers and professors, the upper and middle ranges of writers and journalists, musicians and artists, religious preachers and priests.

6. The body of well-to do shopkeepers and hotel-keepers including the managers, accountants and other officers
employed in the joint stock concerns operating in such fields.

7. The group of rural entrepreneurs engaged in plantation industry, with a number of salaried managerial hands employed on landed estates.

8. The main body of the full-time students engaged in higher education at a university or comparable level.

9. The main body of clerks, assistants and other non manual workers below the managerial and the recognized professional levels.

10. The upper range of secondary school teachers and the officers of the local bodies, social and political workers.

These groups became the spearhead of the Indian middle class.

**Concept of working and non-working pregnant women:**

A working pregnant woman is one who is gainfully employed. She is one who works in anticipation of monetary return. A working pregnant woman coming from any strata of the society should obviously have the necessary educational
qualification or technical training and maturity depending on the profession she pursues.

A non-working pregnant woman means a woman who is not gainfully employed. She is not working in anticipation for any monetary return. These women are generally housewives engaged in endless number of household chores.

In the present study, the working pregnant women were selected from both the organized and unorganized sectors. The organised sector to mention a few includes public sector undertakings, Government departments, Banks and a large number of private organisations including schools, industrial setups, nursing homes and clinics. The unorganised sector includes mainly areas where women work at home and supply orders, whether it is preparing papads or pickles or supplying readymade garments etc. Apart from this a large number of working pregnant women were self employed like those who are doctors, lawyers or have their own business.

Thus the changing trends after independence have opened up new avenues for women's employment, thus leading to enlistment of their social status. Education has allowed the women to come out of the confines of the home and take an active part in the society. Therefore, level of education is an
important factor in the life of working pregnant women as well as non-working pregnant women. Working women job prospects depend upon it. It determines the additional income she can make for the family where as non-working pregnant women can look after her family and themselves in a better way which may be in the form of life style, basic needs or dietary needs etc. It is also related to a woman's aspirations, sense of fulfillment etc.

Thus women's employment makes it clear that the rise of the status of women very much depends up on their education. Kapadia K.M. (1973) has rightly observed "Education has brought women out of the confines of the house and put them into contact with the philosophy of liberalism and the democratic traditions of the west".

The present study proposed to draw its areas of study in connection with the educational, nutritional, physical status and dietary pattern of working and non-working pregnant women of middle class family and which are briefly discussed in the proceeding paragraph of research work.

**Educational status:-**

For the better growth of fetus and physical state of the pregnant women, educational status also plays a significant role. Traditionally the status and role of women in Indian society have been considered lower than that of men. Though there were the
evidences of women scholars in the vedic period in which women enjoyed almost equal, honourable and respectable status in the society. But during the recent years, it has been seen that due to spread of education among women, industrialization, working of caste system, social movement initiated by some enlightened leaders and various legislative enactments and women's organization the quality of women's life have been improved both socially and economically (Arvind K. Joshi, 2003). Due to these revolutionary changes, now women stand freed from various types of shackles. The participation of women, in all spheres of life has increased.

Education has been regarded both as an end in itself and as a means of realising other desirable ends. It develops the personality and rationality of individuals, qualifies women to fulfill certain economic, political and cultural functions, and thereby improves women's socio-economic status. The universal declaration of human rights regards education as one of the basic rights of every women.

Education is also strongly associated with better health and nutrition. Good nutrition is a basic component of working and non-working pregnant women because it lays down the foundation of lifetime health, strength and intellectual vitality from the fetus till the end of the life.
**Nutritional status:-**

The nutritional status of the mother during pregnancy is believed to influence not only the course of pregnancy but also the nutritional status of the newborn. There is a clear evidence of a socio-economic gradient in birth weights of infants. Working mothers tend to have heavier babies than non-working ones. Closely spaced pregnancies, severe anaemia and heavy physical work during pregnancy are contributing factors for high mortality rate and low birth weight of babies (Shaw, 1983).

It is well recognized that the requirement of most nutrients increases during pregnancy, particularly during the later half. A woman during pregnancy requires extra 300 Kcal and 15g protein. The requirement of vitamin 'B'-thiamine, riboflavin and niacin are based on the energy requirement. The greater the energy need, the higher would be the vitamin 'B' need.

The **RDA's** (Recommended Dietary Allowances) suggests for almost all the nutrients increase during pregnancy but the requirement for a special nutrient increase substantially. These nutrients include energy, protein and calcium. Besides these nutrients, iron and zinc are the other trace elements which are of vital importance during pregnancy. The need for protein is more as this nutrient is required for the synthesis of new tissues both
the mothers and the fetus. Vitamins are needed for the proper growth of the fetus and maintenance of good health of the expectant women. Iron is needed in the synthesis of haemoglobin in the fetal blood cells. In addition, the fetus accumulates abundant store of iron in the body to last through the first three to six months of life after birth. This further raises high quantity of iron requirement. The need for calcium increases to support the mineralization of bones and teeth in the fetus. The components of the weight gain (g) computed for different periods of gestation are given in Table-1.3.

**Table No.: 1.3 Components of weight gain during pregnancy.**

<table>
<thead>
<tr>
<th>Weights of gestation (g)</th>
<th>12 weeks</th>
<th>13-25 weeks</th>
<th>25-36 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetus</td>
<td>5</td>
<td>1500</td>
<td>3000</td>
</tr>
<tr>
<td>Placenta and amniotic fluid</td>
<td>50</td>
<td>1000</td>
<td>1500</td>
</tr>
<tr>
<td>Lateral tissues and blood</td>
<td>600</td>
<td>6000</td>
<td>7000</td>
</tr>
<tr>
<td><strong>Total weight gain</strong></td>
<td><strong>655</strong></td>
<td><strong>8500</strong></td>
<td><strong>11500</strong></td>
</tr>
</tbody>
</table>


Women weight due to poor general nutrition prior to pregnancy should increase their calorie and protein intake so as
to attain their ideal weights and achieve a normal total weight gain of 10-12 kg. during pregnancy. Low weight gain in pregnancy is associated with a higher incidence of prematurity and low birth weight, excess weight gain is associated with complications like hypertension, diabetes etc.

**Physical status :-**

Nutritional anthropometry is measurement of human body at various ages and levels of nutritional status. It is based on the concept that an appropriate measurement should reflect any morphological variation occurring due to a significant functional physiological change. The pattern of growth and the physical state of the body are profoundly influenced by diet and nutrition of pregnant women. Hence, anthropometrics measurement are useful criteria for assessing nutritional status of the pregnant women.

Weight is the simplest measurement of growth and nutritional status of the pregnant women. Weight assessment of pregnant women in nutrition studies in most developing countries is concerned with determining the degree of underweight principally resulting from under nutrition. Weight change in pregnancy is a useful indicator of maternal nutritional status. Deficiency of food nutrients according to the physiological need and any physiological problem are the causes of loss of body weight of pregnant women.
Dietary pattern :-

For the assessment of the dietary pattern of the pregnant women, diet surveys constitute an essential part of the complete study of their nutritional status. Dietary enquiries are mainly of two types, one which concentrates on qualitative aspects of the foods, i.e. what kind of foods are eaten, and the other which attempts to estimate the amounts food consumed in quantitative forms, i.e. how much of food is eaten.

Enquiry into qualitative aspects of food consumption includes information on the types of foods that respondent eat, and frequency, their opinion and attitude towards food and the cultural significance they attach to special foods.

In quantitative enquiry, exact amounts of foods or ingredients consumed in terms of grams or litres are assessed, the way of cooking and their nutrient contents estimated. Comparison of nutrient intakes with the Recommended Dietary Allowances (RDA) provide a measure of adequacy or inadequacy of foods and nutrients consumption.

Diet surveys carried out in the country among women belonging to low-income classes have revealed that their diets are inadequate with respect to many nutrition even during the non-pregnant state and that their diets remain unaltered during
pregnancy. (Nirmala et al. 1966; Vijaylakshmi and Devaki, 1976). Inadequate intake, decreased bio-availability, elevated requirements during pregnancy. Depleted body stores and other related conditions may result in deficiencies of different nutrients (WHO, 1989).

Diets tailored around the local dietary pattern within the purchasing power of the people alone will help to wipe out malnutrition among expectant women. Nutritional supplementation of diet of pregnant women appears to increase the birth weight in undernourished but the magnitude of the effect varies (Kardjati et al. 1990).

Hence, there exists a general association between low birth weight, high fetal and infant mortality rates and the diets of poor nutritive value and it seems reasonable to conclude that the diet consumed by the mothers throughout pregnancy, parturition and after delivery has a definite effect on her own health and fetal growth. An improvement in the nutritional status of expectant mothers especially in the developing countries like India is of utmost importance. A study regarding the existing food consumption pattern, food fads and beliefs, nutrient intake and associated socio-economic factors will be of great half.
Impact of social change on women and employment:

Historical evidence reveal that since primitive times women have always been an active partner of their male counterparts whether in the economics, political or social fields. It is rightly said that, "At the back of successful man there is a hand of a women". The economic system of nearly every country has benefited by the active participation and co-operation of its women.

As, it has been seen that women have experienced numerous ups and downs to gain a rightful place in the society, although the very foundation of life is a family and the role of woman is the most vital in nurturing it towards the right direction. Though for many centuries women have survived in the bondage of orthodox and conservative traditions, customs and rituals in the male dominated society but still she endured through all the anxieties of the past. The transition of the position of women to the modern status of equality and liberation is rather raped and even sudden.

The changes which took in the life of employment of women are more representative of the struggle between the forces of rigid conservatism and liberalism between them and the opposite sex.
The Indian feminist movement is the outcome of this tremendous revolution which awakened and strengthen the hands of the 'down-trodden' women.

The impact of rapid urbanisation and industrialisation have also opened wider avenues for women employment. Although the traditional image of the women, as mothers, wives, housewives and, 'Sahbhagini' of their male folks has not changed. India being a developing country but still eyebrows are raised when women step out of the house in search of employment. The repercussions of their entry into employment are still perceivable in the society. Hence, with the passage of time and the rapid social change has brought a remarkable change in the role and status of the present day woman. She is now no longer on the pity of her male-counterparts. The various feminist movements have inculcated in her the feeling of independence and self-reliance.

The process of social change seems to have left hardly any society unaffected. When a change takes root in society, it not only affects the structure of that society, but also the value and attitudes that are held by members of that society. A change in values in turn affects the social relationship of that society. When the structure of the society is in the process of change, it is bound to affect the values on the relative position of men and women in that society, as is evident form the cultural history of India. The past history indicates the prevalence of
super-ordination and sub-ordination in the relations of men and women. The dominant values of the pre-modern societies were dominance, dependence, segregation, obedience and loyalty. Modern societies on the other hand lay emphasis on independence, individuality and companionship in the relations of men and women.

Urbanization, education and employment have brought changes in the attitudes and beliefs of women in terms such as equality, individuality and independence, and the changes in the different status and role of women are related to the change towards modernization of society. Education, occupation and income are certain structural factors in the status of women which have brought about a change in the cognitive structure. There is a congruence between the structural factors and the value patterns that cohere with a certain social system and these values are internalized by the individuals and their behavior and attitudes in turn are concurrent with the structure of the society.

**Working conditions and position of women in Kanpur:-**

There are several motivational syndromes prominent among working women. These are broadly classified under three categories relating to (a) monetary or economic, (b) social role and (c) personality. Due to economic necessity the need to work is related to income. Previous research measuring the needs by husband's income alone ignores qualitative differences in the perception of needs at different class levels. The middle-class
women needs to supplement her husband's income. Many women see their level of earnings as some kind of a measure for personal worth in the world. Some women who have earlier experienced economic deprivation work to attain economic security. If the husband is unemployed the wife has to depend upon her own source of livelihood. This necessity grows stronger in the Indian society as the effectiveness of the joint family system weakens.

Kanpur is a thickly populated industrial city well connected with other parts of the country by Rail, Road and Air transport. Being an industrial centre it has greater employment opportunities for the women, majority of whom belong to the lower or middle-class strata. Due to the rapid increase in industrialisation both the men and women folk have to work side by side to earn a living. It is the middle-class which is greatly affected, because along with earning a livelihood they also have to maintain their status and standard in the society. The people of this class are usually sandwiched between the higher elites and the labour class. It becomes necessary for the women folk to seek employment so as to share the burden of the responsibilities. Even the women in the rural areas are becoming aware of the importance of employment and encourage the girls to earn a livelihood so as to bring an improvement in their status of living.
It can be clearly seen that dual career families here have a relatively higher standard of living, child-care, clothing and transportation. Here couples mostly work with the opinion of saving for future financial security. Women give less emphasis to their personal needs but express their wish to give their children security. Even highly educated women who work as lecturers, doctors and others state that due to high cost of living, they are not able to save which is very essential for the future. The wife's income sometimes also supplements for factors like recreation, visiting friends etc. into the family budget.

Technological advancement has made housework less time consuming, and many women utilise this time for constructive employment. On the other hand, some women want to be recognised as independent personalities. They feel that they can have it by taking jobs.

Some women also enter into employment by aspiration for upward social mobility and also by desire for a sense of competence. Women here take up jobs too so as to shake off the feeling of subordination. The job gives the women more self-esteem and satisfies her need for freedom and independence.

Some women are in gainful employment to make use of professional education. Monetary incentive is also there. These women are not concerned with their household duties, as they
think that their talents are completely wasted. Another important reason for women being in gainful employment is to supplement husband's income. The middle-class women need to supplement their husband's income in order to acquire the numerous accoutrements of the good life.

Many women worked out of gross necessity as there is no choice for them. They have to work willingly or unwillingly. The present economic situation is responsible for that.

Rapid changes have been taking place in the status of women. Higher technical and professional education and varieties of paid employment, varied opportunities for the development of new skills and wider social contacts are some of the concomitance of the new social order that has been ushered in. The change has enabled women to achieve greater equality with men both within and outside the family in the legal, social, educational, occupational and economic spheres of activity. The result of these changes is that a large number of women are taking up new occupational role to have independent income of their own. Most of the middle-class women took to employment by a slight adjustment in their daily routine. The extra income earned by the middle-class working women goes to supplement the family income and make for higher standard of living and leads to rise in the economics status of the family as a whole.
In days of rising prices, it has become extremely necessary for women of the middle-class to bring in additional income if they can for the family. This somehow enables them to make both ends meet. In some cases women have been forced to take up employment against their will, as they have a large family or their husband's income is inadequate or negligible.

Some women continue to work even when there is no need as they have been working for a long time. With these women employment becomes a part of their existence and it is not possible for them to be grounded at home all the time.

Some women entered employment so as to give them a better status both in the family and society at large. While the advancement of specialized skill and education raised the status of those who possessed them without caste consideration, the strength of professional organisations made them free and independent.

The above factors involved in a woman's decision to work because they operate as variables which interact with the employment situation and influence its effect on the family.

Information on the educational status, nutritional status, physical status and dietary pattern of working and non-working pregnant women of middle-class family of Kanpur City is extremely meager, hence the investigation in this respect is greatly needed.
Keeping aforesaid facts the present study entitled "Comparative Study of Nutritional Status of Working and Non-Working Pregnant Women (Middle-Class Family) in Kanpur City" was undertaken with the following objectives:

1. To study the educational status of working and non-working pregnant women (middle-class family) in Kanpur city.

2. To study the nutritional status of working and non-working pregnant women (middle-class family) in Kanpur city.

3. To study the physical status of working and non-working pregnant women (middle-class family) in Kanpur and

4. To access the dietary pattern of working and non-working pregnant women (middle-class family) in Kanpur city.