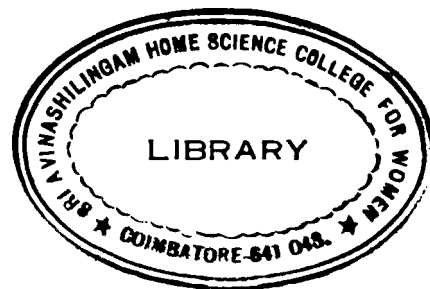


COST OF PREGNANCY AT THREE INCOME LEVELS

**BY
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I INTRODUCTION

No one is more worthy of care than the pregnant woman who carries within her the support of empires and germs of future generation (Israel, 1974). Bearing children is the unique privilege and function of women, (Sebastian, 1977). Bedi (1984) also opines that giving birth to child and to be a mother is one of the strongest desires of a woman. Pregnancy and birth process are neither static nor brief experiences, rather they are periods of human development filled with growth change and exciting enrichment (Schiamberg, 1982). Bedi (1984) expounds that pregnancy brings mixed feelings of joy and fear to women, yet with proper care and attention they can be turned into a fulfilling period in a woman's life.

Pregnancy is not a disease, but a state of physiological stress during which time the various body functions of the mother undergo strain. In most cases the outcome is successful, but when the physiological reserves of the body are poor, eg. in cases of prolonged undernutrition or chronic ill-health the mother or the foetus or both may suffer the stress of the several changes occurring in the body during pregnancy (Ebrahim, 1984).

Good antenatal care is the unborn baby's insurance for health. The aim of antenatal care is to prepare the mother, both physically and psychological, to give birth to a healthy baby and to be able to care for him. To this effect, supervision of her health and nutrition are necessary in order to provide the optimum conditions for the growth of the foetus (Ebrahim, 1979).

Antenatal care is essential in preventing the complications of pregnancy (Stuart and Wells, 1982). What a woman goes through during the antenatal period and how she takes it is an individual matter. Nevertheless for a smooth course of pregnancy, all women must be aware of various body changes, individual responsibilities and precautions during pregnancy. This might mean spending of money abundantly but this is required in order to manage it (Well and Bedi, 1984).

Sastry (1971) views, when the most rapid rate of growth in human development takes place in the foetus at the expense of the mother, the expectant mother should be given utmost care and remain in good health throughout pregnancy. Chitamber (1971) exhorts that a healthy mother gives birth to a healthy baby. Therefore, her health during the period of pregnancy is very important. Balanced diet, exercise, rest, sound sleep, cleanliness and certain other factors exert a decisive influence on the health of the mother and the foetus.

Nutrition is the essence of life. Good nutrition in pregnancy sustains and ^{of}nutrime life (Berggren, 1982). Diet of a mother during pregnancy is the one of the factors for a healthy baby and for her ownself, for it is a period of physiological stress coping with both the needs of the growing foetus and those of her own tissues (Srikantia, 1975). The provision of antenatal care and proper facilities for deliveries could do much to reduce neonatal deaths (Chatterjee, 1984). Regular visits to the primary health centers for medical check up are necessary. During the first trimester, monthly check up is sufficient. However, during the second and third trimester, fortnightly and later weekly check-ups are necessary (Kameshwar Sarma, 1976).

The cost of antenatal care and child birth vary greatly from community to community. Most health insurance policies cover atleast part of these expenses. While developed countries have such provisions, in India it is important that cost of pregnancy is understood and acted upon. Having baby is an added family expense. Saving some money regularly from the family income in preparation for the baby is a wise policy for a couple to follow. Many women who work give up their jobs as pregnancy progresses. Even if a woman just takes temporary leave from the job, the reduced income, comes at the added financial burden (Hurlock, 1978).

Over the past few decades, health condition in India have improved considerably and yet not sufficiently enough to clearly indicate that all conceptions result in live births and that all the children born survive to maturity (Katiyar, 1983). In order to understand the monetary loss due to pregnancy an assessment on the special cost incurred during pregnancy was taken up. The main objective of the study was to determine the total cost of pregnancy at three income levels.

II. REVIEW OF LITERATURE

The related literature on "The cost of pregnancy at three income levels" is reviewed under the following headings:

- A. Needs and requirements of pregnancy.
 - i) Nutritional needs
 - ii) Health needs
 - iii) Medical checkup
- B. Cost of pregnancy
- C. Maternal nutrition and its effects
- D. Services rendered to pregnant women under intervention programmes.

A. Needs and Requirements of Pregnancy

i. Nutritional needs

Nutrition is the essence of life. Good nutrition in pregnancy sustains and nurtures life (Berggren, 1982). National Health and Medical Research Council (1980) considered that maternal nutrition as an important factor influencing the outcome of pregnancy.

The nutritional status of women during pregnancy relates to the bearing and nurturing of children (UNESCO 1983). Madumath (1978) states that since life for an infant starts before birth during its perinatal stage it becomes imperative that the attention is focused on the health and nutrition of the mother right from pregnancy.

Darwish et al (1982) point out that the diet consumed during pregnancy deserves special consideration to make sure that it will not be a limiting factor to the good health of both mother and foetus. An adequate diet during pregnancy results in fewer complications of pregnancy and a less difficult labour.

Grover (1982) indicates that the expectant mothers dietary requirements are increased during pregnancy due to the growth of the foetus, enlargement and hypertension of the organs of reproduction and lactation and increase in the blood volume.

1) Calories

The total calories of pregnancy is estimated to be 80,000 kcal by FAO/WHO (1973) in Western countries, whereas it is estimated to be 40,000 kcal for Indian women who gain an average weight of 6 kg (Swaminathan, 1971). The full energy allowance requires an average increase of 285 kcal per day over the 280 days of pregnancy. Ycm Brough and

Nortovell (1975) have demonstrated the beneficial effects of energy supplementation and reported that extra energy intake is desirable during the second and third trimester. Hence, ICMR (1981) recommended an additional intake of 300 kcal/day during the second and third trimester.

ii) Proteins

ICMR (1981) and joint FAO/WHO Expert group (1973) recommended an extra allowances of 10g dietary protein per day. Adoption of figures for the additional requirements suggested by the FAO/WHO Expert group with adjustments for dietary protein quality (65 NPU) places the value at 14g/day.

The ICMR (1981) recommendation for iron and calcium are

iii) Iron

The total iron needs during pregnancy including the basal loss of 0.6 mg/day comes to approximately 3.4 mg/day, hence the dietary intake based on 8 percent absorption amounts to 40 mg/day.

iv) Calcium

The amount of calcium in a full grown foetus is between 25 and 30 gm most of which is deposited during the third trimester. This corresponds to about 250 to 300 mg calcium

per day during the last 100 days of pregnancy and has to come from maternal stores. An intake of about 1 gm of calcium, everyday in the 3rd trimester may be expected to cover the calcium needs of pregnant women.

v) Vitamins

According to FAO/WHO (1973) increased requirements of vitamins are essential during pregnancy. Vitamin A requirements during pregnancy have been calculated on the basis of the vitamin content of liver of the new born.

Since, the food requirements of pregnancy need to be special qualitatively and quantitatively, one has to incur additional expenses. The nature and type of additional expenses need exploration.

ii. Health needs

Healthy and strong expectant mother will have a healthy baby (Merchant, 1983). Pre-natal care is important for it pays rich dividends in the shape of higher standards of physical and mental fitness, preparation for child birth and preparation for the responsibilities of parenthood (Israel, 1974). Maternity care would ensure that every expectant and nursing mother maintains good health, learns the art of child care has normal delivery and bears healthy children (Sebastian, 1975).

Bedi (1984) recommends the following for adequate health and maintenance of pregnant mothers.

- a. She should keep bowel movements regular, avoiding constipation and strong purgatives.
- b. She need have nice sleep and remain temperamentally cool and relaxed.
- c. She will do well to get two or three tetanus toxoid injections (individed doses over 9 months).
- d. She should take a diet, rich in proteins, vitamins and minerals.

Berggren (1982) has suggested that, physical activities by the pregnancy^l women should not be restricted. Since an active pregnant women will have easy delivery compared to an in-active person.

Sciffers (1971) pinpoints that no clothing that will interfere with the circulation of the blood and lymph can be worn. Clothes for the pregnant women should be light, porous, fairly loose, and adjusted to the temperature of the place. Especially, during the later months of pregnancy lower heels are always advisable.

Kessner (1973) found that those poor mothers who did get good care had fewer problems and healthier infants than those with bad or no prenatal care.

iii. Medical checkup

Bedi (1984) suggest some medical advices to pregnant women, that regular attendance at the clinic for antenatal check-up. There is no need for the woman to show undue alarm at the presence of minor symptoms. At the same time, she should not be totally carefree so as to ignore any warning sign that can result in complications. It is best to obtain full guidelines from one's obstetrician at the very first visit when she goes for registration.

Kousseau (1982) stress that, women are becoming increasingly aware of the need for a regular check-up preferably monthly even in the case of an apparently normal pregnancy.

Rameshwar Sarma (1976) advices to pregnant women that, regular visits to the primary health centres for medical check-up are necessary. During the first trimester monthly check-up is sufficient. However, during the second and third trimester, fortnightly and later weekly check-up are necessary.

B. Cost of pregnancy

Srikantia (1975) has pointed out that the poor nutrition of the expectant mother can lead to a high rate of pregnancy wastage. The incidence of abortions and still-birth is several fold higher among poor communities and compared to the incidence of these conditions in the well to do sections of the population.

Gupta (1979) states that poverty, and under nutrition are the causes of pregnancy failures or still-births and high infant mortality rates.

Raj^o (1977) found that, both rural and urban women belonging to the poor socio-economic groups consuming diets providing less than 1850 calories and about 40 gms of protein (mostly from vegetable sources) showed that there was pregnancy wastage of about 20-30 percent. In other words 20 to 30 percent of the cases were no live births arising from the pregnancy.

Pregnancy wastage could be calculated from 3rd month onward as the data was available from that month only. The total amount of energy, protein and calcium, utilized for one day as estimated by Widdowson (1979). It was multiplied by 30 (days in a month) to obtain the amount utilized for each month and the values added to arrive at a cumulative figure for a particular month. When pregnancy might have resulted in a failure or terminated or miscarried. The cumulative figures thus obtained represent the amount of energy, protein and calcium, that is wasted when a pregnancy is wasted, the amount of money required to purchase food commodities to provide these amounts of energy, protein and calcium would present the cost of pregnancy wastage.

According to the estimate in Japan pointed out by Narain (1985) the basic cost for child birth is 570,000 Yenⁿ (about Rs.27,000).

Williams (1959) have indicated that the cost for maternal care may be more under the control of the family if the baby is born at home the only cost involved may be the physicians fee. Friends or relatives may come into the home and take charge both the home and the mother and baby until the mother is again able to manage her home. If complications arise, a home delivery may prove to be expensive.

Damodaran (1975) reviewed the calculations regarding the energy cost of pregnancy. The total energy cost of pregnancy is about 80,000 k.cal out of which 36,000 k.cal is considered to be accounted for by fat storage. Thus, there is a case for an average increase of about 285 kcal per day over the 280 days of pregnancy or about 150 k.cal per day in the first three months and 350 k.cal per day in the next six months ordinarily a woman needs about 1800-1900 k.cal or energy per day. The extra energy needed on account of pregnancy can be obtained by adding extra amount of cereals, oils and sugar or jaggery to the diet.

Shukla (1982) points out that the precipitation of malnutrition stages and the associated ill effects of the pregnant subjects due to increased demands. Tapping the already deficient intakes are a costly affair for the mother.

Devadas (1981) indicates that child waste includes the cost of going through pregnancy and child birth, cost of all the ceremonies, and the cost at the time of the death.

C. Maternal nutrition and its effects

Pregnancy places added demands for energy and nutrients that, if not met, will deplete the maternal body. Frequent repetition of this cycle without an adequate interval and diet in between is likely to have cumulative effects deleterious to both the mother and her future children, (UNESCO, 1983). A study conducted by Frydman et al (1977) indicate the significance of nutritional status before pregnancy and show that the diet during the last trimester is especially important since it has a considerable effect on the phase of rapid growth of the foetus.

Grover (1982) points out that birth weight is one of the major indices of the maturity of new born and to some extent mirrors the health of the mother. Mudambi and Divitt (1973) have indicated that the baby who is growing for 9 months before birth, depends entirely on the mother, for its nutritional requirements.

Maternal malnutrition affects both the newborn and the extero-gestate foetus directly via the birth weight and levels of foetal stores of nutrients (Iyengar and Apté 1972). Anderson (1977) observes that, the maternal nutritional status has a great influence on the birth weight of the infant.

Naye et al (1974) studied abnormalities of foetal growth and found that maternal undernutrition before and during pregnancy causes retardation of foetal development in both cell, size and number. Behar (1975) opines that studies in Indian and Central American indicate that malnutrition in the mother before and during pregnancy may indeed have a negative effect on the condition of the child, at birth and on it's futher performance.

D. Services rendered to pregnant women under intervention programmes

One of the major achievements during the year 1983-84 has been the introduction of CARE feeding for pregnant and lactating women in 30 ICDS project areas. The pregnant and lactating women are being given a take home weekly ration of 72 grams of Bulgar wheat every week. At present total number of 79,000 pregnant and lactating women are being served with ICSM and Bulgar wheat donated by CARE (Gomathi, 1984).

I.C.D.S. project of Kathura (1980-81) covering 30 villages, of 2026 pregnant women, selected 1605 pregnant women for special nutrition where 1209 actually received special nutrition as on the spot (Goel, 1981).

III. PROCEDURE

The procedure to elicit the required data for the study on cost of pregnancy at three income levels involved the following steps.

- A. Selection of the Area
- B. Selection of the Sample
- C. Method Followed
- D. Collection of Data
- E. Analysis of the Data

A. Selection of the Area

The following private nursing homes in Coimbatore city were visited to collect the required data for the study since permission from the authorities of these hospitals could be easily obtained and they were willing to co-operate in the conduct of the study.

1. Sri Ramakrishna Hospital, Avaranpalyam
2. Balaji Nursing Home, R.S.Puram
3. Sengaliappan Nursing Home, North Coimbatore
4. G.Kuppuswamy Naidu Memorial Hospital, Papanickenpalayam
5. Sheela Clinic, North Coimbatore
6. Venugopal Hospital, Tudiyalur and Coimbatore Medical College Hospital.

B. Selection of the sample

The pregnant women belonging to three income levels namely low income (below Rs.600/months) middle income (Rs.601-1500/month) and high income group (Above Rs.1501/month) as per the income categorization of Mukerjee (1983) were contacted. Twenty visits were made to get 30 co-operative pregnant women in each of the income groups.

The sample selected were expectant mothers in the 3rd trimester of pregnancy. It was not possible to start from the first trimester of pregnancy due to the inadequate time at the disposal of the investigator.

C. Method followed

Through interview information on family background was collected. Recording method was adopted to collect the needed information. A record book was evolved with columns to elicit data on various expenses incurred during pregnancy. The aspects included for entry of expenses were (a) expenses on special foods (b) special clothing (c) doctor and medicines (d) transport (e) recreation and delivery charges. A sample record that was distributed to pregnant women is in Appendix A.

D. Collection of Data

After obtaining permission from the hospital authorities the pregnant women were contacted in person, and objectives of the study were highlighted to them to receive their co-operation. Pregnant women were requested to recall and furnish the information on expenditure pattern incurred during the first two trimesters of pregnancy. Thereafter from the 7th month uptill the time of delivery a record of an expenditure pattern was maintained by the investigator for illiterate pregnant women. The willing educated pregnant women were requested to maintain the record by themselves.

The investigator made sure that they entered the expenses in the record without fail and before they forgot. This was done through her personal visits both to the nursing home during the specified date and time of their consultation with the doctor or at a convenient time at their homes.

E. Analysis of the Data

The data collected was consolidated and treated statistically to find out the cost of pregnancy. 't' test was administered to find the differences of expenditure interms of income, area, occupational status, and the different order of delivery.

IV RESULTS AND DISCUSSION

The results of the study on the "Cost of pregnancy at three income levels" are discussed under the following headings.

- A. Background information of the selected sample.
- B. Expenditure pattern during pregnancy
- C. Expenses incurred during delivery
- D. Expenses made by the working and non-working pregnant women.
- E. Cost of first, second and third deliveries
- F. Birth weight of infants

A. Background information of selected sample

The background information of the selected sample included details regarding the type, size of the family, religion, occupational status, income and area of residence as detailed in Table I.

TABLE I
BACKGROUND INFORMATION OF THE SELECTED SAMPLE

Variables	No. 90
<u>Income</u>	
Low	30
Middle	30
High	30
<u>Area</u>	
Rural	45
Urban	45
<u>Family Size</u>	
Small (up to 5 members)	52
Large (6 and above)	38
<u>Family Type</u>	
Nuclear	41
Joint	49
<u>Religion</u>	
Hindu	86
Muslim	1
Christian	2
Jainism	1
<u>Occupation of the head of the family</u>	
Agriculture	11
Business	13
Clerical work	18
Skilled work	48
<u>Occupation of the pregnant women</u>	
Daily labourer	3
Clerical work	4
Teacher	2
Non-working	81

The above table reveals clearly that among the 90 pregnant women there were 30 in each of the income levels. Among them equal number of pregnant women (45) were from rural and urban area.

More than 50 pregnant women belonged to small families (up to 5 members), and 38 pregnant women belonged to large families (6 and above).

With regards to the family type of the samples 41 pregnant women belonged to the nuclear type of family and 49 pregnant women belonged to the joint family system.

Majority of the samples belonged to Hindu religion, Considering the distribution of the heads of the families through occupation it was found 11 of the heads of the families were agriculturists, 13 business men, 18 clerical workers and the rest (48) skilled workers.

As far the occupation of the pregnant women, majority of them were unemployed. Only nine of them were found to be working. Out of those working, three pregnant women were daily labourers, four were clerical workers and two were teachers.

B. Expenditure pattern during pregnancy

The expenses incurred on special foods, medicare and special clothing, transport, recreation, extra-servant maid during pregnancy and delivery charges are discussed in the following tables in terms of selected variables such as income and area.

1. Expenses incurred on special foods during pregnancy

Table II depicts the expenses incurred on special foods such as milk products, non-vegetarian items, fruits, beverages by pregnant women.

TABLE II
EXPENSES INCURRED ON SPECIAL FOODS DURING PREGNANCY

Amount spent in rupees	Number in percentage			Number in percentage	
	Low (N=30)	Middle (N=30)	High (N=30)	Rural (N=45)	Urban (N=45)
No expenditure	77	37	10	57	27
Below Rs.100/-	17	23	10	6	27
Rs.100/-to Rs.200/-	6	30	40	22	28
Above Rs.200/-	-	10	40	15	18
Mean	20.8	91.3	213.5	96.3	120.77
SD	47.1	108.4	138.20	137.25	124.83

Statistical Analysis

Groups	MD	SED	't' value
1. Low income VS middle income	70.5	21.95	3.212 **
2. Low income VS High income	192.7	27.11	7.107 **
3. Middle income VS High income	122.2	32.616	3.75 **
4. Rural VS urban	24.47	27.97	0.875 N.S

** Significant at 1 per cent level

N.S Not Significant

Food expenses was found minimum, in the low income group and maximum in the high income group. Seventy seven per cent of the pregnant women in the low income group had not spent any amount for special foods apart from their normal diet. This is in accordance with the findings of Jacob et al (1974) who had reported that none of the expectant mothers belonging to low income group included special foods in their diet during pregnancy. But in the middle income group 37 per cent of the pregnant women had not spent any amount for special foods apart from their normal diet. It is also evident from the table that as the income level increased the amount of money spent on special foods also increased. As Kaur et al (1982) have reported income level seem to influence food intake of pregnant women. Between the three income groups the difference in the expenses for food is found to be significant at one percent level.

It is interesting to note that the expenditure incurred on special foods during pregnancy by rural and urban pregnant women were almost the same, without any significant difference between ^{the} two groups.

2. Medicare expenses incurred during pregnancy

Table III denotes the expenses for doctor and medicines procured during pregnancy.

TABLE III
MEDICARE EXPENSES INCURRED DURING PREGNANCY

Amount spent in rupees	Number in percentage			Number in percentage	
	Low (N=30)	Middle (N=30)	High (N=30)	Rural (N=45)	Urban (N=45)
No expenditure	27	3	-	11	9
Below Rs.250/-	57	37	27	40	40
Rs.250/- to Rs.500/-	16	47	43	31	40
Above Rs.500/-	-	13	30	18	11
Mean	102.73	278	385.06	260.82	249.71
SD	101.90	194.77	191.44	225.27	171.33

Statistical analysis:

Groups	MD	SED	't' value
1. Low income VS Middle income	40.82	40.82	4.294 **
2. Low income VS High income	282.83	40.273	7.010 **
3. Middle income VS High income	107.06	50.71	2.111 *
4. Rural VS urban	11.11	42.67	0.260 N.S

** Significant at 1 per cent level

N.S Not significant

* Significant at 5 per cent level

With regard to the expenses on medicare more number of pregnant women in the low and middle income group had spent within Rs.250/-. While 43 percent in the high income group had spent more than Rs.250/- when the low income group was compared with middle income and high income group the difference was highly significant ($P < 0.01$), and the difference between middle and high income group was significant at five percent level. The mean expenditure for a pregnant woman of low income is Rs.103/- against Rs.278/- and Rs.385/- respectively in the middle and high income groups.

Much difference is not seen in the expenditure pattern of the families in the rural and urban area on medicare. This may be because of the intervention programme such as ICDS which includes medical check up, immunisation and referral services for pregnant women. The educational activities of the programmes of ICDS would have enabled both the rural and urban women to become aware of the need for medical check up and consultations. The extent of benefits accruing from ICDS to pregnant women perhaps needs a systematic study.

3. Expenses incurred on special transport during pregnancy

Table IV pictures the expenditure pattern incurred on transport during pregnancy.

TABLE IV
SPECIAL EXPENSES INCURRED ON TRANSPORT DURING PREGNANCY

Amount spent in rupees	Number in percentage			Number in percentage	
	Low (N=30)	Middle (N=30)	High (N=30)	Rural (N=85)	Urban (N=45)
No expenditure	33	40	17	27	33
Below Rs.50/-	63	47	57	64	47
Rs.50/- to Rs.150/-	3	10	16	9	11
Above Rs.150/-	-	3	10	-	9
Mean	10.26	28.46	53.63	18.97	42.6
SD	13.46	58.45	82.32	25.59	81.33

Statistical analysis

Groups	MD	SED	't' value
1. Low income Vs middle income	18.2	11.14	1.63 N.S
2. Low income Vs High income	43.37	15.49	2.80 **
3. Middle income Vs High income	25.17	18.75	1.343 N.S
4. Rural Vs urban	23.63	12.85	1.838 N.S

** Significant at 1 per cent level

N.S Not significant

The expenses on transport in the low income group was found to be three times and five times lesser than the middle and high income group respectively.

Majority of the families both in the urban and rural areas had spent below Rs. 50/- for transport. This might be due to the availability of medical facilities in the near by maternity centres or hospitals for pregnant woman both in rural and urban areas.

4. Expenses incurred on special clothing during pregnancy

Table V indicates the expenses made on clothing during pregnancy.

TABLE V

EXPENSES INCURRED ON SPECIAL CLOTHING DURING PREGNANCY

Amount spent in rupees	Number in percentage			Number in percentage	
	Low (N=30)	Middle (N=30)	High (N=30)	Rural (N=45)	Urban (N=45)
No expenditure	100	83	73	89	82
Below Rs.250/-	-	13	13	9	9
Rs.250/-to Rs. 500/-	-	3	3	2	-
Above Rs.500/-	-	-	10	-	9
Mean	-	28	116.3	23.1	73.1
SD	-	68.08	266.83	83.47	217.38

Statistical analysis

Groups	MD	SED	t _f value
1. Low income Vs middle income	-	-	-
2. Low income Vs High income	-	-	-
3. Middle income Vs High income	88.3	51.14	1.727 N.S
4. Rural Vs urban	50	35.10	1.424 N.S

N.S Not significant

The above table reveals that all the low income group pregnant women and majority of the middle and high income group pregnant women have not been bothered to spend any money on extra clothing during pregnancy. The difference between the various income groups was insignificant statistically. Both the urban and rural pregnant women were on par in spending for the clothing.

5. Expenses incurred on recreation during pregnancy

Table VI shows the expenses incurred for recreation by pregnant women.

TABLE VI
EXPENSES INCURRED ON RECREATION DURING PREGNANCY

Amount spent in rupees	Number in percentage			Number in percentage	
	Low (N=30)	Middle (N=30)	High (N=30)	Rural (N145)	Urban (N=45)
No expenditure	70	30	30	60	27
Below Rs.50/=	30	40	33	29	40
Rs.50/= to Rs. 150/=	-	30	37	11	33
Above Rs.150/=	-	-	-	-	-
Mean	7.93	35.5	40.5	16.6	39.35
SD	12.82	32.34	39.05	23.38	37.22

Statistical analysis

Groups	MD	SED	't' value
1. Low income Vs middle income	25.57	6.29	4.38 **
2. Low income Vs High income	32.57	7.63	4.27 **
3. Middle income Vs High income	5	9.30	0.538 N.S
4. Rural Vs urban	22.75	6.63	3.433 **

** Significant at 1 per cent level

N.S Not significant



The percentage of women spending money on recreation increased as the income level increased. The mean expenditure incurred by the pregnant women of the high income group for recreation was Rs.41/- while it was Rs.36/- in the case of the pregnant women of middle income. The amount spent was Rs.8/- in the low income category. The difference in the expenses between the low and high income and between the low and middle income was significant statistically.

The pregnant women of rural area did not spend as much amount, as those ^d of pregnant women at the urban area. Perhaps, this might be because of the availability of very limited recreational facilities in the rural area.

6. Expenses incurred on servant maid during pregnancy.

Table VII reports the expenses for servant maid by the selected pregnant women.

TABLE VII

EXPENSES INCURRED ON SERVANT MAID DURING PREGNANCY

Amount spent in rupees	Number in percentage			Number in percentage	
	Low (N=30)	Middle (N=30)	High (N=30)	Rural (N=45)	Urban (N=45)
No expenditure	100	97	70	98	80
Below Rs.50/-	-	-	-	-	-
Rs.50/- to Rs.150/-	-	3	23	-	16
Above Rs.150/-	-	-	7	2	4
Mean	0	3	41.83	4	25.88

All the families in the low income group and a sizable proportion of the families in the middle and high income group had the habit of doing household work by themselves, and so reported no expenses on servant maid. A very few families from the middle income group spent above Rs.50/- for the servant maid during pregnancy. Considerable proportion of the families from the high income group spent Rs.50/ to Rs.150/- and above.

Most of the families in the rural and urban area did not spend any amount on servant maid. The analysis of expenses area wise did not bring forth any difference between the rural and urban pregnant women.

c. Expenses incurred during delivery

Table VIII depicts the expenses incurred for delivery of pregnant women at various income levels.

TABLE VIII
EXPENSES INCURRED DURING DELIVERY

Amount spent in rupees	Number in percentage			Number in percentage	
	Low (N=30)	Middle (N=30)	High (N=30)	Rural (N=45)	Urban (N=45)
No expenditure	-	-	-	-	-
Below Rs.500/-	83	37	10	40	47
Rs.500/- to Rs.1000/-	13	43	40	31	29
Above Rs.1000/-	3	20	50	29	24
Mean	261.5	693.16	1129.6	724.66	664.8
SD	290.80	393.6	457.37	525.70	521.73

Statistical analysis

Groups	MD	SED	't' value
1. Low income Vs Middle income	431.66	90.88	4.75 **
2. Low income Vs High income	868.1	100.65	8.625 **
3. Middle income Vs High income	436.44	112.05	3.90 **
4. Rural Vs urban	59.86	111.66	0.536 N.S

** Significant at 1 per cent level

N.S Not significant

High and middle income families have spent more money for delivery than the low income families. Much less expenses are found in the low income families for the delivery. The mean expenses on delivery incurred by the pregnant women of low income was Rs.262/-. It was two and a half times more (Rs.693/-) in the case of middle income pregnant women and four and a half times more (Rs.1130/-) in the case of high income pregnant women. This may be because of the reason that the low income families go to the government hospital where they are charged comparatively less than the private nursing homes. Perhaps the middle and high income families prefer to have consultation with private doctors. The difference in the expense between the three income levels was significant statistically.

Area wise, no significant was observed in the expenditure pattern on delivery among the rural and urban pregnant women.

D. Expenses made by working and non-working pregnant women.

Table IX shows the expenses made by the working and non-working pregnant women.

TABLE IX

EXPENSES MADE BY WORKING AND NON-WORKING PREGNANT WOMEN

Particulars	Working pregnant women (N=9) Mean in Rupees	Non-working pregnant women (N=81) Mean in Rupees
Special foods	180.00	100.61
Medicare	316.66	248.44
Special clothing	150.00	36.79
Transport	52.66	28.35
Recreation	20.00	28.75
Extra-servant maid	51.11	10.90
Delivery	723.30	691.58
Total	1,493.73	1,145.42

When the mean expenditure of several items such as special foods, medicare, special clothing, transport, recreation, servant maid and delivery bills were totalled to arrive at the total cost of pregnancy, it was observed that the non-working women carried Rs.1145/- while it was little more than this amount Rs.1493/- for working women.

No doubt such aspect needs to be studied with larger sample size representing working population for conclusive results.

E. Cost of first, second and third deliveries

Table X indicates the expenditure pattern during first, second, and third deliveries.

TABLE X

COST OF FIRST, SECOND AND THIRD DELIVERIES

Particulars	1st delivery (N=45)	2nd delivery (N=30)	3rd delivery (N=15)
	Mean in Rupees	Mean in Rupees	Mean in Rupees
Special	132.77	104.16	44.66
Medicare	299.93	250.23	131.33
Special clothing	57.33	46.66	23.33
Transport	26.68	48.73	7.2
Recreation	35.35	23.66	13.86
Extra-servant maid	12.60	25.83	-
Delivery	681.17	803.10	518.66
Total	1245.83	1257.43	739.04

It is interesting to note that the money spent on special foods, medicare, special clothing, transport, recreation, extra-servant maid and delivery cost get reduced as the second and third deliveries take place. Perhaps the women become inclined to cut short their expenses during the second and third deliveries either because, they gain confidence and courage to face minor discomforts or difficulties during pregnancy, and delivery or because they learn to minimise expenses from their past learning experiences. Obviously there is no difference in the total cost of first and second delivery while a reduction of Rs.500/- is observed in the case of third delivery.

F. Birth weight of infants

Table XI indicates the birth weight of infants born to the selected women at the three income levels.

TABLE XI
BIRTH WEIGHT OF INFANTS

Groups	Mean birth weight in kg.	Grpups	MD	S.Ed	't' value
Babies belonging to low income-I	2.7	I Vs II	.2	.12	1.66 N.S
Babies belonging to middle income-II	2.9	I Vs III	.3	.14	2.14 *
Babies belonging to high income-III	3	II Vs III	.1	.10	1.9 N.S

N.S. Not significant

* Significant at 5 percent level

The above table shows that the birth weight of the babies belonging to low, middle and high income group were 2.7 kg, 2.9 kg, and 3.0 kg respectively. Statistical analysis showed significant difference between the birth weights at low and high income babies only. Obviously the birth weight of babies belonging to high income group seems to ^{be} the normal than the birth weight of babies hailing from families of middle and low income.

V. SUMMARY AND CONCLUSION

This study was undertaken to find out the cost of pregnancy at three income levels. Thirty women who were undergoing third trimester of pregnancy were chosen from each of the income levels. The total sample were 90 and were followed till their delivery took place. Information on the cost of pregnancy was mainly gathered through record keeping of all the extra expenses encountered due to pregnancy, in terms of special foods, medicare, special clothing, transport, recreation and extra servant maid.

1. The mean expenses incurred on special foods during pregnancy by the selected pregnant women of low, middle and high income families were Rs.21/-, Rs.91/- and Rs.214/- respectively. As the income level increased there was substantial increase in the amount of expenses on special foods. The difference between the three groups of pregnant women was followed to be significant at one per cent level statistically.
2. The mean expenditure on medicare for a pregnant woman of low income is Rs.103/- against Rs.278/- and Rs.385/- respectively in the middle and high income groups, The difference between the three groups have been proved statistically significant.

3. On the whole the mean expenses towards transportation during pregnancy ^{fell} lie within the range ^{of} at Rs.10/- to Rs.54/-. The pregnant women of low and middle income had spent only Rs.10/- and Rs.28/- respectively. Significant difference in the expenses was observed between the low and high income group alone.
4. None of low income pregnant women and majority of the middle (83%) and high income (73%) had spent any money on special clothing during pregnancy. Of the rest, high income group had spent more. There was no significant difference between the various income groups on account of this aspect.
5. The mean expenditure incurred by the pregnant women of the high income group for recreation was Rs.41/- while it was Rs.36/- and Rs.8/- in the case of the pregnant women of middle and low income respectively. The difference in the expenses for recreation between the low and high income and between the low and middle income was significant statistically.
6. Excepting 30 high income pregnant women and 3 middle income pregnant women none had spent money on servant maid. The mean expenses of the high income group amounted to Rs.41.83/-.

7. As for the mean expenses incurred on delivery the amount spent by the pregnant women of low income was Rs.262/-. It was two and a half times more (Rs.693/-) in the case of middle income pregnant women and four and a half times more (Rs.1130/-) in the case of high income pregnant women. The difference in the expenses between the sample of three income groups was significant statistically.
8. The birth weight of the babies belonging to low, middle and high income group was 2.7 kg, 2.9 kg and 3.0 kg respectively.
9. There was no difference in the total cost of first and second delivery while the total cost of third delivery was much less by about Rs.500/-.
10. Working women (9) among the selected sample had spent on an average Rs. 1493/- over the period of pregnancy and delivery against Rs.1145/- spent by the non working pregnant women numbering 81.
11. There was no difference in the expenses incurred on special food, medicines, transport, clothing, servantmaid and delivery charges between the urban and rural pregnant women. The difference in the expenses on recreation between the two groups was significant at one percent level.

To sum up it could be said that, the cost of pregnancy and its implications could be studied in the larger perspective in order to compute conclusive results.

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APPENDICES

7. Occupation:

Nature of occupation:

Night duty/day duty/shifts

8. Other source of Income

Rs. p.

- i. Farming
- ii. Kitchen gardening
- iii. Bamboo Weaving
- iv. Dairy farming
- v. Poultry
- vi. Fishery
- vii. Any other (Specify)

9. How many children would you like to have?

10. Write the ordinal position at the child?

11. Where did your delivery take place?

Hospital/Home

12. What was the weight of your baby?

13. Expenses incurred due to pregnancy.

i.	
Months	Special Foods taken during pregnancy
1st	
2nd	
3rd	
4th	
5th	
6th	
7th	
8th	
9th	
10th	

ii.

Months	Special Clothing used due to pregnancy	Rs.p.
1st		
2nd		
3rd		
4th		
5th		
6th		
7th		
8th		
9th		
10th		

iii.

Months	Doctor's consultation due to pregnancy	Rs. p.
1st		
2nd		
3rd		
4th		
5th		
6th		
7th		
8th		
9th		
10th		

iv.

Months	Medicines used due to pregnancy	Rs. p.
1st		
2nd		
3rd		
4th		
5th		
6th		
7th		
8th		
9th		
10th		

v.

Months	Transport/conveyance used specially due to pregnancy	Rs. p.
1st		
2nd		
3rd		
4th		
5th		
6th		
7th		
8th		
9th		
10th		

vi.

Months	Recreational expenditure due to pregnancy	Rs. p.
1st		
2nd		
3rd		
4th		
5th		
6th		
7th		
8th		
9th		
10th		

vii.

Months	Extra servant maid expenditure due to pregnancy	Rs.p
1st		
2nd		
3rd		
4th		
5th		
6th		
7th		
8th		
9th		
10th		

Viii Expenses incurred during delivery

S.No.	Items	Rs. p
i.	Expenses due to the stay in the hospital	
ii.	Doctor's Fees	
iii.	Medicine	
iv.	Special Food	
v.	Transport charges	
vi.	Other expenses	

கரிப்பு காலத்தில் தமிழ் சொல்லுகளை எழுதி வைத்த ஏடு

1. பேட்டி கொடுப்பவர்
2. வீட்டு விவரம்
3. தனக்கி குடும்ப நிலை:
கட்டுக்கூடுதல்/தனிக் குடும்பம்
4. மதம் ஆர்பி
5. வசவம்/தகவல்
6. குடும்ப விவரங்கள்

பெயர்	குடும்பத் தகவல்கள் உ.ப.டி	மாமாக்காரர்/ மாமாக்காரர்	கல்வித் தொழில் நாடு படிப்பை/ படித்தல்	மாநில அமைச்சர் சு.ப.டி
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7. தொழில் :

புகை வேலை/இரவு வேலை/மாற்ற வேலை

8. மற்ற விவரங்கள்

1. விவசாயம் செய்தல்

6. அப.

2. வீட்டுத் தொட்டி

3. மக்கள் பிடித்தல்

4. பாக் பண்ணை

5. கோழிப்பண்ணை

6. மீன் பிடித் தொழில்

7. மற்றவைகள்

9. உக்கிரத்தின் எந்தவகை குழந்தைகள் விடுவதற்காக?

10. இந்தக் குழந்தை உக்கிரத்தின் எந்தவகையான குழந்தை?

11. உக்கிரத்தின் பிரச்சனை எங்கே நடைபெறும்?

மத்திய மலையாள/வீட்டுவா

12. பிரச்சனையெல்லாம் உக்கிரக் குழந்தைகள் எவ்வளவு?

13. அருகில் பெரியவர்களுக்கு கரிப்ப காலத்தில் ஏற்பட்டு அதைச் செயல்படுத்தும் விவரங்கள்.

1.

மாநிலம்	உலகுக்கு	சு. மய.
1 -ம் மாநிலம்		
2 -ம் மாநிலம்		
3 -ம் மாநிலம்		
4 -ம் மாநிலம்		
5 -ம் மாநிலம்		
6 -ம் மாநிலம்		
7 -ம் மாநிலம்		
8 -ம் மாநிலம்		
9 -ம் மாநிலம்		
10 -ம் மாநிலம்		

2.

மாநிலம்	உலகுக்கு	சு. மய.
1 -ம் மாநிலம்		
2 -ம் மாநிலம்		
3 -ம் மாநிலம்		
4 -ம் மாநிலம்		
5 -ம் மாநிலம்		
6 -ம் மாநிலம்		
7 -ம் மாநிலம்		
8 -ம் மாநிலம்		
9 -ம் மாநிலம்		
10 -ம் மாநிலம்		

3.

மாதங்கள்	மருத்துவ செலவு	ரூ. படி
1-ம் மாதம்		
2-ம் மாதம்		
3-ம் மாதம்		
4-ம் மாதம்		
5-ம் மாதம்		
6-ம் மாதம்		
7-ம் மாதம்		
8-ம் மாதம்		
9-ம் மாதம்		
10-ம் மாதம்		

4.

மாதங்கள்	மருத்துவ செலவு	ரூ. படி
1-ம் மாதம்		
2-ம் மாதம்		
3-ம் மாதம்		
4-ம் மாதம்		
5-ம் மாதம்		
6-ம் மாதம்		
7-ம் மாதம்		
8-ம் மாதம்		
9-ம் மாதம்		
10-ம் மாதம்		

5.

மாநிலம்	கரிப்ப காலத்தில் பேர்த் தொகுக்காக	ச. ப.
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1 -ம் மாநிலம்

2 -ம் மாநிலம்

3 -ம் மாநிலம்

4 -ம் மாநிலம்

5 -ம் மாநிலம்

6 -ம் மாநிலம்

7 -ம் மாநிலம்

8 -ம் மாநிலம்

9 -ம் மாநிலம்

10 -ம் மாநிலம்

6.

மாநிலம்	கரிப்பகாலத்தில் பொது பேர்த் தொகுக்காக	ச. ப.
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1 -ம் மாநிலம்

2 -ம் மாநிலம்

3 -ம் மாநிலம்

4 -ம் மாநிலம்

5 -ம் மாநிலம்

6 -ம் மாநிலம்

7 -ம் மாநிலம்

8 -ம் மாநிலம்

9 -ம் மாநிலம்

10 -ம் மாநிலம்

7.

மாநகரிகள்

கரிப்ப காலத்தில்
வேலையாட்களுக்காக

ரூ. ரூ.

1-ம் மாநகரம்

2-ம் மாநகரம்

3-ம் மாநகரம்

4-ம் மாநகரம்

5-ம் மாநகரம்

6-ம் மாநகரம்

7-ம் மாநகரம்

8-ம் மாநகரம்

9-ம் மாநகரம்

10-ம் மாநகரம்

18. பிரதம காலத்தில் ஏற்பட்ட செலவு விபரங்கள்

என:

வகைகளில்

ரூ. ரூ.

1. சூப்பத்திரியில் தடுக்கப் பொருள்
ஏற்பட்ட செலவுகள்

2. மருத்துவக் கட்டணம்

3. மருந்து

4. தனித்த உணவு

5. போகிற அந்தச் செலவுகள்

6. மற்ற செலவுகள்

APPENDIX - B

STATISTICAL APPRAISALS

$$'t' = \frac{\bar{X}_1 - \bar{X}_2}{SE} \quad n_1 + n_2 - 2 = \text{Mean Difference} / SE$$

$$\text{Mean Difference} = \bar{X}_1 - \bar{X}_2$$

where \bar{X}_1 = Mean of the first group

\bar{X}_2 = Mean of the second group

$$SE = \sqrt{\left(\frac{n_1 S_1^2 + n_2 S_2^2}{n_1 + n_2} \right) \times \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

Where n_1 = Number of sample in the first group
 n_2 = Number of samples in the second group
 S_1 = Standard deviation of first group
 S_2 = Standard deviation of second group.

Example:

STATISTICAL APPRAISAL FOR SPECIAL FOOD EXPENSES INCURRED

i. Low income group Vs Middle income group

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2} \right) \times \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$\bar{X}_1 = 20.8 \quad \bar{X}_2 = 91.3 \quad n_1 = 30 \quad n_2 = 30$$

$$S_1 = 47.1 \quad S_2 = 108.4$$

$$\begin{aligned}
 t &= 20.8 - 91.3 \\
 &= \frac{20.8 - 91.3}{\sqrt{\left(\frac{30 \times 47.1^2 + 30 \times 108.4^2}{30 + 30 - 2}\right) \times \left(\frac{1}{30} + \frac{1}{30}\right)}} \\
 &= \frac{70.5}{21.95}
 \end{aligned}$$

Therefore $t = 3.212$

ii. Low income group Vs High income group

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2}\right) \times \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$\bar{X}_1 = 20.8 \quad \bar{X}_2 = 213.5 \quad n_1 = 30 \quad n_2 = 30$$

$$s_1 = 47.1 \quad s_2 = 138.20$$

$$\begin{aligned}
 t &= 20.8 - 213.5 \\
 &= \frac{20.8 - 213.5}{\sqrt{\left(\frac{30 \times 47.1^2 + 30 \times 138.20^2}{30 + 30 - 2}\right) \times \left(\frac{1}{30} + \frac{1}{30}\right)}} \\
 &= \frac{192.7}{27.11}
 \end{aligned}$$

Therefore $t = 7.107$

iii. Middle income group Vs High income group

$$t_{n_1 + n_2 - 2} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{n_1 S_1^2 + n_2 S_2^2}{n_1 + n_2 - 2} \right) \times \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$\begin{aligned} \bar{X}_1 &= 91.3 & \bar{X}_2 &= 213.5 & n_1 &= 30 & n_2 &= 30 \\ S_1 &= 108.4 & S_2 &= 138.20 \end{aligned}$$

$$t = 91.3 - 213.5$$

$$\sqrt{\left(\frac{30 \times 108.4^2 + 30 \times 138.20^2}{30 + 30 - 2} \right) \times \left(\frac{1}{30} + \frac{1}{30} \right)}$$

$$= \frac{122.2}{32.616}$$

Therefore $t = 3.75$

iv. Rural Vs Urban

$$t_{n_1 + n_2 - 2} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{n_1 S_1^2 + n_2 S_2^2}{n_1 + n_2 - 2} \right) \times \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$\begin{aligned} \bar{X}_1 &= 96.3 & \bar{X}_2 &= 120.7 & n_1 &= 45 & n_2 &= 45 \\ S_1 &= 137.25 & S_2 &= 124.83 \end{aligned}$$

$$t = \frac{66.3 - 120.77}{\sqrt{\left(\frac{45 \times 137.25^2 + 45 \times 124.83^2}{45 + 45 - 2} \right) \times \left(\frac{1}{45} + \frac{1}{45} \right)}}$$

$$= \frac{24.47}{27.97}$$

Therefore $t = 0.875$

There is a significant difference between three income levels with regard to special food expenses incurred during pregnancy, but there is ^{not} any significant difference between Rural and Urban.