



CHAPTER 4

DATA ANALYSIS AND DISCUSSION

This chapter comprises of three major sections. The first section examines the household health expenditure of manual workers engaged in urban informal sector in Khanpur area of Delhi. In the second section an analysis of ability and willingness to pay for health care of the survey households are presented and in the final section the sources of health care provision for the population in Delhi is presented in the light of available data.

4.1 Household Health Expenditures of Manual Workers

In this section the details of demographic and socio- economic characteristics, illness profile, utilization pattern and health expenditures of the sample households covered in the study are discussed.

4.1.1 Demographic and Socio-economic Characteristics

The table 4.1 reveals that the mean age of head of the households in the study is 33.05 years. 92.6 percent of the household heads are male. Of the total respondents in the study 94 percent of them are married, while 4.7 percent are unmarried and 1.3 percent are widow / widower. Educational level of the head of the household shows that 2.7 percent are illiterates, 39.3 percent had primary schooling, 47.3 percent had middle level schooling, while 10.7 percent had high school education and above. The average size of households in the study is 5.15 and the mean number of children (below 5 years) is 1.97. The average number of earning members in the household is 1.26.

The mean monthly income of the households is Rs.2761, which is comparatively higher than the mean income of low income group in other cities in India. In fact Delhi is the highest per capita income state in the country. Household income comprised of all type of income including wages in cash and in kind, bonus, income from subsidiary occupation, income from assets and property and any transfer payment received by the members of the household. However, wage income forms about 90 percent of the household income.

Table 4.1 : Selected Demographic and Socio-economic Characteristics of Households

Average age of Head of Household	33.05
Sex	
Male	92.60 %
Female	7.40 %
Marital Status	
Married	94.00 %
Unmarried	4.70 %
Widow/widower	1.30 %
Educational Qualification	
Illiterates	2.70 %
Primary education	39.30 %
Middle education	47.30 %
Secondary & above	10.70 %
Mean household members	5.15
Mean number of children	1.97
Mean number of earning members	1.26
Mean monthly income of household	Rs.2761.00
Mean monthly consumption expenditure	Rs.2430.47
Mean monthly expenditure on food	Rs.1597.53

The mean monthly consumption expenditure of the household is Rs.2430.47. Consumption expenditure included expenditure on food and non-food items. Non-food items included expenditure on clothes, transport, education, light, fuel, rent, taxes, social and cultural expenditures, medical expenditure, expenditure on consumer durable, washing charges, tobacco, alcohol and life insurance premium. Consumption expenditure accounts for 88.02 percent of the total household income.

When a lowest income household spends nearly 80 percent of its income on food, the higher earning group spends less than 60 percent. The mean monthly household food expenditure is Rs.1597.53, which accounts for 58 percent of household income and 65.72 percent of household consumption expenditure. In fact the percent share of food expenditure is lower than the

expected figure. As per the 45 th round of National Sample Survey conducted in 1989-90, the food constituted 55.25 percent of consumption expenditure in urban areas and 64.5 percent in rural areas. In the 46 th round (1990-91) these figures had increased to 56.79 percent and 66.02 percent in rural and urban areas respectively. However, these figures represent the whole population belonging to different income group.

4.1.2 Illness Profile of the Households

The study recorded the illness episodes of the households during three months prior to the interview. During the three months for which data was collected 359 episodes were reported, affecting 302 persons (table 4.2). The average number of illness episodes in the sample households are 119 per month or 1436 per year. In other words, 154.8 per 1,000 population is affected by illness during a given month.

4.1.3 Period of Illness and Restricted Activity

During the three months for which data was collected 2116 days of illness were reported for various type of illnesses by 150 households. The average number of days is worked out to 5.89 per illness episode. This also include number of days children affected by illness. Nearly 50 percent of these days were affected by children. All the days of illness do not necessarily correspond to the actual days lost in carrying out one's routine activity. Restricted activity for a working persons means days unable to go to work, for a housewife days unable to carry out her routine works, for a student days unable to go to school and so on.

All these details were not recorded in this study. However, number of work days lost by household members due to illness in the family were collected. Of the 150 households only 46 (30.66 percent) had reported wage loss due to illness in the family. The mean number of working days lost is 4 days.

4.1.4 Visits to Health Facility

During the three months for which data have been collected, 513 visits to various health facilities were reported. This works out to 3.42 visits per

household for three months or 1.43 visits per illness episode. In other words, 6.02 visits per person per year. Thus in a year 6020 visits were reported to a health facility for every 1000 population.

Table 4.2 : Illness Profile and Treatment Details of Households

Average number of illness per household (in three months)	2.39
Average number of persons affected per household (in three months)	2.01
Average days of restricted activity per episode	5.80
Source of treatment	
Public facilities	21.33%
Private facilities	68.00%
Both facilities	10.66%
Percentage hospitalized cases	6.0
Mean number of hospital visits per household	3.42%
Mean number of labour days lost	4.0
Percent of households reported wage loss	30.66

4.1.5 Facility Utilized for Treatment

Like other studies, this study also shows that private practitioners and hospitals were utilized for nearly three- fourths of illness episodes. About 68 percent of the households utilized private facilities for various acute and chronic illnesses, whereas 21.33 percent of the households availed government run facilities and 10.66 percent of the households utilized both type of facilities for same or different episodes during the study period of three months. Interestingly, about 67 percent of the hospitalized cases availed treatment in public health facilities. Two out of 150 households studied did not avail any facility for treatment but chose home remedies and self -treatment.

4.1.6 Household Health Expenditures

The cost of treatment is not only the payment to the doctor, hospitals, and pharmacy, but also include other costs such as laboratory tests, transport charges, cost of special food during illness and belief related expenditures. In

the real sense it also includes wage/income loss to the household due to illness in the family. Therefore, total health expenditure of a household is divided into direct and indirect health expenditures. Direct expenditure include total money spend in the hospital such as doctors fee, cost of medicines, cost of lab tests, and other hospitalization charges. On the other hand, indirect health expenditure refers to all expenditures such as on transport, cost of special food during illness and wage/income loss to the family etc. These two types of expenditures have been discussed here separately.

4.1.7 Direct Health Expenditure

One of the problems confronted with recording direct cost has been that doctor's fees is not always given by respondents separately because doctors also dispense medicines. For most of the patients the payment to the doctor could not be differentiated and only in few cases where doctors did not dispense medicines and charged only consultation fee was collected. However, for the analytical purpose, these two cost items have been combined.

The table 4.3 reveals that the health expenditure of the sample households during the three months of the study period was Rs.69240. The direct expenditure formed Rs.40590, which constitutes 58.64 percent of the total health expenditure. The data also shows the details of direct and indirect expenditures incurred by the households during three months period. The average cost of each illness episode in the sample population is Rs.192.87. Out of this direct cost constitutes Rs.113.06 and of this Rs.72.69 is spent on doctor's fees and medicines and Rs.28.18 on hospitalization and surgery and Rs.12.18 on laboratory tests. The average cost per visit is Rs.134.97, of which Rs.79.13 forms direct costs. Of the direct cost per visit, Rs.50.86 forms doctors fee and medicine, Rs.19.73 on hospitalization and surgery and Rs.8.53 on diagnostic tests.

4.1.8 Indirect Health Expenditure

The indirect cost of illness during three months of the sample households is Rs.28650, which constitutes 41.36 per cent of the total health expenditure. Of the total indirect cost, wage/income loss to the family due to absence from work constitutes 69.73 percent, transportation charges and special food during illness constitutes nearly 23 percent of the indirect cost.

Remaining 7.27 percent forms belief related /ritual expenditures. In fact, transportation charges for many cases are negligible. It seems that most of the households availed treatment in the nearest health facility. However, a few cases had to spend a substantial amount on transportation, particularly among hospitalized cases.

Table 4.3 : Distribution of Household Health Expenditure By Type of Cost (in Rs.)

Type of Cost	Total Expenditure for 90 days	Expenditure Per Illness Episode	Cost Per Visit
Direct Expenditure			
- Doctors fee & medicine	26,095.60	72.69	50.86
- Hospitalization & surgery	10,120.00	28.18	19.73
- Diagnostic costs	4,374.40	12.18	8.53
Total	40,590.00	113.06	79.13
Indirect Expenditure			
- Transport & cost of special food	6,569.20	18.30	12.81
- Self-medication & belief related expenditure	2,100.80	5.85	4.10
- Wage / income loss	19,980.00	57.25	38.95
Total	28,650.00	79.81	55.85
Total Health Expenditure	69,240.00	79.81	134.97

Loss of earning /wage refers to the wage or income loss to the family due to sickness of any member in the family. This means when an earning member in the family gets ill, he/she has to forgo work. Similarly, when other members in the family such as children and other dependents are ill, the head of the household mostly earning member has to take care of them or has to accompany them to health facilities. This is so happened in the case of families, without any adult members. The transport charges and on the way expenses of both patients and accompanied persons is included here. This is so essential that these costs reflects the actual expenditure to the family affected by illness.

In the present study, loss of earnings have been reported by 46 respondents. The mean average of wage loss due to illness in the family is Rs.434.35 for three months and Rs.1737.40 per year. The indirect expenditure per illness episode in the table 4.3 shows that wage loss constitute Rs.57.25 for each episode and transport charges and costs of special food during illness forms Rs.18.30 and other expenditures forms Rs.5.85. Out of the indirect cost per visit, wage loss constitutes 69.7 percent (Rs.38.95).

4.1.9 Share of Health Expenditure

The share of health expenditure to household income and consumption expenditure is shown in table.4.4. Health expenditure as percent of household income forms 5.57. This figure is very close to the study findings of urban slum dwellers in Delhi in 1989 (Batra, 1989). Health expenditure constitutes 6.31 percent of the per capita consumption expenditure. This is obviously a lower figure when comparing with other studies in India. Two recent studies conducted on household health expenditure in Maharashtra and Madhya Pradesh in India revealed that health expenditure constituted 7.54 percent and 8.44 percent of per capita consumption expenditure in these two states respectively (George, 1997). However, the percent share of food to total consumption expenditure is quite higher comparing to other study findings. This implies that low income workers in informal sector spend a major share of their consumption expenditure on food items leaving a lower share for other non- food items.

In this study an exceptionally large share of indirect expenditure to total health expenditure is reported. The share of indirect health expenditure to total health expenditure forms 41.36 percent. This is a higher figure when comparing to other study findings such as 19.6 percent by FRCH (1989), 33.90 percent by NIHFV (1993) and 21.80 percent by NCAER (1994) respectively. Many studies on health expenditure in India have not considered the indirect burden particularly, wage/income loss to the household during illness in the family. The reasons for a larger share of indirect expenditure in this study is attributed to the fact that wages in Delhi is considerably superior to other states in India and higher wages reflect higher wage loss per day due to absent from work.

4.1.10 Hospitalization Expenditure

Of the 150 households covered in the study, only 9 (6 percent) households reported hospitalization during illness. The total expenditure on hospitalization cases including loss of earning by the household members is Rs.19930 for three months and Rs.79720 per year. The mean expenditure on hospitalization cases works out to Rs.2214.44. About 67 percent of the hospitalized cases availed public hospital facilities. Mean direct cost per hospitalized case including hospitalization charges, drug cost and doctors fee is Rs.1417. This figure is quite low due to the fact that majority of them availed treatment in public hospitals where almost all services were either subsidized or available free. The mean hospitalization charges for those availed private hospital facilities is Rs.3073.3, while it is only Rs.590 in government hospital. Obviously these expenditures are higher than the ones reported by the NSSO in its 42 nd round (table 4.5).

Table 4.4 : A Summary Table on Share of Household Health Expenditure

Details	Per Household / Year	Per Capita / Year
Household income	33,132.00	6,433.48
Consumption expenditure	29,165.64	5,663.23
- Expenditure on food	19,170.36	3,722.40
- Health expenditure	1,846.40	358.52
-direct	1,082.72	210.24
-indirect	763.68	148.28
- Health expenditure (excluding wage loss)	1,313.60	255.06
- % of income spend on consumption	88.02	
- % of income spend on food	57.90	
- % of income spend on health care	5.57	
- Health expenditure as % of consumption spending	6.31	
- Food expenditure as % of consumption spending	65.72	
- % of direct health expenditure to total health expenditure	58.64	

Table 4.5: Average Amount of Payment (Rs.) Made to Hospital in Major States and Delhi

States	Rural			Urban		
	Govt.	Pvt.	All	Govt.	Pvt.	All
Andhra Pradesh	341.02	491.46	482.72	113.47	575.99	542.90
Bihar	389.22	687.81	583.11	256.73	618.71	504.53
Madhya Pradesh	248.56	698.59	437.91	196.74	587.02	418.58
Maharashtra	438.77	901.36	841.78	400.05	1928.49	1498.87
Tamil Nadu	345.96	681.40	666.84	728.34	1070.08	1044.72
Uttar Pradesh	299.48	972.06	648.73	683.50	1103.91	918.36
West Bengal	315.40	1128.92	504.03	378.88	2195.12	1224.11
Delhi	2700.00	5779.22	5117.23	265.20	2223.78	1649.31
India	320.34	733.38	597.06	385.02	1206.01	933.33

Source : NSSO, 1992. Sarvekshana, Vol.xv, No.4, Issue no. 51. P.59.

The table 4.5 reveals the payment made to hospital per hospitalized case for government and private hospitals according to NSSO study (42 nd round). A wide variation in the average amount of payment made to the government and private hospitals is observed in both rural and urban areas in different states. In urban areas the average amount of payment made to the government hospitals is much less compared to the payment made to private hospital. At the all India level, while the average amount of payment made to the government hospital was only Rs.385.02 in urban areas, it was high as Rs.1206.01 for private hospital. The corresponding figure for urban areas in Delhi is Rs.265.20 for government hospital and Rs.2223.78 for private hospitals. In contrast, in the rural areas of Delhi the average payment made to government hospital is Rs.2700 and for private hospital Rs.5779.22, which is highest among all states in India.

4.2. Analysis of Ability and Willingness to Pay for Health Care

4.2.1 Measurement of Ability to Pay for Health Care

This study was intended to assess neither the maximum amount the households can contribute to health insurance nor their willingness to join any health insurance arrangements. It was primarily intended to estimate economic burden associated with the households illness episodes and to predict the

variables that possibly affect households ability and willingness to pay for health care.

4.2.1.1. Assumptions followed in the analysis

As mentioned earlier, there is no objective guidelines for the amount that people are able and willing to pay for health care. However, a number of factors that can affect their ability and willingness to pay. Based on the findings of earlier studies in the ability to pay literature a few assumptions have been followed to judge whether the households have ability to pay a health insurance premium. These assumptions are essential because there is no agreed guideline for measuring the ability to pay. The assumptions are as follows:

a) Households which earn more than Rs.2500 per month has ability to pay for health care. This assumption was followed because Rs.2500 / month can meet the basic requirements of a household (of 5 members) in a city like Delhi. Many studies among low income households including slum dwellers showed the average monthly income around Rs.2500.(NCAER, & NSSO surveys). It was expected that households earning more than this income can afford health care costs. Therefore, Rs.2500 was taken as cut off point.

b) Households that spend less than 60 percent of their income on food has ability to pay than other households. Low income households spend a major portion of their income on food items. Studies in India particularly by NCAER and NSSO at various point of time revealed that these households usually spend more than 60 percent of their income. It is expected that a household which spends lower than this share can afford health care costs. Therefore, 60 percent of income on food was considered as cut off point.

c) Households which spend less than 6 percent of their monthly income on health care have ability to pay. As mentioned earlier, various studies in India showed that households in India spend between 1- 12 percent of their household income on health care. This share not only varies between rich and poor but also among same group in different regions. Since 6 percent forms the average figure of various studies it was decided to consider this as cut off point.

c) Households which own house /property/major consumer durable have more ability to pay than others. The criteria for measurement of ATP have already been discussed in methodology chapter.

e) Households which have regular saving in formal financial institutions like banks and post offices have ability to pay than others. The criteria for measurement have already been discussed in the methodology.

Based on the above assumptions ability to pay for health care of 150 sample households was measured. The possible scores for each variable affecting ATP are 1,2,3 and 4. There are 5 variables for ATP measurement and the values of ATP for each household would lie between 5 and 20. The values for ATP for each households were calculated by a summation of the scores obtained in all ATP variables. It was assumed that households which scored more than 10 (50 percent of the maximum scores) were considered as able families. In this process 63 households had more than 10 scores each. Therefore, it may be concluded that out of 150 households 63 (42 percent of households) had ability to pay for health care. This result shows that household income is not the only factor which affect ability to pay, but the effect of other variables such as percent of income spend on food, percent of income spend on health care, ownership of property and saving status also play important role in deciding ability to pay for health care. In the table 4.6 households are grouped into ability to pay and not ability to pay based on the scores obtained in each ATP variable.

4.2.1.2 Logit Model of ATP

In order to know which variable can better predict the ATP of the households, a logistic regression was developed using all ATP variables and other socio-economic attributes. The table 4.7 shows the maximum likelihood estimation results of logit model of the ability to pay for health care.

A correlation matrix was developed in order to study the multicollinearity among various independent variables used in the model. A high degree of correlation was found between monthly income vs. consumption expenditure and consumption expenditure vs. food expenditure. They were also significant at one percent level. Among these three variables only monthly income and food expenditure was kept in the model.

Table 4.6 : ATP Measurement for each variable

Variable Type of ATP	Household Income	% of Income spend on food	% of income spend on health	Ownership of property	Saving
No Ability to Pay	82(54.66)	81(54.0)	44(29.33)	57(38.0)	64(42.66)
Ability to Pay	68(45.33)	69(46.0)	106(70.66)	93(62.0)	86(57.33)
Total	150	150	150	150	150

Source : Survey data in the study

Table 4.7: Logit Model - Ability to Pay vs. No Ability to Pay

Variable	Coefficient	Std. Error	t-Statistic
Constant	1.754143	2.948799	0.594867
Monthly income**	0.091289	0.004466	2.908550
Expenditure on food	-0.006711	0.008433	-0.796717
Health expenditure **	-0.016732	0.003380	-4.950656
Ownership of property	0.105906	0.627023	0.168903
Saving*	1.454401	0.603885	2.408408
Family size	-0.365808	0.324317	-1.127934
Earning members	0.764851	1.066597	0.711709
Education of head	-0.073025	0.104443	-0.699187
Number of children**	1.289205	0.403312	3.196546
Age of household head	0.006200	0.048731	0.127531

Note : * p < .05, ** p < .01

In the logit model except the variables such as number of children and education of head of family all the other variables have priori expected signs. The findings emanating from the analysis are as follows:

All the major ATP variables assumed in the study have expected signs. The variables such as percentage of income spend on health care, monthly income and saving are significantly different from zero. However, percent share of income spend on food has the expected negative coefficient, but not significant.

Age of household head has positive sign, but not significant. Number of children in the family has a negative coefficient and is significantly different from zero. Education of household head has an unexpected negative coefficient. This result might be due to the fact that head of the sample households are manual workers in informal sector. Manual work is defined in the study as work involving sufficient physical labour but not requiring much background in general or technical education. The similar findings were also endorsed earlier by other studies on ATP and WTP, particularly in the context of rural health insurance. Walraven (1996) in a feasibility study on rural health insurance in Tanzania showed that education levels in the households had no influence on the ability and willingness to pay health insurance premium and education factor had no influence on the acceptability of an insurance system. Number of earning members in the household has a positive sign but not significant. Family size has a negative coefficient indicating that larger families are likely less able to afford health care costs. The estimated coefficient is not significant which shows family size seems to be not sufficient to predict an accurate judgment about the households ability to pay .

4.2.2 Measurement of Willingness to Pay for Health Care

Like the measurement of ATP, a few assumptions were followed for the measurement of WTP.

4.2.2.1 Assumptions followed in the analysis

a) willingness to pay is positively related to years of schooling of head of household. The role of education in deciding household willingness to pay for health care has already been discussed in methodology chapter. Couple of

studies in India have shown that education of head of households were positively related to household health expenditure (Khandekar,1974, and Yesudian,1989). The studies also showed that household whose head had completed primary schooling (5 years of schooling) and above spent more than others. Therefore in this study 5 years of schooling was chosen as cut off point ; which means households with head who had not completed primary education were assumed to have low willingness to pay for health care.

b) Households that attach more priority on health care of their family members are willing to pay for health care than others. In other words, households which do not give any priority or low priority on health is expected not willing to pay than the one attach medium or higher priority.

c) Education of head of the household influences the perception of symptom and disease. The perception of symptom and disease might be positively related with education of head of household. It is assumed here that households whose head had completed primary schooling and above will have higher perception about the general symptom of diseases than the one with lower education (lower than 5 years of schooling). A few studies had already endorsed similar findings (Yesudian, 1989). Therefore 5 years of schooling was chosen as cut off point for deciding WTP.

d) The households are willing to pay the amount what they are currently spending on health care. The average household health expenditure reported in this study was taken as cut off point.

On the above assumptions the willingness to pay for health care of the sample households were measured. The possible scores for valuation of WTP are 1,2,3 and 4. There are 4 variables for WTP measurement. The total scores for each household lie between 4 and 16. The value of WTP of each household were calculated by summation of scores of all variables. Results obtained were grouped into willing and not willing to pay. Households which scored 8 or less than 8 scores are considered not willing to pay for health care. On the other hand, households which scored more than 8 scores are considered to be willing to pay. In this process 62 households (41.33 percent) were found to be willing to pay for health care. In the table 4.8 households are grouped into willing and not willing to pay according to the scores obtained in each WTP

variable. Since the variable perception of symptom and disease was measured in terms of education this variable is not shown separately in the table 4.8

Table 4.8 : WTP Measurement for each variable

Variable Type of WTP	Education	Priority	Amount willing to pay
No WTP	63 (42%)	51 (34%)	54 (34%)
WTP	87 (58%)	99 (66%)	96 (64%)
Total	150	150	150

Source : Survey data in the study

4.2.2.2 Logit Model of WTP

Many studies on willingness to pay for health care have found that households which spend a larger share of their income on consumption expenditure are willing to pay premium for health insurance or to join any prepayment system. Weaver et al (1996) in their study in central Africa measured WTP by monthly household consumption expenditure. The study showed that higher consumption expenditure group were willing to contribute more on health insurance scheme. These findings were also supported earlier by few authors in the context of willingness to pay user charges on health care. Smith and Rawal (1993) in a study in Tanzania and Weaver (1995) in Niger have shown that higher monthly expenditure group were prepared to pay user charges for various hospital services.

Based on the above assumption the households in this study were differentiated into two groups, one which spend more than the average monthly consumption expenditure reported in this study (88 percent) and the other spending less than this average. It was found that most of the households in the former group were spending more than 10 percent of consumption expenditure on health care. It is assumed here that the former group are expected to contribute towards any health insurance arrangements because health insurance will help to ease their future burden on health care and also prevent erosion of their lower incomes. The willingness to subscribe to any risk

sharing program is likely to be influenced by the perception of risk, the assessment of risk and cost of such event, and the willingness to pay the subscription premium taking into consideration other priorities and their ability to pay for it (Feldstein,1988). This suggests that households willingness to pay for health care depends on ability to pay and other variables including health related and socio-economic factors.

Table 4.9 Logit Model - Willing vs. Not Willing to Pay

variable	Coefficient	Std.Error	t-statistic
Constant	-7.445588	2.665933	-2.792864
Age of household head	-0.005800	0.039394	-0.147241
Children in the family	0.091532	0.213418	0.428886
Earning members ***	1.700837	0.645937	2.633134
Education of head ***	0.303416	0.104653	2.899259
Expenditure on food	0.000468	0.000599	0.781579
Family size **	0.514538	0.252119	2.040853
Marital status	-0.514199	0.925666	-0.555491
Monthly income	-0.000256	0.000274	-0.932056
Ownership of property*	0.818157	0.470497	1.738920
Priority on health care*	0.329368	0.527090	1.624880
Saving of the household	0.447079	0.502946	0.888920
Sex of head of household	0.059202	0.774409	0.076447

Note : * p < .10, **p <.05 and *** p < .001

In order to know which variable can better predict households willingness to pay for health care a logit model has been developed by including all WTP variables and other socio-economic variables. As already mentioned due to high degree of correlation between monthly income and consumption expenditure the latter was dropped from the model. In the model dependent variable equals 1 denotes willingness to pay and 0 denotes not willing to pay for health care.

In the logit model (table 4.9) variables such as age of head of household, sex of the head of household, family size, marital status, number of children, number of earning members, education of head of household, monthly income, expenditure on food, ownership of property, priority given to health care and saving status of households are included. Most of the

coefficients have priori expected sign. However, only earning members, education, family size and ownership of property and priority to health care are statistically significant at 10 percent or better level. The finding emanating from the analysis are as follows:

The effect of earning member is positive and significant. This means families with more earning members are willing to pay for health care. The effect of education is positive and is significantly different from zero. This suggests that within low income households better educated are willing to pay for health care. Family size has a positive sign and this support the proposition that large families are willing to contribute to health insurance. The ownership of property and priority on health care and saving are measured as dummy variables and are found to have the expected sign.

Age of households head has a negative coefficient due to the fact that among manual workers, higher age group has lower education and due to low education priority towards health care by this group might be low and so their willingness to pay may be low. The number of children in the family is expected to have an effect on willingness to pay. More number of children in the family means more future expenditure and therefore the families would be willing to pay for future health care. In this study not much differences in number of children is observed among the households

Monthly income of the households has a positive sign but not significant. This means that higher income of the households does not necessarily increase the willingness to pay. This is in line with other studies in India (Duggal & Amin.1989 and Yesudian.1989) which showed that regardless of economic status people were willing to pay for health care. A few studies have also established that income is not a significant factor for willingness to pay health insurance premium. For instance, a study by Supakankunti (1997) in a province in Thailand showed that households decision to purchase health card was not strongly influenced by their income: but factors such as number of earning members in the family, educational status and presence of illness were found to be the major determinants of health card purchase.

4.3. Sources of Health Care Provision and Utilization in Delhi

Delivery of health services in Delhi is mainly governed by the National Health Policy which was approved by the parliament in 1983. The structure of health care system in Delhi is complex and includes various types of providers. These providers and facilities can be broadly classified using three dimensions such as by ownership, by system of medicine practiced and by type of organization. By ownership type, health facilities are classified into public, private non-profit and private for profit facilities. On the basis of system of medicine these facilities can be classified into allopathic (modern medicine), homeopathic and traditional facilities and by type of organization as hospitals, dispensaries and clinics. These dimensions are independent and overlapping. The classification based on ownership is more commonly used dimension.

Using the ownership criterion, the health care system in Delhi can be divided into four broad sector as follows:

1. Public sector including government run hospitals, dispensaries, clinics, primary health centers and paramedical.
2. Private not for profit facilities including voluntary health programs, charitable institutions, missionaries, charities and trusts.
3. The organized private for-profit sector, including general practitioners having a medical degree or equivalent medicine, private hospitals, and dispensaries, registered medical practitioners and other licensed practitioners and
4. The private informal sector including practitioners not having formal qualifications.

Sources of public health facilities in Delhi are varied. Delhi being the national capital region of the country has a number of public hospital facilities. The public sources refers to both central and state government facilities. The central government health facilities include hospitals and dispensaries funded by central government under general welfare and dispensaries set up exclusively for providing medical services to central government employees. State government health facilities are operating under Delhi administration and

municipal corporation of Delhi. Besides there are hospitals, and dispensaries operating under ESIC which provides medical facilities to organized private employees and their dependents.

Number of hospitals and hospital beds according to rural/urban and ownership type is shown in the table 4.10.

Table 4.10 : Number of Hospitals and beds according to Rural /Urban and Ownership (1993)

Rural/urban	Rural	Urban	Total	
Hospital	4	78	82	
Hospital beds	252	18518	18770	
Dispensaries	97	559	656	
Ownership	Govt	local bodles	Private & vol.orgn.	Total
Hospitals	29	21	32	82
Beds	9298	3756	5716	18770
Dispensaries	308	199	149	656
Population served	Rural	Urban	Total	
Per hospital	2,59,067	1,07,490	1,14,886	
Per bed	4112	453	502	
Per dispensary	10,683	14,999	14360	

Source : Central Health Intelligence Bureau, 1994. Health Information, Ministry of Health and Family Welfare, Government of India, PP.119 –20.

Delhi has 82 large hospitals in total of which 78 are located in urban area and 4 in rural area. Total number of hospital beds constitutes 18770 in 1993, of which 98.65 percent beds are in urban hospitals. Besides there are 656 dispensaries of various types of which 559 are located in urban area and the remaining 97 in rural area.

With regard to ownership of these health facilities, of the 82 hospitals 29 are owned by government, 21 by local bodies and the rest 32 hospitals are owned by for-profit and voluntary organization. Out of total number of hospital beds, 49.5 percent are in government hospitals, 20 percent in hospitals owned

by local bodies and 30.5 percent in other hospitals. Out of 656 dispensaries 47.5 are owned by government, 30.3 by local bodies and 22.7 percent under private and voluntary organization management. It is evident from the table that population in urban areas in Delhi enjoys more health facilities than their rural counterparts. When one hospital serves 1,07,490 population in urban area, the population served by a rural hospital is 2,59,067. Similarly, there is one hospital bed for every 453 population in urban area while the corresponding number in rural area is 4112. However rural areas are better served by government dispensaries.

Apart from these facilities there are large number of private clinics, from consulting specialists to licentiate and Recognized Medical Practitioners (RMP's). In fact, these are the major outlets for low income workers in informal sector. A majority of poor households seek out-patient care in clinics owned by RMP's.

Private sector health services have grown tremendously in Delhi. Due to resource crunch, the government can not meet the growing demand for health services of the population. The geographical boundaries of Delhi has been expanded over a period of time. The municipal corporation of Delhi has not been able to expand its medical infrastructure, adequately to cover the suburbs. Therefore private health care facilities have expanded to fill the gap left by the public sector. Another reason for the increasing availability of private sector health services is the tendency of doctors to stay in bigger cities like Delhi leading to an oversupply of providers. This not only tends to lower prices but services also delivered closer to consumers, further reducing indirect costs like transport costs. The table 4.11 shows the physician providers in major states in India and Delhi in 1991. The population served by a government doctor in Delhi is quite low when comparing to other major states in India. For instance, when one government doctor serves 6233 population in Delhi the corresponding figure is 15438 in the states of Bihar and Uttar Pradesh, which is nearly 2.5 times more than Delhi.

Table 4.11: Physician Providers in major States and Delhi, 1991

State	Population served by a govt. doctor	Doctors registered with medical council	Number of govt. doctors
Andhra Pradesh	61471	32931	1059
Bihar	15438	26374	5238
Gujarat	11404	21812	3645
Karnataka	13536	44183	3397
Madhya pradesh	6418	11187	9791
Orissa	6418	11089	4965
Tamil Nadu	17879	45588	3189
Uttar pradesh	15438	33178	8630
West Bengal	6418	41727	10068
Delhi	6233	NA	1473

Source : Bhat, R .1996. Regulation of the Private Health Sector in India, International Journal of Health Planning and Management, Vol. 11, P.258.