Health seeking behavior of aged population of a rural block in West Bengal

Dr. Satyajit Chakraborty

Dissertation submitted in partial fulfillment of the requirements for the award of the degree of master of public health.

Achutha Menon Center for Health Science Studies

Sree Chitra Tirunal Institute for Medical Science and Technology

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D e c l a r a t i o n

I hereby declare that the work embodied in this dissertation entitled **"Health seeking behavior of aged population of a rural block in West Bengal"** is the result of original research and has not been submitted for any degree in other University or Institution.

Thiruvananthapuram
June 2004

Dr. Satyajit Chakraborty
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C e r t i f i c a t e

I hereby certify that the work embodied in this dissertation entitled "**Health seeking behavior of aged population of a rural block in West Bengal"** is a bonafide record of original research work undertaken by Dr. Satyajit Chakraborty, in partial fulfillment of the requirement for the award of the Master of Public Health degree, under my guidance and supervision.

Thiruvananthapuram
June 2004

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June 2004.

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Health seeking behavior of aged populationof a rural block in West Bengal

Dr. Satyajit Chakraborty

ABSTRACT

Introduction: In view of increased proportion of elderly with diseases, study of health seeking behavior gains importance for formulating a health program targeting this group. This study tries to understand the morbidity pattern of rural elderly along with treatment characteristics and providers sought.

Methodology: Keeping urbanisation affect in mind a rural block near Kolkata was selected for study. 420 elderly above 60 years from 15 villages were selected by cluster sampling method and interviewed. Data collected were analysed by using SPSS.

Results: Majority of sampled elderly were females and 42.8% were 70 years and above. Literacy was 38% and 56.9% were engaged in work with 60% females continuing household job. 46.6% were without spouse being 67% in case of females. 70.7% of elderly were fully dependent though 42% had some assets in their name.

Prevalence of chronic illness was 72.6% with 54% having more than one disease. Majority had visual problem followed by joint pain, cough and blood pressure. Only 12.4% were suffering from acute illness. Incidence of irregular treatment for chronic disease was 78.4%. Treatment expenditure of most (65.9%) was below 150 rupees per month and 34% sought first provider within 0.5 km. Rural public facility and unqualified practitioners formed bulk of first provider while government specialists and private practitioners were major in-between providers. 30% were ultimately continuing treatment with homeopaths and medicine shops.

Discussion: Prevalence of chronic disease in elderly was more with age, without spouse and living alone. Education and socio-economic status mattered in females. Attitude towards ageing affected disease prevalence as well as health seeking behavior. Income, socio-economic status, affect on daily physical activity & accompanying person were inversely related to irregular treatment while attitude towards ageing showed direct relation. Health programs for elderly should address these issues. Study of providers showed that public facility and unqualified practitioners were major providers in rural area. Cost and distance led to discontinuation of treatment by government specialists. Availability, not to attend provider personally, recommendation of previous provider and concern for disease were other major responses for choosing and changing providers.

1. INTRODUCTION:

Last few decades has seen drastic changes in population, particularly in developed countries. The increase of aged population is more than that of general population. Global population increased by 37.6% in between 1980 and 2000, while 60+ group increased by 60.5%. In developing countries the changes were 46.2% and 82.5% respectively. Even 80+ populations which was 34.2 million globally in 1980 has increased to 58.2 million in 2000 and expected to reach 103.9 million in 2030, meaning an increase of 204% between 1980 to 2020.[1]

By sheer number aged people demand attention but when one considers the problems the aged face, social, economical and on health grounds the urgency becomes more evident. Health condition becomes more important in elderly because of increased health care costs, increased demand, costly procedures, lengthy hospital stay and long-term care. Getting older persons to keep themselves healthy for as long as possible, minimizes the cost and this has drawn attention of the public health personals. World level attention to the problems of aged is a recent development. In 1982 first World Assembly was held on problems of ageing. WHO came with 'Brasilia declaration' on healthy ageing only in 1996. Ageing thus became a development issue and healthy older persons were considered to be resources for their families, their community and the economy.

With increase in proportion of aged population, number of elderly with ailments is also on rise but the health care delivery system of most countries, particularly the developing ones are not equipped to tackle the problem. Several researchers like J.M.Guralnik[2], E.Nordberg[3], B.Santos Eggimann[4], have drawn attention to this dilemma and advocated immediate attention. In India where the health care delivery system, both

public and private, has no component of geriatric care, the number of elderly who were ill and in need of specialized care was nearly 27 million in year 2001.[5]

The situation demands a definite health program for the elderly. This is more important for developing countries as resource availability is less and most elderly live in rural area. Health seeking behavior forms an important component in formulating health programs as successful interventions depend on the accessibility and acceptability, both of which relate to broader social factors. In widest sense, health behavior includes activities associated with establishing and retaining a healthy state plus dealing with any departure from that state. 'Illness behavior' includes attention to pain and symptomatology and the process by which symptoms are defined, accorded significance, socially labeled to the extent of seeking help. Health seeking behavior, which forms a part of this wide spectrum, gives an idea of what people do when diseased and the factors influencing their behavior. The factors influencing may be characteristics of the subject, characteristics of the disease, characteristics of the health services.[6]

An attempt has been made in this study to understand the 'health seeking' behavior of elderly depending on the disease profile, socio-economic characteristics of aged population, treatment features and the type of providers sought by the aged. The dissertation is organized with review of literature on the above-mentioned subject leading to rationale and objectives of this study followed by methodologies used, results with summary and conclusions.

2. LITERATURE REVIEW:

Ageing has been defined as a biological process with time dependent irreversible changes leading to progressive loss of functional capacity after the point of maturity. Till date, all evidence suggests that maximum human life span, programmed into us by our gene, is around 120 years. Several psychologists had connected ageing to incapacitance but lack of health is not an exclusive feature of ageing. Epidemiologists studying people over 65 years of age have found that 95% have a normal ageing pattern that is no excessive increase in illness. Only 5% can be classified as having 'pathological ageing'.[7] This has resulted in a debate on age of ageing, or at what average age the individual passes the invisible frontier of failure to cope with the expected workload or responsibilities of the indigenous culture. Naturally this differs in various countries. In USA and Britain it is 65 years for men and 60 for women, while in Nigerian culture, for males it is 80 years and for females, menopause is equated with old age.[1] The United Nations (1954) and the World Assembly on ageing have generalized the boundary for defining old age to be 60 years.[8]

Demographic changes:

In developed countries elderly account for 17 percent of total population, while it is 7 percent in developing countries. But in terms of absolute figures, out of a total of 490 million of world's elderly population, 282 million (57.6%) live in developing region. As for India, the mortality and fertility figures indicate that though mortality figures started improving in the 1920s, the process of population ageing intensified only in the 1990s with the impact of fertility decline on successive birth cohorts. The elderly population in India ranks the fourth highest among the countries of the world and by the end of twentieth century; it will be second only to China. The proportion of 60+ populations was

5.1% of the total population in 1901. This rose to 5.4% in 1951, 6.4% in 1981, 6.8% in 1991 and was projected to be 7.7% of the total population by the year 2001.[9]

Increase in elderly has ushered in the term 'population ageing', which according to demographers mean a population where fertility begins to decline and the youth dependency section of the population (children under working age) becomes proportionately less with rise in median age of the population. To call a population 'old' there is no precise limit of indicators. But a population with a median age of 30 years or more, or with an ageing index above 30, or proportion of the elderly to the total population above 10 percent, can be considered as 'old'. When all these indices reach this level, the expectation of life at birth crosses 70 years. With these indices less developed countries, in general, will not have 'old' population till around 2020.[8] The problem of less developed countries today is not ageing per se, but an increase in the number of older persons**.** The absolute number is also very important in several spheres of life such as health, entertainment, social security, living arrangement and labor participation, to mention only a few.

Ageing causes additional problem for the women. The increase in life expectancy becomes burden because of dependency, widowhood and ill health. Census of our country shows male predominance in sex ratio in elderly, in rural as well as urban area. However a reverse trend was observed in urban elderly with a shift in sex ratio from masculinity, 106.1 in young old (60 –69 years) to 103.6 in middle old (70-79 years), to feminity in old-old (80+ years) with sex ratio of 95.2 in 1991.[10] Sex ratio is more in favour of women in developed countries. According to Goldstein and Griswold, the current ratio of men to women is 69 to 100 at age 65 and 36 to 100 by age 85.[11]

Socio-economic characteristics:

Socio-economic characteristics of elderly, which form the background of health seeking behavior can be discussed under the followings; a) Literacy, b) Marital status, c) Living arrangement and d) economic situation.

Literacy:

Any person having ability to read and write with an understanding of any language is defined as literate in India. According to 1991 census literacy among elder person was 40.6% in males and 12.68% in females. S. Irudaya Rajan and others while discussing on this issue in "India's elderly" has noted that the disparity was more in rural area where literacy level was still low with 33.6% males and only 7.5% females being literate. According to authors this was due to the want of infrastructure in rural area and most of these aged people had spent much of their lives prior to the present accelerated level of socio-economic development.[12]

Marital Status:

Marital status of elderly is important because married fare better than the single on a number of dimensions such as economic, social, emotional and care given during the progression through the older life. Authors of the book, "India's elderly" have drawn attention to the increasing proportion of women in general and widow in particular among the elderly age group. As per 1991 census currently married males accounted for 80.7% against 44.2% for females. The reasons are longer life for women compared to men and the universal tendency for women to marry men older than themselves. However the authors have pointed out the decline in proportion of widows among elderly women during the last 30 years. The proportion was 75 in 1961, declined to 69 in 1971, further to 64 in 1981 and 54 in 1991.[12] K.Dandekar while discussing life cycle has stated that for Indian women widowhood was expected at age 55 in 1971 while in Japan and other

developed countries it was 67.1 years. In India as longevity of women increases, they are expected to remain widowed for a greater period of their future life.[13]

Living Arrangement:

Family structure in India has been hit by urbanization. Elderly, who mostly depended on family for care, got affected. Several studies have been done on the living arrangement of elderly. Authors of "India's elderly" have cited several studies in this regard. One by Nandan et al (1987) found that elderly in nuclear households have a feeling of helplessness. The aged are looked upon as burden in barely sustainable households. Family support towards elderly becomes very difficult among poverty-ridden households. An intrafamily relationship study among urban elderly by Shah (1993) found intrafamily relationship somewhat higher in widows than the widowers and somewhat lower in joint families compared to those living in nuclear families.[12]

S. Siva Raju in an article on aged has cited some studies regarding living arrangements of elderly. Mishra's study (1987) on retired government male employee living in Chandigarh found that majority live in nuclear families, while Sati (1998) in a study on retired persons in Udaipur city found that majority was in joint households.[9]

K. Dandekar in her book on elderly has cited examples of some developed countries showing that elders mostly want to stay with their families or close to their children. Old age home is not accepted even in those countries. In USA only 4.2% of male and 5.3% of female above 65 years stay in institutions. In Britain, USA and Denmark the percentage of elders (65+) living with children in same household or in the vicinity of 10 minutes journey or less is 65.4, 60.7 and 52.1 respectively. The difference between developing countries like India and advanced countries in this regard was that elders in advanced countries can afford to establish separate household to a much larger extent.[13]

Economic Conditions:

Elders as a group are not homogenous. Harry R Moody has divided elderly into; i) Ill-derly meaning older people who tend to be poor and subject to chronic illness and ii) Well-derly meaning older people who tend to be well off both physically and financially. According to the author, in USA, poverty among older people (65+) varies according to various characteristics such as gender, age, living arrangement etc. Among married men of all races, less than 6% are in poverty group, where as 60% of older black women living alone fall into poverty group.[7]

In India as well as in other developing countries, work area include mostly the informal sector (agriculture) and hence there is no fixed age of retirement. It has been seen that aged in rural area doing agricultural work go on continuing till physic permits. Poverty of the household is another factor, which drives older people to continue doing work. NSSO 42nd round survey found that 46% men in rural area pursued agriculture in the age group 60-64. This percentage declined to 25 for age 70 and up. A total of three fourth of men in rural area were active in the age group 60-64 and 36% seemed active even after 70 years of age.[13]

D. Radha Devi in an article made a detail discussion on activity participation of elderly. The total number of economically active elderly persons had increased consistently from 10.1 million in 1950 to 26.4 million in 2000. Elderly persons engaged in agriculture increased from 11 million in 1971 to 16 million in 1991 where as in non-agriculture sector the increase has been from 2.8 million in 1971 to 4.4 million in 1991. The author commented that as long as poverty was not eradicated from the face of India, even the elderly have to make their contribution to the family income, however meager it may be.[8]

Morbidity in elderly:

Study in USA by National Center for Health Statistics (1990) showed morbidity prevalence in elderly as; a) arthritis- 48.3%, b) hypertension- 38%, c) hearing impairment- 28.6%, d) cataracts- 15.6%, e) deformity- 15.5%, f) diabetes- 8.8% and g) varicose vein- 7.8%.[7] Study in rural area of Nigeria (1986) showed; a) poor vision- 39% in males and 44% in females, b) bending problem- 42% males and 46% females, c) arthritis- 34% males and 46% females and d) digestion/teeth- 21% in males and 12% in females.[1] Some chronic diseases tend to occur more in women. Guralnik and others in an article stated that older women have higher prevalence rates of disability than men of the same age. This difference did not result from women developing disability more often than men but rather surviving longer with their disabilities.[14]

In India, authentic study on elders was carried by National sample survey organization in its 42nd round (1990). The nationwide study by NSSO consisted of households having at least one member aged 60 years and above. The survey covered over 50,000 households spread over 8,312 villages and 4446 urban blocks in the country. K. Dandekar while discussing this 42nd round report on health condition of elderly states that chronically ill increase with age. The percentage of those ill was 39 among age group 60-64 years, increased to 45 in the age group 65-69 and 55 in the age group 70+ years. There was gross interstate variation in prevalence of chronic illness as well as type of illness among the elderly. Kerala showed the highest number of chronically ill elderly while in West Bengal, incidence of blood pressure and heart disease was much higher than national average.[13]

P.H. Reddy in an article reviewed NSSO 42nd round data. In rural area, chronic disease in elderly was 45% while 44.8% in urban area. Among rural elderly 34.4% had cough and 47% had problem of joint. Blood pressure, heart disease and diabetes were

6.4%, 3.7% and 1.7% respectively.[15] A. Khokhar and M.Mehra made a study on morbidity profile of elderly residing in urban community of Delhi. 85% of the subjects complained of one or more health problems.[16]

Indrani Gupta and Deepa Sankar discussed 52nd round NSSO survey (1995-96) in an article. The prevalence of morbidity according to age groups and sex were as shown in Table (a).[17]

Table. (a). Morbidity in elders by age & sex:

	Age 60-69 years		Age 71-79 years	
	Male (%)	Female (%)	Male (%)	Female (%)
Vision	18.51	21.52	29.58	34.64
Hearing	9.02	10.22	16.97	21.00
Cough	20.01	15.84	25.75	21.63
Joint pain	28.95	37.09	39.43	45.34
Piles	2.91	1.93	3.41	1.79
Bl. Pressure	10.59	11.31	11.57	12.94
Heart disease	3.91	2.53	4.69	3.38
Diabetes	4.04	2.96	4.65	3.14

Study by Help Age India in 1996 showed that 60 per cent of elderly population had hearing impairment. Prevalence rate of diabetics was about 177 for urban and 35 per 1000 for rural. The number of older persons with cancer was 0.35 million and prevalence rate of mental morbidity was estimated at 89 per 1,000 population.[18] S. Irudaya Rajan, U.S.Misra and P. Sankara Sarma in their study on aged found that 35% of the surveyed elderly reported having some or other perennial health problems which seemed to be more in proportion with increase in the age of the respondent.[12]

A study done on health care for rural aged in Madurai, Tamilnadu showed as high as 88% having visual problem, 40% had locomotor difficulties. Symptom of central nervous system was 14%, cardiovascular 17%, respiration 16%, dermatological 13%, gastrointestinal 10%, psychiatry 4%, acoustic 8% and neoplasm 2%.[19] S. Vijaya Kumar in a study in Andhra Pradesh found that among elderly 70% complained of suffering from one or more chronic illness. It was evident that many of the aged suffered from more than one combination of ailments.[20]

Health services:

In developed countries utilization of health care by elders is on rise. In USA the elderly (65+) constitute 12% of the population but consume more than 30% of health care spending.[7] According to Guralnik, in 1995, persons more than 65 years accounted for 12 million of the 31 million hospitalization in USA and 40% of hospital revenue came from 'medicare'.[21] According to some researchers this has already raised the issue of 'inter generational equity' as treatment expenditure for elderly is three times greater than that for children.[22]

In developing countries, elders form a weak group in respect of availing social benefit. J. Brodsky and others have stated in an article that the search for effective policies for care of frail elderly in general and long term care policies in particular, are the most pressing challenges facing modern society.[23] The inequities in elderly based on class, gender and race are expected to influence the parameters of ageing population. Women's issues are extremely important in considering social policies for elder population. Thus developing countries must have their own priorities in planning health care.[24]

Other researchers have dealt on issues of formulating health care for the aged. Epidemiological transition in less developed countries has created necessity for health

care transition from systems based on cure to one that highlight prevention and long time care.[25] Scarcity of resources is prevalent in all less developed countries, so making best use of the limited resources by integrating health care for elderly people with established health services, particularly existing primary health care system should be given priority.[26]

Some studies have been done in India on use of health services by the elderly. S. Vijaya Kumar in his article stated that only 30% of the elderly suffering from illness have treatment. Nearly 55% of the aged did not get even minimum care and personal help from their family members during illness.[20] Others doing a similar study in kerala have found that in case of sickness, 90% of the respondents, irrespective of sex, had consulted doctor. The most preferred system of treatment by the surveyed elderly was allopathic which was adopted by nearly 90%. The rest 10% of the elderly relied either on ayurvedic or homeopathic system of medicine. The most common source of health service utilization was reported to be in government quarters followed by the private clinics and hospitals.[12]

Health seeking behavior:

Recognition of disease by elderly, his response to it and reaching a provider or changing provider depends on several factors, which may relate to person, household and community. I. Jai Prakash while studying the psychological well being of elderly stated that subjective well being of the elderly depended on social activity, health, marital status and socio-economic status.[27] Studying the reaction of elderly to health problems, S. Siva Raju wrote in an article that majority of aged refrain from seeking medical aid due to many impediments, beside lack of money. The idea that old age is an age of ailment and physical infirmity, is deeply rooted in Indian mind and many of the sufferings and stresses are accepted as natural and inevitable by the elderly.[9] KNS Yadava and others made a study on aged persons (>60 years) in rural areas of Varanasi district of

Uttarpradesh in 1990. Socio-economic behavioral problems were found to play a significant role in determining the health condition of the aged. Illiteracy, poverty and adverse familial relationship had impact on health during ageing.[28]

S. Siva Raju did a study on elderly at Mumbai. The uniqueness of the study was understanding health problems of aged, from subjective as well as professional perspective. The respondents first assessed themselves and then medical professionals examined them. Important factors like age, marital status, educational status, living arrangement, economic status, worries, degree of feeling idle and addictions were cross tabulated with both perceived and actual health status of the elderly. Age and health status had association with perceived health status in males. Differential influence of marital status was significantly noticed. Educational background, status in family and having constant worries had significant association with perceived health status.[29]

Indrani Gupta and P. Dasgupta did an exploratory study of health seeking behavior of adults in urban Delhi. Though the study was not on aged, it throws light on health seeking behavior with comparison across economic classes. The respondents were followed for 6 months and their actions related to acute and chronic diseases were recorded. Study showed that education and income had association with falling sick and higher household size had negative relationship with illness. As for providers, 22% of middle-income group, 26% of high-income group and only 17% of low-income group used government hospitals. Low-income group mostly used private clinics while private hospitals had access only to higher group. It was seen that 90% of those seeking care did not change type of providers. Of those who changed 60% had recommendation of previous doctor as the cause. In 10% case change was due to need of specialists treatment and 20% was due to dissatisfaction with previous provider.[30]

A study in Bangladesh on relationship between incidence of disease and socio-economic characteristics of the elderly showed that education and occupation were inversely related to disease among elderly. It was found that more than half of the respondents did not avail government facility because of lack of proper and sympathetic care from the doctors. About one sixth of the respondents mentioned the distance to be traveled and the long waiting time as deterrents in using government hospitals.[31]

I. Gupta and D. Sankar in an article did a multivariate analysis of deterrents to health status of elderly using data from 52nd round NSSO survey. The survey isolated discomforts and disabilities specific to old age like visual, hearing etc. from chronic illness like cough, piles, blood pressure etc. For analysis both were taken as binary with 55.8% answering ‘yes’ for first category and 53.6% ‘yes’ for second category and probit analysis done. Authors conclude that economic conditions of household as well as ownership of property and social disadvantage based on gender, social class had affect on reporting of discomforts specific of old age. Most importantly, those living with spouses showed a better chance of warding off disability than those living without their spouse. The result on chronic illness was slightly different but the spousal support and economic variables continued to play an important role in reporting and seeking care.[17]

3. RATIONALE & OBJECTIVES:

3.1. Rationale:

Definite health program for the aged is a need in India in the context of increase in proportion of elderly population. Several studies have covered the demographic and socio-economic conditions of the elderly including morbidity but there are only a few studies on health seeking behavior particularly among rural elderly population. This is also true for West Bengal where 7.3% of 80.2 million people are over 60 years of age. 72.5% of total population live in rural area.[32] Rapid modernization has affected the village life style particularly those surrounding Kolkata, the cosmopolitan city of the state. In rural area public sector is still the only health facility available, while spurt of modern medical techniques are seen in urban area mostly in private sector. With life expectancy moving above 65, the rural aged form a formidable group that is experiencing the changes but has to continue with age-old rural health infrastructure. Study among this group of elderly, using primary data collected by community survey may enable one to understand the health seeking behavior of aged in context of these changes.

In this background, a modest approach has been made in this study to know the disease profile of rural people above 60 years of age; the health care availed by them, including public, private and traditional along with socio-economic and demographic characteristics. The study was undertaken in rural community in a district of West Bengal, nearer to Kolkata.

3.2. Objectives:

1) **To find out the extent and nature of chronic and acute diseases among elderly.**
2) **To describe the socio-economic and demographic characteristics of the elderly population in relation to chronic and acute diseases.**
3) **To find out the health seeking behavior of the elderly population.**

4. METHODOLOGY:

4.1. Study design:

A cross sectional descriptive study.

4.2. Study period:

January 2004 to March 2004.

4.3. Study area:

West Bengal has 19 districts spreading from sub-Himalayan region to Bay of Bengal. North 24 Parganas, a district situated at north- eastern border of Kolkata was selected for study. It had an area of 6746 sq. km. with 4 divisions, 27 municipalities, 22 blocks with 1851 villages and total population of 89,30,295. Some health indicators of the district, as of 2002, were CBR: 20.7, CDR: 7.1, IMR: 52, Life expectancy at birth: 66.1(Male) and 69.3 (Female). (Source: C.M.O.H office records) The district is mainly agricultural with some industries bordering Kolkata. It has border with Bangladesh resulting in refugee influx. Land reform and local self-government since 1977 had brought some changes in rural area but disparity of employment opportunity is having its affect on village family structure. At the same time private hospitals with modern facilities have come up in cosmopolitan area along with spread of various forms of private health care in areas surrounding Kolkata and it is largely unregulated. Rural area has the same old public health infrastructure with sub-center, PHC and BPHCs. This district was chosen due to its predominant rural area with cosmopolitan city nearby.

The district had 22 blocks of which 6 were in forest area of ‘Sundarbans’. They were excluded from study due to difficulty in accessibility. Of the remaining 16 blocks one, ‘Amdanga’ block, was selected by lottery method. It was situated in northwestern part of the district with an area of 138.8 sq km and a population of 1,65,771. Population density was 1194 per sq km and male- female ratio was 931 females per1000 males. It had 71 villages with most villages having inhabitants between 1500 to 3000, lowest being

618 and highest 6146. With 7.3% of population above 60 years, villages were expected to have 110 to 220 elderly people on average with total elderly population of 12,101 in that block.

4.4. Sampling design:

Cluster sampling method was followed.

There were 3 Primary Health Centers in Amdanga such as Maricha-Adhata PHC, Beraberia PHC and Amdanga BPHC. Villages were grouped in 3 as served by PHCs. This was done to avoid preference to any one PHC. Considering time constraint 15 villages were taken as cluster for study. From 3 groups of villages, 5 were selected from each group by simple random method to form the 15 clusters. Names of selected villages with population are;

1. Rajberia (964)
2. Harpur (2031)
3. Kanchiara (2538)
4. Jaypur (1071)
5. Dariapur (4149)
6. Madhabpur (2598)
7. Atghara (1595)
8. Bijaypur (1825)
9. Kumarduni (1715)
10. Ratanpur (2025)
11. Bodai (6146)
12. Durlavpur (1493)
13. Rahana (2257)
14. Rafipur (1472)
15. Noapara (2373)

4.5. Sample size:

Prevalence of chronic disease in aged was taken as 46% (NSSO study in 1991 found it to be 45% in rural area). Based on this assumption with an accuracy of ± 6% for a 95% confidence interval and with a design effect of 1.5, the required sample size was estimated to be about 420.

4.6. Selection of sample:

Sample size of 420 and 15 villages selected to form the clusters led the number of sample from each village to be 28. In selected villages a central place was chosen. Due to absence of definite road system within village, one side of the village was chosen by lottery like east, west, north or south. All houses of that side were surveyed for persons completed 60 years till the required number of 28 people interviewed. If required number was not available at one side of the village then after coming back to the central place another side was chosen by lottery. In this way 15 villages were covered for requisite number.

In same household if there were more than one aged person present then all of them were included in the sample and interviewed. If any aged household member was absent during interview, he was not included in the sample. Few aged people had difficulty in understanding or answering questions due to illness. Help of relatives were sought to elicit the answers.

Verbal consent was obtained from the respondents and where necessary verbal consent of relatives was obtained.

4.7. Tool used:

Pre tested structured questionnaire was used for data collection. Some open-ended questions were included to elicit responses as to the causes of irregular treatment and for choosing first provider, in between provider and current provider.

4.8 Data collection:

Study of health seeking behavior includes recognition of disease by elderly, providers sought and the various socio-economic and demographic factors, which influence this activity. Variables for this study were chosen as follows;

4.8.1.Dependent variables:

A) Chronic and acute diseases that elders perceived to be suffering from at the time of interview were recorded. **Chronic diseases** were considered those health conditions from which the patient was suffering for more than 3 months (National center for health statistics definitions, CDC). 42nd and 52nd round NSSO survey had enquired about health conditions of elderly.[15, 17]. Based on that, respondents in this study were asked about the following chronic illnesses;

a) Visual problem
b) Hearing problem
c) Mental illness.
d) Joint pain
e) Chronic cough
f) Piles
g) Blood pressure
h) Diabetes
i) Heart ailment
j) Urinary problem
k) Gastric
l) Cancer
m) Others

The chronic conditions were recorded as answered by the respondents. Along with this, perception of the patient of the disease as severe, non-severe and indifferent was recorded. Each was asked about possession of any records on treatment of any form.

Acute diseases were health conditions of short duration and sudden onset. Any such health conditions experienced with in 2 weeks before the date of interview were recorded.

B) Treatment of chronic conditions was enquired and grouped as 1) **regular** and 2) **irregular.** Treatment was considered irregular if it consisted any of these conditions as delay in starting treatment, irregular medication and no treatment. In case of acute illness the time taken by respondent to seek any treatment was recorded.

C) Providers sought for treatment of chronic health conditions. As study was conducted in rural area, followings were recorded as providers; a) Unqualified practitioner, b) Qualified private practitioner, c) Nursing home/private hospital, d) Rural government facility, e) Specialists of government hospital, f) Homeopath/ ayurveda/ kaviraji and g) Medicine shop. For respondents having treatment it was noted as first provider, in between and current provider. Some with multiple diseases had more than one first provider but as it was few so during data entry it was neglected.

4.8.2. Explanatory variables:

Several conditions affect health-seeking behavior. They may be at individual, household and community level. A study done in Bangladesh had used education, occupation, sympathetic care, distance, long waiting time at hospitals as independent variables,[31] where as age, gender, education, social status, residence (rural/urban), economic status, living arrangement, widowhood and command over resources were used as explanatory variables in a study done by Indrani Gupta and others.[17]

In this study explanatory variables were chosen as:

A) Age. Elders completed 60 years and above were included in sample. It was recorded as stated by respondent. Most studies in India, including NSSO has used 60 years as

cut-off age. As for grouping of age, NSSO in its 42nd round had used 60-64, 65-69 and 70 & above as age groups for elderly. Some had grouped 60-69 as young old, 70-79 as middle old and 80+ as old-old,[12] while others used 60-69 as young old and 70+ as old-old.[10] In this study, groups used were 60-64, 65-69, 70-74 and 75 years and above.

B) Sex.

C) Education. It was recorded as illiterate, read & write and formal schooling and above. It was further grouped as literate and illiterate.

D) Occupation. Present and past occupation of respondents were recorded as agriculture, service, business, laborer, household, others and at home meaning no work. For analysis it was further grouped as agriculture, household, at home and others (including business, service, laborer and others).

E) Religion.

F) Income and assets. Along with it sources of income and types of assets as house or land were noted.

G) Use of tobacco. In any form and also use of alcohol was noted.

H) Attitude toward ageing. Respondents were asked to state their feelings on being old and it was recorded as healthy, despair, non-committal and others.

I) Affect of illness on daily physical activity. Recorded as stated by respondent based on 'RAND 36-item health survey 1.0'schedule. Scores given as 1, 2, 3 depending on whether activity was a) limited a lot, b) limited a little and c) not limited at all. 1 equated to 0, 2 as 50 and 3 as 100. It was added and divided by number items applicable for the respondent. As 84.2 was considered as normal, so following groupings were done a) above 80- no effect, b) 71 to 80- mildly affected, c) up to 70- affected.

J) Satisfaction with last treatment. This was considered for treatment of chronic illness and was recorded as no, yes and cannot say.

K) Marital status. Noted as never married, married, widowed and separate but for analysis it was grouped as a) with spouse meaning current married and b) without spouse.

L) Living arrangement. Recorded and grouped as a) alone and with spouse, b) spouse and children and c) children only.

M) Socio-economic status of household. Type of house was found to represent economic disparity in rural area. Estimation of income or expenditure was difficult to elicit and so avoided during survey. Thus scoring was done as a) Pucca house- 4, b) Kuchha-pucca house- 2, c) kuchha house-1, d) Motor cycle-2, e) Power tiller-2, f) Television-1 and g) Cooking gas-1. Households were grouped as upper-income group with 7 or above score, middle-income group with score 4 to 6 and lower-income with score up to 3.

N) Dependency. It was grouped in three; a) Fully dependent- those who had no income and had to depend on other's income for daily living. Some possessed house but it had no monetary implication. b) Partially dependent- those who had some form of income but support of others was necessary. c) Not dependent- those elders who had individual income and were not dependent on others.

O) Household size. Recorded as total (including elderly), adult (18 to 59 years) and elderly members (>60 years) present in household.

P) Relative or self attached to medical care services. Any form of service including medicine shop and unqualified medical practice were included.

Q) Accompanying persons. Whether present, while going to provider for treatment.

R) Cost of treatment per month. For chronic diseases only it was recorded.

S) Cost borne by whom: It was recorded as self, spouse, son, daughter, relative and outside help that included begging.

T) Distance to reach first provider. Recorded as stated by respondents. It was grouped as a) up to 0.5 km, b) 0.6 to 1.5, c) 1.6 to 3 and d) above 3km.

U) Road condition. Recorded as good or bad.

4.9. Data entry:

All data were first entered in excel spread sheet, cleaned and then entered in SPSS for analysis. Associations between variables were calculated using Chi Square statistical tests and stepwise method of multiple logistic regressions. Responses to open ended questions were coded, grouped and then entered for analysis.

5. RESULTS:

The survey covered 420 elderly of 15 villages with 98.1% being self-respondent and only 1.9% needing other family members to answer the interview schedule. Before discussing the morbidity status of elderly, a few background characteristics of the studied elderly is given in the following section.

5.1. Socio-demographic characteristics of the studied sample of elderly:

40.7% were Muslim and rest Hindu. Sex distribution of respondents as in Table-1 shows 62.1% to be females. Females were more in age group 60-64 and 65-69 being 66.1% and 68.8% respectively. Overall literacy rate of the elderly was 38.1%, Table-2. 31.4% of males and 80.4% of females were illiterate, Formal schooling was 32.1% in males and only 5% in females.

Table 1. Distribution of study population according to sex & age groups:

Sex	Age groups				Total
	60-64	65-69	70-74	75 & above	
Male	39 (33.9)	39 (31.2)	45 (40.2)	36 (52.9)	159 (37.9)
Female	76 (66.1)	86 (68.8)	67 (59.8)	32 (47.1)	261 (62.1)
Total	115 (100)	125 (100)	112 (100)	68 (100)	420 (100)

Table 2. Educational level of the study population:

	Educational levels		
	Illiterate	Read & write	Formal schooling
Male n-159	50 (31.4)	58 (36.5)	51 (32.1)
Female n-261	210 (80.4)	38 (14.6)	13 (5.0)
Total n-420	260 (61.9)	96 (22.9)	64 (15.2)

Figures in parenthesis indicate percentages

Table 3. Present occupation status of elderly study population:

	Present occupation					
	Agri-culture	Business	Laborer	House-hold	Others	At home
Male n-159	28 (17.6)	12 (7.5)	9 (5.8)	7 (4.4)	12 (7.5)	91 (57.2)
Female n-261	00	1 (0.4)	6 (2.3)	157 (60.1)	7 (2.7)	90 (34.5)
Total n-420	28 (6.7)	13 (3.1)	15 (3.6)	164 (39)	19 (4.5)	181 (43.1)

Figures in parenthesis indicate percentages.

42.8% of males were in work even after 60 years of age while 65.5% of females were working (household included as work), Table-3. At home means no work and 57.2% of males and 34.5% of females were at home after age 60.

Distribution of occupation according to age group in Annexure, Table A, shows that 30.8% of males of age 60-64 and 25.6% of males in age group 65-69 were continuing agricultural work. Females continuing with household work were 78.9% in 60-64 and 72.1% in 65-69 age group. Table B of Annexure shows occupation change. While 23.6% were engaged in agricultural work during their prime age, 6.7% were still continuing with it in their old age. Even 3.6% were continuing their work as laborer.

27.8% of males in 75 + age group were without spouse, while in other age groups it was near 10%, Table- 4. But in females, even in 60-64 age group, 36.8% were without spouse, which became 90% in 70-74 and 97% above 75 years age group. Without spouse included widowed and one never married. Table-5 indicates living arrangement. Majority males (75.5%) lived with spouse & children while majority females (63.2%) lived with children only. Strikingly 3.8% of elderly were living alone. More elderly females (5%) were living alone compared to males (1.9%).

Table 4. Distribution of elderly population according to marital status:

	Age groups	Marital status		Total
		Without spouse	With spouse	
Male	60-64 years	2 (5.1)	37 (94.9)	39 (100)
	65-69 years	4 (10.3)	35 (89.7)	39 (100)
	70-74 years	5 (11.1)	40 (88.9)	45 (100)
	75 years & above	10 (27.8)	26 (72.2)	36 (100)
Total		21 (13.2)	138 (86.8)	159 (100)
Females	60-64 years	28 (36.8)	48 (63.2)	76 (100)
	65-69 years	56 (65.1)	30 (34.9)	86 (100)
	70-74 years	60 (89.6)	7 (10.4)	67 (100)
	75 years & above	31 (96.9)	1 (3.1)	32 (100)
Total		175 (67)	86 (33)	261 (100)

Figures in parenthesis indicate percentages.

Table 5. Living arrangement of elderly study population:

Sex	Living arrangement			
	With spouse	Spouse & children	Children only	Living alone
Male n-159	12 (7.5)	120 (75.5)	24 (15.1)	3 (1.9)
Female n-261	8 (3.1)	75 (28.7)	165 (63.2)	13 (5)
Total n-420	20 (4.8)	195 (46.4)	189 (45)	16 (3.8)

Figures in parenthesis indicate percentages

Distribution of study sample according to household size is shown in Annexure, Table C. 36.2% of elderly sample had 5 household members and 18% had more than 10 members. As of adult member in household, 8.3% elderly had no adult household members. Table-6 shows that only 11.9% of sampled elderly had relative or self attached to medical care services, which included working in government programs, as unqualified practitioner, working in medicine shops etc.

Table 6. Self or relative of elderly attached to medical care services:

	Frequency	Percent
No	370	88.1
Yes	50	11.9
Total	420	100.0

Table 7. Distribution of study population according to whether they had individual income and assets:

	Individual income		Individual assets	
	Yes	No	Yes	No
Male n-159	99 (62.3)	60 (37.7)	141 (88.7)	18 11.3)
Female n-261	23 (8.8)	238 (91.2)	36 (13.8)	225 (86.2)
Total n-420	122 (29)	298 (71)	177 (42.1)	243 (57.9)

Figures in parenthesis indicate percentages.

62.3% of elderly males had some form of income while in case of females it was only 8.8%. Asset here included house &/or land and 88.7% of aged males had some assets in his possession in comparison to 13.8% in case of females. Tables D and E in Annexure show that among the elderly population 14% had earnings from occupation, 4.8% had pension and 9.8% had earnings from other sources (rent, land etc). Of sampled elderly 37.6% had houses and 15.5% had land in their name.

Table 8. Socio-economic status of the households of study population:

	Frequency	Percent
Lower	247	58.8
Middle	84	20.0
Upper	89	21.2
Total	420	100.0

Table-8 shows socio-economic status based on scores as mentioned in methodology, main criteria being type of house and possession of power tiller and motorcycle. 58.8% of sampled elderly belonged to households of lower economic group while 21.2% belonged to upper category. Economically 70.7% of elderly were fully dependent on others and it was more in case of females, being 90.8%, Table-9. Fully dependent elders had no income of their own and for daily living had to depend totally on other's income. Some of them had house in their name but it had no monetary implication. 39.6% of male elderly were not dependent on others for daily living.

Table 9. Distribution of study population according to economic dependency:

Sex	Dependency status		
	Fully dependent	Partially dependent	Not dependent
Male n-159	60 (37.8)	36 (22.6)	63 (39.6)
Female n-261	237 (90.8)	17 (6.5)	7 (2.7)
Total n-420	297 (70.7)	53 (12.6)	70 (16.7)

Figures in parenthesis indicate percentages

Use of tobacco in any form was high among elderly (53.6%), Table-10, being 65.4% in males and 46.4% in females. Males mostly used "bidi", while females chewed tobacco leaf. Report of alcohol consumption was very low.

Table 10. Use of tobacco among elderly population:

	Using tobacco	
	No	Yes
Male n-159	55 (34.6)	104 (65.4)
Female n-261	140 (53.6)	121 (46.4)
Total n-420	195 (46.4)	225 (53.6)

Figures in parenthesis indicate percentages

Table 11. Attitude towards ageing among the elderly:

	Attitude		
	Healthy	Despair	Non-committal
Male n-159	56 (35.2)	33 (20.8)	70 (44)
Female n-261	62 (23.8)	77 (29.5)	122 (46.7)
Total n-420	118 (28.1)	110 (26.2)	192 (45.7)

Figures in parenthesis indicate percentages.

Despair for being ‘old’ was more in females, 29.5%, compared to 20.8% in males. Similarly 35.2% of males had healthy attitude about getting old, while in case of females it was 23.8%.

5.2. Morbidity characteristics of sampled elderly population:

This section deals with morbidity profile (both chronic & acute diseases) among elderly along with study of association with various socio-economic factors pertaining to sampled elderly population.

Table 12. Distribution of chronic diseases in sampled elderly population:

	Age groups	Chronic diseases		Total
		Absent	Present	
Male	60-64 years	16 (41)	23 (59)	39 (100)
	65-69 years	13 (33.3)	26 (66.7)	39 (100)
	70-74 years	11 (24.4)	34 (75.6)	45 (100)
	75 year & above	6 (16.7)	30 (83.3)	36 (100)
Total male		46 (28.9)	113 (71.1)	159 (100)
Female	60-64 years	29 (38.2)	47 (61.8)	76 (100)
	65-69 years	30 (34.9)	56 (65.1)	86 (100)
	70-74 years	6 (9)	61 (91)	67 (100)
	75 years & above	4 (12.5)	28 (87.5)	32 (100)
Total female		69 (26.4)	192 (73.6)	261 (100)
Total sample		115 (27.4)	305 (72.6)	420 (100)

Figures in parenthesis indicate percentages.

Table-12 shows that 72.6% of the elderly reported to have some form of chronic diseases. In case of males the prevalence was 71.7% where as in case of females it was 73.6%. Prevalence was seen to increase with age. Table-13 shows affect of chronic disease on daily physical activity of respondents and were calculated using 'RAND 36 health item' scale. In case of 43.6% of elderly with chronic disease, daily physical activity was not affected while for 56.4% it was affected including 16.1%, where the affect was mild. 54.4% of elders were seen to be suffering from more than one chronic disease with similar distribution in both sexes, Table-14.

Table 13. Affect of chronic disease on daily physical activity of respondents:

	Affect on physical activity		
	Affected	Mildly affected	Not affected
Male n-113	38 (33.6)	22 (19.5)	53 (46.9)
Female n-192	85 (44.3)	27 (14.1)	80 (41.6)
Total n-305	123 (40.3)	49 (16.1)	133 (43.6)

Figures in parenthesis indicate percentages.

Table 14. Multiplicity of chronic diseases in elderly:

	Chronic disease	
	With single disease	More than one disease
Male n-113	58 (51.3)	55 (48.7)
Female n-192	81 (42.2)	111 (57.8)
Total n-305	139 (45.6)	166 (54.4)

Figures in parenthesis indicate percentages.

Table 15. Chronic diseases profile among sampled elderly population:

Chronic Disease	Prevalence among elderly (%)		
	Male	Female	Combined
Problems of vision	23.9	40.2	34.0
Hearing problems	4.4	5.0	4.8
Mental problems	3.8	2.7	3.1
Joint pain	8.2	26.4	19.5
Chronic cough	21.4	9.6	14.0
Piles	8.2	1.1	3.8
Blood pressure	8.8	15.3	12.9
Diabetes	5.7	4.2	4.8
Cardiac ailments	6.3	3.4	4.5
Urinary ailments	9.4	0.4	3.8
Gastric problems	5.7	8.8	7.6
Cancer	1.3	00	0.5
Others	5.0	8.8	7.4

Table 16. Perception and care seeking among elderly for chronic diseases:

Chronic Disease	Perceived as			Treatment records available (%)	Received treatment (%)
	Severe (%)	Not severe (%)	Indifferent (%)		
Problems of vision	69.2	27.3	3.5	41.3	53.8
Hearing problems	35.0	55.0	10.0	5.0	5.0
Mental problems	69.2	7.7	23.1	23.1	61.5
Joint pain	89.0	9.8	1.2	35.4	91.5
Chronic cough	91.5	1.2	7.3	72.9	98.3
Piles	68.8	31.2	0.0	50.0	75.0
Hypertension	85.2	13.0	1.8	79.6	100.0
Diabetes	95.0	5.0	0.0	90.0	100.0
Cardiac ailments	100.0	0.0	0.0	94.7	100.0
Urinary ailments	87.5	12.5	0.0	93.8	100.0
Gastric problems	84.4	9.4	6.3	59.4	100.0
Cancer	100.0	0.0	0.0	50.0	100.0
Others	93.5	6.5	0.0	77.4	90.3

Tables 15 & 16 show prevalence of chronic diseases as percent of elderly population for the total and also for males and females separately. Visual problem was present in 34% of elderly population. In male elderly it was 23.9% and in females it was more, 40.2%. Prevalence of joint pain and blood pressure was more in females (26.4% and 15.3% respectively), while chronic cough, which included bronchitis, asthma and T.B., was more among males being 21.4%.

Perception of the disease among patients was recorded in 3 categories, severe, not severe and indifferent. Diabetes, heart ailment, cancer, chronic cough and others (included CVA, fracture etc.) were perceived as serious (above 90%) and some form of treatment sought (near 100%). 35% of elderly with hearing problem thought it as serious but only 5% had some treatment. As of visual problem, 69.2% thought it to be serious and 53.8% of them had some form of treatment.

Table 17. Distribution of acute diseases in the study sample:

Sex	Acute disease	
	Absent	Present
Male n-159	144 (90.6)	15 (9.4)
Female n-261	224 (85.8)	37 (14.2)
Total n-420	368 (87.6)	52 (12.4)

Figures in parenthesis indicate percentages.

Prevalence of acute disease in elderly was found to be 12.4% with 5.5% suffering from fever, 2.4% respiratory disease, 1.9% diarrhoea and 1% with injury. Females had a higher prevalence of 14.2% compared to 9.4% among men.

Table 18. Association between chronic disease and socio-economic characteristics:

Association between prevalence of chronic diseases and socio-economic and demographic conditions in elderly was studied by cross tabulating the data (n=420)

Variables		Chronic disease		Chi Square P value
		Absent	Present	
Present occupation	Agriculture	18 (64.3)	10 (35.7)	0.000
	Household	59 (36)	105 (64)	
	At home	25 (13.8)	156 (86.2)	
	Others	13 (27.7)	34 (72.3)	
Marital status	With spouse	71 (31.7)	153 (68.3)	0.044
	W'out spouse	44 (22.4)	152 (77.6)	
Individual asset	No	57 (23.5)	186 (76.5)	0.035
	Yes	58 (32.8)	119 (67.2)	
Attitude towards ageing	Healthy	48 (40.7)	70 (59.3)	0.000
	Despair	13 (11.8)	97 (88.2)	
	Non committal	54 (28.1)	138 (71.9)	
Age groups	60-64	45 (39.1)	70 (60.9)	0.000
	65-69	43 (34.4)	82 (65.6)	
	70-74	17 (15.2)	95 (84.8)	
	75 & above	10 (14.7)	58 (85.3)	

Figures in parenthesis indicate percentages.

between presence or absence of chronic diseases and various socio-economic and demographic characteristics. Statistical significance was assessed by Chi Square tests. For comparison, present occupation was grouped as a) agriculture b) household c) at home and d) others. Age, present occupation, marital status, having individual assets and attitude towards ageing were found to have significant association with p value less than 0.05.Test of significance was done with disaggregate data for sex using Chi Square tests, Table 19. Significant association was seen in females for education and SES of households. For males it was significant for individual income and tobacco use with p value less than 0.05. Here education was grouped as a) illiterate and b) literate.

Table 19. Association in study population with disaggregated data for sex:

Sex	Variables		Chronic disease		Chi Square P value
			Absent	Present	
Male n-159	Education	Illiterate	14 (28.0)	36 (72.0)	0.509
		Literate	32 (29.4)	77 (70.6)	
Female n-261	Education	Illiterate	49 (23.3)	161 (76.7)	0.019
		Literate	20 (39.2)	31 (60.8)	
Male n-159	Individual income	No	11 (18.3)	49 (81.7)	0.022
		Yes	35 (35.4)	64 (64.6)	
Female n-261	Individual income	No	65 (27.3)	173 (72.7)	0.303
		Yes	4 (17.4)	19 (82.6)	
Male n-159	Using tobacco	No	9 (16.4)	46 (83.6)	0.011
		Yes	37 (35.6)	67 (64.4)	
Female n-261	Using tobacco	No	36 (25.7)	104 (74.3)	0.776
		Yes	33 (27.3)	88 (72.7)	
Male n-159	SES of household	Lower	25 (27.8)	65 (72.2)	0.935
		Middle	11 (30.6)	25 (69.4)	
		Upper	10 (30.3)	23 (69.7)	
Female n-261	SES of household	Lower	37 (23.6)	120 (76.4)	0.029
		Middle	20 (41.7)	28 (58.3)	
		Upper	12 (21.4)	44 (78.6)	

Figures in parenthesis indicate percentages.

Table 20. Association between multiplicity of chronic disease & socio-economic conditions of elderly study population:

Variables		Chronic disease (n=305)		Chi Square P value
		Single	More than one	
Living arrangement	Alone & with spouse	9 (34.6)	17 (65.4)	0.026
	Spouse & children	73 (54.1)	62 (45.9)	
	Children only	57 (39.6)	87 (60.4)	
Age group	60-64	40 (57.1)	30 (42.9)	0.037
	65-69	41 (50)	41 (50)	
	70-74	34 (35.8)	61 (64.2)	
	75 & above	24 (41.4)	34 (58.6)	
Marital status	With spouse	80 (52.3)	73 (47.7)	0.018
	W'out spouse	59 (38.8)	93 (61.2)	
Attitude towards ageing	Healthy	32 (45.7)	38 (54.3)	0.002
	Despair	31 (32)	66 (68)	
	Non committal	76 (55.1)	62 (44.9)	

Figures in parenthesis indicate percentages

Study of association between multiplicities of chronic diseases in elderly with socio-economic characteristics was done using Chi Square tests. It was found to be significant (p value less than 0.05) for age group, living arrangement, marital status and attitude towards ageing. Living arrangement had been grouped as a) alone and with spouse, b) with spouse and children and c) with children only.

Association between acute disease and socio-economic variables in elderly sample population:

No statistical association seen between the prevalence of acute diseases and the socio-economic characteristics of elderly using Chi Square statistical tests.

5.3. Health seeking behavior of sampled elderly population:

Findings in this section are divided into characteristics of treatment and characteristics of providers as sought by the elderly having disease.

5.3.1. Characteristics of treatment:

Treatment has been divided into a) regular and b) irregular. This section also includes the responses obtained from sampled population to the open-ended questions. Associations between treatment characteristics with socio-economic factors were analysed. Statistical analysis was done by using Chi Square statistical tests and stepwise methods of multiple logistic regressions.

Table 21. Treatment profile of elderly study population with chronic diseases:

	Treatment of chronic disease	
	Regular	Irregular
Male n-113	28 (24.8)	85 (75.2)
Female n-192	38 (19.8)	154 (80.2)
Total n-305	66 (21.6)	239 (78.4)

Figures in parenthesis indicate percentages.

Table shows that 78.4% of elderly with chronic illness had irregular treatment (including those who had no treatment), which was slightly more in females, 80.2% compared to 75.2% in males.

Table 22. Time sought for treatment of acute disease in elderly study population:

	Time to seek treatment			
	No treatment	< 24 hours	24 to 48 hours	> 48 hours
Male n-15	2 (13.3)	3 (20)	7 (46.7)	3 (20)
Female n-37	16 (43.2)	4 (10.8)	3 (8.2)	14 (37.8)
Total n-52	18 (34.6)	7 (13.5)	10 (19.2)	17 (32.7)

Figures in parenthesis indicate percentages.

Table-22 indicates that in case of acute disease only 13.5% sought treatment within 24 hours of onset of the disease. 32.7% had treatment after 48 hours while 34.6% had not sought any treatment till the time of interview.

Table 23. Distribution of sampled elderly population having treatment for chronic disease as regards accompanying person:

	Accompanying persons		
	Yes, always	Yes, occasional	No
Male n-103	43 (41.7)	28 (27.2)	32 (31.1)
Female n-173	93 (53.8)	38 (22)	42 (24.2)
Total n-276	136 (49.3)	66 (23.9)	74 (26.8)

Figures in parenthesis indicate percentages.

Table shows that 26.8% had no accompanying person while going to provider and 73.2% had accompaniment. In case of 49.3% accompanying person was always present while for 23.9% it was occasionally present. Accompanying person was always present more in case of females (53.8%) compared to 41.7% in case of males.

Table 24. Distribution of cost per month for treatment of chronic disease in study population:

Sex	Cost per month (Rs)			
	0 to 50	51 to 150	151 to 300	Above 300
Male n-103	19 (18.4)	35 (34)	28 (27.2)	21 (20.4)
Female n-173	66 (38.2)	62 (35.7)	34 (19.7)	11 (6.4)
Total n-276	85 (30.8)	97 (35.1)	62 (22.5)	32 (11.6)

Figures in parenthesis indicate percentages.

Treatment cost per month included cost for medicine, investigations, consultancy and transport. Table shows that 30.8% were spending less than 50 rupees. 11.6% were spending more than 300 rupees per month. While 20.4% of male elderly were spending more than 300 rupees, it was only 6.4% in case of females.

Table 25. Persons bearing cost for treatment of chronic disease in elderly:

	Cost borne by				
	Self	Spouse	Son	Daughter	Outside help
Male n-100	50 (50)	1 (1)	43 (43)	3 (3)	3 (3)
Female n-171	15 (8.7)	22 (12.9)	118 (69)	8 (4.7)	8 (4.7)
Total n-271	65 (24)	23 (8.5)	161 (59.3)	11 (4.1)	11 (4.1)

Table shows that in majority cases cost was borne by sons, 59.3%. 24% of elderly had cost borne by themselves, which was more in case of males, being 50% as compared to 8.7% in females. 4.1% needed outside help which included even begging from neighbours.

Table 26. Distance to reach first provider for treatment of chronic disease in elderly study population:

	Distance in km.			
	Up to 0.5	0.6 to 1.5	1.6 to 3	Above 3
Male n-103	34 (33)	16 (15.5)	37 (36)	16 (15.5)
Female n-173	59 (34)	38 (22)	56 (32.4)	20 (11.6)
Total n-276	93 (33.7)	54 (19.6)	93 (33.7)	36 (13)

Figures in parenthesis indicate percentages.

Distance to reach first provider shows that most elderly (33.7%) went up to 0.5 km to reach provider, while 13% went more than 3 km to reach first provider for treatment of chronic illness.

Association between treatment characteristics and socio-economic conditions of elderly population with chronic disease:

Association between treatment of chronic disease and various socio-economic and demographic characteristics of the sampled population was assessed by cross tabulating the data (n=305) between regular and irregular treatment and other variables using Chi Square tests, Table 27. Individual income, Individual assets, attitude towards ageing, accompanying person, affect on daily physical activity, cost of treatment, distance to reach first provider, socio-economic status of household, dependency and education were seen to have association with treatment characteristics, with p value less than 0.05. Assessment of other socio-economic factors, which were not found to be statistically significant in association with treatment, is shown in Annexure Table G.

Table 27. Association between treatment characteristics and socio-economic factors:

Variables		Treatment of chronic disease (n=305)		Chi Square P value
		Regular	Irregular	
Individual income	No	38 (17.1)	184 (82.9)	0.002
	Yes	28 (33.7)	55 (66.3)	
Individual asset	No	30 (16.1)	156 (83.9)	0.003
	Yes	36 (30.3)	83 (69.7)	
Attitude towards ageing	Healthy	33 (47.1%)	37 (52.9%)	0.000
	Despair	7(7.2)	90 (92.8)	
	Non committal	26 (18.8)	112 (81.2)	
Accompanying person (n=276)	No	12 (16.2)	62 (83.8)	0.027
	Yes, always	42 (30.9)	94 (69.1)	
	Yes, occasional	12 (18.2)	54 (81.8)	
Affect on daily physical activity	Affected	15 (12.2)	108 (87.8)	0.000
	Mildly affected	7 (14.3)	42 (85.7)	
	Not affected	44 (33.1)	89 (66.9)	
Cost of treatment per month (n=276)	0 to 50 Rs.	5 (5.9)	80 (94.1)	0.000
	51 to 150 Rs	19 (19.6)	78 (80.4)	
	151 to 300 Rs	28 (45.2)	34 (54.8)	
	Above 300 Rs	14 (43.8)	18 (56.3)	
Distance to reach first provider (n=276)	Up to 0.5 km	17 (18.3)	76 (81.7)	0.000
	0.6 to 1.5 km	13 (24.1)	41 (75.9)	
	1.6 to 3 km	17 (18.3)	76 (81.7)	
	Above 3 km	19 (52.8)	17 (47.2)	
SES of household	Lower	16 (8.6)	169 (91.4)	0.000
	Middle	18 (34)	35 (66)	
	Upper	32 (47.8)	35 (52.2)	
Dependency	Fully dependent	38 (17.2)	183 (82.8)	0.009
	Partially dependent	13 (34.2)	25 (65.8)	
	Not dependent	15 (32.6)	31 (67.4)	
Education level	Illiterate	32 (16.2)	165 (83.8)	0.002
	Literate	34 (31.5)	74 (68.5)	

Figures in parenthesis indicate percentages.

Analysis by step wise multiple logistic regressions:

Socio-economic characteristics, which seemed independent and showed statistical significance by Chi Square tests in Table- 27 were further analysed using stepwise multiple logistic regression statistical tests. Regular treatment was taken, as '0' and irregular treatment was taken as '1' as binary outcome.

Table 28. Association between treatment of chronic disease and socio-economic characteristics of sampled elderly by logistic regression tests:

Variables	Odds ratio	P value	95% C.I.for the Adjusted Odds Ratio. (A.R.O.)	
			Lower	Upper
No individual income	1			
Some Individual income	.386	.025	.168	.885
Lower socio-economic status	1			
Middle socio-economic status	.329	.013	.138	.789
Upper socio-economic status	.135	.000	.058	.314
Physical activity affected	1			
Physical activity mildly affected	.708	.555	.226	2.224
Physical activity not affected	.248	.001	.106	.578
Healthy attitude to ageing	1			
Attitude of despair to ageing	5.899	.001	2.015	17.266
Non committal to ageing	2.594	.019	1.166	5.769
No accompanying persons	1			
Always accompanying persons	.215	.002	.081	.574
Occasional accompany persons	.594	.361	.195	1.814

(Factors not included in final stage of analysis were individual assets, education, dependency and distance to reach first provider)

Socio-economic factors, except cost per month, were entered as categorical independent variables. Stepwise logistic regression after adjusting for all these factors showed individual income, socio-economic status of households, affect of disease on daily

physical activity, attitude towards ageing and accompanying persons to be related with treatment characteristics, Table-28. Upper socio-economic status of households, disease having no affect on daily physical activity, individual income and presence of accompanying persons had negative relation, while 'despair' attitude towards ageing had positive relation with treatment being irregular.

Association between time sought for treatment of acute disease and socio-economic conditions of elderly population:

No association could be established statistically between time sought for treatment of acute disease and various socio-economic factors due to paucity of cases.

Table 29. Responses of causes from all who had irregular treatment for chronic diseases (n-239):

Suggested causes of irregular treatment	Response- number (%)
Monetary problem	180 (75.3)
Distance/ non-availability of concerned specialists	122 (51)
Lack of accompaniment	99 (41.4)
Lack of perception of the disease	47 (19.7)
Less cared in family	47 (19.7)
Despair of old age	24 (10)
Infirm to move	21 (8.8)
Believe disease incurable	19 (7.9)
Fear of modern medical procedure	10 (4.2)
Busy with works of daily living	9 (3.8)

(Responses include multiple answers)

Table shows responses by patients regarding causes for having irregular treatment. Irregular treatment included delay, irregular medication and no treatment. Many gave multiple answers. Majority (75.3%) stated monetary problem as cause of irregular treatment while long distance or non-availability of concerned qualified doctors came second (51%). Lack of accompaniment was the third most response (41.4%). 19.7% of respondents revealed lack of perception about the disease and being less cared in the family as causes for irregular treatment.

5.3.2. Provider characteristics:

This section deals with types of providers sought by the sampled elderly for treatment of chronic diseases. Providers were recorded as first, in between and current providers. Causes for choosing providers were elicited from the responses to open ended questions. In respect of first contact the characteristics of follow up providers were also seen.

Table30. Distribution of first provider for treatment of chronic diseases:

	None	Un-qualified	Qualified private	Govt facility rural	Govt hospital specialist	Homeo/Ayurved	Medicine shops
Male n-113	10 (8.8)	47 (41.6)	19 (16.8)	26 (23)	3 (2.7)	3 (2.7)	5 (4.4)
Female n-192	19 (9.9)	74 (38.5)	22 (11.5)	47 (24.5)	5 (2.6)	15 (7.8)	10 (5.2)
Total n-305	29 (9.6)	121 (39.7)	41 (13.4)	73 (23.9)	8 (2.6)	18 (5.9)	15 (4.9)

Figures in parenthesis indicate percentages.

39.7% of elderly with chronic illness went to unqualified practitioner as first provider and 23.9% went to rural government facility, which include sub-center, P.H.C., B.P.H.C. and rural hospitals. 2.6% went to specialist of government hospital as first provider while 13.6% chose qualified private practitioners.

Table 31. Reasons for choosing First provider (n=276):

Reasons	Response- number (%)
Provider local and available	179 (64.9)
Medical provision cheap/ free of charge	119 (43.1)
Concern for the disease	47 (17)
Concern for quality of care	36 (13)
Faith in provider / discipline	20 (7.2)
No other facility available	12 (4.3)
Emergency nature of onset of disease	11 (4)
Relative attached to medical care service	9 (3.3)

As for reasons for choosing first provider, majority, 64.9%, said that provider was local and all time available, next 43.1% said cheap or free medical provision as cause for choosing provider. 17% and 13% mentioned concern for disease and concern for quality of care respectively as reasons for choice.

Table 32. Distribution of in between provider for treatment of chronic disease:

	None	Unqualified	Qualified private	Nursing home/ pvt hospital	Govt facility rural	Specialists in govt hospitals
Male n-113	62 (54.9)	2 (1.8)	18 (15.9)	5 (4.4)	2 (1.8)	24 (21.2)
Female n-192	130 (67.7)	5 (2.6)	16 (8.3)	8 (4.2)	6 (3.1)	27 (14.1)
Total n-305	192 (63)	7 (2.3)	34 (11.1)	13 (4.3)	8 (2.6)	51 (16.7)

Figures in parenthesis indicate percentages.

In between providers were those whom patients chose between first and current provider. Here 16.7% had gone to specialists of government hospitals followed by 11.1%, who had gone to qualified private practitioners after attending first provider for treatment.

Table 33. Reasons for choosing In-between provider (n=113):

Reasons	Response- number (%)
Not cured by previous provider	56 (49.6)
Recommended by previous provider	54 (47.4)
Recommended by neighbours	10 (8.8)
Concern for quality of care	8 (7.1)

It seems from table 33 that choice of in between provider did not always depend on patients but on recommendations or results of treatment by first providers. Table shows that 47.4% mentioned recommendation by previous provider as cause, while 49.6% of patients mentioned not getting cured by previous provider as cause. 8.8% and 7.1% mentioned recommendation of neighbours and concern for quality of care as cause for choosing certain providers.

Distribution of current provider for treatment of chronic diseases:

Table-34 shows that 17.7% and 12.8% of patients were getting treatment from homeopathic/ ayurvedic providers and medicine shops respectively as current provider. 16.7% and 11.1% continued with unqualified practitioners and rural government facilities respectively. A good majority (16.7%) were continuing treatment with qualified private practitioners. Treatment with specialists of government hospitals, meaning those of upper tiers like sub-divisional, district and teaching hospitals reduced drastically from 26% as in between provider to 6.9% as current provider.

Table 34. Distribution of current providers;

	None	Un-qualified	Qualified private	Nursing home/ pvt hospital	Govt facility rural	Specialist in govt hospitals	Homeo/ayurved	Medicine shops
Male n-113	13 (11.5)	16 (14.2)	24 (21.2)	8 (7.1)	12 (10.6)	11 (9.7)	20 (17.7)	9 (8)
Female n-192	22 (11.5)	35 (18.2)	27 (14.1)	12 (6.3)	22 (11.5)	10 (5.2)	34 (17.6)	30 (15.6)
Total n-305	35 (11.5)	51 (16.7)	51 (16.7)	20 (6.6)	34 (11.1)	21 (6.9)	54 (17.7)	39 (12.8)

Figures in parenthesis indicate percentages.

Table 35. Reasons given by patients for choosing Current provider (n=270):

Reasons	Response- number (%)
Not cured by previous provider	81 (29.3)
Distance to reach previous provider	68 (24.6)
Provider local and available	62 (22.5)
Medical provision cheap/ free of charge	56 (20.3)
Recommended by previous provider	38 (13.8)
Cost of previous facility	25 (9.1)
Recommended by neighbours	26 (9.4)
Repeated provider's consultation not needed	17 (6.2)
Not to attend personally	16 (5.8)
Concern for quality of care	16 (5.8)
Satisfied with present treatment	18 (6.5)

As for choosing current provider 29.3% mentioned not cured by previous provider as cause, while 24.6% and 22.5% mentioned distance to reach previous provider and provider being local and all time available as causes. 9.1% mentioned cost of previous treatment as cause for change, while 6.2% and 5.8% mentioned no need of repeated provider's consultation and not to attend personally the provider as causes for choosing specific current provider.

Table 36. Follow up providers after first contact for treatment by either unqualified practitioner or rural government facility:

Majority of elderly with chronic illness had attended either unqualified practitioner (n=121) or rural government facility (n=73) as first provider. Table below shows follow up of those patients in relation to seeking further providers.

	Unqualified provider		Rural government facility	
	In between provider	Current provider	In between provider	Current provider
None	61 (50.4)	3 (2.5)	41 (56.2)	1 (1.4)
Unqualified practitioner	3 (2.5)	33 (27.3)	1 (1.4)	12 (16.4)
Qualified private Practitioner	22 (18.2)	22 (18.2)	9 (12.3)	10 (13.7)
Nursing home/ pvt. hospital	6 (5)	3 (2.5)	3 (4.1)	4 (5.5)
Rural govt. facility	7 (5.7)	4 (3.3)	00	29 (39.7)
Specialist of govt. hospital	22 (18.2)	5 (4.1)	19 (26)	5 (6.9)
Homeopathy/ ayurvedic	00	27 (22.3)	00	6 (8.2)
Medicine shop	00	24 (19.8)	00	6 (8.2)
Total	121(100)	121(100)	73 (100)	73 (100)

Figures in parenthesis indicate percentages.

49.6% of elderly who had unqualified practitioner as 1st contact attended more than two providers, while it was 43.8% for elders having rural government facility as 1st contact. Where unqualified practitioner was 1st contact, 27.3% continued with it. 22.3% and 19.8% continued with Homeopath and medicine shop as current provider respectively. With rural hospital as 1st contact, 39.7% continued with it as current provider and 13.7% and 16.4% went respectively to qualified private practitioner and unqualified practitioner.

6. SUMMARY AND CONCLUSIONS:

To study health-seeking behavior of elderly, this study tried to look at the morbidity in elderly population with treatment pattern and providers sought. For wider view, set of open-ended questions was added to find out the causes of irregular treatment and rationality behind choosing a certain provider or changing providers. Sample size was 420 with 28 from each of the 15 villages of 'Amdanga' block, selected by simple random method to form the clusters. Elders were taken as those completed 60 years. Same was followed by NSSO in 42nd and 52nd round surveys.[15,17] A pre-tested structured interview schedule was used as tool for the survey.

The proportion of elderly in 60-64, 65-69 and 70-74 age groups varied within 25% to 30% while it was 16% in 75 years and above. 1991 census showed proportion of elders in 60-69 and 70 + age groups as 63.3% and 36.7% for West Bengal.[12] Regrouping survey data to 60-69 and 70 + age groups showed the proportion of elderly to be 57.1% and 42.9% respectively. Females were overwhelmingly more in study sample being 62.1%. Females were more than males in all age groups except 75 years and above, where it was 47.1% compared to 52.9% in case of males. 1991 census on sex ratio among elderly showed less proportion of females in all age groups.[10,12] More females in study population might be due to interview time as during daytime most males might have been outside and not available for study. However, proportion of males were more in 75 + age group, probably due to inability to go outside.

38.1% of study populations were literate, being 68.6% in case of males and 19.6% among females. Literacy rate for elderly in 1991 census for West Bengal was 51.7% in males and 11.2% in females.[12] Proximity of the area to cosmopolitan city might have resulted in higher literacy rate. 42.8% of male elderly and 65.5% of female elderly were engaged in some form of work. Among females 60% were in household work and 5.5% in other works like laborer etc. This differed from National work participation rate of 1991 census, where 40% were in work and majority of both sexes were engaged in

agricultural work. But 1991 census data of West Bengal showed work participation to be 54.1% for male elderly and 6.4% for females. This indicates less participation of females in works other than households and this corroborate with present study.

Majority of female elderly (67%) were without spouse and 63.2% were living with children only. More than 90% of females above 70 years were widow. On other hand 13.2% of male elderly were without spouse and 75.5% were living with spouse and children. This is slightly more than the 1991 census figure for West Bengal where 66.9% of female elderly and 11.8% of male elderly were without spouse.[12]

62.3% of elderly male had some income while in females it was 8.8%. Several elderly possessed house or small land in their name but it had not much monetary value. Thus 37.8% of males and 90.8% of females above 60 years were economically fully dependent on others. This was similar to NSSO 42nd round data where 38.2% of rural males and 81.5% of rural females above 60 years were economically fully dependent on others.[13]

Socio-economic status showed 58.8% elderly belonging to lower socio-economic households. Use of tobacco in any form was high among elders, 53.6% being 65.4% in case of males and 46.4% in females. NFHS-II data on all India figure shows 37.6% of males above 60 years and 25% of females above 60 using some form of tobacco. 11.9% of sampled elderly had any relative attached to some medical care services. Attitude towards ageing showed that 28.1% thought it to be healthy while 26.2% accepted ageing with despair. It was more in females, 29.5% compared to 20.8% in case of males.

As of morbidity, 72.6% of sampled elderly population had chronic illness, which was same in both sexes. Prevalence of illness was seen to increase with age. 54.4% of elders with disease had more than one disease. Chronic disease had affect on daily physical activities of patients and 40.3% were found to be affected while 16.1% were

mildly affected. Prevalence of acute disease was seen in only 12.4% of sampled elderly. Compared to NSSO 42nd round survey, prevalence of chronic illness was more (NSSO showed prevalence of 45% in rural elderly), but for West Bengal, NSSO study showed prevalence of 64.7% in case of rural male elderly and 60.6% in female elderly.[13] Other studies on morbidity also show gross variations. A study in Delhi had prevalence of 85%[16] while another in Andhra Pradesh showed it to be 70%.[20]

Majority of elderly suffered from vision problem (34%). Next were joint problem, cough and blood pressure being 19.5%, 14% and 12.9% respectively. Among others 7.6% had gastric problem, 4.8% had diabetes, 4.5% had heart ailments and 4.8% had hearing problems. There was difference between sexes. Blood pressure, vision and joint problems were more in females while chronic cough, piles, heart ailments and urinary problems were more in males. Studies on morbidity pattern again vary. NSSO 42nd round showed majority elderly in rural area suffering from joint problems (47%) with coughs coming next (34%). Blood pressure, heart disease and diabetes were 6.4%, 3.7% and 1.7% respectively.[15] NSSO 52nd survey on morbidity by age and sex showed visual problem to be 29.5%, hearing 16.9%, cough 25.7% and joint problem 39.4% in males of 70 to 79 age group while for females the figures were 34.6%, 21%, 21.6% and 45.3% respectively.[17] A study in Tamilnadu showed vision problem to be as high as 88%[19] while study in Andhra Pradesh showed vision problem to be 26.4%, joint 24.4% and hearing problem 16%.[20]

All diseases except vision, hearing, mental and piles were considered to be serious by elders (>80%). Hearing was considered to be serious by least number of respondents (35%). This had affect on having treatment. Only 5% had treatment of some form for hearing problem and it was 53.8% for vision and 61.5% for mental conditions. Percentages having treatment of some form did not corroborate with perception of disease

in case of visual and hearing problems. It might be that for these conditions elderly had no faith in any system other than allopathic system and allopathic care for vision and hearing were conspicuously lacking in rural area.

Chronic disease conditions of elderly showed association with present occupation, marital status, assets, age groups and attitude towards ageing. Elderly with no work had more disease (86%), which might be due to inclusion of persons with increased age in 'at home' category, and disease was seen to increase with age. Prevalence of chronic disease was seen more in elders without spouse, having no individual assets and attitude of despair towards ageing. Further analysis in males and females separately showed illiteracy and lower and upper socio-economic status to be associated with more prevalence of illness in females, while in case of males, prevalence was more in those having no income and not using tobacco. Relation between increased prevalence of illness and lower socio-economic status seen only in women, indicate gender role along with poverty. Illness might have been more in upper socio-economic group of females due to sedentary life-style. Use of tobacco in elders might indicate money in hand, which implies better economic condition. Thus males not using tobacco might be relatively poor and be vulnerable to diseases.

Keeping similarity with previous findings, prevalence of multiple chronic diseases differed in age groups, marital status and attitude towards ageing. 60.4% of elderly living with children only and 65.4% living only with spouse or alone had more prevalence of multiple disease compared to those living with spouse and children (45.9%). Similar results were seen in a study where spousal support and economic variables played an important role in reporting and seeking care in elderly.[17] Other studies showed marital status, socio-economic status, illiteracy and adverse familial relationship to have impact on psychological and physical health during ageing.[27,28,29]

Health seeking behavior of elderly has been analysed under treatment characteristics and provider characteristics. Majority of sampled elderly population, 78.4% with chronic disease had irregular treatment. Irregular treatment included delay in treatment, irregular medication and no treatment. It was seen that 49.3% of elderly with disease had accompanying person while going to provider. 33.7% sought first provider with in 0.5 km while 13% went more than 3 km for first provider, which was more in males (15.5%) than females (11.6%). 30.8% could spend up to 50 rupees per month for treatment while 11.6% spent more than 300 rupees.

Absence of individual income, no assets, illiteracy, full economic dependency, low socio-economic status, having no accompanying persons, less spending on treatment and negative attitude towards ageing showed difference in treatment characteristics. Irregular treatment was more in these groups compared to others. Incidence of irregular treatment was seen more in elderly in whom physical activity was affected by disease (87.8%) than those in whom there was no affect. Normally affect on daily activity turns a disease serious but affect on mobility with absence of accompanying persons might have led to irregular treatment. Incidence of irregular treatment was less in those who went more than 3 km for treatment than who sought treatment nearby. For rural elderly person to move 3 km for treatment showed eagerness for getting cured. This might have resulted in less irregular treatment in them.

To find out factors mostly related to treatment characteristics, step wise multiple logistic regressions was done with independent factors showing significant association with Chi Square tests. After adjusting for individual income, socio-economic status, affect of disease on daily physical activity, attitude towards ageing and accompaniment, elders with individual income and belonging to households of upper socio-economic status showed less chance of having irregular treatment compared to those having no income of

their own (A.O.R. 0.386; CI: 0.168 – 0.885) and those belonging to households of lower socio-economic status (A.O.R. 0.135; CI: 0.058 - 0.314). Similarly those in whom there was no affect on daily physical activity and those who always had accompanying persons had less chance for irregular treatment than those in whom physical activity was affected (A.O.R. 0.248; CI: 0.106 – 0.578) and those who had no accompanying persons (A.O.R. 0.215; CI: 0.081 – 0.574). Persons with attitude of despair had more chance of having irregular treatment (A.O.R. 5.899; CI: 2.015 – 17.266) than those having healthy attitude. All these factors should be considered as target areas for intervention while planning health program for elderly.

Above results showed similarity with responses of patients as to causes of irregular treatment, because majority (75.3%) stated monetary problem as cause and 41% cited lack of accompaniment as cause. Only 10% stated that despair attitude towards ageing was a cause of irregular treatment. This small response in comparison to logistic regressions analysis shows the necessity of in-depth interview other than some open-ended questions for proper assessment of the responses.

With chronic illness 39.7% went to unqualified practitioners and 23.9% to rural government facility (sub-centers, PHCs, rural hospitals) as first provider. It was natural for rural area where these were the only facilities available. But 13.4% attended qualified private practitioners as first provider, which might be due to proximity to cosmopolitan city. More over this shows an increasing trend of qualified doctors from city attending periodically private clinics of adjoining rural area. The provider characteristics of this study differed from a study done in Kerala, which showed 90% attending allopathic doctors. Road connectivity of Kerala should be kept in mind while comparing with other states.[12] Traditional healers were found not to play any important role as health providers in villages of peri-urban area and this is supported by other studies.[12,34] Unqualified

practitioners, locally called ‘quacks’ and practicing allopathic medicine were seen in most villages. Reasons for choosing first provider was mostly all time availability (64.9%) and less cost (43.1%).

Specialists of government hospitals (16.7%) and qualified private practitioners (11.1%) formed bulk of in-between providers. Reasons for choosing were not getting cured by previous provider and recommendation of previous provider. Similar results were shown by a study where 60% of those who changed providers was due to recommendation of previous provider, 10% was due to need of specialists and 20% due to dissatisfaction with previous provider.[30]

Majority of current providers were unqualified practitioners (16.7%) and homeopaths (17.7%). Medicine shops formed a large part (12.8%). Majority responses for choosing provider were not getting cured, distance to reach previous provider, local availability and cost of treatment. 5.8% cited not to attend provider personally as cause, which might be a reason for greater role of medicine shops as current provider. 16.7% of elderly continued with qualified practitioner, which again indicates spread of private clinics in peri-urban rural areas.

Follow up of providers highlighted the importance of first contact in health care. Majority of those who attended unqualified practitioners as first provider were continuing with homeopathy (22.3%) and medicine shops (19.8%). 39.7% of those who attended rural government facility as first provider were continuing with it. Strikingly 16.4% of those who had rural government facility as first contact went to unqualified practitioners as current provider, which might be due to inadequacy of rural government health facilities. Interestingly 26% of elderly went to specialists of government hospitals of upper tier as in between providers after attending rural government facility. It is seen that

only 7% continued with it as current provider. This might be due to distance as well as due to cost and introduction of ‘user charge’ in government hospitals.

6.1. Strength and limitations of study:

The strength of the study was that it was based on community survey and performed by one investigator with medical background. But there were some limitations like limiting the study to only one district of West Bengal due to time constraint and want of manpower. All the diseases were recorded as perceived by the elderly population and no clinical or diagnostic tests were done to confirm or refute the same. Treatment was not only limited to modern allopathic system, but also other forms including unqualified practitioners, medicine shops and homeopaths were included in study. This might have exposed the important role played by these unqualified providers but at the same time raise questions regarding the authenticity of the morbidity characteristics.

6.2. Conclusions:

A study among aged population above 60 years and residing in rural area near to a cosmopolitan city showed 72.6% suffering with chronic illness. Majority had more than one diseases and prevalence increased with age. Marital status and living arrangement showed association with prevalence of disease. Education and socio-economic status in females and individual income in males showed similar association. Attitude for being old was found to play an important role in prevalence as well as treatment characteristics for chronic illness.

Majority of elderly with chronic illness had irregular treatment (78.4%) being slightly more in females. After adjusting for the factors in step wise multiple logistic regression model; income, socio-economic status, absence of any affect on daily physical activity and accompanying persons were found to be inversely related to irregular treatment while despair attitude showed direct relation.

Significant gap was seen between need and treatment provision particularly for visual and hearing problems. Rural government facilities and unqualified practitioners were the two most frequented providers as first contact. Qualified private practitioners were seen to play a major role in peri-urban rural area. Homeopaths and medicine shops were not first choice of rural elderly but their substantial presence as current provider (30%) indicates inadequacy of rural government facility as regards health needs of aged. At the same time decline in proportion of specialists of government hospitals as current provider show inability of elderly population to continue such treatment. Responses of elderly seeking treatment showed distance, cost, availability of provider, recommendation of previous provider, not to attend provider personally, concern for disease and concern for quality of care as reasons for changing and selecting providers.

6.3. Recommendations:

a) Steps to be taken so that elders have some money for their own. Old age pension, which was seen to be received by only 4.8% of sampled elderly, should be implemented at a larger scale.

b) Among elderly population, females and those over 70 years age need to be targeted with particular emphasis on increasing financial capacity.

c) More stress to be given to female literacy as it is expected to have positive effect on health status in future.

d) Attitude towards ageing had affect on health status as well as health seeking behavior. Health staffs and medical officers should be equipped for proper counseling.

e) Rural community volunteers can be introduced to accompany the aged in seeking treatment, as part of their job. Village health guides can be tried for this purpose with community donation.

f) Rural government facilities to be strengthened with definite geriatric programs. Unqualified practitioners should be included with due importance in these health programs.

g) To address the needs regarding visual and hearing problems, peripheral health staffs to be equipped to treat basic hearing and vision problems with proper referral. Restarting ‘cataract camps’ on large scale should be given a thought.

h) Practice by qualified private practitioners in rural areas should be encouraged but regulations should be brought to check unnecessary charging by them, which often push rural people below poverty line.

i) Introduction of ‘user charge’ at upper tiers of government hospitals might be reconsidered specially for aged population as socio-economically they form a vulnerable group.

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8. ANNEXURE:

8.1. Tables

Table A. Age groups & sex with present occupation for study population:

Sex	Age groups	Present occupation					
		Agri-culture	Business	Laborer	House-hold	Others	At home
Male	60-64 n-39	12 (30.8)	2 (5.1)	5 (12.8)	1 (2.6)	5 (12.8)	14 (35.9)
	65-69 n-39	10 (25.6)	6 (15.4)	4 (10.3)	1 (2.6)	2 (5.1)	16 (41)
	70-74 n-45	5 (11.1)	4 (8.9)		2 (4.4)	3 (6.7)	31 (68.9)
	75 & above n-36	1 (2.8)			3 (8.3)	2 (5.6)	30 (83.3)
Total n-159		28 (17.7)	12 (7.5)	9 (5.7)	7 (4.4)	12 (7.5)	91 (57.2)
Female	60-64 n-76			3 (3.9)	60 (78.9)	2 (2.6)	11 (14.6)
	65-69 n-86		1 (1.1)		62 (72.1)	3 (3.5)	20 (23.3)
	70-74 n-67			2 (3)	28 (41.8)	2 (3)	35 (52.2)
	75 & above n-32			1 (3.1)	7 (21.9)		24 (75)
Total n-261			1 (0.4)	6 (2.3)	157 (60.2)	7 (2.7)	90 (34.5)

Figures in parenthesis indicate percentages.

Table B. Occupation of study population: Present and past.

Occupation	Present occupation		Past occupation	
	Frequency	Percent	Frequency	Percent
Agriculture	28	6.7	99	23.6
Business	13	3.1	22	5.2
Laborer	15	3.6	66	15.7
Household	164	39.0	212	50.5
Service	00	00	21	5.0
Others	19	4.5	00	00
At home	181	43.1	00	00
Total	420	100.0	420	100.0

Table C. Distribution of study sample according to household size:

Total members[1]	Frequency	Percent
Up to 5	152	36.2
6 to 10	192	45.7
More than 10	76	18.1
Adult members[2]	Frequency	Percent
Nil	35	8.3
Up to 2	147	35
3 and 4	147	35
More than 4	91	21.7
Elderly members	Frequency	Percent
One	241	57.4
More than one	179	42.6
Total	420	100

1. Total members of household include elderly.
2. Adult members are between 18 to 59 years.

Table D. Income source in elderly:

Source	Frequency	Percent
Occupation	60	14.2
Pension	20	4.8
Others	42	10
No income	298	71
Total	420	100.0

Table E. Asset type in elderly:

	Frequency	Percent
House	158	37.6
Land	65	15.5
No assets	243	57.8
Total (n-420)	466	

Frequency is more than 420, as some elderly possessed both house and land.

Table F. Support for fully dependent elderly:

Sex	Supported by		
	Son	Spouse	Others
Male n-60	54 (90)	1 (1.7)	5 (8.3)
Female n-237	172 (72.5)	44 (18.6)	21 (8.9)
Total n-297	226 (76)	45 (15.2)	26 (8.8)

Figures in parenthesis indicate percentages.

Table G. Association those are statistically not significant by Chi Square test between treatment of chronic disease and socio-economic conditions:

Variables		Treatment of chronic disease (n=305)		Chi Square P value
		Regular	Irregular	
Sex	Male	28 (24.8)	85 (75.2)	0.307
	Female	38 (19.8)	154 (80.2)	
Religion	Hindu	46 (25)	138 (75)	0.079
	Muslim	20(16.5)	101 (83.5)	
Marital status	With spouse	40 (26.17)	113 (73.9)	0.055
	Without spouse	26 (17.1)	126 (82.9)	
Relative/self attach to MC	No	55 (20.2)	217 (79.8)	0.084
	Yes	11 (33.3)	22 (66.7)	
Using tobacco	No	31 (20.7)	119 (79.3)	0.685
	Yes	35 (22.6)	120 (77.4)	

Variables		Treatment of chronic disease (n=305)		Chi Square P value
		Regular	Irregular	
Road condition	Good	45 (22.4)	156 (77.6)	0.659
	Bad during rain	21 (20.2)	83 (79.8)	
Age groups	60-64	16 (22.9)	54 (77.1)	0.990
	65-69	18 (22)	64 (78)	
	70-74	20 (21.1)	75 (78.9)	
	75 & above	12 (20.7)	46 (79.3)	
Total household members	Up to 5	21 (18.9)	90 (81.1)	0.239
	6 to 10	26 (20.2)	103 (79.8)	
	More than 10	19 (29.2)	46 (70.8)	
Present occupation	Agriculture	3 (30)	7 (70)	0.267
	Household	26 (24.8)	79 (75.2)	
	At home	27 (17.3)	129 (82.7)	
	Others	10 (29.4)	24 (70.6)	
Total adult household members	Up to 2	22 (16.8)	109 (83.2)	0.166
	3 and 4	27 (27)	73 (73)	
	More than 4	17 (23)	57 (77)	
Having multiple disease	Single	27 (19.4)	112 (80.6)	0.390
	More than one	39 (23.5)	127 (76.5)	
Treatment cost borne by	Self	26 (40)	39 (60)	0.003
	Spouse	7 (30.4)	16 (69.6)	
	Son	32 (19.6)	129 (80.1)	
	Daughter	1 (9.1)	10 (90.9)	
	Outside help	0	11 (100)	

Figures in parenthesis indicate percentages.

8.2. INTERVIEW SCHEDULE:

Id. Number ———————— Date: ————————

- Name. _____
- Respondent name & relation (if different). _____
- Address. _____
  _____
  _____
- Age. _____ (In completed years)
- Sex. Male / Female
- Religion. Hindu / Muslim / Christian / Others
- Education.

Illiterate	Knows to read and write	Schooling (primary and above)
College educated	Technically educated	Others

- Occupation:

Serial	Agriculture	Service	Business	Laborer	Household	Others	None
Currently							
Before							

- Marital Status:
    a) Never married.
    b) Married.
    c) Widowed.
    d) Divorced / separated.

- Living arrangement:
    a) With spouse
    b) " spouse and children
    c) " Children only
    d) Living alone
    e) Others

- Household members (Total numbers) _____
    a) Adult male (18-59) _____
    b) Adult female (18-59) _____
    c) Children (<18) _____
    d) Elderly (>60) _____

- Any close relative attached to medical care. Yes / No
    Type of work _____

- Socio economic status of household with whom the respondent lives.

    a) House:

Pucca	Pucca-kuchha	kuchha

b) Articles in possession:

Television	Cooking gas	Fridge
Motorcycle	Power tiller	

- Any income and assets for the elderly: Yes / No
- If yes,
  - Source: Occupation / pension / others
  - Asset: House / land
- If no income, who supports: son / daughter / spouse / relative / others.

- Using Tobacco. Yes / No

Types			
Amount			
How many years			

- Using alcohol Yes / No
  a) Type. _____
  b) Frequency. _____
  c) For how many years _____

- Attitude towards ageing:

Healthy	Despair
Non committal	Others

- Suffering from chronic diseases:

Type of disease	Yes / no	Consider the disease to be			Posses records
		Severe	Not severe	Indifferent	
Visual					
Hearing					
Locomotion					
Mental					
Joint pain					
Ch. Cough					
Piles					
Bl. Pressure					
Diabetes					
Ht ailment					
Gastric					
Urinary					
Cancer					
Others					

- Severity of disease assessed by it's affect on daily physical functioning:

(Q: Does your disease now limit you in these following activities? If so how much?)

Serial number.	Physical activities	Limited a lot	Limited a little	Not limited at all
1	Vigorous activities like agricultural work, gardening, carrying water etc.	1	2	3
2	Moderate activities like moving objects at home.	1	2	3

3	Light activities like carrying articles, utensils etc.	1	2	3
4	Climbing steps.	1	2	3
5	Climbing multiple steps.	1	2	3
6	Bending, kneeling or stooping.	1	2	3
7	Walking one yard.	1	2	3
8	Walking few yards.	1	2	3
9	Walking more than a mile.	1	2	3
10	Bathing or dressing by self.	1	2	3

- Episode of acute disease (in last 15 days) Yes / No

- What acute disease. _____

- In acute disease, time between recognition and reaching provider.
  _____ (Days).

- In chronic disease, treatment
  a) Timely.
  b) Regular.
  c) Delayed.
  d) Irregular.
  e) No treatment.

- What are the causes of delay and/ or irregular treatment?

(Depending on answer, some probing questions will be asked to clear the answer)

- Providers sought (Chronic & acute diseases):

Sr no	Type of disease	First provider	Current provider	Providers changed in between

- Why prefer the provider and treatment for how many days.

1. First provider.

2. Current provider.

3. In between providers.

- Satisfaction with past treatment: Yes / No / cannot say.

- Accompanying person: Always / Occasional / None.

- Cost of treatment per month.

- Who bears the cost:

Self	Spouse	Son
Daughter	Relative	Outside help

- Distance to reach first provider: _____ km (approx)

- Transport service available: Yes / No.

- Road condition: Good / Bad all times / Bad during rainy season.

Interview ends with giving thanks to the respondent and the relatives.

_____
Signature of investigator.

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Variables		Treatment of chronic disease (n=305)		Chi Square P value
		Regular	Irregular	
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	Female	38 (19.8)	154 (80.2)	
Religion	Hindu	46 (25)	138 (75)	0.079
	Muslim	20(16.5)	101 (83.5)	
Marital status	With spouse	40 (26.17)	113 (73.9)	0.055
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Relative/self attach to MC	No	55 (20.2)	217 (79.8)	0.084
	Yes	11 (33.3)	22 (66.7)	
Using tobacco	No	31 (20.7)	119 (79.3)	0.685
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	More than 4	17 (23)	57 (77)	
Having multiple disease	Single	27 (19.4)	112 (80.6)	0.390
	More than one	39 (23.5)	127 (76.5)	
Treatment cost borne by	Self	26 (40)	39 (60)	0.003
	Spouse	7 (30.4)	16 (69.6)	
	Son	32 (19.6)	129 (80.1)	
	Daughter	1 (9.1)	10 (90.9)	
	Outside help	0	11 (100)	

Figures in parenthesis indicate percentages.

2. INTERVIEW SCHEDULE:

Id. Number _____ Date: _____

- Name. _____
- Respondent name & relation (if different). _____
- Address. _____
  _____
  _____
- Age. _____ (In completed years)
- Sex. Male / Female
- Religion. Hindu / Muslim / Christian / Others
- Education.

Illiterate	Knows to read and write	Schooling (primary and above)
College educated	Technically educated	Others

- Occupation:

Serial	Agriculture	Service	Business	Laborer	Household	Others	None
Currently							
Before							

- Marital Status:
    a) Never married.
    b) Married.
    c) Widowed.
    d) Divorced / separated.

- Living arrangement:
    a) With spouse
    b) " spouse and children
    c) " Children only
    d) Living alone
    e) Others

- Household members (Total numbers) _____
    a) Adult male (18-59) _____
    b) Adult female (18-59) _____
    c) Children (<18) _____
    d) Elderly (>60) _____

- Any close relative attached to medical care. Yes / No
    Type of work _____

- Socio economic status of household with whom the respondent lives.

    a) House:

Pucca	Pucca-kuchha	kuchha

b) Articles in possession:

Television	Cooking gas	Fridge
Motorcycle	Power tiller	

- Any income and assets for the elderly: Yes / No
- If yes,
  - Source: Occupation / pension / others
  - Asset: House / land
- If no income, who supports: son / daughter / spouse / relative / others.

- Using Tobacco. Yes / No

Types			
Amount			
How many years			

- Using alcohol Yes / No
  a) Type. _____
  b) Frequency. _____
  c) For how many years _____

- Attitude towards ageing:

Healthy	Despair
Non committal	Others

- Suffering from chronic diseases:

Type of disease	Yes / no	Consider the disease to be			Posses records
		Severe	Not severe	Indifferent	
Visual					
Hearing					
Locomotion					
Mental					
Joint pain					
Ch. Cough					
Piles					
Bl. Pressure					
Diabetes					
Ht ailment					
Gastric					
Urinary					
Cancer					
Others					

- Severity of disease assessed by it's affect on daily physical functioning:

(Q: Does your disease now limit you in these following activities? If so how much?)

Serial number.	Physical activities	Limited a lot	Limited a little	Not limited at all
1	Vigorous activities like agricultural work, gardening, carrying water etc.	1	2	3
2	Moderate activities like moving objects at home.	1	2	3
3	Light activities like carrying articles, utensils etc.	1	2	3

4	Climbing steps.	1	2	3
5	Climbing multiple steps.	1	2	3
6	Bending, kneeling or stooping.	1	2	3
7	Walking one yard.	1	2	3
8	Walking few yards.	1	2	3
9	Walking more than a mile.	1	2	3
10	Bathing or dressing by self.	1	2	3

- Episode of acute disease (in last 15 days) Yes / No

- What acute disease. _____

- In acute disease, time between recognition and reaching provider. _____ (Days).

- In chronic disease, treatment
    a) Timely.
    b) Regular.
    c) Delayed.
    d) Irregular.
    e) No treatment.

- What are the causes of delay and/ or irregular treatment?
  (Depending on answer, some probing questions will be asked to clear the answer)

- Providers sought (Chronic & acute diseases):

Sr no	Type of disease	First provider	Current provider	Providers changed in between

- Why prefer the provider and treatment for how many days.

1. First provider.

2. Current provider.

3. In between providers.

- Satisfaction with past treatment: Yes / No / cannot say.

- Accompanying person: Always / Occasional / None.

- Cost of treatment per month.

- Who bears the cost:

Self	Spouse	Son
Daughter	Relative	Outside help

- Distance to reach first provider: _____ km (approx)

- Transport service available: Yes / No.

- Road condition: Good / Bad all times / Bad during rainy season.

Interview ends with giving thanks to the respondent and the relatives.

_____
Signature of investigator.