

PATTERNS OF MORBIDITY IN SELECTED DISTRICTS OF HIMACHAL PRADESH

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ABSTRACT

Morbidity is the leading cause of mortality among people in developing countries, more specifically among women living in the rural areas. While bio-physiological factors affecting health have been largely established, the role of socio-economic characteristics in a given cultural setting and environmental conditions as the cause morbidity and disease remain lesser explored. The underlying assumption of this paper, based on the study of a limited sample (66 indoor women patients) admitted in three district hospital in a hill state, namely Kinnaur, Solan and Shimla of Himachal Pradesh, is socio-economic characteristics along with cultural and environmental conditions are critical in the causation of morbidity. These districts, besides located at different altitude, climatic conditions and occupational engagements also represent population with distinct socio-cultural and economic characteristics. The rationale of taking limited indoor patient population was conditioned by the rugged terrain and lack of transport facilities making out-door patients declining to stay back for interviews. Resultantly, only a limited number of patients were available for interviews. An interview schedule was used to collect data on the socio-economic and environmental conditions in which the patients were living. The findings although due to small sample size remain limited but provide sufficient indications that socio-economic conditions in a cultural setting along with environmental conditions play a critical role in the causation of morbidity and illness.

Keywords: Morbidity, Health care, Population, Health Services, Environment, Himachal Pradesh

INTRODUCTION

The National Health Policy (2002) of India affirmed its commitment to achieve the goal “Health for All” by 2010. How far it succeeded does not need elaboration as neither the policy could be executed in totality nor complete improvement in the health status of women, especially those living in the rural, remote inaccessible regions and urban fringes. It is a truism that absolute elimination of diseases- physical and mental disorders in a given society always remains a

formidable challenge and the state as its constitutional commitment to people got to be in a proactive mode. Thus continuous engagement of the nation-state in meeting the health needs of the society through planned policy and programme is to prevent and contain diseases in general and communicable diseases (AIDS, STDs, RTI, TB etc.) in particular. In setting the goal 'health for all' the centre and the state governments have therefore been laying emphasis upon preventive, curative and therapeutic dimensions of health. Somehow, the analysis of the causes of disease and preventive measures, though, propagated through electronic and print media have been on the back seat. The reason, perhaps, being the belief among the medical fraternity is bio-physiological conditions of population of populations cause diseases. Therefore, as a logical corollary to the overriding belief the socio-economic and cultural factors causing disease are largely ignore. Resultantly, across the states in India while the emphasis on integrated development of health delivery system along with health infra-structure have been central focus, the role of socio-economic factors leading to widely spread health distributive inequalities and inequities remained secondary.

Morbidity, a widely used term by epidemiologists in the analysis of ill-health within a given population is concerned with specific condition representing both risk to life and presence of a disease in a given population. The morbidity analysis comprises of prevalence and incidence. While the former pertains to number of individuals suffering from a particular condition, the latter deals with how many people develop a condition within a particular time. In general the time span is one year (Scott & Marshall 2009: 489). Paradoxically, to any one's astonishment morbidity is a condition in which individual suffers from physical, mental and social agony, affecting individual about which he/she is not aware but carries a feeling of physically disorder. The prevalence of high rate of morbidity in a society has implications not for the individual alone but also for the family, community and the society. Perhaps, due to the ambivalent situation Zurayak et al. (1993) described morbidity to an attribute or state of being morbid meaning thereby the state of being diseased (*perceived or real*). In the case of women, in addition to physical and mental 'reproductive morbidity' is another condition with gynecological diseases and risks. The conditions pertaining to obstetric morbidity includes the conditions during pregnancy, delivery and post-partum period. The other conditions are reproductive tract infections, cervical cell changes, uterus prolapsed, infertility, urinary tract infections, burning sensation during urination, etc.

What causes morbidity, a highly critical question remains unanswered due to lack of in-depth analysis of the relationship between socio-economic conditions and morbidity in general in India as well as developing and developed countries. Mackenbach (1992) had argued that in Netherlands the evidence on variation in the frequency of health problems started accumulating in the 1990s indicating association with lower socio-economic status. The negative association

has been observed with reference to birth weight, adult body height, prevalence of health complaints and chronic conditions. However, the studies showed inconsistency between various studies and health problems. In addition to the said, there are a large number of other called 'risk factors', such as unfavourable material living and working conditions, psychological stress, lack of social support, non-availability adequate health care, which determine the extent and magnitude of morbidity. It has also been noted that there exist multiple morbidity. In few of the studies conducted on elderly in India on prevalence of multi-morbidity suggest it increases progressively with age. The observations in this regard further suggest although the association between socio-economic status and prevalence of individual chronic diseases is well established only a few studies have examined this association. Akker *et al.* (2000) in the context of Netherlands found multi-morbidity was highly correlated with age, low socio-economic status and those who had disease prior to the study.

In the Indian society health and morbidity among women, besides socio-economic factors is also affected by socio-cultural factors also. There is no denying the fact that at present women in India are confronted with multitude of health issues due to the persistence socio-economic, ethnic and gender disparities. All together build in a structure of thinking, feelings and virtual believing about their given conditions. Resultantly, observed by Amartya Sen (*cited in* Balarajan & Selvaraj *et al.* 2011), women not only under-report illnesses but also their use of the available health care facilities. One of the consequences is women in the low socio-economic classes pass through a peculiar type of socio-psychological dilemmas conditioned by patriarchy, religion and belief system that they remain under socially afflicted nutritional deprivations, hence malnourished. This cycle continues as a vicious circle from the day a child is conceived till the child grows and becomes a mother. It is a fact that 70 per cent of the non-pregnant and 75 per cent of the pregnant women remain anemic (Tarozzi 2012). The implication of malnutrition is higher rate of prevalence of morbidity among women belonging to low socio-economic class. Logical corollary of which also suggests socio-economic conditions coupled with other factors cause morbidity.

OBJECTIVE

After having argued that there has been relatively less emphasis upon the reduction of socio-economic inequalities in the society, logically it implies that socio-economic conditions of the population and concomitant living conditions are likely to affect morbidity and disease. Although data limitation is there due to very small sample, this paper aims at finding out whether socio-economic status of women with their given health condition also develop a condition of physical and mental unwell-being. In pursuance of the said this paper analysis the following:

- Socio-economic and demographic characteristics of the morbid population, i.e. the patients admitted in district hospitals and community health centres;
- The living and environmental conditions of the patients under study; and,
- The remedies for the reduction in morbidity through improvement in living conditions without involving additional socio-economic costs

METHODOLOGY

This study, primarily descriptive in nature, is based on the patients admitted in 3 government health institutions, mainly the District Hospitals and Community Health Centres located in district Solan, Shimla and Kinnaur of Himachal Pradesh. The rationale of selecting hospital patients is their availability for interviews and possible observations of their overall conditions and behaviour. The number of patients being only 66 with history of illness, having suffered cardiovascular problems, general medicine, neurology, and also have undergone surgery, were interviewed. The data analysis because of the small sample size calculated frequencies and percentages only.

Socio-Demographic, Economic and Environmental Conditions

The social, demographic and economic analysis which besides reflecting upon social status and standard of living also have bearing on human behavior, perceptions and world view. In relation to morbidity the socio-economic and environmental conditions are critical in respondents’ knowledge, awareness and practices related to morbidity.

Table 1: Social-demographic condition of Respondents

1 Age				
District	Solan	Shimla	Kinnaur	Total
Up to 20	6 (22.22)	2 (8.00)	2 (14.28)	10 (15.150)
21-25	3 (11.11)	2 (8.00)	-	5 (7.58)
26-30	1 (3.70)	1 (4.00)	2 (14.28)	4 (6.06)
31-35	1 (3.70)	6 (24)	-	7 (10.61)
36-40	4 (14.82)	1 (4.00)	1 (7.15)	6 (9.09)
41-45	1	1	1	3

	(3.70)	(4)	(7.15)	(4.55)
45+	11 (40.75)	12 (48)	8 (57.14)	31 (46.96)
Total	27 (100)	25 (100)	14 (100)	66 (100)
II Marital Status				
Married	12 (44.44)	16 (64)	11 (78.570)	39 (59.09)
Widowed	7 (25.93)	3 (12)	-	10 (15.16)
Divorced	1 (3.70)	-	1 (7.15)	2 (1.52)
Unmarried	7 (25.93)	6 (24)	2 (14.28)	15 (22.73)
Total	27 (100)	25 (100)	14 (100)	66 (100)
III Education-wise Distribution				
Illiterate	8 (29.63)	6 (24)	4 (28.57)	18 (27.27)
Literate	1 (3.70)	1 (4)	-	2 (3.03)
Primary	3 (11.11)	3 (12)	2 (14.29)	8 (12.13)
Middle	4 (14.82)	4 (16)	4 (28.57)	12 (18.18)
High School	2 (7.40)	5 (20)	3 (21.42)	10 (15.15)
Plus Two	5 (18.52)	2 (8)	-	7 (10.60)
Graduate/BSc/Arts/Com	4 (14.82)	4 (16)	1 (7.15)	9 (13.64)
Total	27 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

The data (Table 1) suggest women in the 45 years and above age in comparison to relatively younger age groups are suffering, indicating with increasing age vulnerability to morbidity

increases. This is further observed that more married women than the unmarried are admitted, implying thereby due to various reasons and constraints of married life, especially among the lower income groups tend to suffer more. The widows and unmarried account only for one-fourth each of the total in Solan and Shimla district whereas their number is around 12 per cent respectively. In comparison to which the number of divorced is negligible.

The education does not show any definite trend. However, the indication is that the illiterate and relatively less educated are more prone to morbidity. The district-wise distribution indicates a substantial number in each district is of illiterate. In Solan district the maximum number has plus two qualifications followed by those with middle school and graduation. In district Shimla the maximum patients have high school qualification followed by a similar number with middle class and graduation qualification. In district Kinnaur, nearly thirty per cent has middle school education followed by those with high school and primary level education. Similarly, out of the total the maximum number is of the illiterate followed by middle, high school and graduation. The illiterate thus tend to be more in morbid condition.

Table 2: Economic conditions of Respondents

District	Solan	Shimla	Kinnaur	Total
I. Present Sector of Employment				
Agriculture/ Horticulture	6 (22.22)	8 (32)	5 (35.71)	19 (28.78)
Govt. Service	-	-	3 (21.42)	3 (4.55)
Private Service	-	3 (12)	1 (7.15)	4 (6.06)
Self Employed	3 (11.11)	-	1 (7.15)	4 (6.06)
Retd/	3 (11.11)	3 (12)	-	6 (9.09)
Unemployed	2 (7.41)	2 (8)	1 (7.15)	5 (7.58)
Any others	13 (48.15)	9 (36)	3 (7.15)	25 (37.88)
Total	27 (100)	25 (100)	14 (100)	66 (100)
II. Income from				

Employment				
Nil	12 (44.44)	12 (48)	5 (35.71)	29 (43.94)
10000-20000	12 (44.44)	8 (32)	9 (64.29)	29 (43.94)
21000-30000	-	3 (12)	-	3 (4.55)
31000-40000	-	1 (4)	-	1 (1.52)
51000+	2 (7.41)	1 (4)	-	3 (4.55)
Total	27 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

The state largely being rural agriculture based economy, more than one fifth in district Solan are in agriculture and horticulture and nearly half of them fall in the any other category which is predominantly constituted by homemakers (Table 2-I). Among the remaining they are in the self employed, unemployed and retired category. In contrast to which, in district Shimla nearly one-third are in agriculture and horticulture. Nearly two-fifth falls in the any other category of employment. But none of them is in government service. In district Kinnaur the maximum number (35.72 per cent) are in agriculture and horticulture and little more than one-fifth is in government employment. Like other district the remaining are distributed among other categories. In Himachal women are equal partners in agriculture and horticulture activities. The other major category is of home makers. Both involve women in prolonged hours of working making them more vulnerable to morbidity risks. The women working in other these two areas are relatively smaller.

Given the nature of work involvement the incomes of the respondents are likely to be low. More than two-fifth in district Solan, nearly half in district Shimla and more than one-third in Kinnaur do not have any income (Table 2-II). More than two-fifth in district Solan have income between Rs.10000 to Rs.20000 per month, almost one-third in district Shimla and little more than one-third have similar income. In the higher income categories there is highly negligible number. The overall income scenario suggests nearly half of them have no income and the similar number is placed in the Rs.10000 to Rs.20000 a month. The remaining though are in the higher income groups but their number is very small. The general inference emerges that those having less income are likely number more in the morbid conditions.

Table 3: Environmental and Living conditions of respondents

District	Solan	Shimla	Kinnaur	Total
I. Supply of Drinking Water				
Yes	27 (100)	20 (80)	14 (100)	61 (92.43)
No	-	5 (20)	-	5 (7.57)
Total	27 (100)	25 (100)	14 (100)	66 (100)
II. Source of Water Supply				
From natural resources	-	1 (4)	1 (7.15)	2 (3.03)
Hand Pump	-	1 (4)	-	1 (1.52)
IPH Supply	27 (100)	23 (920)	13 (92.85)	63 (95.45)
Total	27 (100)	25 (100)	14 (1000)	66 (100)
III. Purification Before Supply				
Yes	27 (100)	18 (72)	11 (78.57)	56 (84.85)
No	-	7 (28)	3 (21.43)	10 (15.15)
Total	27 (100)	25 (100)	14 (100)	66 (100)
IV. Drainage for the Disposal of Waste Water				
Yes	27 (100)	24 (96)	10 (71.43)	61 (92.43)
No	-	1 (4)	4 (28.57)	5 (7.57)
Total	25 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

The water not only sustains human life but also total existence. The inadequate supply of water in general and treated water in particular leads to morbidity risk. The data (Table 3-I) reveal that except for just 20 per cent respondents in district Shimla (suburb of Shimla), all the respondents

in all the three districts get drinking water supplies. There is highly negligible number of respondents having water supply from natural sources and hand pumps installed at their places. Almost all the respondents, however, state that they receive IPH maintained water supply. The water, as is visible from the data is completely purified before its supply is affirmed by all the respondents in district Solan. In comparison to them almost three-fourth from district Shimla and Kinnaur receive the treated water. However, there are some residents who do not feel that the water supplied to them is totally treated due to the presence of mud particles and other impurities. The latter holds ground as Shimla suffered from severe problem of jaundice outbreak recently. It is ironical that 90 per cent people receiving drinking water supply from public health department are among those admitted in hospital, especially those who suffer from water-worn disease raise questions about the purity of water supplied by the public health department.

Table 4: Types of Toilets

District	Solan	Shimla	Kinnaur	Total
I. Types of Toilets				
Dry latrine	11 (40.74)	4 (16)	3 (21.43)	18 (27.27)
Wet latrine	-	4 (16)	7 (50)	11 (16.67)
Flush system	16 (59.26)	17 (68)	4 (28.57)	37 (56.06)
Total	27 (100)	25 (100)	14 (100)	66 (100)
II. Fuel/Appliances Used for Cooking.				
Wood	11 (40.74)	7 (28)	7 (50.00)	25 (37.88)
LPG	16 (59.26)	17 (68)	7 (50.00)	40 (60.61)
Heater	-	1	-	1 (1.51)
Total	27 (100)	25 (100)	14 (100)	66 (100)
III. Disposal of Animal				

Dung				
Keep near the house	6 (22.22)	1 (4)	4 (28.58)	11 (16.67)
Keep away from the house	6 (22.22)	11 (44)	10 (71.42)	27 (40.91)
No animals	15 (55.56)	13 (52)	-	28 (42.42)
Total	25 (100)	25 (100)	14 (100)	66 (100)
IV. Use of Chemical Spray in Agriculture and Horticulture.				
Yes	10 (37.04)	10 (40)	8 (57.15)	28 (42.43)
No	17 (62.96)	15 (60)	6 (42.85)	38 (57.57)
Total	27 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

The data (Table 4-I) reveal that in all the three districts dry latrines exist even today. There are wet latrines too. However, there are though without flush system, but people have erected septic tanks. The flush system also maintained. The construction of latrines with flush system has reduced the defecation by people in the open in almost all the three districts. The cooking fuel and devices used by the respondents are mainly two and vary considerably from each other.

The fuel types used in kitchen matter a lot in the causation of diseases like lung congestion. The data (Table 4-II) indicate that in comparison to use of wood for cooking, almost 60 per cent respondents from Solan, 68 per cent from Shimla and fifty per cent from Kinnaur use LPG. The cow dung traditionally used to keep the house clean by giving a coat of it on the floors and walls is now used more as organic fertilizer is dumped near their agriculture and horticulture fields to mature for months together. The number of such respondents is much higher than those who manage the cow-dung near their homes. Further, the respondents (Table 4-IV) the use of chemical sprays has increased among the farmers. The analysis suggest there has been a shift in the defecation practices with more & more people resorting to use of flush system, which is considered more hygienic. The data at the same time suggest that more than 50 per cent of the patients using flush system indicates either they do not maintain hygiene in the toilets which often become a cause of morbidity. Similarly, despite the change in practices certain conditions

as pointed out by the respondents during the course of discussion, such as size of kitchen, ventilation source, etc. need change.

Availability and Accessibility of Health Services

This is an accepted fact that the control over morbidity and disease also depend upon the availability of health infrastructure and accessibility to health services. What has been observed that there is noticeable regularity in the occurrence and reoccurrence of certain morbidity conditions and diseases under specific conditions *vis-à-vis* socio-economic status and prevailing existential conditions of a given population. The occurrence is in certain patterns indicative of three different conditions, viz., progressive illness, catastrophic incidents- accidental injuries leading to decline in functional abilities of the individual, and the normal processes and conditions of life affecting nutritional intake, dietary patterns, and bio-chemical changes in the human body (Vellas *et al.* 1992). These patterns of morbidity can affected with availability and accessibility to health services. However, despite the presence of accessible health services it is intriguing to find people in hospitals everywhere and hill state where the present study undertaken is no exception.

Table 5: Type of Health Facilities and Services

I. Type of Health Facilities and Services				
DH	11 (40.75)	11 (44)	8 (57.14)	30 (45.46)
CHC	11 (40.75)	5 (20)	3 (21.43)	19
PHC	3 (11.11)	2 (8)	1 (7.15)	6
SC	2 (7.40)	7 (28)	2 (14.28)	11
Total	27 (100)	25 (100)	14 (100)	66 (100)
II. Testing Services				
(ii)Blood Testing	25 (92.60)	18 (72)	8 (57.14)	51
X-ray	2 (7.40)	5 (20)	6 (42.86)	13
ECCG	-	1 (4)	-	1

Surgery	-	1 (4)	-	1
Delivery/others	-	-	-	-
Total	27 (100)	25 (100)	14 (100)	66 (100)
III. Medicines				
General Medicines	14 (51.85)	14 (56)	10 (71.43)	38
Specific Disease related medicines	13 (48.15)	11 (44)	4 (28.57)	28
Total	27 (100)	25 (100)	14 (100)	66 (100)
IV. Services				
Ultra Sound	11 (40.75)	18 (72)	10 (71.43)	39
CT Scan	11 (40.75)	7 (28)	4 (28.57)	22
MRI	5 (18.52)	-	-	5
Total	27 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

Among the facilities are Sub Centre, Primary Health Centre, Community Health Centre and District Hospital (Table 5-I). Although two-fifth of the respondents in district Solan have access to CHC, but in district Shimla and Kinnaur only one-fifth each have access to same level of health facility. In comparison there are small number of respondents in all the three districts who have access only to PHCs and SCs. In totality (Table 5-II) more than two-third of the respondents has higher level of health facility available to them. The diagnostic services available to the respondents are neither adequate nor uniform. The maximum facility they enjoy is blood testing. The other facilities, such as ECHO, ECG, Surgery and delivery services are hardly available to the respondents in the three districts.

The medicines are generally not available to the patients in most hospitals, particularly the lower level health facilities (Table 5-III). However, the supplies of specific disease related medicines are available to almost half of the respondents from district Solan, more than two-fifth from district Shimla and little above one-fourth in district Kinnaur. The data (Table 5-IV) indicate that in the existing health facilities provide high-tech diagnostic services, such as Ultra Sound, CT

Scan and MRI. But these are differentially available in different districts. The data in this way indicate that hi-tech diagnostic facilities are available to respondents.

Table 6: Health Facility

District	Solan	Shimla	Kinnaur	Total
I. Doctors in Health Facility.				
Yes	27 (100)	25 (100)	14 (100)	66 (100)
No	-	-	-	-
Total	27 (100)	25 (100)	14 (100)	66 (100)
II. Technical Staff in the Health Facility.				
Yes	20 (74.07)	21 (84)	14 (100)	55 (83.33)
No	7 (25.93)	4 (16)	-	11 (16.67)
Total	27 (100)	25 (100)	14 (100)	66 (100)
III. Reasons Accounting for the Lapses.				
Not coming time on duty	7 (25.93)	4 (48)	4 (28.58)	15 (22.73)
Regular services	20 (74.07)	21 (48)	10 (71.42)	51 (77.27)
Total	27 (100)	25 (100)	14 (100)	66 (100)
IV. Availability of Medical Insurance Support in Illness.				
Yes	1 (3.70)	4 (16)	4 (28.57)	9 (13.64)
No	26 (96.30)	21 (84)	10 (71.43)	57 (86.36)
Total	27 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

According to the data (Table 6) the doctors are available in all the health facilities which the respondents go to seek consultation and treatment. Unlike the availability of doctors, the

technical staff is not available in all the facilities. The data therefore suggest either the staff remain absent or the positions are lying vacant. However, non-availability of technical staff negatively impact of the delivery of health services. The date thus confirms the inference that the staff does not come to their respective health facility in time and therefore the respondents do not find them during their visit. The other reason is regular service make them complacent and therefore they are not bothered to be available, a work culture affecting the service sector.

Disease Types and their Management

Understanding the nature and types of diseases prevalent in a given social setting is significant in planning and formulation of strategies to control the diseases as well as their precipitating factors. In this way, a society reduces the risk and burden of disease on the people. In the developing and under-developed countries, because of the fears of epidemics and epidemics experienced in reality, such efforts are of considerable significance. The World Health Organization (2005) cautioned about the increasing risks of disease burden, which not only mean increase in the economic costs but also the long run impact of sufferings and consequent disabilities among cross sections of a population. A disease implies condition of human body either non-functional or dysfunctional and therefore suggesting a condition short of normal functions of the body.

The communicable diseases are also further divisible into different types, broadly two. First category comprises of the diseases which are caused by internal infections caused by unsafe medical and reproductive health practices, mainly involving blood infections. The other type of communicable disease includes the physical ill-health caused by virus prevalent in the air. The second category of diseases is called non-communicable.

Table 7: Identification of Diseases either Respondents or Others in Family Suffered and Managed- Communicable Diseases.

District	Solan	Shimla	Kinnaur	Total
I. Communicable Diseases				
(i) Malaria				
Yes	27 (100)	20 (80)	12 (87.51)	59 (89.39)
No	-	5 (20)	2 (14.59)	7 (10.61)
Total	27 (100)	25 (100)	14 (14.59)	66 (100)

(ii) Typhoid				
Yes	25 (92.59)	20 (80)	11 (14.59)	56 (84.85)
NO	2 (7.41)	5 (20)	3 (21.43)	10 (15.15)
Total	27 (100)	25 (100)	14 (21.43)	66 (100)
(iii) Hepatitis A B C D E				
Yes	11 (40.74)	12 (48)	2 (14.28)	25 (37.88)
NO	16 (59.26)	13 (52)	12 (85.72)	41 (62.12)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(iv) Jaundice				
Yes	24 (88.88)	22 (88)	9 (64.28)	55 (83.33)
No	3 (11.12)	3 (12)	5 (35.72)	11 (16.67)
Total	27 (100)	25 (100)	14 (35.72)	66 (100)
(v) Gestrotitis				
Yes	15 (55.56)	9 (36)	6 (42.85)	30 (45.45)
No	12 (44.44)	16 (48)	8 (57.15)	36 (54.55)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(vi) Cholera				
Yes	9 (33.34)	7 (28)	5 (35.71)	21 (31.82)
No	18 (66.66)	18 (72)	9 (64.28)	45 (68.18)
Total	27 (100)	25 (100)	14 (35.71)	66 (100)
(vii) Hookworm				

Yes	5 (18.52)	6 (24)	2 (14.28)	13 (19.69)
No	22 (81.48)	19 (76)	12 (85.72)	53 (80.31)
Total	27 (100)	25 (100)	14 (85.72)	66 (100)
(viii) Tuberculosis				
Yes	7 (25.93)	9 (36)	2 (14.28)	18 (27.27)
No	20 (74.07)	16	12 (14.28)	48 (72.73)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(ix) Smallpox				
Yes	21 (77.77)	21 (84)	14 (100)	56 (84.85)
No	6 (22.33)	4 (16)	-	10 (15.15)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(x) Chickenpox				
Yes	14 (51.85)	16 (64)	8 (57.15)	38 (57.58)
No	13 (48.15)	9 (36)	6 (57.15)	28 (42.42)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(xi) Whooping Cough				
Yes	8 (29.63)	10 (40)	11 (78.57)	29 (43.94)
No	19 (70.37)	15 (60)	3 (78.57)	37 (56.06)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(xii) Mumps				
Yes	12	14	14	40

	(44.46)	(56)	(100)	(60.61)
No	15 (55.55)	11 (44)	0	26 (39.39)
Total	27 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

The data (Table 7) with regard to the communicable health problems ever suffered by the respondents and their family members include Malaria, Typhoid, Jaundice, Gastroenteritis, Cholera, hookworms and Tuberculosis. The data also indicate high prevalence of Smallpox, Chickenpox, Whooping cough, Mumps etc. The data on communicable diseases reveals that almost all of these are prevalent in the study area, the respondents and their members of their respective families suffered at some point of time. Though the extent and magnitude varies from district to district and disease to disease, but presence of the large number of communicable diseases and their identification by the respondents suggest certain linkages with the socio-economic and environmental conditions.

Table 8: Identification of Diseases either Respondents or Others in Family Suffered and Managed- Non- communicable Diseases.

District	Solan	Shimla	Kinnaur	Total
Non- communicable diseases.				
(i) Cardiovascular diseases				
Yes	18 (66.670)	20 (80)	13 (92.86)	51 (77.27)
No	9 (33.33)	5 (20)	1 (7.14)	15 (22.73)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(ii) Chronic Pulmonary disease				
Yes	21 (77.78)	4 (16)	- (14.28)	25 (37.88)
No	6 (22.22)	21 (48)	14 (14.28)	41 (62.12)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(iii) Cancer				

Yes	4 (14.82)	7 (48)	1 (7.14)	12 (18.18)
No	23 (85.18)	18 (72)	13 (92.85)	54 (81.82)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(iv) Strokes				
Yes	25 (92.59)	23 (92)	14	62 (93.94)
No	2 (97.40)	2 (8)	-	4 (6.06)
Total	27 (100)	2 (100)	14 (100)	66 (100)
(v) Accident Trauma Injuries				
Yes	9 (33.34)	11 (44)	2 (14.28)	22 (33.33)
No	18 (66.66)	14 (56)	12 (85.71)	44 (66.67)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(vi) Obesity				
Yes	7 (25.93)	16 (64)	2 (14.28)	25 (37.88)
No	20 (74.07)	9 (36)	12 (85.72)	41 (62.12)
Total	27 (100)	25 (100)	14 (100)	66 (100)
(vii) Alcoholism				
Yes	23 (85.18)	23 (92)	14 (100)	60 (90.91)
No	4 (14.82)	2 (8)	-	6 (9.09)
Total	27 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

The analysis of communicable diseases suffered by the respondents or the members of their respective family (Table 8) reveal cardiovascular diseases either suffered by them or any of their family members. The increasing number of cardiovascular diseases in the hills is a matter of concern. There are 25 of the total respondents who have reported prevalence of pulmonary diseases either suffered by them or the members of their respective family. One of the most fatal diseases is cancer. Unlike the cardiovascular disease only a small percentage of the total respondents less than one-fifth have reported cancer. In comparison to the above, the number of respondents reporting strokes is almost total. The accident caused trauma injuries have also been reported. Alcoholism is one of the most critical issues confronted by the people of hill state.

Table 9: Management of Communicable Diseases.

Response/District	Solan	Shimla	Kinnaur	Total
Don't know	2 (7.40)	-	1 (7.15)	3 (4.55)
Go to the hospital	23 (85.18)	17 (68)	5 (35.71)	45 (68.18)
Proper cleanliness	1 (3.71)	3 (12)	3 (21.43)	7 (10.61)
Home remedies	1 (3.71)	5 (20)	5 (35.71)	11 (16.66)
Total	25 (100)	25 (100)	14 (35.71)	66 (100)
Management of Non-Communicable Diseases.				
Don't know	2 (7.40)	1 (4)	5 (35.72)	8 (12.12)
Go to the hospital	22 (81.49)	21 (84)	6 (42.85)	49 (74.24)
Proper cleanliness	1 (3.71)	2 (8)	-	3 (4.55)
Home remedies	2 (7.40)	1 (4)	3 (21.43)	6 (9.09)
Total	27 (100)	25 (100)	14 (100)	66 (100)

Parenthesis show percentage

A small percentage (Table 9) does not know how to manage communicable disease whereas a large number in total and from each district go to hospital. The other choice expressed by the

respondents is to keep clean so that they do not catch an infection. Among these the Kinnaur has the maximum percentage in comparison to Shimla and Solan districts. There is another section which opts for home remedies. Among them the maximum number comes from district Kinnaur followed by district Shimla. With regard to management of non-communicable diseases the maximum number, like the management of communicable diseases prefer to go to hospital. However, the respondents who do not know what to do are little above one-third in number belonging to Kinnaur. Only a very small number of respondents take a chance and try home remedies for the treatment.

SUMMARY OF FINDINGS AND CONCLUSIONS

The foregoing data analysis, though based on a small sample may not be considered adequate in the context of quantitative analysis of prevalence of morbidity. However, in the backdrop of paucity of studies on the subject there emerge certain signals having theoretical and methodological implications.

- One of the indications that morbidity vulnerability increases with increase in age has been an accepted fact. What is significant methodologically is that small sample based analysis also matches large sample data based studies. The vulnerability further increases with marriage and reproductive related constraints conditioned by low socio-economic status. This is obvious from the finding that number of married women in morbid conditions is more than the unmarried.
- Education-wise data in the study do not show any definite trend. However, the indication is the illiterate and relatively less educated are more prone to morbidity than the educated. The educational status is also to be read with consequent sector of employment and level of income. The three are not only related with each other but also have considerable bearing on each other. The sector of employment suggests home makers due to the prolonged working and lack of rest put them into morbidity risk category. Similarly those involved in agricultural and horticultural activities because of long hours of work and use of chemical manures etc. tend to be affected more than who are in other less arduous economic activities.
- The income-wise distribution reveals people with less income, due to consequential reasons are prone more to be under morbid risks than those having higher incomes. The inference drawn from the overall situation of the respondents is that there is a vicious circle putting low income respondents under high morbidity risks.
- The regular supply of potable drinking water assumingly is good for people's health. However, the data states otherwise more than 90 per cent people receiving drinking water supply from public health department are among those admitted in the district hospital or

community health centre. It implies that water supplied by the public health department is not treated. This became obvious when large number of people in Shimla suffered from jaundice.

- The lack of proper covered drainage system also contaminate water and cause health problem Even water is supplied but public health open drainage system along the water supply lines perpetrate morbid conditions.
- There has been a shift in the defecation practices with more & more people resorting to use of flush system, which is considered more hygienic. The data at the same time suggest that more than 50 per cent of the patients using flush system indicates either they do not maintain hygiene in the toilets which often become a cause of morbidity.
- The higher number of LPG using patients in comparison to fire-wood users is surprising. However, LPG stoves do not emit smoke and like-wise one expects less morbidity. The results contrary to the expected imply that other conditions, such as size of kitchen, ventilation source, etc. are also important and therefor require detail analyses.
- The surrounding conditions need to be clean and hygiene. People dispose of animal dung away from their respective home. However, the number sick persons happens to be high among them. Similarly are placed those who do not have any animals in their house. It implies other factors, such as diet, nutritional status may also account for morbidity than the hygienic conditions alone.
- The indications also suggest that the increasing use of chemical spray in agricultural and horticultural has resulted in high morbidity in villages. Although a substantial number (57.57%) not using chemical manures are also among the sick. May be that even when spray is carried out the chemical does not remain confined to the fields alone but also spreads around with air and may be a cause of morbidity.
- The major communicable diseases prevalent in the study mentioned by the respondents include malaria (89.39%), typhoid (84.85%), humilities (7.88%) Jaundice (83.33%) Gastroentitis (45.45%), Cholera (31.82%), Small Pox (84.85%), Chicken Pox (57.58%), Mumps (60.61%) etc. The analysis of the characteristics of respondents suggests these are present among cross sections of the society.
- The non-communicable diseases, such as strokes are reported by almost 90 per cent, alcoholism 92 per cent, Cardio-vascular diseases by 77 per cent. The patients argue that these diseases are on the rise due to changing dietary habits and life styles among people. However, there is a need for a study of communicable and non-communicable diseases along with peoples with deity's habits and life styles.
- The disease management by the people for illness and general as well as non-communicable disease suggest hospital and consequent hospitalization is the only method

followed by people in largest number of cases. Some also resort to use of home remedies and other local methods.

The findings although due to small sample size remain limited but provide sufficient indications that socio-economic and environmental conditions play a critical role in the causation of morbidity and illness. Methodologically, a study on morbidity based on indoor patients also calls for a comparative sample of people with similar socio-economic status and living conditions not admitted in hospital to assess whether they are also prone to morbidity.

REFERENCES

- Akker VD, Buntinx F, Metsemakers JF, Knottnerus JA (2000) Marginal impact of psychosocial factors on multi-morbidity: Results of an explorative nested case-control study. *Social Science and Medicine*, Vol. 50, Pp. 1679–1693
- Balarajan, Y; Selvaraj, S; et al. (2011). "Health care and equity in India". *Lancet*. Vol. 377, Pp. 505–15. doi:10.1016/s0140-6736(10)61894-6.
- Banjare, Pallavi & Jalandhar Pradhan (2014) Socio-economic Inequalities in the Prevalence of Multi-morbidity among the Rural Elderly in Bargarh District of Odisha, *PLoS*, Vol. 9, No. 6, e-97832, 0.137/journal.pone.0097832 retrieved on 16.12.2016. PMID: PMC4046974
- Mackenbach, J. P. (1992) Socio-economic Health Differences in The Netherlands: A Review of Recent Empirical Findings, *SocSciMed*, Vol.34, No. 3, Pp.213-16
- Scott, John & Gordon Marshall (2009) *Oxford Dictionary of Sociology*, London: Oxford University Press, p.489.
- Tarozzi, Alessandro (2012), "Some Facts about Boy versus Girl Health Indicators in India: 1992—2005". *CESifo Economics Studies*. Vol. 58, No. 2, Pp.296-321. doi:10.1093/cesifo/ifs013. Retrieved on 16.12.2016.
- United Nations (1995). Population and Development (vol. 1) New York: Department of Economic and Social Development.