

## Occupations and Morbidity Pattern in a North Indian Site: Need for Focused Health Services for House Wife, Pensioners and Unemployed

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### Abstract

**Background:** Morbidity has factors related to occupational status, however information from community based study is seldom available in India. This article uses self reported morbidity in the community from one North Indian sites and effect of occupational status on morbidity.

**Methods:** An ICMR Task force study of health accounting, collected different health related parameters at baseline. Under the study thousand households (500 rural, 500 urban) were surveyed during 2012-13 by door to door survey using pretested questionnaire after availing written informed consent. This information reflects the distribution of demographic and occupation profile in relation to morbidities.

**Results:** Overall self reported morbidity prevalence was nearly sixteen percent (821 out of 5279, 15.8%). 766 individuals provided details, among them 530 (12%) were considered as corroborative evidence to support disease diagnosis. Nearly 32% suffered from communicable and 67% suffered from non-communicable diseases. Among different occupations, pensioners had highest morbidities (24.5%) followed by unemployed (20.5%) and housewives (21.4%).

**Conclusion:** Morbidity profile and effect of occupation/ work status is evident from the study. There is need of targeted services for these groups and periodic feedback or impact assessment from consumers themselves will be more authentic for appropriate policy formulation.

**Keywords:** Occupation, Morbidity, Health Account.

### Introduction

High disability and sickness absence observed in some occupations relates to occupation-specific consequences.<sup>1</sup> In view of connection between occupation, employment status and morbidity, there has been a need for focused policy planning and health service delivery, but seldom done in absence of information. To look into the pattern of distribution of morbidity among different occupations in the North Indian site, while conducting survey for one ICMR Task Force study- Health Account Scheme, information about occupation was compared with the morbidity profile in which 5279 participants were surveyed from rural (2781) and urban (2498) site

respectively during the year 2012-13. This information might be of use for policy planning for need based service delivery.

### Methods

A small village of Hardoi district, near Lucknow, North India was selected by random allocation. It comprised of 526 households (HH) to cover almost the whole village, 500 HH were surveyed. For Urban morbidity information, was gathered from a block of 500 HH from urban site nearby Lucknow district. Information was collected on various aspects of health status and occupation.

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Information of different occupations were categorized in 9 categories and was compared with self-reported morbidity observed in recall period of previous 2 months. Data was collected by door to door approach during April 2012 to Jan 2013. Pattern of morbidity in relation to occupation was analyzed using SPSS package version 19. Total 5279 persons of all ages were surveyed by team including medical doctor from 1000 households (500 rural, 500 urban). Among them, 821 participants (15.6%) expressed health problem/s (Ref. Table 1). 767 participants shared detailed disease information and were able to produce some corroborative evidence of prescription slip/written treatment/ tablet strips, test report/ pharmacy slips/ bills. 530 among them were

comfortably sharing information about their occupations too. The final analysis for occupation and disease categories included, those were provided corroborative evidences of the written prescription/ test reports/ medicine bills.

Subgroup analysis was conducted to see pattern of distribution of communicable and non-communicable diseases among different occupations/ work profile.

## Results

Overall 15.8% morbidities were reported by 821 persons from all age and gender groups combined. 12% were with some record/ corroborative evidence of disease.

	Rural (%)	Urban (%)
Total n= 5279	2718	2498
Male	1442(51.9)	1292(51.7)
Female	1339(48.1)	1206(48.3)
<b>Age group (yrs.) distribution</b>		
0 - 1	79(2.8)	51(2.0)
1 - 6	326(11.7)	228(9.1)
6 - 18	822(29.6)	649(26.0)
18 - 30	589(21.2)	650(26.0)
30 - 40	354(12.7)	346(13.9)
40 - 50	245(8.8)	271(8.7)
50 - 60	182(6.5)	204(8.2)
60 - 70	144(5.2)	113(4.5)
>70	40(1.4)	40(1.6)
<b>Education</b>		
Illiterate	705(27.8) *	233(10.0) *
Primary	695(27.4)	538 (23.1)
Middle	485(19.1)	423(18.2)
High school	245(9.7)	265(11.4)
Intermediate	197(7.8)	251(10.8)
graduate/post graduate	187(7.4) *	445(19.1) *
Profession/honours	23(0.9)	171(7.4)
<b>Occupation distribution</b>		
Housewife	691(28.2)	610(26.5)
Student	947(38.7)	897(38.9)
Skilled work	22(0.9)	36(1.6)
Unskilled work	550(22.5) *	158(6.9) *
Business	59(2.4)	149(6.5)
Unemployed	82(3.4)	74(3.2)
Private Service	38(1.6)	121(5.3)
Government job	42(1.7) *	175(7.6) *
Pension	17(0.7) *	81(3.5) *
<b>Positive for any Disease? n=821 (15.6% of total population)</b>		
Yes	485(17.4)*	336(13.5) *
No	2296(82.6)	2162(86.5)
Single disease	460(94.9)	293(87.2)
Multiple diseases	25(5.1) *	43(12.8) *

Statistically significant \*P value=<0.05

**Table1.Demographic profile of the study population**

Out of 5279 participants, 821 (15.6%) had morbidity in last 2 months on survey dates, out of which 485/2781 (17%) were in rural- site and 336/2498 (13%) in urban (Hardoi district). 571 (approx 70%) out of 821 people having complaints of one or more health related problems were having corroborative evidence of diagnosis or treatment or test report, hence were included in analysis to find out distribution of occupation and pattern of different morbidity prevalence. Occupation wise

there were 28.2% housewives, 38.7% students, 0.9% skilled workers, 22.5% unskilled workers, 2.4% businessmen, 3.4% unemployed, 1.6% private job, 1.7% government job and 17% pensioners in rural community. There were 26.5% housewives, 38.9% students, 1.6% skilled workers, 6.9% unskilled workers, 6.5% businessmen, 3.2% unemployed, 5.3% private job, 7.6% government job and 3.5% pensioners in urban community.

Occupation (n)	Communicable diseases, n (%)	Non communicable diseases, n (%)
Housewife (366)	91 (24.9)	275 (75.1)
Student (114)	57 (50)	57 (50)
Regular work (7)	2 (28.6)	5 (71.4)
Irregular work (130)	60 (46.2)	69 (53.1)
Business(19)	8 (42.1)	11 (57.9)
Non- earning (43)	17 (39.3)	26 (60.5)
Private job (7)	4 (57.1)	3 (42.9)
Government job (35)	4 (11.4)	31(88.6)
Pension (46)	6 (13.0)	40 (87.0)
Total (767)	249 (32.5)	517 (67.5)

Statistically significant P value=0.00

**Table 2. Distribution of communicable vs. non communicable disease among different occupations**

Difference of communicable vs. non-communicable disease among different occupations was statistically significant (p value=0.00). More physically demanding the job is, lesser is the prevalence of non-communicable disease. Women were found to have double burden of diseases because of high prevalence of both communicable and non-communicable diseases.

In rural areas, communicable diseases were found to be more prevalent across different occupations in comparison to their urban counterparts (Table 3). Overall morbidities are more among rural temporary jobs holders/ irregular laborers, however non-communicable disease are more in urban counterparts in all occupations.

Occupation (n)		Communicable disease	Non-communicable disease
Housewife (366)	rural, 183	61(33.3)	123(66.7)
	urban,183	30(16.4)	153(83.6)
Student (114)	rural, 84	49(56.3)	39(41.7)
	urban, 30	8 (26.7)	22(73.3)
Regular work (7)	rural, 3	1(33.3)	2(66.7)
	urban, 4	1(25)	3(75)
Irregular work (130)	rural, 111	54(48.6)	56(50.5)
	urban,19	6(31.6)	13(68.4)
Business(19)	rural, 11	4(36.4)	7(63.6)
	urban,8	4(50)	4(50)
Non- earning (43)	rural, 28	12 (42.9)	16(57.1)
	urban,15	5(33.3)	10(66.7)
Private job (7)	rural, 2	2(100)	
	urban, 5	2(40)	3(60)
Government job(35)	rural, 10	4(40)	6(60)
	urban,25	0	25(100)
Pension(46)	rural, 10	2(20)	8(80)
	urban,36	4(11.1)	32(88.9)
Total(767)	rural, 442	189(42.8)	253(57.2)
	urban, 325	60(18.5)	265(81.5)

Statistically significant P value = (<0.001)

**Table 3. Difference of rural vs. urban distribution of morbidities among different occupations**

21.4% of housewives (n=278), 4.8% of students (n=4.8), 10.3% of regular workers, 7.2% of irregular workers and businesspersons, 20.5% of unemployed, 3.1% of private jobs, 9.7% of government job, and 24.5% of pensioners of the total 571 participants had morbidity.

Hence the prevalence of all categories of ailments was topped by housewives followed by unemployed and pensioners.

## Discussion

Data were obtained from national health interview surveys<sup>2</sup> or similar surveys between 1986 and 1992. A lower than average prevalence of morbidity was found for higher and lower administrators and professionals as well as for blue collar workers, whereas a higher than average prevalence was found for skilled and unskilled manual workers and agricultural workers. Self-employed men found were in general healthier than the average population. Similar trends were observed in studies reported from abroad. A European study described morbidity differences according to occupational class among men from France, Switzerland, (West) Germany, Great Britain, the Netherlands, Denmark, and Sweden. Variation in morbidity prevalence in agrarian sector reported from different countries shows difference from that of skilled and semiskilled workers. Though, relative health of farmers differed between countries to country. The morbidity difference between manual workers and the class of administrators and professionals was approximately equally large in all countries. Consistently larger inequality estimates, with no or slightly overlapping confidence intervals, was only found for Sweden in comparison with Germany. A similar trend of morbidity in north Indian average town was observed in the present study, while, larger burden was evinced among housewives.

The size of inequalities in health was found to vary between countries in European studies. Studies conducted to assess whether there are variations amongst 11 Western European countries<sup>3</sup> with respect to the size, in self-reported morbidity between people with high and low educational levels evinced interesting trends. In general, there was a tendency for inequalities to be relatively large in Sweden, Norway, and Denmark and to be relatively small in Spain, Switzerland, and West Germany. Intermediate positions were observed for Finland, Great Britain, France, and Italy<sup>4</sup>. The position of the Netherlands strongly varied according to sex: relatively large

inequalities were found for men whereas relatively small inequalities were found for women. It is remarkable that health inequalities are not necessarily smaller in countries with more egalitarian policies such as the Netherlands and the Scandinavian countries<sup>5,6</sup>. The current study based evidence of morbidity in relation to community based occupation furnished very important information from India.

The situation of developing nation like India, regarding disease based morbidity and its prevalence could be understood more comprehensively by undertaking studies focusing on community undergoing temporal changes, while implementing different educational and health programs. In order to get trend similar to that of European studies many more studies need to be carried out as that of the one being discussed in the present context.

While reassessing the international pattern of inequalities in mortality using an inequality index devised recently on the size of mortality differences associated with occupational status<sup>7</sup>.

The smallest inequalities in mortality are observed for Norway and Denmark<sup>9</sup>. Larger inequalities are observed for Sweden (compared to Norway circa 1.5 times as large), England and Wales (2 times), Finland (4-5 times) and France (6-8 times). Our study also shows approximately two times higher morbidities among pensioners vs. others and among rural vs. urban (Table 2).

India, being a developing nation, facing ridden with public health problems, various communicable diseases, malnutrition, poor environmental sanitation and inadequate medical care thereof<sup>10</sup>. Globalization and rapid industrial growth in the last few years has resulted in emergence of occupational health related issues. Present study showed less employment opportunity, unemployment and less manual work among a section of population shows high morbidity among classes<sup>11,12</sup>.

There is dearth of community based data from India compels one to rely on census report. It is the major source of reliable information on employment and related issues. The general census in India is carried out every 10 yrs. And the decennial trend reflects the status of morbidity and its prevalence and gender link to such prevalence or incidence for a long standing problem or issue. In case a short focused and indepth data is required to take any corrective or area specific temporal measure, one feels handicapped. Such

decennial data can only give material for long term planning and are not precise to throw light on specificity and sensitivity of any disease or morbidity pattern.

Though, the agencies like National Institute of Occupational Health, Industrial Toxicology Research Centre, Central Labour Institute are working on limited focused issues like asbestos and asbestos related diseases, pesticide poisoning, and silica related occupational hazards and illnesses. Apart from these, some sentinel studies have been undertaken to address morbidities across community from occupation point of view, however, representation of community as a whole is missing from researchable issues and publications. This type of study not only attempts to fill the gap but also highlights urgency of such information. This is essential for monitoring the impact of different focused health schemes and policies of Government.

### Conclusion

There is a difference in the prevalence of overall morbidity in rural and urban population and among different occupations. A need of health education/services targeted towards housewives, unemployed, unskilled and pensioners, that too more in rural areas, is evident from the observation.

### References

1. Brage S, Bjerkedal T, Bruusgaard D. Occupation-specific morbidity of musculoskeletal disease in Norway. *Scand J Public Health* March 1997; 25: 50-57.
2. Cavelaars AEJM, Kunst AE, Geurts JJM et al. Morbidity differences by occupational class among men in seven European countries: an application of the Erikson-Goldthorpe social class scheme. *Int J Epidemiol* 1998; 27(2): 222-30.
3. Cavelaars AE, Kunst AE, Geurts JJ et al. Differences in self reported morbidity by educational level: a comparison of 11 western European countries. *J Epidemiol Community Health* Apr 1998; 52(4): 219-27.
4. Ferrario MM, Veronesi G, Chambless LE et al. The contribution of major risk factors and job strain to occupational class differences in coronary heart disease incidence: the MONICA Brianza and PAMELA population-based cohorts. *Occup Environ Med* Oct 2011; 68(10): 717-22.
5. Eikemo TA, Kunst AE, Judge K et al. Class-related health inequalities are not larger in the East: a comparison of four European regions using the new European socioeconomic classification. *J Epidemiol Community Health* Dec 2008; 2(12): 1072-78.
6. Borrell C, Muntaner C, Benach J et al. Social class and self-reported health status among men and women: what is the role of work organisation, household material standards and household labour? *Soc Sci Med* May 2004; 58(10): 1869-87.
7. Kunst AE, Groenhouf F, Andersen O et al. Occupational class and ischemic heart disease mortality in the United States and 11 European countries. *Am J Public Health* Jan 1999; 89(1): 47-53.
8. Lissau I, Rasmussen NK, Hesse NM et al. Social differences in illness and health-related exclusion from the labour market in Denmark from 1987 to 1994. *Scand J Public Health Suppl* 2001; 55: 19-30.
9. Kunst AE, Mackenbach JP. International variation in the size of mortality differences associated with occupational status. *Int J Epidemiol* Aug 1994; 23(4): 742-50.
10. Saiyed HN, Tiwari RR. Occupational Health Research in India. *Industrial Health* 2004; 42: 141-48.
11. Shukla A, Kumar S, Ory FG. Occupation health and environment in an urban slum in India. *Social Science and Medicine* 1991; 33(5): 597-603.
12. Agnihotram RV. An overview of occupational health research in India. *Indian J Occup Env Med* 2005; 9(1): 10-14.