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*Journal homepage: <http://www.journalijar.com>***INTERNATIONAL JOURNAL
OF ADVANCED RESEARCH****RESEARCH ARTICLE****A Study of the Morbidity pattern amongst patients attending the OPD at Urban health training centre, Era's Lucknow Medical College and Hospital, Lucknow.*****Abhishek Arun¹, Pratibha Gupta², J.P.Srivastava³, Daya Prakash²****1.** MD Resident, Department of Community Medicine, Era's Lucknow Medical College and Hospital, Lucknow 226003, India.**2.** MD, Associate Professor, Department of Community Medicine, Era's Lucknow Medical College and Hospital, Lucknow.**3.** MD, Professor and Head, Department of Community Medicine, Era's Lucknow Medical College and Hospital, Lucknow.**Manuscript Info****Manuscript History:**

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Abstract**Background:** Health which is multidimensional in nature and difficult to measure, often captured through a range of indicators like mortality and morbidity. The data on morbidity is easy to collect but difficult to measure without subjective bias. A bulk of the research has been done for standardization of definitions of morbidity at National and local levels by various researchers.**Objectives:** This study attempts to find out the pattern of morbidities of the people along with their age, sex and in different seasons of the year, amongst the patients attending to the OPD at Urban Health and Training Centre (UHTC), ELMC&H.**Materials and methods:** Data for 12 months (April 2012 to March 2013) was obtained from routine consultation and recorded on a pre designed morbidity sheets from outpatient attendance of our Urban Health and Training Centre (UHTC), under the department of Community Medicine, ELMC&H, Lucknow. Only new patients were taken into account.**Results and conclusion:** A total of 17,890 individuals (3399 males, 14,491 females) gave their consent and participated in the study. The case rate was reported higher for the age group (31-40 years). The percentage of female OPD consultations (11,273 ie. 63%) was more than that of males (6617 ie.37%). Respiratory & GIT diseases still contributed the major proportion of morbidities in both sexes. In the non-communicable disease group, hypertension (43%) was the major disease burden followed by anaemia (20.8%) and asthma (11.7%). Attendance rate for most of the illnesses was observed more in winters followed by rainy season.*Copy Right, IJAR, 2013.. All rights reserved.***Introduction**

Non-communicable diseases are increasing worldwide due to rapidly changing life style. Earlier burden of communicable diseases was much higher than non-communicable diseases. Changing scenario of disease burden in a community can best be studied on the basis of hospital data due to lack of reliable community-based data and some to some other difficulties experienced from the community. In the year 2001, chronic diseases contributed approximately 46% of the global burden of diseases¹ (The world health report 2002). This shift in the pattern of disease from communicable to non-communicable is occurring at a faster rate in developing countries than it did in the industrialized regions of the world half a century ago² (Popkin B.M 2002). Projections nevertheless indicate that

communicable diseases will still occupy a critically important position up to 2020³ (Murray C.J. et al. 1996). Sometimes chronic diseases are considered communicable at the risk factor level. Modern dietary patterns and physical activity patterns are risk behaviors that travel across countries and are transferable from one population to another like an infectious disease, affecting disease pattern globally⁴ (Choi B.C.K. et al.2001).

The rapidity of the changes in developing countries is such that a double burden of disease may often co-exist which strains the existing resource poor health delivery system. Changing disease pattern and treatment seeking behavior of patients demand restructuring / remodeling of existing health care system also. There seems to be an urgent need of effective utilization of specific clinics established in tertiary health care institutions. Geographical variation of diseases must be taken as an opportunity to carry out continuous surveillance of different diseases in hospitals so that reliable and updated data are timely available for health administrators to plan, implement and evaluate disease control and prevention programme strategies⁵ (M.K. Sharma et al.2008). Present study aims at studying morbidity pattern of communicable and non-communicable diseases amongst patients attending to the OPD of Urban health and training centre (UHTC) at Era's Lucknow medical college and hospital, Lucknow, reflecting the disease burden in the community.

Aims and objectives

- (1) To study morbidity pattern of diseases at UHTC, of ELMC&H.
- (2) To observe the sex, age and season wise distribution of morbidities among the studied subjects.
- (3) To suggest measures to lower the burden of diseases in a community.

Materials and methods

The study was undertaken by the department of Community Medicine, Eras Lucknow medical college and hospital (ELMC&H), Lucknow The Urban Health Training Center (UHTC), Nakkhas, Lucknow supervises 20 mohallas covering around 24,500 population in the area. In the present study, the morbidity pattern was seen through Out Patients Department (OPD) approach in a span of 12 months at OPD of UHTC. The analysis was done on the basis of new patients only; if the same patient came for consultation for more than one time for a particular illness then he/she may be considered once. As per the norms laid down at UHTC, OPD services are run on every working day at Nakkhas. All the diagnosed diseases were classified in to broad categories on the basis of physiological systems and a separate head was given for generalized pain, weakness, fever, and headache. Morbidity pattern was analyzed from the OPD attendance register from April 2012 to March 2013.

Type of study: This was a cross sectional study carried out for a period of 12 months amongst patients who attended the OPD at Urban Health Training Centre of the Department of Community Medicine, Era's Lucknow Medical College and Hospital, Lucknow, India.

Duration of the study: This study was conducted between April 2012 and March 2013. A total of 17,890 individuals (3399 males, 14,491 females) gave their consent and participated in the study. A structured, pretested schedule was used to collect the data with regards to the socio-demographic characteristics (age, gender, religion) and the morbidity pattern.

Inclusion criteria: All the adults who were aged 18 years and above, who attended the OPD at Urban Health Training Centre of the Department of Community Medicine, Era's Lucknow Medical College and Hospital, Lucknow, India.

Exclusion criteria: All the participants who were aged less than 18 years of age were excluded from the study. The patients who were non cooperative and those who refused to provide the necessary information were also excluded.

The patients/subjects were assured of the confidentiality of the data and their informed consent was obtained. A pretested performa was employed to record the necessary information such as socio demographic factors, occupational history, past and present medical history, findings of clinical examination and investigations performed among the workers. Standard clinical methods and investigations were used for the diagnoses of diseases, and opinion of the specialists from the Eras Lucknow medical college and hospital (ELMC&H), Lucknow, was obtained to confirm them. International Classification of Diseases version 10 (ICD 10) was used to perform the final

diagnoses, e.g., Chronic bronchitis (ICD No. J44) was defined as the presence of a chronic productive cough in a patient on most of the days for three months and persistent chronic productive cough in a patient in for two successive years; and patients in whom other causes of chronic cough have been excluded (other causes of chronic cough were excluded by sputum microscopy and chest X-ray). To detect anemia in all the subjects, the hemoglobin level (g/dl) was estimated using Sahli's Hemoglobinometer. The subjects in whom the hemoglobin values were lower than that prescribed by the WHO norms were diagnosed with anemia (males < 13 g/dl and females < 12 g/dl). Injuries that had occurred in the past six months were included in the study. Test for the statistical significance was applied by using χ^2 test for analyzing the difference between the two proportions ($P < 0.05$ was considered significant).

Results

Table 1: Distribution of patients according to age and gender

Age and Gender	Total number	Percentage %
Age in years		
18-30	1789	10.0%
31-40	6798	37.9%
41-50	5367	30.0%
51-60	2156	12.0%
>60	1780	9.9%
Total	17890	100%
Gender		
Male	6,617	37%
Female	11,273	63%
Total	17,890	100%
Pattern of disease		
Communicable disease	6619	36.9%
Non-communicable disease	11271	63.1%
Total	17890	100%

Table 1 shows distribution of study subjects/patients according to age, sex and predominant pattern of disease. A majority of subjects belong to the age group 31-40 years. The percentage of females (63%) outnumbered males (37%). Non-communicable disease (63.1%) were more common than the communicable disease (36.9%).

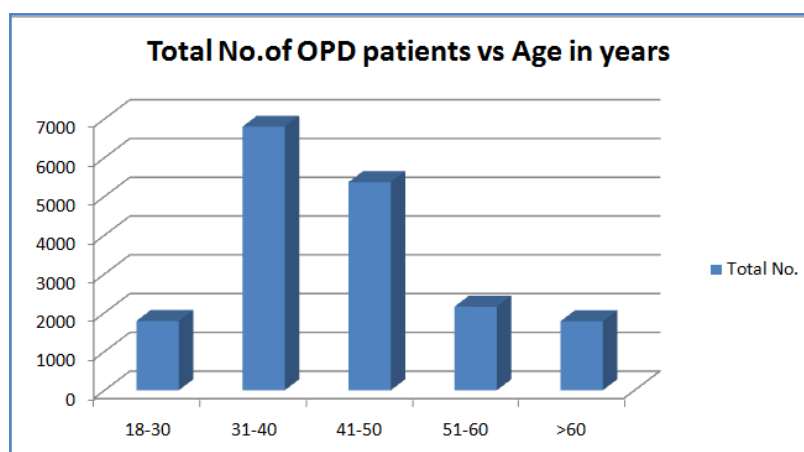


Figure 1: Showing morbidity pattern according to age.

Table 2: Morbidity pattern of communicable disease

Disease	OPD	Male	Female	z-value	p-value	ICD-10 code
URTI/ARI	2912(44%)	960(33%)	1951(67%)	19.5	<0.0001	J00
Pulmonary tuberculosis	1589(24%)	826(52%)	763(48%)	1.582	0.114	A15.0
Pneumonia	198(3.0%)	121(61%)	78(39%)	3.207	0.001	J17
Acute diarrhea	530(8%)	149(28%)	381(72%)	11.208	<0.0001	R19.7
Hepatitis	175(2.6%)	77(44%)	98(56%)	1.599	0.11	B15.9
Typhoid/Enteric fever	125(1.8%)	42(34%)	83(66%)	3.882	0.0001	A01.09
RTI/STD	992(15.1%)	89(9%)	903(91%)	45.22	<0.0001	A64
Others	98(1.5%)	30(31%)	68(69%)	4.164	<0.0001	
Overall	6619(100%)	2294(34.7%)	4325(65.3%)	26.23	<0.0001	

Most Common URTI/ARI (44%) with second most common PT (24%) (for difference $z=25$, $p<0.0001$)

Table 2 : shows morbidity pattern of communicable diseases in OPD of UHTC and also by gender. Acute respiratory infection (ARI) was the most common (44%) reported communicable disease followed by pulmonary tuberculosis (24%) and STD (15.1%). All there communicable diseases were mostly managed at OPD only. Females dominated males in the reported morbidity spectrum of all communicable diseases. There were 4325 (65.3%) females among all reported cases. Diseases patterns among males and females were also found significantly different ($P<0.01$).

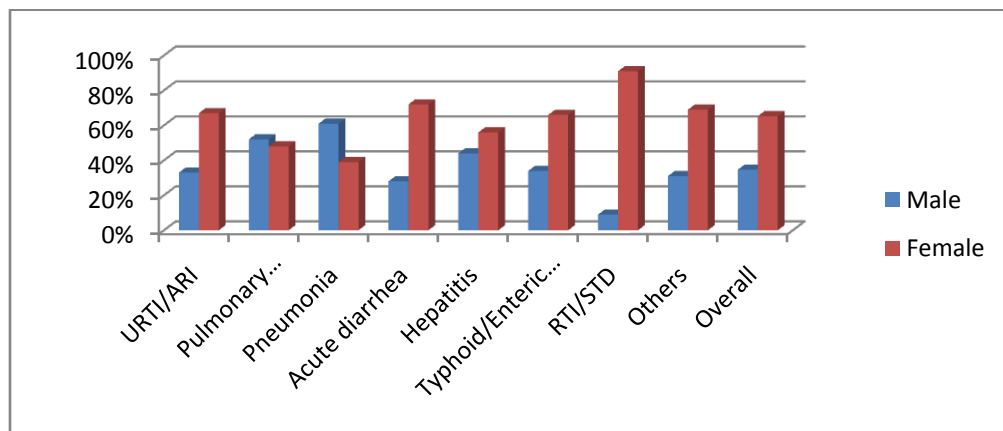


Figure 2: Showing the distribution pattern of communicable diseases amongst patients attending OPD at UHTC (ELMC&H).

Table 3: Morbidity pattern of non communicable disease

Disease	OPD	Male	Female	z-value	p-value	ICD-10 code
Hypertension	4959(43.0%)	2034(41%)	2925(59%)	12.86	<0.0001	I10
Diabetes mellitus	789(7%)	363(46%)	426(54%)	2.25	0.02	E14
Asthma	1318(11.7%)	619(47%)	699(53%)	2.21	0.03	J45

IHD	1014(9.1%)	690(68%)	324(32%)	12.32	<0.0001	I20.8
Bronchitis	146(1.3%)	85(58%)	61(42%)	2.01	0.04	J41
CVA/hemiparesis	563(5.1%)	343(61%)	220(39%)	5.31	<0.0001	G81
Anemia	2254(20.8%)	113(5%)	2141(95%)	97.87	<0.0001	D50
Arthritis	124(1.2%)	45(36%)	79(64%)	3.17	0.001	M15.4
Others	104(0.9%)	31(30%)	73(70%)	4.51	<0.0001	
Overall	11,271(100%)	4323	6948	25.42	<0.0001	

Most Common Hypertension (43%) with second most common Anemia (20.8%) (for difference $z=39.97$, $p<0.0001$)

Table 3 shows morbidity pattern of non-communicable diseases for OPD at UHTC and also for males and females . In the non-communicable disease group, hypertension (43%) was the major disease burden followed by anaemia (20.8%) and asthma (11.7%). A large percentage of non- communicable cases were managed in OPD. Observed distributions of males and females in different morbidity categories were also found to differ significantly ($P<0.01$). Females were found to be comparatively more sufferers of anaemia (95%), hypertension (59%), Diabetes mellitus (54%), asthma (53%) and arthritis (64%). Rest of the reported non-communicable diseases were found to be comparatively more prevalent among males than that of females.

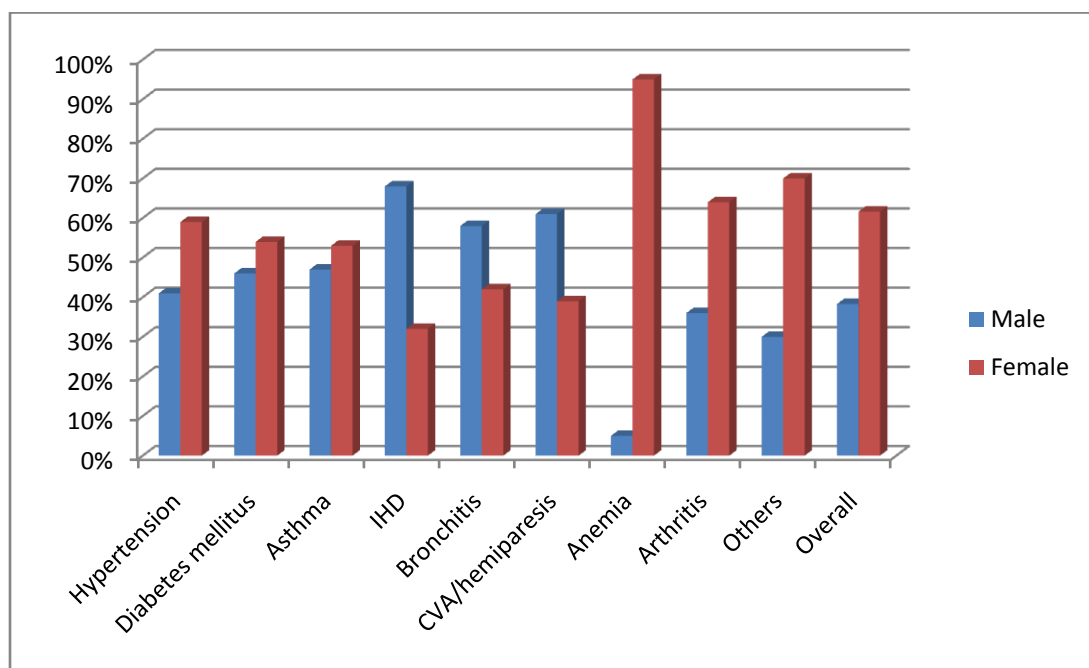


Figure 3: Showing the distribution pattern of non-communicable diseases amongst patients attending OPD at UHTC (ELMC&H)

Table 4: Distribution of the reported cases of diseases in different seasons.

Morbidity	Season						Total	
	Summer		Rainy		Winter			
	Reported cases	Percentage (%)	Reported cases	Percentage (%)	Reported cases	Percentage (%)		
GIT problems	345	49	204	29	156	22	705	100
Respiratory problems	1972	32	1787	29	2404	39	6163	100

Hypertension	1488	30	1636	33	1835	37	4959	100
Diabetes Mellitus	292	37	221	28	276	35	789	100
Bone and joint problems	46	37	26	21	52	42	124	100
Nutritional deficiencies	699	31	946	42	609	27	2254	100
Parasitic infections	48	39	40	32	37	29	125	100
Diarrheal diseases	201	38	223	42	106	20	530	100
Headache	09	30	12	35	12	35	33	100
Fever	284	28	426	42	304	30	1014	100
UTI/STI	357	36	407	41	228	23	992	100
Others	69	34	64	32	69	34	202	100
Total	5733	32	5979	33.4	6178	34.6	17890	100

For most of the morbidities registered in OPD, cases were found more in winter season followed by the rainy season (Table 4). In the present study, the diseases like GIT problems, Parasitic & Infectious and Diabetes Mellitus are more common in summer while Skin, Fever and Nutritional deficiency related diseases reported maximum attendance during rainy season. Respiratory diseases are more prominent (around 39 percent) during winter than summer (32%) and rainy season (29%). Also, Bone & Joint related diseases were found more during winter season.

Discussion

In this study, we explored spectrum of communicable and non-communicable diseases in the OPD of UHTC. Burden of non-communicable diseases came out to be much higher (63.1%) as compared to communicable diseases (36.9%) in the studied health facility. Among communicable diseases, ARI (44%) was the most common disease reported followed by pulmonary tuberculosis (24%) and STD/RTI (15.1%). In the non-communicable disease group, Hypertension (43%) was the major disease burden followed by Anaemia (20.8%) and Asthma (11.7%). A higher morbidity was reported during the winter season (34.6%) followed by rainy season (33.4%).

Higher proportion of ARI cases in OPD than that in IPD contradicts observation in an earlier study⁶ (Graham S.M 2003). Possibility of misdiagnosis for diseases like ARI in the OPD set up cannot be ruled out for this finding. Considerable respiratory diseases like ARI, pneumonia and pulmonary tuberculosis were treated in the OPD of UHTC. Most patients visiting the Out Patient Department have already been to many practitioners before landing in the studied health facility and might very well be suffering from infections with resistant bacteria. Also, among adults complications can develop despite clinical improvement⁷ (Leser C.F. et al. 2005) requiring indoor care.

Hypertension being the commonest non-communicable morbidity corresponds with the findings of others⁸ (Ashavadi T.F. et al. 2004). The female preponderance of this disorder is as per expectations. After 45 years systolic blood pressure increases more in females than in males⁹ (Swales J.D 2004). In OPD patients of UHTC, female population predominate¹⁰ (Sharma M.K. et al. 2005) among elderly and approaching for treatment here. This fact can explain the female predominance in hypertension. In most regions, hypertension accounts for 10% of adult hospital morbidity¹¹ (Mbanya J.C. et al. 2003). In Chennai reported prevalence of hypertension was 8.3% among males and 8.2% among females. Crude Prevalence of hypertension in the age group 20 years and above was reported to be 21.1% with the age standardized prevalence of 17%¹² (Shanthirani C.S. et al. 2003). Prevalence of hypertension even in rural areas of Kerala is as high as 12.5% to 17.9%¹³ (Anand M.P 1999) in spite of the fact that this state is considered a model for betterment of health situation in India. In some developing countries especially those with a high prevalence of diabetes almost 100 percent of persons with diabetes fall into its type-2 category¹⁴ (Hetzel B.S. et al. 2002). Type-2 Diabetes affects approximately 8% of adults in United States¹⁵ (Diabetes prevention programme Research Group 2002). Diabetes prevalence ranged from 8.4% among normotensives to 25.6% amongst hypertensives in a study conducted in South India¹⁶ (Snehalatha C. et al. 2003). This fact indicates the role of hypertension as an important component of studying morbidity spectrum for health planning in India.

In India approximately 1 million patients of cancer develop annually. To reinforce the population-based registry, hospital-based cancer registry data play important roles and they provide valuable information for planning effective strategies for cancer control¹⁷ (Desai P.B 2002). Anaemia was more prevalent than Asthma and Diabetes. In Asian population, IHD was present in 9.4% of normotensives and 17.1% hypertensives giving 3.3% prevalence in combined population¹⁸ (Singh R.B. et al 2000). This finding is in agreement with our study results of 14.6% prevalence. Prevalence of CHD was reported to be 4.5% in Jaipur¹⁹ (Gupta R et al.1995). The variations in prevalence of IHD at different places suggest the need of conducting more studies on regional basis. Patients were found not to be approaching at proper OPD resulting in wastage of clinical expertise. Expert clinicians were not adopting proper inter departmental referral system, perhaps due to avoiding denial from services and managing patients to the extent possible at their own level. Although there were no serious ethical concern associated with the adoption of referral system. Also, patients were approaching tertiary care hospital for some common ailments also which can easily be managed at primary and secondary care health facilities. Even after approaching they were not seeking treatment at proper OPD. This may be due to lack of proper awareness and guidance at the time of registration.

Limitations of study

The study has several limitations in terms of duration and coverage. Switching over of increase in disease burden from communicable to non-communicable diseases cannot be commented on the basis of this study as only 12 months data were analyzed. Also, the study reports diseases covered under IDSP only and some other diseases remain unreported. The study does not explore causes of the observed patterns also.

Future scope of the study

The study has several implications for health care policy and practice. Observed patterns of communicable and non-communicable diseases among different sub group may be extrapolated at community levels and may be helpful for health planners to frame policies capable to facing future challenges. Observed distribution in OPD and IPD may guide health managers in strengthening and remodeling health care facilities in health institutions for attaining better satisfaction levels for both patients as well as health care providers. Further multi-centric long-term studies with wider coverage are desirable for studying disease trends suggesting better planning strategies.

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