



Pattern of Respiratory Morbidity in the Catering Population of Rural Health and Training Centre, Bhopal, Madhya Pradesh

Sanjay Kumar Gupta¹, Neeraj Khare², Samarth Sharma³

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Author's Affiliation:

¹Professor, Department of Community Medicine; ²Assistant Professor, Department of Community Medicine; ³Intern, PCMS&RC, Bhopal

Correspondence:

Dr Sanjay Kumar Gupta
sanjaygupta2020@gmail.com

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ABSTRACT

Introduction: Respiratory tract infections are perhaps the most common human ailment. It is estimated that Bangladesh, India, Indonesia and Nepal together account for 40 per cent of the global ARI mortality. The research was done to study the trend and pattern of respiratory diseases and demographic characteristics.

Methodology: A hospital based retrospective study was carried out at rural health and training centre from 2006-2011.

Observations: The trend of respiratory morbidity in rural health and training centre catering area was increasing from 2006-2011(2.79-14%), than little dip thereafter. Maximum percentage of respiratory patients were reported in 2012 (23.78%) followed by in 2009(19.96%). Trend of respiratory problems among 0-5 years of age from 2006-2009 in increasing trend (3.3% -13.26%) thereafter slight decrease in percentage observed. Out of all respiratory problems most common was upper respiratory tract infection (78.30%) followed by ARI/Pneumonia (15.92%). Over all contribution of respiratory morbidity among patients attending rural health and training centre was 17.09%.

Conclusion: Respiratory diseases trend at rural areas were in increasing trend and most of the cases occurred of upper respiratory tract infection.

Keywords: Respiratory Morbidity, Demography, Pattern and trend, Rural areas

INTRODUCTION

The upper respiratory tract infections include common cold, pharyngitis and otitis media. The lower respiratory tract infections include epiglottitis, laryngitis, laryngo-tracheitis, bronchitis, bronchiolitis and pneumonia; however, some children may have pneumonia which is a major cause of death¹. In less developed countries, measles and whooping cough are important causes of severe respiratory tract infection. Every year many young children die due to ARI, 3.9 million deaths worldwide. 40 per cent of the global ARI mortality occurs in India, Bangladesh, Indonesia and Nepal². On an average, under five children suffer about average of 5 episodes of ARI per child per year, most of the attacks are mild and self limiting epi-

sodes, ARI is responsible for about 30-50 per cent of visits to hospital and for about 20-40 per cent of indoor admissions². It is also a major cause of disabilities in children like deafness as complication of otitis media. For the year 2002 study conducted by WHO in India reveal that ARI is also one of the major reasons for which children are brought to the health facilities^{2,3}. Hospital records from states with high infant mortality rates show that up to 13% of inpatient deaths in paediatric wards are related to ARI.³ the reason for high case fatality due to ARI may be that children are either not brought to the hospitals or brought too late. WHO estimated that respiratory infections deaths in India around 987000, of which most of them due to acute lower respiratory tract infections 969000

(ALRI), and small number due to acute upper respiratory infections 10,000 (AURI)^{3,4}.

The study was carried out to find out various respiratory problems in the area so we can plan effective preventive and control measures in the future.

Objectives of the study is to find out the trend and pattern of respiratory diseases and there demographic characteristics in the area.

METHODOLOGY

A record based retrospective study of respiratory diseases was carried out from outpatient department record from 2006 to 2014 at rural health and training centre of community medicine department comes under Peoples college of Medical sciences and Research Bhopal. The data was collected in predesigned and pretested proformas with the help of available record; the standard definition was used for respiratory diseases⁴.

Cross sectional study and Period of study was January 2015 to March 2015, area of study is rural health and training centre of department at Ratua. Study Population was all patient attended centre during that period with the sample size of 12488. Inclusion criteria was those who visited health centre during that period and falls under our define criteria and Exclusion criteria was those who visited health centre during that period for others region and not falls under our define criteria. Data analysis done with using statistical software SPSS 19 and appropriate test was also applied with the help of expert.

RESULTS

The trend of respiratory morbidity in rural health and training centre catering area was reported in increasing trend from 2006-2011(2.79-14%). Out of total patients maximum percentage of respiratory patients were reported in 2012 (23.78%) followed

by in 2009(19.96%). Trend of respiratory problems among 0-5 years of age from 2006-2009 in increasing trend (3.3% - 13.26%) thereafter slight decrease in frequency observed.

Table: 1 Trend of respiratory morbidity among patients attending rural health and training centre from 2006 to 2014

Years	Respiratory Morbidity among		Total* (%)
	Male (%)	Female (%)	
2006	168 (2.79)	152 (2.3)	320 (8.49)
2007	442 (7.35)	613 (9.45)	1055 (12.48)
2008	609 (10.13)	811 (12.51)	1420 (18.65)
2009	805 (13.4)	916 (14.13)	1721 (19.96)
2010	837 (14)	831 (12.82)	1668 (18.19)
2011	829 (13.8)	808 (12.46)	1637 (18.05)
2012	781 (13)	779 (12.01)	1560 (23.78)
2013	794 (13.22)	801 (12.35)	1595 (16.01)
2014	741 (12.33)	771 (11.89)	1512 (12.89)
Total	6006 (100)	6482 (100)	12488 (100)

* Out of total patient attended in that percentages of respiratory problem; Chi-square=47.3 Probability = 0.0001 (Highly significant difference were observed regarding respiratory morbidity between two groups)

Table: 2 Trend of respiratory morbidity among 0-5 years of age attending rural health centre from 2006 to 2014

Years	Respiratory Morbidity among 0-5 years		Total (%)
	Male (%)	Female (%)	
2006	48 (2.74)	67 (4)	115 (3.3)
2007	199 (11.39)	176 (10.73)	375 (11)
2008	209 (11.97)	197 (12)	406 (12)
2009	234 (13.4)	215 (13.1)	449 (13.26)
2010	196 (11.22)	196 (11.95)	392 (11.57)
2011	227 (13)	183 (11.15)	410 (12.1)
2012	218 (12.48)	206 (12.56)	424 (12.52)
2013	228 (13)	209 (12.74)	437 (12.9)
2014	187 (10.71)	191 (11.64)	378 (11.42)
Total	1746 (51.56)	1640 (48.44)	3386 (100)

Chi-square = 8.33; probability = 0.402 (No significant difference were observed among under five years of male and female due to respiratory morbidity)

Table: 3 Trend of respiratory morbidity according to probable diagnosis at rural health and training centre from 2006 to 2014

Probable diagnosis	Respiratory Morbidity among		Total (%)	Percentage Out of all patients (N= 74765)
	Male (%)	Female (%)		
Cold	222 (3.39)	208 (3.23)	430 (3.31)	0.50%
Cold with cough	173 (2.6)	134 (2)	307 (2.3)	0.41%
URI	4923 (75.27)	5085 (79)	10008 (77.15)	13.38%
ARI/Pneumonia	1081 (16.52)	955 (14.84)	2036 (15.69)	2.72%
Asthma	76 (1.16)	42 (0.65)	118 (0.9)	0.15%
Tuberculosis	9 (0.13)	3 (0.046)	12 (0.092)	0.02%
COPD	56 (0.85)	5 (0.077)	61 (0.47)	0.08%
Total	6540 (100)	6432 (100)	12972 (100)	17.35%

Chi-square=15.8; probability = 0.001 (significant difference were observed among males and females according to types of respiratory morbidity)

Out of all respiratory problems most common was upper respiratory tract infection (77.15%) followed by ARI/Pneumonia, over all contribution of respiratory morbidity among all patients attending rural health and training centre was 17.35%. Prevalence of asthma among male was 1.16% and in female 0.65%. COPD was 12 time higher among males than females. URI was higher among females 431 (89%) of above 50 years in comparison to male of same age group 495(70.3%). COPD, Asthma and TB cases among above 50 years of age males 7.67%, 5.53% and 1.27% was higher in comparison to females 1.03%, 1.44% and 0.41% respectively.

DISCUSSION

A cross sectional study conducted by Rashmi M R, Twinkle Agrawal, Farah Naaz Fathima, Badari Narayana T K⁵ in near Bangalore among elderly they observed respiratory morbidity was 37.5%⁵, but study conducted by us be observed respiratory morbidity 23.78% this observed difference may be due to they did in geriatric population and we did in general population. Study conducted by The Pragti Chhabra et al they observed overall prevalence of chronic cough, chronic phlegm and dyspnea was 2.0%, 1.2% and 3.4%, respectively. The prevalence of wheezing was 3.2%. The prevalence of chronic cough, chronic phlegm, dyspnea and wheezing was 5.8%, 2.9%, 9.9% and 8.7%, respectively, among smokers⁶. The study conducted by Claudia Spix et al⁷ in the five west European city regarding the relationship of air pollutants and admission in the hospitals due to respiratory problems they found significant relationship with increase of ozone in the air and respiratory admission but in the present study we only studied the pattern of respiratory morbidity reported in the rural health and training centre⁷. The study done by John Gamble et al in the diesel garage workers about the effect of NO₂ and respirable particulate on the respiratory problem they found no significant relationship between NO₂ level in the environment and respiratory problems on the peoples working in the diesel garage, but present study not studied such type effects only pattern of respiratory morbidity cases reported in the centre⁸.

Bin Zhao et al studied the numerical effects of the transport of droplets or particles generated by respiratory system in the indoors travel more those who generated by coughing or sneezing in compared to normal respiration, but in present study we studied only pattern no numerical effects⁹. Study conducted by Wong T W et al at Hong Kong they found hospital admission increase significantly due to respiratory morbidity when NO₂, O₃ and PM₁₀ increase in the environment, in the pre-

sent study we observed pattern of respiratory morbidity we were not correlate the effect of air pollutants¹⁰. T W Wong done and Xu X study in the Hong Kong and china respectively to find the association between daily mortality due to respiratory and cardio vascular diseases with air pollution, in the present study we studied only morbidity^{11,12}.

Study done by Medina Ramon M et al at US city they also find relationship between O₃ level and PM₁₀ with hospital admission due to respiratory problems¹³. The study conducted by Lee N, Hui D et al they found patients with SARS, cardiovascular complications including hypotension and tachycardia were common but usually self limiting, in present study we have not found any case of SARS may be due to we did study in Rural India^{14,15}. the study done by Toren K et al and Bai J in the great Britain about sensitivity and specificity of the questionnaire methods in the diagnosis of asthma they found 36% & 94% respectively^{16,17}.

Study conducted by Parasuramalu B G et al in Bangalore India they found prevalence of Asthma was 2.88% in present study we observed the prevalence in male is 1.16%, lower than Bangalore study may be due to they did in large metropolitan city and we did in rural area¹⁸. The study done by Salvi S S et al to find out the prevalence of COPD in non-smoker they found 25-45% in this they consider biomass fuel may be responsible for the same¹⁹.

The study conducted by Sunyer J et al they conclude that the ECRHS multilingual translated respiratory symptoms questionnaire shows high internal consistency²⁰.

CONCLUSION

Out of all respiratory problems most common was upper respiratory tract infection (77.15%) followed by ARI/Pneumonia, over all contribution of respiratory morbidity among all patients attending rural health and training centre was 15.11%, highly significant difference were observed regarding respiratory morbidity between males and females and types of disease.

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