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Epidemiology of Morbidity Profile among Population of Dehradun, Uttarakhand

Surekha Kishore[1], Mahendra Singh [2], Neha Verma[3], Pradeep Aggarwal[4], Yogesh Bahurupi[2], Bhavna Jain[3]

[1]Head and Professor, [2]Assistant Professor, [3]Senior Resident, [4]Associate Professor, Department of Community and Family Medicine, All India Institute of Medical Sciences, Rishikesh, U.K , India

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.

Objective: This study attempts to find out the pattern of morbidity of people along with their age, sex, type of family and religion who are permanent residents of Dehradun, Uttarakhand.

Materials and Methods: This Cross-sectional study was done from December 2018 to February 2019 for a period of 3 months. A door-to-door survey was conducted amongst all residents of Raiwala and Rishikesh block, Dehradun, Uttarakhand. All residents were interviewed and data related to the socio-demographics characteristics, co-morbidities, alcohol consumption and tobacco use was collected. SPSS software was used for analysis.

Results: A total of 3198 were included in the study. The case rate was highest (86.7%) for ≥60yrs age group. Among communicable diseases, upper respiratory tract infections (URTI) (6.71%)) and acute gastroenteritis (5.8%) had maximum burden. Musculoskeletal pains (31.4%) and hypertension (8.1%) were the most reported diseases among non-communicable diseases. Females outnumbered males in most of the diseases.

Conclusion: The relatively higher burden of non-communicable diseases hints towards entering of the transition phase in India, an eye opener for the health planners to equip themselves against these diseases and develop appropriate health care policies and practices.

Key words: *Morbidity, Mortality, Communicable diseases, Non-Communicable diseases*

Introduction

Long term diseases are our own creation. The India is ageing, it is natural and inevitable so, the risk of having, at least, one chronic disease, such as hypertension, diabetes, arthritis, cancers, Tuberculosis, hypertension increases with age, this is not so much a function of chronological age per se but a reflection of the life-long accumulation of risk factors[1].

Corresponding Author:
Dr. Neha Verma
Senior Resident, Department of Community and Family Medicine, AIIMS Rishikesh.
9690465595, E-mail: neha88sunshine@gmail.com

As Johansson (1991) points out, the concept of morbidity has more than one meaning and it is complex, multi- dimensional, difficult to define and measure because it has strong cultural character which permit their meaning to change over time and space[2].

Morbidity is measured by the World Health Organisation using DALYs (Disability Adjusted Life Years), the amount of life left due to disease or conditions. Globally, morbidity is higher in LEDCs than MEDCs. In MEDCs, the primary source of morbidity is from disease due to poor lifestyles and diseases from old age. The survival rate from these diseases is much higher in MEDCs too. The major sources of morbidity in LEDCs are prenatal conditions, Cancer, heart diseases,

hypertension and Tuberculosis with much lower survival rates[3].

Morbidity is affected by certain risk factors. In these factors are malnutrition, social diseases (i.e. Tuberculosis, AIDS), unsanitary hygiene & living conditions, a lack of clean water and poor living standards. In these main factors are high blood pressure, lack of physical activity and lifestyle choices such as a smoking, alcohol, tobacco and poor diets[4].

Improving health status around the world today is an important social objective, which has obvious direct payoffs in terms of longer and better lives for millions and indirect payoffs through accelerating economic growth[5].

Non-communicable diseases are increasing worldwide due to rapidly changing life style. NCDs kill 41 million people each year, equivalent to 71% of all deaths globally. Each year, 15 million people die from a NCD between the ages of 30 and 69 years; over 85% of these "premature" deaths occur in low- and middle-income countries. Earlier, burden of communicable diseases was much higher than non-communicable diseases. Due to rapid change in lifestyle, the gap has reduced drastically causing double burden of disease in developing counties such as India[6].

Inspite of the declining mortality and changing morbidity pattern, India still has the "unfinished agenda" of combating the traditional infectious diseases that continue to contribute to a heavy disease burden and take a sizeable toll[7].

A constant watch on the changing pattern of the diseases provides us an opportunity for timely intervention as well as monitor the progress of the ongoing disease control programs and helps in optimizing the allocation of the limited resources[8].

With this perspective, the present research was undertaken to study the morbidity pattern and the socio-demographic profile among population of Dehradun, Uttarakhand.

Objective: To study the morbidity pattern and its socio demographic determinants among population of Dehradun, Uttarakhand.

Materials and Methods:

Study Design: The present study was a community based cross sectional study done in Raiwala and Rishikesh block of Dehradun, Uttarakhand.

Study Period: Three months from December 2018 to February 2019**.**

Study Settings: Rishikesh and Raiwala block of Dehradun, Uttarakhand.

Study Population: The People living in the area of Rishikesh and Raiwala block were included in the study.

Sample Size: House to house survey was done and we were able to collect demographic data on all residents, though some residents refused to undergo full assessment, making a total sample size of 3198.

Data Collection: Data was collected after taking informed verbal consent from the participants by means of a predesigned, pretested and semi-structured questionnaire covering information regarding socio-demographic factors, co-morbidities, and lifestyle.

Data Analysis: Data was entered and analyzed using SPSS software version 21 for windows.

Results

Table 1: Distribution of study population according to socio-demographic characteristics (N=3198):

Sociodemographic Characteristics	Variables	Male No. (%)	Female No. (%)	Total No. (%)
Age groups	0-14 years	354 (55.6)	283 (44.4)	637 (19.9)
	15-29 years	474 (48.9)	497 (51.1)	971 (30.3)
	30-44 years	434 (51.9)	402 (48.1)	836 (26.1)
	45-59 years	305 (58.5)	216 (41.5)	521 (16.2)
	≥60 years	164 (70.4)	69 (29.6)	233 (7.3)
Type of family	Nuclear	1172 (54.2)	992 (45.8)	2164 (67.6)
	Joint	350 (53.5)	304 (46.5)	654 (20.4)
	3 generation family	209 (55)	171 (45)	380 (11.8)
Religion	Hindu	1568 (54.5)	1311 (45.5)	2879 (90.1)
	Muslim	73 (45.1)	89 (54.9)	162 (5.1)
	Sikh	78 (60.5)	51 (39.5)	129 (4.1)
	Christian	12 (42.8)	16 (57.2)	28 (0.9)
BPL Card	Present	299 (51.2)	285 (48.8)	584 (18.3)
	Absent	1432 (54.7)	1182 (45.3)	2614 (81.7)

It was observed that majority of the study population were in the age group of 15-29 years (30.3%), belongs to nuclear family (67.6%), Hindu (90.1%) by religion and without having BPL card (81.7%). The prevalence of morbidity among study participants were 43.5%.

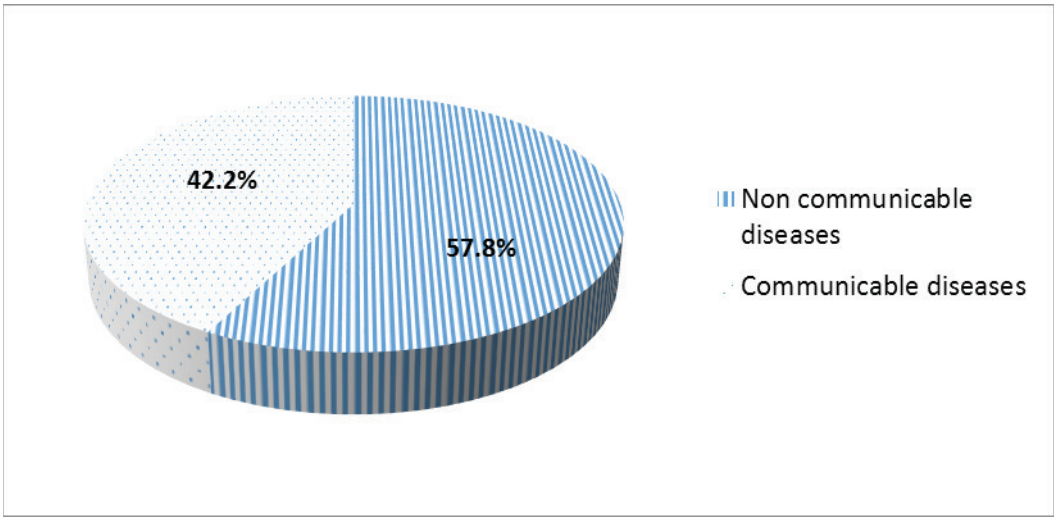

Figure 1: Prevalence of Communicable and Non Communicable diseases

Table 2: Association between socio-demographic characters and morbidity patterns

Sociodemographic Characters	Variables	Morbidity Present No. (%)	Morbidity Absent No. (%)	P Value
Sex	Male	707 (40.8)	1024 (59.2)	<.05
	Female	685 (46.7)	782 (53.3)	
Age Groups	0-29 years	336 (20.9)	1272 (79.1)	<.05
	30-59 years	854 (62.9)	503 (37.1)	
	≥60 years	202 (86.7)	31 (13.3)	
Type of Family	Nuclear	960 (44.4)	1204 (55.6)	>.05
	Joint	286 (43.7)	368 (56.3)	
	Three Generation family	146 (38.4)	234 (61.6)	
Religion	Hindu	1310 (45.5)	1569 (54.5)	<.05
	Muslim	46 (28.4)	116 (71.6)	
	Sikh	28 (21.7)	101 (78.3)	
	Christian	7 (25)	21 (75)	
BPL Card	Present	244 (41.8)	340 (58.2)	>.05
	Absent	1148 (43.9)	1466 (56.1)	

Table 2 shows that morbidities found to be more among ≥60 years (86.7%) hindu (45.5%) females (46.7%) who were living in nuclear family (44.4%) and had no BPL card (43.9%).

Discussion

This was a community based cross sectional study done to study the morbidity pattern and its socio demographic determinants among population of Dehradun, Uttarakhand.

The importance of the study lies in the fact that a constant watch on the changing pattern of the diseases provides us an opportunity for timely intervention as well as monitor the progress of the ongoing disease control programs and helps in optimizing the allocation of the limited resources.

The study confirms that burden of Non communicable diseases (57.8%) are more than that of Communicable diseases (42.2%).

Among Communicable diseases URTI (6.71%) contributed the most followed by acute gastroenteritis (5.8%). Similar results were found in a study done by Sharma MK et al[9] , Abhishek et al[10] and Lamichhane DC et al[11] and contradicts the finding in an earlier study done by Kumari R et al[8].

Our study reported higher proportion of musculoskeletal pain (31.4%) followed by hypertension (8.1%) and Diabetes mellitus (7.5%) among NCD's. Results are comparable to other studies conducted by Jyvasjarvi S et al[12], Dharmaratne S et al[13], Gupta A et al[14], Shankar R et al[15] and Lai MS et al[16]. However, a study done in Lucknow shows hypertension to be the major non-communicable disease followed by anaemia[10].

In our study all most all the diseases were more common in females, a finding consistent with other

studies[8,9,10]. This may be due to the fact that males are having more interaction with the social, economic and biological determinants of the health aspects and moreover females concern more with the health of family members rather than their own individual health.

It was observed that morbidities are more common in age group ≥60 years. This confirms the well-known fact that as the life years' increases, structural and functional changes is deteriorating with the old age. So, they are affected by chronic diseases more frequently than younger people.

Morbidities were reported higher among Hindus (45.5%). This may be due to the fact that Hindus forms the major proportion (90.1%) of study as compared to others religion.

Conclusion

The relatively higher burden of non-communicable diseases hints towards entering of the transition phase in developing country like India, the situation once faced by developed countries long back. This is an eye opener for the health planners to equip themselves against these diseases and develop appropriate health care policies and practices.

The high morbidity load among elderly in the present study stresses for efforts to provide better health care to them and thus ensure that they remain active members of our society.

Further multi-centric long term studies with wider coverage are desired for better under-standing of the disease trend which will also act as a perfect tool for the health planners to plan better strategies.

Limitations of the study: As study was of shorter duration, so seasonal variation of morbidity pattern could not be assessed.

Conflict of Interest: Nil

Source of Funding: Nil

Ethical Clearance:

References

1- Andrew M Prentice, The emerging epidemic of obesity in developing countries, International Journal of Epidemiology, 2006;35:93–9

2- Empowerment: A goal or a means for health promotion? Medicine Health Care and Philosophy 10(2):197-207 · July 2007 .[Cited on 10 april 2019]. Available from: https://www.researchgate.net/publication/6708395_Empowerment

3- World Health Organization.. Age standardized disability-adjusted life year (DALY) rates, by country. [Cited on 10 April 2019]. Available from: https://www.who.int/gho/mortality_burden_disease/countries/situation_trends_dalys/en/

4- World Health Organization. Global patterns of health risk. [Cited on 11 April 2019]. Available from: https://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_part2.pdf)

5- Acemoglu D, Johnson S. Disease and development: The effect of life expectancy on economic growth. [Cited on 12 April 2019]. Available from: https://books.google.co.in/books?isbn=0821376608

6- World Health Organization. Non Communicable Diseases. [Cited on 12 April 2019]. Available from: https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases

7- Baridalyne Nongkynrih, BK Patro, Chandrakanta S Pan-dav. Current Status of Communicable and Non-communicable Diseases in India. Japi. 2004: 52; 118-23.

8- Kumari R, Nath B, Midha T, Vaswani ND, Lekhwani S, Singh B. Morbidity profile and seasonal variation of dis-eases in a primary health center in Kanpur district: A tool for the health planners. J Fam Med Primary Care. 2012; 1:86-91.

9- M.K. Sharma, D. Kumar. Health Care Utilization Pattern for Communicable and Non-Communicable Diseases in a Tertiary Care Health Facility in Chandigarh, India. The Internet Journal of Health. 2007; Volume 7 Number 2.

10- Abhishek, Arun, Pratibha Gupta, J.P Srivastava, Daya Prakash: A Study of the Morbidity pattern amongst pa-tients attending the OPD at Urban health training centre, Era's Lucknow Medical College and Hospital, Lucknow. International Journal of Advanced Research. 2013; 1(10): 906-913.

11- DC Lamichhane, BR Giri, OK Pathak, OB Panta, and PR Shankar. Morbidity profile and prescribing patterns among outpatients in a teaching hospital in

Western Ne-pal. Mcgill Journal of Med.2006; 9(2): 126-133.

12- Jyvasjarvi S, Keinanen-Kiukaanniemi S, Vaisanen E, Lari-vaara P, Kivela SL. Frequent attenders in a Finnish health centre: Morbidity and reasons for encounter. Scand J Prim Health Care. 1998; 16:141-8.

13- Dharmaratne S, Agampodi S, Dassanayaka S, Kuma-rihami P, Ratnayake A, Wickramathilake S. Disease bur-den assessment beyond in-patient data: A morbidity pro-file assessment of outpatients. Int J Prev Med. 2012;3:730- 2.

14- Gupta A, ChellaiyanV, Lohiya A, Rizwan SA, Upadhyay RP, Palanivel C. Morbidity Profile of Out-Patients At-tending a Primary Health Centre in Rural Puducherry, South India. Natl J Com-munity Med. 2014; 5(4): 424-7.

15- Shankar R, Kumar P, Rana M, Dubey A, Shenoy N. A comparative study of drug utilisation at different levels of the primary healthcare system in Kaski district, West-ern Nepal. The New Zealand Medical Journal. 2003;116:1- 8

16- Lai MS, Chu CS, Lin SH, Lin MS. Prescribing patterns in primary health care in Taiwan. Int J ClinPharmacolther 1995;33:437-441