International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Prevalence of Non - Communicable Diseases Among Elderly Population in Northern State of India

Dr. Anil Kumar Verma, S. K. Raina, Dr. Raman Chauhan

Abstract: ***Background: To assess the prevalence of non - communicable diseases (NCDs) among the elderly population in two health blocks of the district Kangra in Himachal Pradesh, India. This was a cross - sectional study selected randomly one Urban and one Rural. As per the geographical train of HP 75% population was taken from rural area by considering village as one cluster and 25% population was taken from urban area considering ward as one cluster by applying population proportion size technique (PPS). Sample size was calculated by using the formula $4PQ/e^2$. By applying the above formula the desired sample size comes out to be 681, If the non - response rate in the study population = 10%, the desired sample size will be 750. Aim & objective: To estimate the Prevalence of Non - Communicable Diseases Among Elderly Population in Northern state of India. Material & Methods: This community - based cross - sectional study was conducted in the hilly area of HP, India, with 750 elderly subjects (60 years and above) selected for the study by an appropriate sampling procedure. A self - administered structured Questionnaire for interview and examination was implemented. In this data regarding social determinants of health of individual was collected. Results: It was observed that prehypertension was more in urban area, Stage I hypertensive subjects in urban area were 40 (21%) & in rural area were 128 (22.45%), while stage II hypertension was observed in 36 (18.94%) & 95 (16.66%) of study subjects in urban & rural area respectively. It was seen that 19.47% (37/190) study participants in urban area had asthma, while 26.31% (150/570) in rural area were suffering from disease, Coronary artery disease was twice in rural area 8.77% (50/570) as compared to urban subjects 4.73% (9/190) CVA cases was almost equal in both the areas 3.68% (21/570) and 3.15% (6/190) in rural & urban area respectively. There was no cancerous condition seen in urban area while only 0.17% (1/570) of study subjects in rural area had cancer.***

Keywords: elderly health, non-communicable diseases, rural and urban comparison, hypertension prevalence, sampling methodology

1. Introduction

The world population is rapidly aging due to increased longevity, decreased fertility, and mortality rates [1] As per World Population Prospects, one in 11 individuals was above 65 years in 2019, and by 2050, one in six people will be above 65 years of age.2 According to the WHO estimates, 15% of the global population is disabled.3 Globally, non - communicable diseases (NCDs) are currently the leading cause of mortality and morbidity. Along with aging, behavioural factors such as tobacco use, physical inactivity, excess consumption of alcohol, and an unhealthy diet further increase the risk of NCDs and mortality due to NCDs [4, 5]. India, being a developing nation has seen an unprecedented economic growth in the past few years and with the increase of life expectancy the burden of communicable and non - communicable diseases increases many fold. NCDs are common among the elderly as reported from the first wave of the WHO Study on global Ageing (SAGE) studies conducted in India during 2007–2010.6 Therefore, the current study aimed to know the prevalence of NCDs among elderly in the Northern hilly state of India. Globally every year, 71% of deaths are due to NCDs. Three - fourths of these deaths occur in low - and middle - income countries [6]. The presence of two or more chronic diseases called multimorbidity is also increasing worldwide [7]. Low - and middle - income countries like India face multiple health challenges arising from NCDs

2. Results

The participants in our study were predominantly from rural area (75%) as compared to urban area (25%) and most of the respondent in urban area was females 54.71% (104/190) as compared to rural area where 58.07% (417/570) were male participants. In urban area 28.42% (54/190) were belonging to upper lower class, 27.89% (53/190) upper middle class, 22.10% (42/190) lower middle, 16.31% (31/190) upper class and 5.26% (10/190) lower class according to Kuppu swamy scale whereas in rural area 42.36% (322/5700) were belonging to upper middle class, 36.71% (279/570) upper class, 12.05% (95/570) lower middle, 07.10% (54/570) upper lower class and 1.31% (10/570) lower class according to Udai Pareek scale. All the participants were Hindu by religion.

Table 1

Clinical features	Urban (n=190)	Rural (n=570)	Total
Normal	42 (22.10)	143 (25.08)	185 (24.34)
Pre - hypertensive	72 (37.89)	204 (35.78)	276 (36.31)
Stage 1 HTN	40 (21)	128 (22.45)	168 (22.10)
Stage 2 HTN	36 (18.94)	95 (16.66)	131 (17.23)
BMI			
Normal	70 (36.84)	240 (42.10)	310 (40.78)
Overweight	27 (14.21)	101 (17.71)	128 (16.84)
Obese	84 (44.21)	159 (27.89)	243 (31.97)
Underweight	9 (4.73)	70 (12.28)	79 (10.39)
Hypercholesterolemia			
Yes	181 (95.26)	544 (95.43)	725 (95.39)
No	9 (4.73)	26 (4.56)	35 (4.60)
Total	190	570	760
Diabetes			
Yes	27 (14.21)	74 (12.98)	101 (13.28)
No	163 (85.78)	496 (87.01)	659 (86.71)
Total	190	570	760

According to (Table: 1) 72 (37.89%) study participants who were pre - hypertensive while in rural area there were 204 (35.78%) pre hypertensive subjects. Stage I hypertensive subjects in urban area were 40 (21%) & in rural area were 128 (22.45%), while stage II hypertension was observed in

36 (18.94%) & 95 (16.66%) of study subjects in urban & rural area respectively. In urban area, 36.84% (70/190) study participants had normal BMI as compared to 42.10% (240/570) in rural area Hypercholesterolemia was, observed among 95.26% (181/190) and 95.43% (544/570) study subjects in urban & rural area respectively and diabetes was found to be present in 14.21% (9/190) in urban and 12.98% (26/570) in rural area.

Table 2

Asthma	Urban	Rural	Total
Yes	37 (19.47)	150 (26.31)	187 (24.60)
No	153 (80.52)	420 (73.68)	573 (75.39)
CAD			
Yes	9 (4.73)	50 (8.77)	59 (7.76)
No	181 (95.26)	520 (91.22)	701 (92.23)
CVA			
Yes	6 (3.15)	21 (3.68)	27 (3.55)
No	184 (96.84)	549 (96.31)	733 (96.44)
Total	190	570	760
Heart Failure			
Yes	3 (1.57)	5 (0.87)	8 (1.05)
No	186 (97.89)	565 (99.12)	751 (98.81)
Total	**190**	**570**	**760**

It was seen that (Table: 2) 19.47% (37/190) study participants in urban area had asthma, while 26.31% (150/570) in rural area were suffering from disease. (Table3). coronary artery disease was twice in rural area 8.77% (50/570) as compared to urban subjects 4.73% (9/190) CVA cases was almost equal in both the areas 3.68% (21/570) and 3.15% (6/190) in rural & urban area respectively, whereas heart failure was observed to be higher in urban area 1.57% (3/190) as compared to rural area0.87% (5/570)

3. Discussion

The participants in our study were predominantly from rural area (75%) as compared to urban area (25%) and most of the respondent in urban area were females 54.71% (104/190) as compared to rural area where 58.07% (417/570) were male participants. In the urban area 7.89% (15/190) were currently smokers and 8.94% (17/190) were ex tobacco users in comparison to rural area where the percentage of current smokers was 14.56% (83/570) and 5.78% (33/570) were ex tobacco users, non - smokers among urban and rural area were 83.15% (158/190) & 79.64% (454/570) respectively. According to global adult tobacco survey - 2, fact sheet (2016 - 17), national prevalence of current tobacco smoking among adult was 10.7% (19% men, 2% women) and 14.2% in Himachal Pradesh. The prevalence of smoking in urban area in our study was less than that reported by HP state and comparable in rural area. Out of 190 study subjects in urban area 12.10% (23/190) were currently alcohol users, 6.84% (13/190) ex alcohol users and 81.05% (154/190) were teetotallers, as compared to rural area in which out of 570 study subjects, 15.08% (86/570) were currently alcohol users, 9.64% (55/570) ex alcohol users and 75.26% (429/570) were teetotallers. National prevalence of current alcohol use among 10 - 75 years is 14.6% whereas in HP state it is 17.6% which is higher than our study. The history of smoking and alcohol abuse was present among male participants only in current study.

In urban area 36.84% (70/190) study participants had normal BMI, 14.21% (27/190) were overweight, 44.21% (84/190) obese and 4.73% (9/190) were underweight, which is lower than that reported by different investigators like epidemiological study of obesity among elderly in Chandigarh by H. M. Swami, V Bhatia et al [8]. The prevalence of overweight was 33.14%, preobesity 25.41 and obesity 7.54% among elderly. A similar study from Puducherry using STEP questionnaire had reported the prevalence of overweight and obesity to be 46%[8]. Another study from New Delhi found nearly 36% of the elderly to be overweight and obese[9]. In rural area 42.10% (240/570) participants had normal BMI, 17.71% (101/570) were overweight, 27.89% (159\570) obese and 12.28 % (70/570) underweight. The study conducted by Jeffy Binu and Rajendra Harnagle[10] among rural geriatrics population in Kerala, revealed overall a high prevalence of overweight (44%) and obesity (10%). In males, 35% were overweight and 11% were obese, while in females 49% were overweight and 9% were obese. Hypercholesterolemia was observed among 95.26% (181/190) and 95.43% (544/570) study subjects in urban & rural area respectively and diabetes was found to be present in 14.21% (9/190) in urban and 12.98% (26/570) rural area in our study on clinical examination based on questionnaire only.

4. Conclusion

In our study, cardiovascular diseases were present in 68.1%, Stage I hypertensive subjects were more in urban area while stage II hypertension was observed in 36 (18.94%) & 95 (16.66%) of study subjects in urban & rural area respectively. In urban area, 36.84% (70/190) study participants had normal BMI as compared to 42.10% (240/570) in rural area Hypercholesterolemia was, observed among 95.26% (181/190) and 95.43% (544/570) study subjects in urban & rural area respectively and diabetes was found to be present in 14.21% (9/190) in urban and 12.98% (26/570) in rural area. The study brings to light that almost all elderly had reported to have one or the other health problem. Most of the health problems of elderly are controllable if addressed properly. Hence there is an urgent need of dealing the geriatric health problems in comprehensive and coordinated approach by health personnels and good compliance by the elderly people and their family members. The capacity building of primary health care providers will help in the early detection of morbidities among the elderly and referring the needy elderly on time to the facilities will definitely help in active and healthy aging.

Conflicts of Interest: None declared.

Funding: No external funding.

References

[1] Facts on ageing and life course. WHO ageing and life course. Available online at: http: //www.who. int/features/factfiles/ageing/ageing_facts/en/index. html. [Last accessed on 2019 Nov 15]
[2] Population ageing and development, 2012. United Nations Population Division. Available online at: http:

//www.un. org/en/development/desa/ population/publications/pdf /ageing/2012PopA geingandDev_WallChart. pdf [Last accessed on 2019 Nov 15]
[3] International Classification of Impairment, Disabilities, Handicaps. Geneva: World
[4] Health Organization; 1980. [Last accessed on 2019 Nov 15]
[5] The disabled elderly and their use of long - term care. Available on line at http: //www.aspe. hhs. gov/daltcp/reports/diseldes. [Last accessed on 2019 Nov15]
[6] Mahajan A, Ray A. The Indian elder: factors affecting geriatric care in India. Glob J Med Public Health.2013; 2: 1 - 5.
[7] Kristine Krapp. Activities of Daily Living Evaluation. Encyclopedia of Nursing & Allied Health. ed. Gale Group, Inc.; 2006. Enotes Nursing Encyclopedia. [Last accessed on 2019 Nov 15]
[8] Grigsby J, KayeK, Baxter J, Shetterly SM, Hamman RF. Executive cognitive abilities and functional status among community - dwelling older persons in the San Luis Valley Health and Aging Study. J Am Geriatr Soc.1998; 46 (5): 590 - 6
[9] Rajkamal R, Singh Z, Stalin P, Muthurajesh E. Prevalence and determinants of overweight and obesity among elderly population in an urban area of Puducherry. Int J Med Sci Public Health 2015; 4: 369 - 72. Available: https: //www.ejmanager. com/fulltextpdf. php?mno=1394. [Last accessed on 2016 Sep 27].
[10] Singh P, Kapil U, Dey AB. Prevalence of overweight and obesity amongst elderly patients attending a geriatric clinic in a tertiary care hospital in Delhi, India. Indian J Med Sci 2004; 58: 162 - 3. [PUBMED] [Full text]
[11] A Study on the prevalence of overweight and obesity and its influencing factors among rural geriatric population in Kerala JeffyBinu and RajendraHarnagle*