Research Article

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Lifestyle habits and diseases amongst rural geriatrics population

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ABSTRACT

Background: Modern science through improved sanitation, vaccination, and antibiotics, and medical attention has eliminated the threat of death from most infectious diseases. Death from lifestyle diseases like heart diseases and cancers are now the primary causes of death. Everybody naturally has to die of something, but lifestyle diseases take people before their time. Aim & Objective of the study was to find out association of risk factors (BMI and occupation) with lifestyle related diseases among the rural elderly.

Methods: This cross-sectional study was conducted during January 2015 to April 2015 in a rural (Bhojipura block) areas of district Bareilly, Uttar Pradesh. 121 elderly persons of age 60 years and above were selected by systematic random sampling method and interviewed on a predesigned pretested questionnaire by house to house visits in the study area. Data was analysed by percentage and Chi squire tests.

Results: Mixed dietary habit (27.8%), alcohol (9.3%) and smoking addictions (31.5%) were more common in men while tobacco chewing (16.4%) and sedentary habit (71.6%) was more common in women. Prevalence of hypertension, diabetes and chronic liver diseases were more common in both obese/obesity and working group in comparison to non-obese/obesity and non- working group. Here association of diabetes and chronic liver diseases with occupation & body mass index (BMI) was found statistically significant (<0.05).

Conclusions: Present study observed higher prevalence of hypertension, diabetes and chronic liver diseases among working group as compared to non- working group. Present study also shows higher BMI increases risk factors for lifestyle diseases.

Keywords: Lifestyle habits and diseases, Geriatric, Obese, Working

INTRODUCTION

Never before have had so many people lived for so long.¹ Aging previously regarded as emerging trend mainly in the industrial countries is now recognized as a global phenomenon. Life style, defined as "the way people live", has shown considerable evidence of being associated with the health of an individual.² Many current day problems especially of the geriatric population like hypertension, diabetes mellitus and osteoarthritis are related to nutrition and lifestyle.

Lifestyle diseases (also sometimes called diseases of longevity or diseases of civilization interchangeably) are diseases that appear to increase in frequency as countries become more industrialized and people live longer. They can include Arthritis, asthma, some kinds of cancer, chronic liver disease or cirrhosis, chronic obstructive pulmonary disease, Type 2 diabetes, heart disease, metabolic syndrome, chronic renal failure, osteoporosis, stroke, depression and obesity. With rapid economic development and increasing westernization of lifestyle in the past few decades prevalence of these diseases has reached alarming proportions among Indians in the recent years.

Diet and lifestyle are major factors thought to influence susceptibility to many diseases. Drug abuse, tobacco smoking, and alcohol drinking, as well as a lack of exercise may also increase the risk of developing certain diseases, especially later in life.³⁻⁵ Present study was undertaken against this background to explore the lifestyle diseases of the geriatric population.

Aim and objective

To find out association of lifestyle habits with gender among the rural elderly

To find out association of risk factors (BMI and occupation) with lifestyle diseases amongst the rural elderly.

METHODS

The present study was conducted in Bareilly district which is also known for Nath Nagri. Out of the 15 blocks in the district Bareilly, Bhojipura block was selected for study as it is the field practice area of the department of community medicine, SRMS Institute of medical sciences, Bareilly. Total no. of villages in Bhojipura block is 98, out of which one village Dhaura was randomly selected.

This is a cross-sectional study conducted in 121 individuals aged 60 years and above. Study had attempted to include all the household and residents of the Village who are \geq 60 years of age. The participants were selected by using systematic random sampling method. Study was conducted using predesigned & pretested questionnaire through interview method. This community based survey was conducted for 4 months – January to April 2015.

Questionnaire included information on lifestyle factors (including stress), health status and risk factors for emerging diseases. Elderly population was classified for BMI as per WHO's guidelines.^{6,7} Blood pressure was measured using Welch- Allyn shock resistant BP instrument (air based) with appropriate size cuffs and hypertensives were categorized as per VIIth Joint National committee on Prevention, Detection, Evaluation and treatment of High Blood pressure.⁸ Blood investigation like blood sugar was carried out after informed consent and classified as per WHO's & American Medical association's guidelines.⁹⁻¹¹

All the investigations have been carried out at laboratory established at Rural Health Training Centre, Dhaura Tanda. Statistical analysis was performed using statistical software SPSS version 18 of Microsoft windows. Categorical data analysis was done using percentage & chi square test. The level of statistical significance was set at 0.05. All the instruments were regularly calibrated before taking them to the field.

Procedure of measurements

Blood pressure was measured by the auscultatory method with a random zero mercury sphygmomanometer and standard cuff (cm). The blood pressure measurement was taken in the seated position, quietly in a chair with feet on the floor and an arm support at the heart level. Hypertension was defined according to the guidelines of the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure, that is, systolic blood pressure ≥140 mm Hg or diastolic blood pressure ≥90 mm Hg concomitant antihypertensive use of medications.¹² Body weight and height were assessed with all subjects standing without shoes and heavy outer garments to the nearest 0.1 kg and 1 cm, respectively. Body mass index was estimated according to standard nomograms. Waist circumference was measured over light clothing at a level midway between the lower rib margin and the iliac crest in centimeters rounded up to nearest 0.5 cm.

Blood plasma glucose concentration was determined by the glucose oxidase-peroxidase method. The diagnosis of diabetes was defined by either casual plasma glucose $\geq\!200~\text{mg}\cdot\text{dL}\!-\!1$ associated with symptoms of diabetes and on fasting samples-plasma glucose $\geq\!126~\text{mg}\cdot\text{dL}\!-\!1$. Individuals with self-reported, prior physician-diagnosis of diabetes were classified as having previously diagnosed diabetes.

Sleep duration refers to the hours spent sleeping at night; the participants were classified into three groups according to sleep duration: ≤ 5 hours/night (short sleep duration subgroup), 6 to 8 hours/night (normal sleep duration subgroup), and ≥ 9 hours/night (long sleep duration subgroup). ¹³

Chronic liver diseases refers to disease of the liver which lasts over a period of six months Arthritis is a form of joint disorder that involves inflammation in one or more joints.

Inclusion criteria

Elderly more than or equal to sixty years, residing for at least six months in the area were be considered as a resident and included in the study.

Elderly whose native place is other than present place of residence but the duration of stay was more than six months were included in the study

Exclusion criteria

Those elderly living in the area for less than six months were not included in the study.

Those elderly, who were seriously ill, non-cooperative or refused to provide necessary information, were not included in the study.

RESULTS

Table 1 displays majority of the study subjects were having sedentary habit (71.9%) and mixed type dietary habit (64.5%), and association of physical activity & dietary habit with gender was found statistically nonsignificant. Only one alcohol and tobacco user had been reported among women. Alcoholic beverages were consumed by 9.3% men subjects only while 31.5% women were having smoking habit. Here association of smoking with gender was found statistically significant (0.05). Prevalence of tobacco chewers among women (Khaini 16.4%) was slightly more in comparison to men (14.9%). Disturbed sleep was found more common in men (27.8%) than women (17.9%).

Table 2 shows highest prevalence of HTN (55.4%) with slightly more frequency in women (58.2%) than men (51.9%). Similarly, a higher frequency of obesity (37.3%), diabetes (20.9%), Peptic ulcer disorder/Gastritis (11.9%), Musculo-skeletal disorder (9.0%), Cataract (7.5%) and Insomnia (6.0%) were reported among geriatric women. On the other hand, men were observed with higher frequency of Anemia (37.0%), chronic lung diseases (20.4%), chronic liver disease (25.9%), Stroke/AMI (3.7%) and chronic kidney disease (1.8%) than women. Here a statistically significant prevalence of obesity & Chronic liver diseases was found with sex (p (0.05).

Table 3 shows that, amongst chronic lifestyle diseases, prevalence of hypertension (59.2%), diabetes (32.6%) & chronic liver diseases (26.5%) was more common among working group, while chronic lung diseases was more common among non-working/retired group of geriatric study subject. Prevalence of arthritis was nearly equally

distributed among working & non-working/retired group of geriatric study subjects.

Table 1: Association of lifestyle habits with gender among geriatric study subjects.

Category	Total 121 (%)	Men (54)	Women (67)	p- value				
Physical activity								
Sedentary	87(71.9%)	39 (72.2%)	48 (71.6%)	0.94				
Moderate	34(28.1%)	15 (27.8%)	19 (28.4%)	0.54				
Dietary habi	t							
Vegetarian	43(35.5%)	15 (27.8%)	28 (41.8%)	0.10				
Mixed	78(64.5%)	39 (72.2%)	39 (58.2%)	0.10				
Alcohol								
Yes	6(4.9%)	5(9.3%)	1(1.5%)					
No	115 (95.1%)	49 (90.7%)	66 (98.5%)	0.05				
Smoking								
Yes	18 (14.9%)	17 (31.5%)	1(1.5%)	0.05				
No	103 (85.1%)	37 (68.5%)	66 (98.5%)	p<0.05				
Tobacco che	wing							
Yes	18 (14.9%)	7 (13.0%)	11 (16.4%)	0.50				
No	103 (85.1%)	47 (87.0%)	56 (83.6%)	0.59				
Sleep Pattern								
Normal (6-8 hours /night)	94 (77.7%)	39 (72.2%)	55 (82.1%)					
Disturbed (<6 & >8 hours/night)	27 (22.3%)	15 (27.8%)	12 (17.9%)	0.19				

Table 2: Association of chronic morbidities with gender among geriatric study subjects.

Mouhidition	Total Percentage	Men (54)		Women (67)		
Morbidities		Normal	Diseased	Normal	Diseased	p-value
Hypertension	67 (55.4%)	26 (48.1%)	28 (51.9%)	28 (41.8%)	39 (58.2%)	0.48
Anemia	43 (35.5%)	34 (63.0%)	20 (37.0%)	44 (65.7%)	23 (34.3%)	0.75
Obesity	35 (28.9%)	44 (81.5%)	10 (18.5%)	42 (62.7%)	25 (37.3%)	0.02
Diabetes	23 (19.0%)	45 (83.3%)	9 (16.7%)	53 (79.1%)	14 (20.9%)	0.56
Chronic lung diseases	20 (16.5%)	43 (79.6%)	11 (20.4%)	58 (86.6%)	9 (13.4%)	0.31
Chronic liver diseases	18 (14.9%)	40 (74.1%)	14 (25.9%)	63 (94.0%)	4 (6.0%)	0.002
Peptic ulcer disorder/Gastritis	12 (9.9%)	50 (92.6%)	4 (7.4%)	59 (88.1%)	8 (11.9%)	0.41
Arthritis	10 (8.3%)	50 (92.6%)	4 (7.4%)	61 (91.0%)	6 (9.0%)	0.76
Cataract	7 (5.8%)	52 (96.3%)	2 (3.7%)	62 (92.5%)	5 (7.5%)	0.38
Insomnia	6 (4.9%)	52 (96.3%)	2 (3.7%)	63 (94.0%)	4 (6.0%)	0.57
Stroke/AMI	3 (2.5%)	52 (96.3%)	2 (3.7%)	66 (98.5%)	1 (1.5%)	0.43
CKD	2 (1.6%)	53 (98.1%)	1 (1.8%)	66 (98.5%)	1 (1.5%)	0.88
Total morbidities	246	107		139		

Table 3: Association of lifestyle diseases with Occupation & Obesity in geriatric study population.

Chronic lifestyle diseases	Non-working/ retired n=72(%)	Working n=49 (%)	P value	Non-Obese (BMI<24.9) n=83	Obese (BMI≥25.0) n=38	P value
Hypertension (67)	38(52.8%)	29(59.2%)	0.48	44(53.0%)	23(60.5%)	0.44
Diabetes (23)	7(9.7%)	16(32.6%)	0.0005	11(13.3%)	12(31.6%)	0.02
Chr. lung Diseases (20)	14(19.4%)	6(12.2%)	0.29	16(19.3%)	4(10.5%)	0.22
Chr. liver disease (18)	5(7.0%)	13(26.5%)	0.006	4(4.8%)	14(36.8%)	<0.00005
Arthritis (10)	6(8.3%)	4(8.2%)	0.97	5(6.0%)	5(13.1%)	0.18

^{*}Multiple responses allowed

Table 3 also shows that prevalence of hypertension (60.5%), diabetes (31.6%), chronic liver diseases (36.8%) and arthritis (13.1%) were more common in obese/obesity (BMI \geq 25.0) in comparison to non-obese/obesity (BMI<24.9) geriatric subjects, it may be because of obesity is a risk factors in the natural history of such diseases. Here association of diabetes and chronic liver diseases with occupation & body mass index (BMI) was found statistically significant (<0.05).

Table 4 shows that three or more health morbidities were more reported in males (41) compare to females (24) while one to two morbidities were more common in females, and the association of number of health problems with gender was found statistically significant.

Table 4: Association of chronic health problems versus gender in geriatric study subjects.

No. of health problems	Males	Females	Total	Chi- square value	p- value
≥3	41	24	65		0.0007
2	32	48	80	14.51	
1	34	67	101	14.31	
Total	107	139	246		

^{*}Multiple responses allowed

These data show that higher percentage of elderly women (148) is in the category of higher morbidities than males (137). It could be attributed to the fact that Indian females, after achieving middle age, begin to lead a sedentary life style because of the traditional Indian social system. Whereas in case of males they continue working because of the economic constraint and they are considered bread earner for the family.

DISCUSSION

Old age is an unpreventable physiological state which suffers both from communicable and non-communicable diseases. Thus, various dimensions that affect the lives of the elderly are elaborated in the present study which includes lifestyle habits, chronic morbidities and their major risk factors.

Moneer A suggests that almost in every state in India, the aged are concentrated in rural areas and need to be

weighed accordingly in formulations of old age policies. He also suggests that feminization of ageing; widowhood and rapid growth of the older old are emerging issues for researchers, service providers and insurers.¹⁴

This study shows that around 55.4% of the elderly persons were suffering from hypertension. In a multi centric study carried out by the hypertension study group found that the prevalence of hypertension was 55% and 53% in rural areas of Kerala (India) and Dhaka (Bangladesh) respectively, which is comparable to the present study. In another study by Prakash, et al prevalence of hypertension was 48%. Joshi, et al study in Northern India found 49% of the elderly had hypertension in rural area, which is almost similar to the present study finding. 16,17

In this study, the prevalence of hypertension among nonobese and obese was 53.0 % and 60.5 % respectively while the prevalence of diabetes among non-obese and obese was 13.3% and 31.6% respectively. A study done by Swami HM, et al among the geriatric population of Chandigarh, showed the prevalence of hypertension was 82.5% among the overweight elderly in comparison to 45.87% among non-overweight or obese. Similarly the prevalence of diabetes was 15% in overweight and 9.92% in non-overweight elderly. So this study also showed that higher prevalence of hypertension and diabetes among obese subjects in comparison to non-obese subjects.

A study done by Moharna PR, et al among the geriatric population in Chandigarh, showed the prevalence of hypertension as 51% and diabetes as 36% and 41% of the persons were overweight and 64% of overweight persons were hypertensive. The overweight was significantly associated with diabetes. Only 23% among the overweight subjects were exercising regularly daily. It was found that due to inadequate control of diabetes, the long term complications such as coronary heart disease (CHD) were higher in this group. They also found out high cholesterol, hypertension, smoking and alcohol consumption were risk factors for CHD. 19

CONCLUSION

This study concluded that mixed dietary habit, alcohol and smoking addictions were more common in men while

tobacco chewing and sedentary habit was more common in women. Prevalence of hypertension, diabetes and chronic liver diseases were high in both obese/obesity and working group in comparison to non-obese/obesity and non- working group. Here association of diabetes and chronic liver diseases with occupation & body mass index (BMI) was found statistically significant (<0.05).

Suggestions

There is a need to address the problem of lifestyle diseases in rural India especially among the elderly. We need a fundamental shift in the way we think about older people, from dependency and deficit towards independence and well-being.

Doctors have to be trained to handle the illnesses associated with aging and health care must be subsidized for the elderly (geriatric units in hospitals & highly subsidized medicines).

Early inputs of healthy aging practices should be instituted in communities with special focus on women. There is need to have some form of occupational avenues for elderly in villages.

Community members and health care systems must be sensitized to the health problems of the elderly. Efforts must be made to bring "Care for the elderly" within Primary Health Care.

Case management and chronic disease management systems must be accompanied by processes that identify and support at risk older people before poor health and disease become established. Case finding using validated tools to identify older people with potential risk factors would be a good method.²⁰

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Institutional Ethics Committee

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