Impact of Age on the Prevalence of Chronic Diseases in Geriatric Population

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Abstract

Old age is unpreventable physiological state and epidemiologically independent risk factor for chronic non-communicable diseases. This study was designed to determine the prevalence of chronic diseases and disability among geriatric study subjects. This cross-sectional study was conducted to assess various dimensions that affect the lives of the elderly which includes the socio-demographic variables, employment status, lifestyle habits, health and psychological conditions. Chi Square test with statistically significance of p value <0.05 was used for analysis. All patients older than 60 years (N=199) were divided into men (57.29%) and women (42.72%). Men had a higher literacy (p<0.001), employment (47.36%; p<0.001), upper socioeconomic status (48.25%; p<0.05) and physical activity (56.15%; p<0.001) than women. The most common chronic diseases in decreasing frequency are hypertension (60.84%; p<0.01), musculoskeletal disorders (37.69%), anaemia (35.18%; p< 0.001), hyperlipidemia (34.18%), insomnia (32.17%), obesity (30.59%), hyperglycaemia (25.63%; p<0.05), hyperuricemia (20.61%; p<0.001), depression (19.60%; p<0.01), peptic ulcer disease (13.57%; p<0.001), chronic lung disease (12.57%), chronic kidney disease (07.54%), autoimmune disease (07.04%; p<0.05), cancers (05.53%) and chronic liver disease (03.52%). However, geriatric women were more frequently diagnosed with hypertension (71.77%), musculoskeletal disorders (41.18%), anaemia (47.06%), insomnia (34.12%), obesity (15.30%), hyperglycaemia (34.12%), hyperuricemia (36.48%), depression (28.24%), peptic ulcer disease (25.89%), chronic lung disease (17.65%) and autoimmune disease (11.77%) than men. Rising prevalence of chronic conditions especially among geriatric women are considered as the major causes of disability in the elderly population. Screening programs should be instituted at the community level for the early diagnosis, treatment, and further regular monitoring of the treatment compliance to control diseases related morbidity and mortality.

Keywords: Age, chronic conditions, disability, geriatric, hypertension, musculoskeletal disorders.

Introduction

Age is an epidemiologically recognized as an independent risk for the chronic non-communicable diseases. Successful aging refers to a process by which the deleterious complex of diseases, disabilities and impairments of normal aging are minimized by controlling the blood pressure, blood glucose levels, blood lipids levels, and the total body fat percentage to avoid the development of complications; and thereby preserving the body functions until senescence makes a continued life impossible[1].

"Demographic transition" which involves a shift from high mortality/high fertility to low mortality/low fertility has produced pronounced results in the form of population aging. Decline in the young population proportion along-with increased life span of individuals due to reduced fertility and mortality rate has lead to an increased elderly people proportion in the total population[2]. The life expectation at birth has shown an increase from "42 years in 1951-1960" to "58 years in 1986–1990" which is recently projected to "67 years by 2011 –2016 for males and 69 years for females" in India. This shows an increase of about "9 years" in males and "11 years" in females over the 25 years period [3]. Furthermore, decline in fertility rate

from 5.9 to 2.6 children per woman has been observed in India[4]. The United Nations (UN) defines a country with more than 7% of the total proportion of people over 60 years as "Aging" or "Greying Nation". India has, thus, acquired the label of "an aging nation" with 7.47% proportion in 2001, 8.3% in 2008, and has been expected to reach 12.6% by 2025[2]. The UN has further made projection that 21% (about 324 million) of the Indian population will be above 60 years by 2050 which was 6.8% in 1991[5].

Age related physiological decline of the normal body functioning results in a poor mobility, vision, hearing, an inability to eat and digest food properly, a decline in memory, an inability to control the certain physiological functions and various chronic health problems. However, several factors such as heredity, healthy lifestyle, avoiding smoking, maintaining a healthy weight and diet, and exercising appropriately has a great influence on the individual longevity. People with the most robust genetic makeup can even have short life span on the chronic exposure to environmental toxins. On the other hand, an increased longevity can unavoidably lead to an increased need for the health care services for the extra life years due to a positive relationship between age and disease occurrence[6].

Aging further affects the socio-economic well-being as the earning members are lowered; and increases the dependency burden which affects the population both physically and socio-economically. An increase in psychological illnesses among elderly population might be further attributed to rapid urbanization and societal modernization which has lead to breakdown in the family values and support; economic insecurity; social isolation; and elderly abuse. Moreover, pension and social security in most of the developing countries is restricted to employee or retiree of the public sector or the organized industrial sector[7]. Elderly people further gets impeded from accessing the available health services due to inadequate facilities for the health care, rehabilitation, and recreation; a lack of transport facilities; and dependency on somebody to accompany them to the health care facilities. Aging has led to an increase in the chronic conditions with advancing age from 39% in 60-64 year to 55% in those older than 70 year among Indian population[8]. However, the geriatric age group suffers from the dual medical conditions; where age-related declined immunity and physiological changes has lead to an increased burden of communicable diseases as well as non communicable chronic diseases. Chronic diseases can further limit the daily activities and the quality of life (QOL) by causing medical, social and psychological disorders; where, QOL in elder years is defined as an ability to maintain their independence and eliminate costly care giving services by shopping for themselves, cooking their own meals, bathing, dressing, walking and climbing stairs without assistance[9]. The focus shouldn't be alone on reducing the chronic disease related morbidity and mortality, but should further promotes the optimal health and ensures the disability-free years either by preventing the disease or the impairment through the implementation of the different preventive programmes. Hence, this study was an attempt to determine the prevalence of different chronic diseases and disabilities among the geriatric population in an Indian community.

Methodology

Overview of Design: This cross-sectional study was undertaken to determine the geriatric health of Ex-Servicemen registered with Ex-Servicemen Contributory Health Scheme (ECHS) Polyclinic, being located at Sultanpur Lodhi, Kapurthala, Punjab (India). Under this health scheme, the individuals who had been retired from the defence services; their family members including spouse, children, and parents; elder than 60 years; registered with ECHS Polyclinic; and had visited polyclinic during the study period were entitled to free at-the-point-of-access primary and follow up services for all kind of acute and chronic diseases. The study was conducted from June, 2013 to Oct, 2013 with prior institutional ethical committee approval and informed written consent from all the 199 selected subjects. Chi Square test with statistical significance of p value <0.05 was used for statistical analysis.

Survey Questionnaires: A structured in-person interview was conducted to record socio-demographic variables, lifestyle habits and chronic diseases. Socio-demographic variables include education, socio-economic status (SES) and employment status. Education level was classified into four categories: no/little formal, primary, secondary and graduation. Income adequacy was defined into lower, middle and upper on the basis of retired ranks of Ex-servicemen including their household income and assets. At least 30minutes of regular aerobic physical activity (e.g., brisk walking) per day for most days of the week was considered adequate[1]. The evaluated list of chronic diseases includes obesity, hypertension (HTN), hyperglycaemia, hyperlipidemia, hyperuricemia, depression, insomnia, anaemia, cancers, peptic ulcer disease or gastritis, musculoskeletal disorder, autoimmune disease, chronic liver disease, chronic lung disease, chronic kidney disease (CKD). The patients were listed with the specific conditions on the basis of signs and symptoms, biochemical analysis, and/or currently being diagnosed for a particular disease with the written prescribed medications.

Measurements: Subjects was made to stand in an erect barefoot position, arms by side, and feet together position to determine height using a wall mounted and non extendable measuring tape. Weight measurements were taken with each subject standing at the centre of the weighing scale in light clothing with no shoes and socks. Body mass index (BMI) was calculated as weight per square meter (kg/m^2) and obesity was graded with ≥30.00kg/m^2 [1]. Blood pressure (BP) was measured as per JNC VII guidelines using a standard mercury sphygmomanometer and suitable calibrated cuff in the right arm with the subject rested for 5 minutes. HTN was defined with a systolic BP level of ≥140mmHg and diastolic BP of ≥ 90 mm Hg[1].

Laboratory tests: A fasting blood sample was obtained from all pre-informed individuals after 8–10 hours of fasting. Hyperglycaemia was diagnosed on the basis of fasting blood glucose levels > 100mg/dl (5.5mmol/L) and/or 2 hour postprandial blood glucose levels >140mg/dl (7.8mmol/L) with Erba glucose kit (GOD-POD method, end point) [10]. Hyperlipidemia was defined by a total cholesterol (TC) levels >200mg/dl (5.2mmol/L) with Erba cholesterol kit (CHOD-PAP method, end point) [11]. The WHO's haemoglobin threshold was used to define anaemia with Sahli's method. The threshold for non pregnant women (>15years) is 12.0g/dl (7.4mmol/L) and 13.0g/dl (8.1mmol/L) for all the men[12]. Hyperuricemia was detected by Erba uric acid Des kit (Modified Trinder method, End point). The reference range of uric acid is 3.4-7.2mg/dl (0.20-0.43mmol/L) for men and 2.4-6.1mg/dl (0.14-0.36mmol/L) for women[13].

Results and Discussion

All patients older than 60 years of age (N=199) were divided into men (57.29%) and women (42.72%) groups. Table 1 shows 18.42%, 28.08%, 46.50% and 07.02% of men had no/little, primary, secondary and graduation level education; and geriatric

women had 72.95%, 22.36%, 03.53% and 01.18% for the same education categories, respectively. This shows a statistically significant higher literacy among men (53.52%; p<0.001) than women (4.71%; p<0.001). Further, a statistically significant higher employment in men (47.36%; p<0.001), and unemployment among women subjects (98.83%; p<0.001) was reported. Similarly, a statistically significant higher SES was observed among men (48.25%; p<0.05) than women (30.59%; p<0.05), which might be contributed to a higher unemployment among the latter group (98.83%; p<0.001).

Table 2 displays a statistically significant active lifestyle in men (56.15%; p<0.001), and sedentary lifestyle among women (78.83%; p<0.001), respectively. Similarly, a statistically significant vegetarianism and non-vegetarianism was practiced by women (84.71%; p<0.001) and men (48.25%; p<0.001), respectively. No alcohol and tobacco use had been reported among women subjects. Alcoholic beverages were consumed by men subjects (40.36%; p<0.001) alone. Furthermore, 97.99% of men had quit or never smoked in their lifetime with only 02.02% of currently smoking subjects.

Figure 1 reflects the most common chronic diseases observed in the studied population in a decreasing frequency are HTN (60.84%; p<0.01), musculoskeletal disorders (37.69%), anaemia (35.18%; p< 0.001), hyperlipidemia (34.18%), insomnia (32.17%), hyperglycaemia (25.63%; p<0.05), hyperuricemia (20.61%; p<0.001), depression (19.60%; p<0.01), peptic ulcer disease (13.57%; p<0.001), chronic lung disease (12.57%), obesity (11.56%), CKD (07.54%), autoimmune disease (07.04%; p<0.05), cancers (05.53%) and chronic liver disease (03.52%).

Table 3 shows a statistically significant highest prevalence of HTN (60.84%; p<0.01) with more frequency in women (71.77%; p<0.01) than men (52.64%; p<0.01). Similarly, a higher frequency of anaemia (47.06%; p< 0.001), hyperglycemia (34.12%; p<0.05), hyperuricemia (36.48%; p<0.001), musculoskeletal disorders (41.18%), insomnia (34.12%), obesity (15.30%), autoimmune disease (11.77%; p<0.05), and chronic lung disease (17.65%) were reported among geriatric women. On the other hand, men were observed with higher frequency of hyperlipidemia (35.09%), chronic kidney disease (08.78%), cancers (06.15%), and chronic liver disease (05.27%) than women.

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 demographic, socioeconomic, employment status, lifestyle habits, health and psychological conditions.

Table-1
Comparison of socio-demographic variables in all the geriatric age group subjects[*]

Category	Total Percentage	Men (114)	Women (85)	p value
EDUCATION				
No/Little	41.71 (83)	18.42 (21)	72.95(62)	
Primary	25.63 (51)	28.08(32)	22.36(19)	**<0.001**
Secondary	28.15 (56)	46.50(53)	03.53(03)	
Graduation	04.53 (09)	07.02(08)	01.18(01)	
SOCIO ECONOMIC STATUS				
Middle	59.30 (118)	51.76(59)	69.42(59)	
Upper	40.71 (81)	48.25(55)	30.59(26)	**<0.05**
OCCUPATION				
Stays at home	72.36 (144)	52.64(60)	98.83(84)	
Employed	27.64 (55)	47.36(54)	01.18(01)	**<0.001**

*parentheses represent absolute number of the subjects in a sample.

Table-2
Lifestyle habits of all the study subjects in geriatric age group[*]

Category	Total Percentage	Men (114)	Women (85)	p value
PHYSICAL ACTIVITY				
Adequate	41.21 (82)	56.15(64)	21.18 (18)	**<0.001**
Inadequate	58.80 (117)	43.86 (50)	78.83 (67)	
DIETARY HABITS				
Vegetarian	65.83 (131)	51.76 (59)	84.71 (72)	**<0.001**
Nonvegetarian	34.18 (68)	48.25 (55)	15.30 (13)	
ALCOHOL				
Yes	23.12 (46)	40.36 (46)	00 (00)	**<0.001**
No	76.89 (153)	59.65 (68)	100.00 (85)	
SMOKING				
Current	02.02 (04)	03.51 (04)	00 (00)	3.05
Ex/Never	97.99 (195)	96.50 (110)	100.00 (85)	

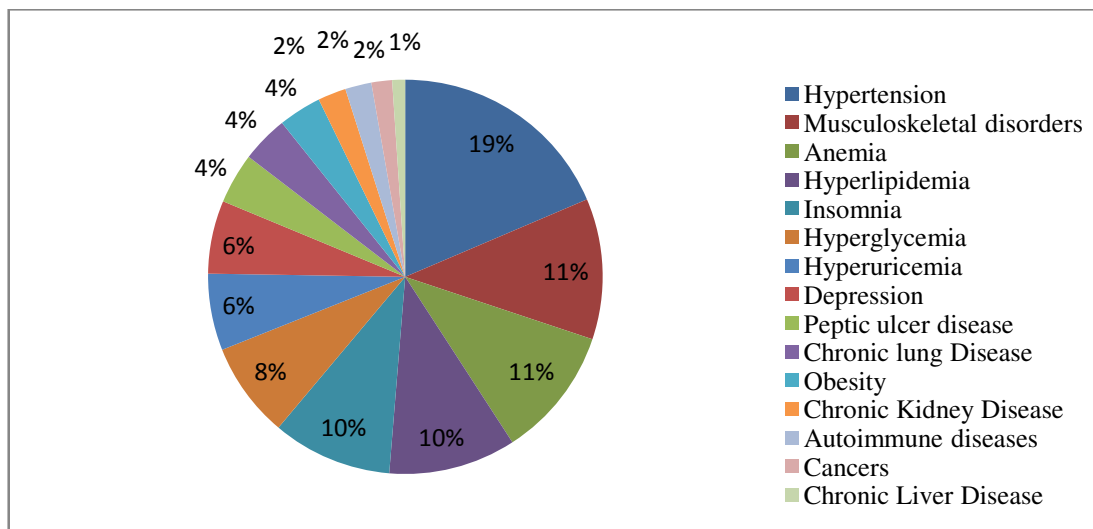*parentheses represent absolute number of the subjects in a sample.

Figure-1
Prevalence of chronic diseases in geriatric population

Table-3
Prevalence and comparison of chronic diseases in a decreasing frequency among geriatric subjects[*]

Diseases	Total percentage	Men (114)		Women (85)		P value
		Normal	**Diseased**	**Normal**	**Diseased**	
Hypertension	60.84(121)	47.36 (54)	52.64 (60)	28.24 (24)	71.77 (61)	**<0.01**
Musculoskeletal Disorders	37.69 (75)	64.92 (74)	35.09 (40)	58.83 (50)	41.18 (35)	.70
Anaemia	35.18 (70)	73.69 (84)	26.32 (30)	52.95 (45)	47.06 (40)	**<0.001**
Hyperlipidemia	34.18 (68)	64.92 (74)	35.09 (40)	67.06 (57)	32.95 (28)	0.11
Insomnia	32.17 (64)	69.30 (79)	30.71 (35)	65.89 (56)	34.12 (29)	0.27
Obesity	11.56 (23)	91.23(104)	08.78 (10)	84.71(72)	15.30 (13)	2.04
Hyperglycaemia	25.63 (51)	80.71 (92)	19.30 (22)	65.89 (56)	34.12 (29)	**<0.05**
Hyperuricemia	20.61 (41)	91.23 (104)	08.78 (10)	63.53 (54)	36.48 (31)	**<0.001**
Depression	19.60 (39)	86.85 (99)	13.16 (15)	71.77 (61)	28.24 (24)	**<0.01**
Peptic Ulcer Disease /Gastritis	13.57 (27)	95.62 (109)	04.39 (05)	74.12 (63)	25.89 (22)	**<0.001**
Chronic Lung Disease	12.57 (25)	91.23 (104)	08.78 (10)	82.36 (70)	17.65 (15)	3.51
Chronic Kidney Disease	07.54 (15)	91.23 (104)	08.78 (10)	94.12 (80)	05.89 (05)	0.60
Autoimmune disease	07.04 (14)	96.50 (110)	03.51 (04)	88.24 (75)	11.77 (10)	**<0.05**
Cancers	05.53 (11)	93.86 (107)	06.15 (07)	95.30 (81)	03.51 (04)	0.19
Chronic Liver Disease	03.52 (07)	94.74 (108)	05.27 (06)	98.83 (84)	01.18 (01)	2.40

[*]parentheses represent absolute number of the subjects in a sample.

The current study (table 1) observed a statistically significant higher literacy (p<0.001) and SES (p<0.05) in men than women. People with low level of education and SES are more likely to suffer from diseases, experience loss of functioning, cognitive and physical impairment, and the higher mortality rates[14]. Furthermore, various aspects of childhood circumstances, educational experiences, work careers, marriage and family experiences, leisure, neighbourhood conditions, and health care differs in people with different social statuses[15]. These health differences are observed throughout the lifecycle but they either cumulate or are tempered by the later life situations[14,15]. Marengoni et al.[16] further observed that the unhealthy behaviours linked to an educational level or social status in the early life may play a role in an elderly individual health status. Majority of geriatric subjects stays at home (72.36%) with a higher unemployment and employment in women (98.83%) and

men (47.36%), respectively. The unemployment in the geriatric population makes a large proportion of them financially dependent on the other family members. Further, elderly individuals who are working in agriculture or in business feels difficulty in working due to the lack of physical and cognitive efficiency which makes them partially or fully dependent on their family members. Uwakwe et al.[17] highlights the financial dependency has a strong relation with the mental and the physical health of geriatric people. Moreover, Kakkar et al.[18] has observed less morbidity among the working geriatric group than retired or homemaker. A statistically significant sedentary lifestyle (58.80%; p<0.001) was observed which predominates in women (78.83%; p<0.001) than men (43.86%; p<0.001) in the present study (table 2). Similarly, Sun et al.[19] has reported that the older age groups especially women were less likely to be regularly active measured by both subjective and objective

criteria. On the other hand, Santulli et al.[20] highlighted that regular physical activity ameliorates β adrenergic activity which contributes to the clinical improvement of cardiovascular health. Various barriers of poor health, lack of time or motivation, perceived ability, adverse environments, social concerns, and fear of pain are experienced by the geriatric population towards achieving an active lifestyle[21]. A statistically significant vegetarianism (65.83%; p<0.001) with higher frequency in women (84.71%; p<0.001) than men (51.76%; p<0.001) was observed in the present study. Furthermore, Deriemaeker et al.[22] has suggested that a vegetarian lifestyle has a no adverse impact on the elderly population health status; after reporting a similar profile in terms of the amount of nutrients intake, blood values, and physical characteristics in both vegetarians and non-vegetarians. Men had been found with a statistically significant (40.36%; p<0.001) alcohol use in the current study. Being male, socially isolated, single, and separated or divorced were the various socio-demographic factors associated with alcohol use disorders among the elderly people[23]. Henry et al. [24] has further observed the associations between a ever been heavy drinker and long lasting effects with a poorer self perceived health status, frequent visits to the doctor, depressive symptoms, major illnesses, less satisfaction with life, and smaller social networks than non-heavy drinkers and people who have never drunk.

Hypertension (60.84%; p<0.01) was the most common statistically significant cause of chronic non-communicable diseases morbidity in the studied population which has been buttressed with the reports from the other parts of the world (table 3)[25]. Apart from the age related cardiovascular changes, aging can lead to an increased sedentary living, overweight and obesity, excessive food intake and reduced food metabolism which can further predisposed the elderly population to HTN. The second most common cause of geriatric morbidity from the chronic non-communicable diseases was musculoskeletal disorders (37.69%) with the predominance in women (41.18%) than men (35.09%). Similarly, Tsou and Ching[26] observed that musculoskeletal disorders leads to incorrect biomechanics, impaired mobility, skeletal and muscular de-conditioning which further results in the decreased functional reserves and ability to adapt to physiological, physical and psychosocial challenges.

Anaemia (35.18%; p<0.001) was the third most common statistically significant cause of chronic non-communicable diseases morbidity with higher prevalence in women (47.06%; p<0.001) than men (26.32%; p<0.001). Conversely, Bhasin and Rao[27] has contrary finding of a higher prevalence of anaemia in men than women. Age related anaemia due to reduced ratio of bone marrow to fat cells and a reduced marrow response on stimulation with erythropoietin; should not be presumed to be a result of "normal aging" or due to nutritional deficiency, and thus blanket treatment with haematinics should be avoided. An appropriate clinical attention and thorough investigation should be required in an elderly population to rule out iron deficiency as a result of chronic blood loss through gastrointestinal lesions including malignancies, vitamin B12 deficiency, folate

deficiency, myleodysplastic syndrome, and anaemia of chronic disease with renal insufficiency[27]. The fourth most common cause of chronic non-communicable diseases morbidity hyperlipidemia (34.18%) was observed more in men (35.09%) than women (32.95%) in the current study. Contrarily, Yamwong et al.[28] has found a significantly higher BMI, TC and LDL levels in women than men. Insomnia (32.17%) had been ranked as a fifth most common cause of chronic non-communicable diseases morbidity in the present study with a higher complaint by women (34.12%) than men (30.71%). Walsh et al.[29] found aging, _per se_, does not cause the sleep disturbances. Rather, the sleep disruptions in this population are secondary to or co-morbid with medical and psychiatric illness which produces significant serious consequences possibly secondary to the deficits in slow-wave sleep in form of an increased risk of falls; poorer overall QOL; deficits in attention, response times, short-term memory, and performance level; and an impaired cognitive functioning[29].

Women (15.30%) had shown higher predisposition to obesity than men (08.78%) in the present study which has been found contrary to Kiss et al[30]. An array of chronic disease and disabilities of diabetes, heart disease, high blood pressure, metabolic syndrome, difficulties with daily life activities and lower self-reported QOL scores, which usually appears during the second half of life puts overweight or obese individuals at an elevated disease burden in the elder age[31]. A statistically significant hyperglycaemia was observed more frequently in women (34.12%; p<0.05) than men (19.30%; p<0.05) in the present study. Moreover, Cigolle et al.[32] has reported adults with diabetes had an increased prevalence and incidence of geriatric conditions across the age spectrum compared to those without diabetes.

A statistically significant hyperuricemia was reported more frequently in women (36.48%; p<0.001) than men (08.78%; p<0.001) in the present study. An elevated serum uric acid was found associated with metabolic syndrome[33]; however, with a decreased risk of dementia and better cognitive function later in life[34]. Depression (19.60%; p<0.01) was reported with a statistically significant higher trend in women (28.24%; p<0.01) than men (13.16%; p<0.01) in the present study, and similar trend was found by Kleisiaris et al[35]. Various life events in the form of adapting to a move from home to an apartment or retirement facility, chronic pain, feelings of isolation or loneliness as children move away and their spouse and close friends die, loss of independence (problems getting around, caring for themselves, or driving), multiple illnesses (thyroid disorders, heart disease, cancer, and stroke), struggles with memory loss and problems thinking clearly makes them susceptible to depression[35]. A statistically significant dyspepsia (13.57%; p<0.001) due to an underlying peptic ulcer disease and/or gastritis was reported more frequently in women (25.89%; p<0.001) than men (04.39%; p<0.001) in the current study. Despite the age-related anatomic and physiological changes in the gastrointestinal system; pharmacologic (Non

Steroidal Anti-Inflammatory Drugs (NSAIDS)), dietary and behavioural factors are contributory[36]. Accordingly, NSAIDs-induced gastropathy was reported as the most prominent cause of geriatric dyspepsia due to an irrational use of NSAIDs for musculoskeletal disorders which was the second most common chronic diseases among the present study population amidst the other diverse causes[26,36]. The prevalence of chronic lung diseases (12.57%) presenting in the form of asthma, allergic bronchitis and/or chronic obstructive pulmonary disease was more prevalent in women (17.65%) than men (08.78%), which might be attributed to chronic exposure to the fumes and smoke released by *chullas* used for cooking purposes by women in the study area. Similarly, Arif et al.[37] has observed female gender, low SES, hay fever, obesity, and smoking status to be associated with current or probable asthma.

Autoimmune disease (07.04%; $p < 0.05$) was reported at a statistically significant higher trend among women (11.77%; $p < 0.05$) than men (03.51%; $p < 0.05$) in the study population. It has been suggested that age related increased auto-antibodies production along with decrease in immune responsiveness has led to the increased incidence of autoimmune, malignant and infectious diseases[38]. The low prevalence of cancer (05.53%) in the current study might be contributed to an initial attempt by most cancer patients to treat their symptoms with a traditional treatment from an unauthorized practitioner, further seeks medical help only in advanced stages of the illness, and/or the cultural restraints regarding the diagnosis disclosure. Further, age related reduction in protective enzymes, and growth factors response; and an increased pathogenic load from the gut put the aged liver at an increased risk of hepatic diseases which might be attributed to the chronic liver disease observed in the present study[39].

Limitations: A cross-sectional design limited evaluation of cause-effect associations or relationship between lifestyle factors and geriatric hypertension or associations between dyspepsia and excessive consumption of NSAIDs. The sample size for each entity in this study was relatively small; and data was drawn from the polyclinic attendees of the study area so only the geriatric patients who presented to the clinic were studied. Thus, extrapolation and generalization of the study results require a planned longitudinal study following a large cohort of the elderly to show the trends and patterns of unhealthy behaviours and chronic diseases over time.

Conclusion

Rising prevalence of chronic conditions especially among geriatric women are considered as the major causes of disability in the elderly population. The study provides baseline information on chronic conditions and their socio-demographic correlates among the elderly population. Common elderly concerns of finance, social interaction, functional ability and environmental risks should be taken into consideration. Screening programs should be instituted at the community level for the early diagnosis, treatment, and further regular monitoring of the treatment compliance to control diseases related morbidity and mortality.

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