Pattern of morbidity among elders attending general practice: health needs assessment of geriatric patients in Oman

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Abstract

The main purpose of this study was to identify specific problems and pattern of morbidities that is common in the elderly. A cross sectional study surveying the health status and needs of targeted population was conducted in selected primary health care (PHC) outpatient settings. All consenting individuals aged 60 years and above who visited the selected PHC clinics were interviewed. Information was collected using face-to-face interviews based on a structured, pre-tested questionnaire. A total of 185 people were evaluated in this study. About 75% of participants were age 60-70 years. Overall, male predominance was noted with 137 (74.1%) males and among all participant's 80% were married. The mean BMI was 26.47±4.98 kg/m^2 and mean waist circumference was 90.16±12.97 cm. The prevalence of smoking, DM, HTN, dyslipidaemia and history of IHD among participants were 7.6%, 37.8%, 49.7%, 27.6% and 8.1%, respectively and males showed a significantly higher prevalence than females in smoking and HTN ($p<0.05$). Hypertension was common comorbid ailment with 29.2% of stage I and 19.5% of stage II hypertension among 60-70 age groups. The majority of the participants were taking shower; using toilet, feeding and get dressed independently, 88.6%, 87.6%, 87% and 87.6% respectively. These findings provide important information on high prevalence of overweight, hypertension, diabetes, smoking and dyslipidaemia among elders. The other common morbidities were impaired vision, walking difficulty, and hearing problems. The activity of daily living (bathing dressing toileting feeding) is preserved in most of older people.

Introduction

Elderly population is in a rapid expansion worldwide, as a result of dramatic advances in medicine towards prevention, controlling and curing of diseases that are associated with high mortality. By the year 2025, people in this age group will reach a total of 1.2 billion and this will rise to 2 billion in year 2050 with 80% of them living in developing countries.[1] The sultanate of Oman is no exception of this global trend, especially with the dramatic increase in life expectancy for Omani people over the last four decades. Elderly in Oman constituted 3% of the population in 1993, increased to 3.5% in 2010 and is expected to reach 15.2% by 2050.[2] Oman has generally triumphed over the epidemic of communicable and deficiency diseases (characteristics of underdevelopment)[3-5] and crossed the *transition phase* towards the epidemic of chronic non-communicable and affluence diseases (characteristic modernization and advanced levels of development).[6]

Primary Health Care (PHC) physicians, managing the geriatric care clinic, usually initiates a comprehensive assessment of older clients attending the clinic.[7] Each clinic has a catchment area, and older individuals in that area are usually being called, at least initially, for such assessment. Like an effective medical evaluation, the geriatric assessment needs to be sufficiently flexible and adaptable. Effective primary care management of geriatric health issues, with its goal of caring for healthy and functional elderly patients, may perhaps be better described as a comprehensive health screening.[8] Disease management not only need professional skills but also requires family support as well as social rehabilitation facilities in order to allow older individuals being effective members of community at their late life.[9-11]

According to United Nation and World Health Organisation estimations, the population in the elderly age group is growing in the Sultanate due to the impressive health, social and economic development is estimated to go up to 10% of the total population by the year 2025. Ministry of health integrated the elderly care in the band of primary health care services in the new seventh fifth year plan for ministry of health through the plan of primary health care domain, which aims to reduce morbidity in elderly age group and early detection of old age diseases and their complications.[12] In view of vulnerability of older people and their growing number in Oman, a study was conducted in South Batinah Governorate to identify specific problems and pattern of morbidities among elders.

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Materials and Methods

A cross sectional study surveying the health status and needs of targeted population was conducted in selected PHC outpatient settings in the South Batinah Governorate of Oman. The study was approved by the institutional review board and Ministry of Health, Oman. A structured questionnaire was designed incorporating important barriers and attitudes in research that were identified through an extensive literature search of the Pub Med database. After consensus of all study investigators, we also included some questions, which were particularly important to our local scenario. Questions about past research involvement and experiences were also included. The time required to complete the questionnaire was about 10 to 12 minutes.

Ethics approval and consent to participate

The study protocol was approved by the Institutional Review Board and Ministry of Health, Oman.

Study participants

Elderly Omani individuals residing in South Batinah governorate were recruited. A written informed consent was obtained. All consenting individuals aged 60 years and above who visit the selected PHC clin-

ics were interviewed. Information was collected using face-to-face interviews based on a structured, pre-tested questionnaire. Those who did not give consent and those unable to participate due to their illness were excluded from the study.

The sample size was determined using a single population proportion sample size estimation method by assuming that 50% of the patients have co morbidities (to obtain the maximum representative sample size since no similar study was found in the region) with 95% confidence interval and at confidence interval 5. Finally, we calculated 384 patients by using population correction formula.

Data collection

Data was collected through individual face-to-face interview by trained interviewers using a structured, pre-tested questionnaire. Survey instrument was made after literature search reviewed by and agreed on via several brain storming sessions. The questionnaire thoroughly discussed among the interviewers before data collection to decrease interview bias. Face and content validity of the questionnaire was obtained through a review process with experts in the field. After incorporating the identified inconsistencies and inaccuracies, the questionnaire was piloted.

Statistical analysis

Study data was analyzed using Statistical Package for Social Sciences (SPSS) version 20 for percentage, frequency and mean. Descriptive statistics used to describe patient's demographics. Chi-square test was used as a test of significance to compare differences between groups for categorical data and using the Mann Whitney U test, a non-parametric statistical test for continuous data.

Results

A total of 185 people were evaluated in this study. About 75% of participants were age 60-70 years, 16.8% were 70-80 years and 8.1% were above 80 years of age. Overall, male predominance was noted with 137 (74.1%) males and among all participant's 80% were married. The mean BMI was 26.47±4.98 kg/m^2 and BMI in the males was statistically significantly lower than the females (P=0.005). Mean waist circumference was 90.16±12.97 cm and waist circumference in the male and females did not show any statistical difference (p=0.09). The prevalence of smoking, DM, HTN, dyslipidaemia and history of IHD among participants were 7.6%, 37.8%, 49.7%, 27.6% and 8.1%, respectively and males showed a significantly higher prevalence than females in smoking and HTN (p<0.05) (Table 1).

The proportion of this cohort that were age 60-70 (n=139), hypertension was common comorbid ailment with 29.2% of stage I and 19.5% of stage II hypertension affected overall, with the frequency decreasing with increasing age (Table 2). The next most common comorbid ailments were impaired vision 32.4%, walking difficulty (23.8%), impaired gait (18.9%), impaired hearing (14.6%), and urinary incontinence (11.9%).

Participants' were asked multiple questions regarding their daily living activities. Their answers were labelled as independent, with help and dependent (Table 3). Nearly two third (77.3%) were not utilising walking aid. The majority of the participants were taking shower; using toilet, feeding and get dressed independently, 88.6%, 87.6%, 87% and 87.6% respectively. More than a half of the participant's perform their daily activities such as driving, cooking, housekeeping, grocery and self-medication independently.

Discussion

This study provides the evidence about the prevalence of chronic diseases as well as functional capacity (limitation) in elderly population in Oman. Overall, we found that the functional capacity of elders is not diminished as the age advances but the proportion of chronic diseases is high among this age group. Amongst other included chronic diseases in this study, hypertension was the most common disorder (50%) in elderly individuals.[13] Similar numbers were observed in previous studies carried out in other countries such as in Saudi Arabia (46.5%) and 67% in UAE.[14,15] Moreover, another study conducted in Fayoum rural district in Egypt reported 37.4% hypertensive elders.[16] The increasing prevalence of hypertension within elder population may be attributed to change in living standard in the past many years. However, the prevalence of hypertension is still considerably lower than other European countries such as in France (67%), Italy (71%) and in England (81%).[17,18] On the other hand, few studies show lower proportion of elders has hypertension such as in Korea (9.2%) and in Vietnam (15%).[19,20]

Two out of five individuals (37.8%) in this study, reported diabetes which was similar with Saudia (36.5%), 52% UAE.[14,21] However, other countries data shows lower prevalence such as Albania (19%), Germany (17%), and in China 24.8%.[22-24] Danaei *et al.*[25] had reported that diabetes was rising globally, driven by both population growth and ageing with increasing age-specific prevalence. In contrast, prevalence of diabetes was quite low in Thailand (14.8%), Korea (2.8%) and Vietnam <1%.[19,20,26] Dyslipidaemia is one of the four proven conventional risk factors for coronary heart diseases besides cigarettes smoking, diabetes, and hypertension.[27] Our study showed almost one third of the participant (27%) had high lipids. Previous studies performed in Saudi Arabia found 52.9%, and in UAE 28.6% prevalence.[14,28] In a survey conducted in the town of Sarih in north of Jordan, 59% of people aged ≥60 year has dyslipidaemia.[29]

Table 1. Frequencies of study participants' risk factors.

Variables	Frequencies	Percentages
Smoking		
Yes	14	7.6
No	164	88.6
Ex-smokers	7	3.8
DM		
Yes	70	37.8
No	115	62.2
HTN		
Yes	92	49.7
No	93	50.3
Dyslipidaemia		
Yes	51	27.6
No	134	72.4
IHD		
Yes	15	8.1
No	170	91.9
COPD		
Yes	9	4.9
No	176	95.1
Arthritis		
Yes	28	15.1
No	157	84.9
Low backache		
Yes	7	3.8
No	178	96.2
Stroke		
Yes	9	4.9
No	176	95.1
Renal disease		
Yes	2	1.1
No	183	98.9
Cancer		
Yes	1	0.5
No	184	99.5
Psychiatric issues		
Yes	2	1.1
No	183	98.9
Skin problems		
Yes	3	1.6
No	182	98.4

Another study conducted in Wrdha district, India reported 40% elders have high lipids.[30]

The present study findings showed that the prevalence of current smoking in elders in Oman is 7.6% that was lower than the Saudi Arabia 25% and Lebanon (25%).[31,32] In a cross sectional survey conducted in a random general population of eleven countries such as Algeria, Egypt, Jordan, Morocco, Pakistan, Saudi, Syria, Tunisia, Turkey, and UAE. 29.8% elders are smokers.[33] In Europe 11.5% elders are smokers, a similar prevalence was observed among older adults among the elders in Canada (12%).[34,35] In 2010, Ischemic heart disease was the leading cause of mortality worldwide.[36] Projections reveal that ischemic heart disease mortality in the Middle East countries will increase at a rate compared to other regions.[37] The result of the current study showed that 15% Omani older adults have IHD, this is closer to elders in Saudi 16.7%, 15% in UAE, and 14% in Lebanon.[14,38,39]

The prevalence of osteoarthritis was estimated to be 15% in the present study. The prevalence was lower than UAE where it was 45% in elders.[14] Other studies conducted in Southern region of Saudi where it is 24%, and in Egypt it was 42%.[38,39] Obesity is a risk factor for coronary heart diseases, and it is strongly associated with diabetes and hypertension and impaired quality of life.[40] Omani elders have high prevalence of overweight/obesity (BMI≥25 kg/m^2) 77% Omani elders are overweight this is similar to Saudi 71%, Egyptians (65%) and to Lebanon 68%.[16,32,41] In another study conducted in north of Jordan reported 90% of overweight/obesity in elder population.[42]

Functional limitations was investigated through activities of daily living (ADL), a five item scale commonly used in comprehensive geriatric assessment evaluating the basic activates such as bathing, toileting, clothing, walking and eating by his/her own, 87% of elders can perform bathing, toileting, feeding and dressing independently while 77% can walk independently, this data similar to another assessment in Oman where 75% elders are independent to perform ADL,[43] in Saudi Arabia Qassim region almost 90% elders can perform these four activities independently[44] in another cross sectional study in Lebanon where 76% of participant can perform basic ADL independently.[32] In Jordan, more than 80% older

Table 2. Distribution of geriatric morbidity.

Variable	Total (n=185)	60-70 (n=139)	70-80 (n=31)	>80 (n=15)	P-value
BP					0.821
Normal	36 (19.5)	26 (14.1)	6 (3.2)	4 (2.2)	
Pre hypertension	59 (31.9)	46 (24.9)	11 (5.9)	2 (1.1)	
Stage 1	54 (29.2)	41 (22.2)	8 (4.3)	5 (2.7)	
Stage 2	36 (19.5)	26 (14.1)	6 (3.2)	4 (2.2)	
Dementia					<0.001
Yes	15 (8.1)	6 (3.2)	4 (2.2)	5 (2.7)	
No	170 (91.9)	133 (71.90)	27 (14.6)	10 (5.4)	
Depression					0.05
Yes	11 (5.9)	6 (3.2)	2 (1.1)	3 (1.6)	
No	174 (94.1)	133 (71.9)	29 (15.7)	12 (6.5)	
Gait					<0.001
Impaired	35 (18.9)	13 (7)	14 (7.6)	8 (4.3)	
Normal	150 (81.1)	126 (68.1)	17 (9.2)	7 (3.8)	
Vision					<0.001
Impaired	60 (32.4)	29 (15.7)	20 (10.8)	11 (5.9)	
Normal	125 (67.6)	110 (59.5)	11 (5.9)	4 (2.2)	
Hearing					0.024
Impaired	27 (14.6)	15 (8.1)	7 (3.8)	5 (2.7)	
Normal	158 (85.4)	124 (67)	24 (13)	10 (5.4)	
Insomnia					0.017
Yes	20 (10.8)	10 (5.4)	6 (3.2)	4 (2.2)	
No	165 (89.2)	129 (69.7)	25 (13.5)	11 (5.9)	
Body pain					0.004
Yes	20 (10.8)	9 (4.9)	8 (4.3)	3 (1.6)	
No	165 (89.2)	130 (70.3)	23 (12.4)	12 (6.5)	
Loss of appetite					0.001
Yes	12 (6.5)	4 (2.2)	4 (2.2)	4 (2.2)	
No	173 (93.5)	135 (73)	27 (14.6)	11 (5.9)	
Urinary incontinence					<0.001
Yes	22 (11.9)	8 (4.3)	9 (4.9)	5 (2.7)	
No	163 (88.1)	131 (70.8)	22 (11.9)	10 (5.4)	
Stool incontinence					0.002
Yes	11 (5.9)	6 (3.2)	1 (0.5)	4 (2.2)	
No	174 (94.1)	133 (16.2)	30 (16.2)	11 (5.9)	
Walking difficulty					<0.001
Yes	44 (23.8)	22 (11.9)	14 (7.6)	8 (4.3)	
No	141 (76.2)	117 (63.2)	17 (9.2)	7 (3.8)	

people can perform bathing, toileting, feeding and dressing independently.[45] In India, Ahmedabad, 90% elders can perform these four activities without help.[46] Geriatric population in this study have shown a good personal daily activity by their own. The result is very encouraging, however this is imperative to promote and improve the geriatric health in Oman managing common issues and updating physicians regarding evolving problems.

Conclusions

Geriatric population tends to develop more chronic disease state, develop frailty and dependency, and reduced quality of life. The study results provide important information on high prevalence of overweight, hypertension, diabetes, smoking and dyslipidaemia among elders. The other common morbidities were impaired vision, walking difficulty, and hearing problems. The activity of daily living (bathing dressing toileting feeding) is preserved in most of older people.

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Table 3. Difficulties of daily living activities.

	Total (n=185)	60-70 (n=139)	70-80 (n=31)	>80 (n=15)	P-value
Walking aid					<0.001
Yes	42 (22.7)	19 (13.7)	13 (41.9)	10 (66.7)	
No	143 (77.3)	120 (86.3)	18 (58.1)	5 (33.3)	
Shower					<0.001
Independent	164 (88.7)	130 (93.5)	24 (77.4)	10 (66.7)	
With help	11 (5.9)	3 (2.2)	6 (19.4)	2 (13.3)	
Dependent	10 (5.4)	6 (4.3)	1 (3.2)	3 (20)	
Feeding					0.013
Independent	161 (87)	127 (91.3)	24 (77.4)	10 (66.7)	
With help	18 (9.8)	9 (6.5)	6 (19.4)	3 (20)	
Dependent	6 (3.2)	3 (2.2)	1 (3.2)	2 (13.3)	
Dressing					0.001
Independent	162(87.6)	128 (92.1)	24 (77.4)	10 (66.7)	
With help	13 (7)	5 (3.6)	6 (19.4)	2 (13.3)	
Dependent	10 (5.4)	6 (4.3)	1 (3.2)	3 (20)	
Toileting					0.003
Independent	161 (87.6)	127 (91.4)	25 (80.7)	9 (60)	
With help	14 (7)	6 (4.3)	5 (16.1)	3 (20)	
Dependent	10 (5.4)	6 (4.3)	1 (3.2)	3 (20)	
Attend phone call					<0.001
Independent	108 (58.7)	96 (69.1)	10 (32.3)	2 (13.3)	
With help	53 (28.6)	34 (24.5)	14 (45.2)	5 (33.3)	
Dependent	24 (13)	9 (6.5)	7 (22.6)	8 (53.4)	
Driving					<0.001
Independent	121 (65.4)	106 (76.3)	11 (35.5)	4 (26.7)	
With help	45 (24.3)	24 (17.3)	16 (51.6)	5 (33.3)	
Dependent	19 (10.3)	9 (6.5)	4 (12.9)	6 (40)	
Cooking					<0.001
Independent	103 (55.7)	88 (63.3)	12 (38.7)	3 (20)	
With help	56 (30.3)	40 (28.8)	13 (41.9)	3 (20)	
Dependent	26 (14.1)	11 (7.9)	6 (19.4)	9 (60)	
House keeping					<0.001
Independent	95 (51.4)	82 (59)	10 (32.3)	3 (20)	
With help	68 (36.8)	46 (33.1)	16 (51.6)	6 (40)	
Dependent	22 (11.9)	11 (7.9)	5 (16.1)	6 (40)	
Grocery					<0.001
Independent	113 (61.1)	98 (70.5)	12 (38.7)	3 (20)	
With help	53 (28.6)	32 (23)	15 (48.4)	6 (40)	
Dependent	19 (10.3)	9 (6.5)	4 (12.9)	6 (40)	
Laundry					<0.001
Independent	98 (53)	85 (61.2)	10 (32.3)	3 (20)	
With help	60 (32.4)	42 (30.2)	15 (48.4)	3 (20)	
Dependent	27 (14.6)	12 (8.6)	6 (19.4)	9 (60)	
Self-medication					<0.001
Independent	122 (65.9)	101 (72.7)	15 (48.4)	6 (40)	
With help	49 (26.5)	32 (23)	13 (41.9)	4 (26.7)	
Dependent	14 (7.6)	6 (4.3)	3 (9.7)	5 (33.3)	

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