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Empowering Role of Family Medicine Clinic in Geriatrics Care in a Rural Region in Egypt

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Abstract

Background: Ageing has become a medical and social problem in today's world. Most elderly patients` first contact is with non-geriatricians, usually family medicine physicians and primary health care providers.

Aim: identify weak areas of geriatric health care through elderly health status evaluation in an Egyptian rural area and demonstrating pilot health education program regarding major geriatrics concerns.

Methods: Cross-sectional study was done in the catchment area of the family health unit in El-Qaliobya Governorate in Kom-ashfeen village from July 2013 till January 2014 on the elderly aging 60 years and above, 419 elderly were enrolled. An interview questionnaire included socio-demographic data, basic activities of daily livings, and instrumental activities of daily livings, mental status, and nutritional status. Hearing and visual status were assessed. Screening for anemia, hypertension and diabetes was performed. Health education program was organized. Completing and updating contents of the health folders of all study subjects was done.

Results: The mean age was 66.95±6.5 years. (56.6%) were males. The most commonly reported diseases were rheumatic diseases, ischemic heart diseases and renal impairment, respectively. 36.3% were unaware of hypertension. 51 (12.9%) of subjects were diabetic by history, and 15.3% and 45.6% had fasting and post prandial hyperglycemia respectively discovered by screening. 83% of elderly females were anaemic. (57%) of the study subjects were assisted by someone in some activities of daily livings. 31% of the subjects had mental problem. and (17%) were malnourished and 52% were at risk of malnutrition, and (28%) of the subjects had hearing problem. 266 (63.5%) of study subjects were on a regular medication intake. The mean number of drugs taken was 3.29 ± 1.7. 126 medical records had been created and 293 incomplete file were completed and activated.

Conclusions: The study highlighted service related areas for family physicians to close the wide gap in geriatric care by periodic health status assessment, screening for common chronic diseases, health education and counseling programs.

Keywords: Family medicine physician, geriatric care, health assessment

Background

The world population has been experiencing significant ageing—the process that results in rising proportions of older persons in the total population—since the mid-twentieth century. Ageing is also partly the result of the trend toward longer and generally healthier lives of individuals, but because chronic and degenerative diseases are more common at older ages, they result in an increased prevalence of non-communicable diseases at the population level. [1]. Family physicians (FP) are essential providers of geriatric care, especially in rural areas [2] Family physician and primary health care is the cornerstone of active Ageing [3]. They have the-unique-responsibility and potential to address the needs of older persons as felt by the older persons themselves. Unique, because they see the persons in their own environment, during a long period of time, with an understanding for

the medical and non-medical life history of their patients and with the capacity to discuss the approach to their general health. [4].

The geriatric assessment is an important component in geriatric care which is multidimensional, multidisciplinary diagnostic instrument designed to collect data on the medical, psychosocial and functional capabilities and limitations of elderly patients [5]. So we aimed at evaluating health status of elderly persons living in an Egyptian rural area and demonstrating health education program regarding major geriatrics health concern

Method:

This study is a descriptive cross-sectional study in the catchment area of the family health unit in El Qaliobya Governorate in Kom-ashfeen village. Total population in the village reaches 30,000 persons. 4500 are the number of elderly aged 60 and above. In the family medicine clinic, there is a health record for each elderly, this was used as the sample frame, where a systematic random sample was drawn, and selection was from every 5th folder. Calculated sample size is 354. Considering response rate 80%, So 425 is the proposed sample taken. There were no exclusion criteria. Recruitment of the subjects was done by phone dialing or a nurse calling at home for non-responsive to request their sharing in the study. Home visits were conducted to those who had difficult mobilization to the family medicine unit. The study started at July 2013 and continued for seven months.

An interview questionnaire included socio-demographic data, life style items and medical history. Assessment of Activities of daily livings by Katz index of dependence[6], instrumental activities of daily livings by Lawton index of dependence[7], mental status by Mini Mental Status Examination [8,9], nutritional status by Mini Nutritional Assessment [10], hearing by Whisperd voice test [11] and visual status using Snellen chart [12]. Screening of diabetes mellitus was done using Gluco-check test [13]. Fasting and 2 hour postprandial glucose test were done as a confirmatory test for those whom glucocheck reading above 200 mg/dl. Screening of blood pressure was performed according to American Society of Hypertension 2013 [14] and screening for anemia was done by taking blood sample to measure the level of hemoglobin where cut off level of hemoglobin in male is 13 g/dl and is 12 g/dl in female [15].

Health education sessions for the elderly discussing (fall prevention, how to take medication, healthy nutrition, importance of exercise, improvement of social activity and the way to healthy and active Ageing) was carried out once weekly at the family health unit, where a trained nurse with the researcher conducted the session for 20 persons at a time followed by counseling for the related topic. Two nurses helped the researcher in medical record

review for selected study subjects and completing contents of folders of all the study subjects and complete and update data of the folders which were already present but not activated.

Data collection was completed to all subjects using questionnaire and clinical examination. Statistical analysis of the data was performed by using SPSS (statistical package for social science) 15 software package under windows XP operating system [16]. Categorical data were presented as frequency and percentage. Quantitative data was presented as mean and standard deviation SD. Chi square test were used to compare qualitative data

Ethical consideration: approval was obtained from Faculty of Medicine, Ain-Shams University/Research Ethics committee. Before enrolment in the study an informed consent was obtained from each subject. Confidentiality of data was ensured and all data was kept secured.

Results:

419 elderly were enrolled in the study, most of study subjects (76.6%) aged 60 to 70 years. Male subjects represented (56.6%). Nearly half of study subjects were illiterate. Around 45% of study subjects don't currently work. More than half of subjects (56.6%) were currently married. Most commonly reported medical diseases from history taking was rheumatic disease 39(9%) followed by Ischemic heart disease 37(8.8%) then renal diseases 36(8.6%) (Figure 1). Table 1 shows assessment of daily activities where, difficult elderly transfer was reported by 80 (19.1%). Regarding the instrumental activities of daily living; only 88.3% and 91.4% were assessed in taking medications and handling money respectively.

Table 2 shows results of screening for health status. Half of participants (52%) are at risk of malnutrition, 19% of the study subjects are malnourished by MNA screening. Mental assessment by MMSE revealed that 132 (31.5%) of the study subjects have mental assessment score <24 having the least mean score for attention 57.8% of score followed by recall questions with 62% of score. Visual acuity of the study subjects showed that 98% have error of refraction, and 1 to 1.7% with no light perception in either eye. Auditory screening revealed about (27.7%) with hearing problems.

Screening showed that 11.9% of patients were known hypertensive, on the other hand 48.2% were detected on screening examination. Similarly 51(12.9%) of subjects were reported as diabetic by history, and there are 64(15.3%) & 191(45.6%) participants had fasting and post prandial hyperglycemia respectively which discovered upon screening. About 83% of elderly females and 24% of elderly males were anaemic. 266(63.5%) of study subjects are on regular medication intake. 4.5% take multi medications for co-morbidities

and the mean number of drugs taken was 3.29 + 1.7 ranging from (0-9).

During the study period 126 new files had been created and 293 incomplete file were completed and activated. Important geriatric assessment domains were added in a separate sheet.

Fig. 1 Frequency of reported diseases of study subjects by history taking:
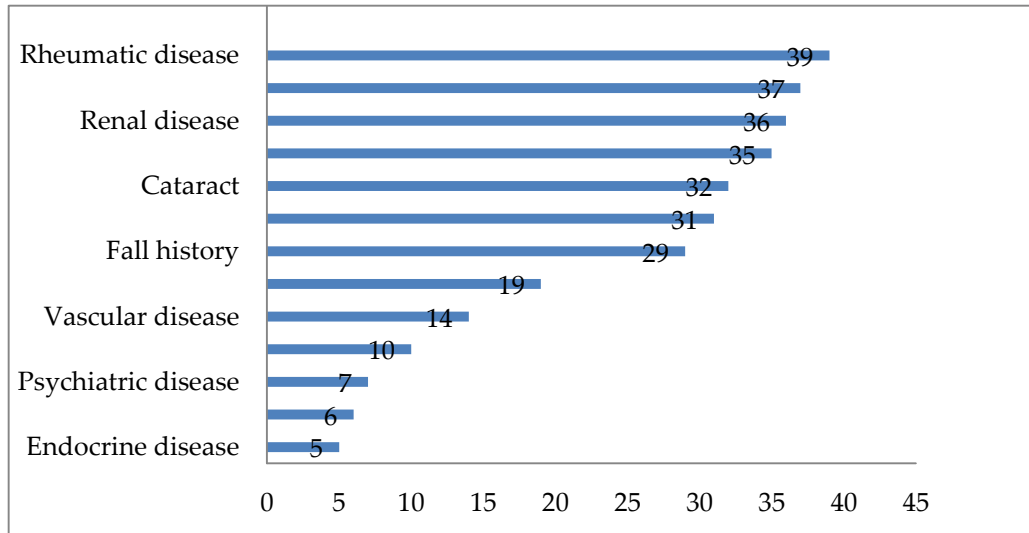
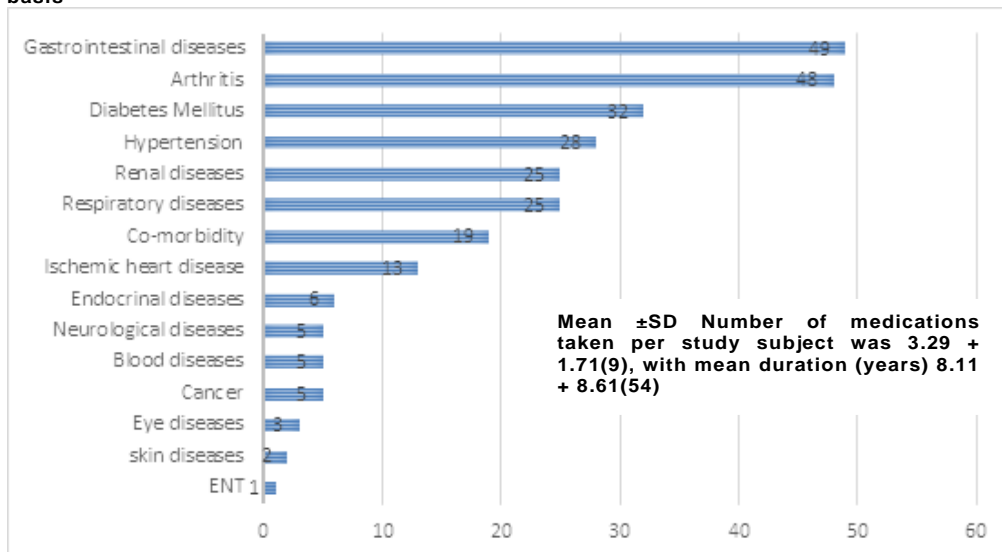**Fig. 2 Frequency of medications by therapeutic indication study subjects are taking on regular basis**

Mean ±SD Number of medications taken per study subject was 3.29 + 1.71(9), with mean duration (years) 8.11 + 8.61(54)

Table 1 Assessment of daily activities of studied subjects

	Basic activities total No=419			
	Independently done		Done with assistance	
	No.	%	No.	%
Bathing	352	84%	67	16%
Dressing	365	87.1%	54	12.9%
Toileting	406	96.9%	13	3.1%
Transferring	339	80.9%	80	19.1%
Continence	413	98.4%	6	1.6%
Feeding	394	94%	25	6%
	Instrumental activities of daily livings total 419			
Ability to use telephone	138	32.9%	281	67.1%
Shopping	173	41.3%	246	58.7%
Food preparation	137	32.7%	282	67.3%
Housekeeping	119	28.4%	300	71.6%
Laundry	86	20.5%	333	79.5%
Mode of transportation	128	30.6%	291	69.4%
Responsibility for own medication	49	11.7%	370	88.3%
Ability to handle finance	36	8.6%	383	91.4%

Table 2 Screening for health status of study subjects nutritional, mental and common diseases

Assessment tests	Total No =419		
Nutrition assessment MNA test Total score 30 points	No	%	
Normal(>23.5)	120	28.6%	
At risk (17-23.5)	219	52.3%	
Malnourished(<17)	80	19.1%	
Mini mental test Cognitive impairment (<24)	132	31.5%	
Items of mini mental test	Max. score	Mean	S.D
Orientation	10	9.57	1.3
Registration of information	3	2.98	0.466
Attention	5	2.89	1.76
Recall	3	1.88	1.914
Language	9	6.82	1.852
Anemia	No %	Mean Hb (g/dl)	S.D
Male	57 (24.1%)	12.87	±1.52
Female	152 (83.5%)	10.91	±1.0
Total hypertensive participants n(%)		202 48.2%	
history of hypertension n(%)		50 11.9%	
Unawareness of hypertension n(%)		152 36.3%	
Diabetes Mellitus		51 12.17%	
Hyperglycemia on screening			
	Fasting	64 (15.3%)	
	Postprandial	191 (45.6%)	

Fig. 3 Frequency of surgical operations study subjects had undergone
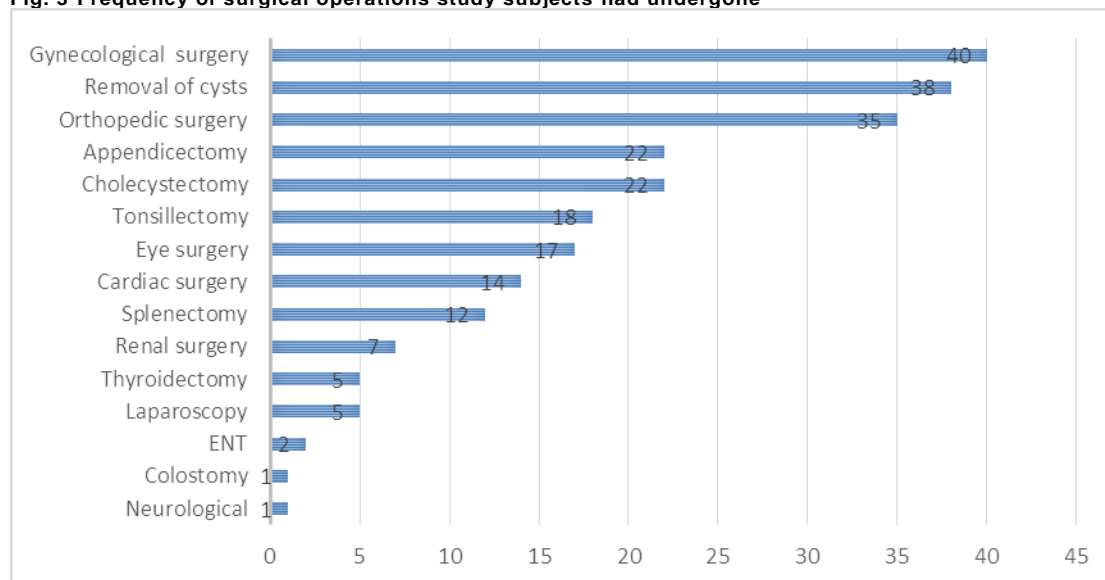
Discussion

The geriatric assessment is a multidimensional, multidisciplinary assessment designed to evaluate an older person's functional ability, physical health, cognition and mental health, and socio-environmental circumstances. The geriatric assessment includes a review of the two key divisions of functional ability: activities of daily living (ADL) and instrumental activities of daily living (IADL). In the current study, functional status of the elderly was evaluated according to Katz index for basic activities of daily livings and assessment of instrumental activities of daily livings according to Lawton scale of IADL (table 1). It is worth mentioning that evaluation of functional status always carry wide range when comparing different study [17,18,19] still the percentages of disability presented in table 1 are considered relatively high and should be considered when applying services.

In the current study assessment of mental status was evaluated by mini mental status examination, where 31.5% of the subjects have a degree cognitive impairment. In comparison there were two other Egyptian studies performed on the community dwelling Egyptian elderly revealing that the prevalence of mild cognitive impairment is 32% (20).Prevalence ratios for dementia subtypes were 2.2%, 0.95%,0.55 and 0.45 for AD, multi-infarct dementia, mixed dementias and secondary dementias respectively[21]. On the other hand McPherson and Schoephoester reported that 10 to 20 percent of those aged 65 and older may have mild cognitive impairment. While screening results alone are insufficient to diagnose dementia, they are an important first step [22]. Meanwhile in Badia study 11% individuals scored (<19). On the other hand in Orozco and Ledesma study at 2011 in Spain; 38% had a mild deterioration of the cognitive state and 27% moderate deterioration in cognitive state by (MMSE) [23,19].

In the current study 52% were at risk of malnutrition and 19% were malnourished. While in Badia´s study at the year 2015 according to the MNA test scores, 65.50% individuals had correct nutritional status, 30.8% were at risk of malnutrition, and 3.7% individuals had malnutrition [23]. On the other hand Agarwalla et al., 2015 found 15% were malnourished and 55% were at risk of malnutrition [24]. This result should be considered when managing geriatric problems because the prevalence of malnutrition increases with escalating frailty and physical dependence [25].

Evaluation of vision and hearing revealed that 98% have error of refraction, and 1 to 1.7% with no light perception in either eyes. Meanwhile Orozco amd Ledesma found in his study that there are 68% visual deficits [19]. Results of auditory assessment of the elderly using Whisper voice test, revealed that about 28% of subjects have auditory defects. But in Badia´s study auditory impairment was present in (37.8%) of the study subjects using Whisper test [23]. Also Orozco and Ledesma found in their study that 35% of the study subjects are with hearing deficiency [19].

The previous results spot light on the importance of screening for sensory impairment and early treatment of those problems especially with confirmed increasing prevalence of sensory impairment among elderly population [26]

Screening for diseases appeared of utmost importance. While only 11.9% of elderly subjects in the current study were known hypertensive they were 48.2% by examination meaning that 36.3% were unaware of hypertension. 12.2% were known diabetics by history, 17% were found to have fasting and 49% to post prandial hyperglycemia. Those percentages highlighted important problems of increasing prevalence of diabetes and hypertension and also there were 36.3% and 49% were having undiagnosed hypertension and diabetes. We can say that our results go in parallel with Wild et al. 2004 and Chinnakali et al. 2012[27,28].

Meanwhile studying other medical conditions revealed that arthritis is having prevalence rates of 9%. This can be compared to the morbidity and mortality weekly report, 2013 who found that of persons ages 65 or older, 49.7% reported doctor-diagnosed arthritis [29]. It is worth mentioning that People with arthritis have significantly worse health related quality of life [30]

Anemia was predominant in females (83%) and 24% of elderly males were anaemic. Senior women health care appeared to be mandatory for this higher anaemia rate and as gynaecological operations was the commonly reported one. The problem of anaemia in elderly was discussed in several previous researches highlighting the prevalence and its serious consequences [31, 32, 33]

We found that 4.5% take multi medications for co-morbidities and the mean number of drugs taken was 3.29 ±1.7 ranging from (0-9). There was a difference between the current study and other Egyptian study reporting that frequency of polypharmacy was 56% when defining it as using 5 or more drugs [34]

Medical record review was conducted for all study subjects; folders of the subjects were completed and updated. Some new records were created for those who did not have folders. There were only 293 files for elderly in the catchment area of the unit. Only socio-demographic data was present in the file except 60 files of those who have chronic diseases and are taking treatment from the family medicine unit monthly and so their files were complete. This spot light on the importance of paying more attention to improve the filing system in elderly patients. In the current study a program for health education was designed and we recommended for a series of comprehensive, integrated education programs. Course contents included active ageing, taking medication, exercise importance and healthy nutrition.

Thus it is recommended to establish practical geriatric assessment (functional, nutritional, sensory and cognitive assessment), using geriatric assessment tools as interview questionnaire and regular examination every 6 months by family physicians and general practitioner. "The education support training of general practitioners is a key to learning about the importance of good care for the health of the elderly" including explanation of how the prevalence we found can affects the quality of life of the elderly so it is important to empower the role of family physician in geriatric care. In Conclusion: The study highlighted service related areas for family physicians to close the wide gap in geriatric care by periodic health status assessment, screening for common chronic diseases, health education and counseling programs.

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