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Spectrum of Clinical Care for the Surgical Geriatric Population

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Abstract. Although there are numerous studies on the most common chronic diseases in Saudi Arabia, some data on the extent to which standards of clinical care for the geriatric population are lacking. Therefore, a comprehensive surgical geriatric clinical care assessment was done using Arabic language survey. Sixty patients over the age of 65 years, attending a surgical clinic, were surveyed between September 2010 and February 2011. Variables included age, marital status, education, and income. Morbidities included diabetes, hypertension, hyperlipidemia and osteoporosis. Patients were asked about the progress in their condition in one year. Assessment of prevention of complications was assessed by obtaining the proper related history. The mean of the study population age was 70. *Diabetes mellitus* accounted for 32% of the co-morbidities, hypertension 29%, hyperlipidemia 24%, and osteoporosis 15%. During a year, 50% of diabetics reported that their condition got worse, and 10% noted improvement. Hypertensive reported same condition or worse equally. Regarding prevention of complications, diabetic annual ophthalmologist visits occurred in 67%, dentist visits in 44%, and daily feet exam in 59%. Sixty-two percent of diabetics were not measuring their blood sugar daily. The current study detected a high number of geriatric problems and co-morbid conditions prompting health care providers to improve timely preventive, diagnostic and therapeutic interventions.

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Introduction

Aging is a natural process which occurs in all living organisms. It is a gradual change in physiological functions, which increases susceptibility to diseases[1]. This population requires proper care as they have physical disabilities, poor quality of life, often on multiple medications, therefore more at risk of drug reactions[2]. Old people often do not complain about every health problems, which they think may be minor problems, and many problems go undetected; thus, there is a need for systematic approach for proper geriatric care and guidelines are needed[3,4]. The older segment on the rise and shows a steady increase in number in the Kingdom of Saudi Arabia (KSA)[5]. However, although there are numerous studies on the most common chronic diseases in KSA, there are some data on the extent to which standards of clinical care for the geriatric population are lacking[6-10].

In light of all that, the purpose of this study is to adapt, and pilot a comprehensive geriatric care assessment (survey), and to measure the prevalence of specific surgical geriatric socio-medical problems in Jeddah, KSA. Patients attending surgical clinic have age related co-morbid conditions which have adverse effects on surgical outcome. *Diabetes mellitus* (DM), hypertension, osteoporosis and hyperlipidemia were selected as they are usually managed in primary care.

Materials and Methods

A pilot study was conducted between September 2010 and February 2011, in a surgical clinic of tertiary hospital in Jeddah, KSA. A group of 60 patients including both genders aged 65 years or above were asked the designed Arabic questionnaire. Patients were asked about the age, marital status, nationality, educational level, income level (low, moderate, and high income). From the 15 most common chronic diseases, four diseases were selected that are usually managed in primary care: DM, hypertension, hyperlipidemia and osteoporosis. Patients were asked about influenza or pneumonia vaccination, patient's well-being progress in one year, patient's difficulties in

peformimg daily activities (eye, hearing, sleeping, memory, urine control, walking, praying, and shopping problems) and assessment of prevention of complications. The assessment of prevention of complications was assessed by asking questions related to annual visits to ophthalmologist, dentist, dietitian, daily feet examination, exercise and current disease information. Frequencies of measuring blood sugar during the day among diabetic patients were also assessed.

This questionnaire designed by reviewing the literatures and the updated guidelines.

Results

The total number of patients who participated in the survey during the study period were 60. Out of those, 60 patients fulfilled the criteria, while 25 patients were excluded for various reasons. Table 1 shows patient's baseline characteristics as recorded in the survey. In this survey the mean age of the patients was 70. Majority of them were males (55%). More than 70% of patients were married and widowed/divorced were 27%. Educational level was higher in males. More Saudis participated in this study than non-Saudis.

Table 1. Patient's baseline characteristics*.

Variable	Male	Female	Both Genders
Patient No. (%)	33 (55%)	27 (45%)	60
Age years (mean)	69	71	70
Marital Status			
Married	30 (50%)	14 (23%)	44 (73 %)
Widowed\Divorced	3 (5%)	13 (22%)	16 (27 %)
Nationality			
Saudi	23 (38%)	8 (13%)	31 (51%)
Non-Saudi	10 (17%)	19 (32%)	29 (49%)
Educational Level			
Educated	26 (43%)	8 (13%)	34 (56%)
Non-educated	7 (12%)	19 (23%)	26 (44%)
Income Level			
Low income (SR5,000 / Month)	8 (13%)	18 (30%)	26 (43%)
Moderate income (SR5,000-SR10,000 / Month)	20 (33%)	8 (13%)	28 (46%)
High income (> SR10,000 / Month)	5 (8%)	2 (3%)	7 (11%)

**Percentages approximated.*

Of the chronic diseases studied the results showed that the most percentage prevalent was DM (32%). Hypertension was 29%, hyperlipidemia 24%, and osteoporosis 15%. In addition, missing preventive measures, such as vaccination accounted for highest prevalence among our population studied (90%) (Fig. 1).

The present study found that most prevalent chronic diseases had a significant influence on the quality of life in the elderly. The extent of the impact and the abilities most affected varied according to the disease. This part of the survey included the effect of each disease on the overall patient perspective quality of life compared to a year back (Fig. 2). For diabetics, nearly 50% of them reported their condition as worse, 40% no change, while 10% said they had improvement in condition. Among hypertensive patients, equal number reported their condition either got worse or was the same, with nearly 15% of them reported improvement in their condition. For patients with hyperlipidemia, nearly 55% of the reported their condition got worse, and the rest reported that their condition remained the same (more than 20%) and better (2%). Nearly 60% of patients with osteoporosis said their condition became much worse (25%), while those who answered that their condition was stable or better accounted for 15%.

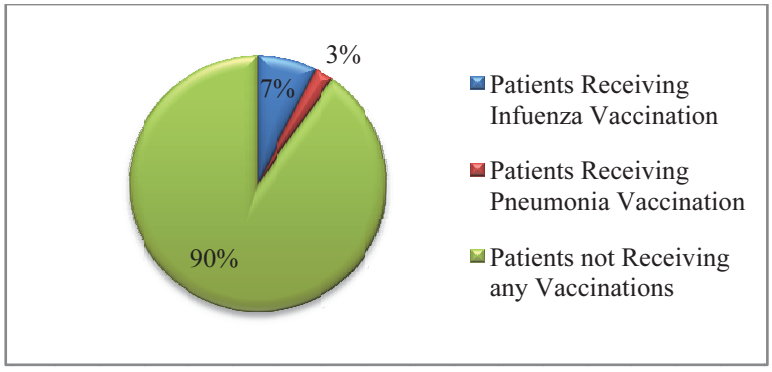

Fig. 1. Regular immunization as a preventive measure.

Patients' difficulties on performing their daily activities were assessed in accordance with their co-morbidities as illustrated (Fig. 3). In our survey, eye problems were of high prevalence (70%),

hearing problems (≃35%), difficulties in conducting daily routine duties such as praying, walking and shopping was observed in nearly 60%, 40% and 35%, respectively.

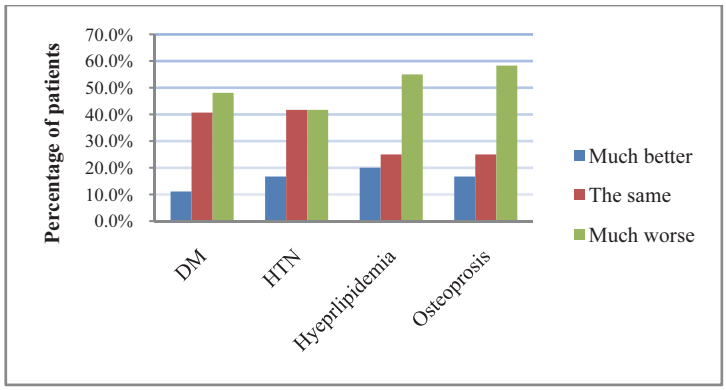

Fig. 2. Patients' well-being progress in one year.

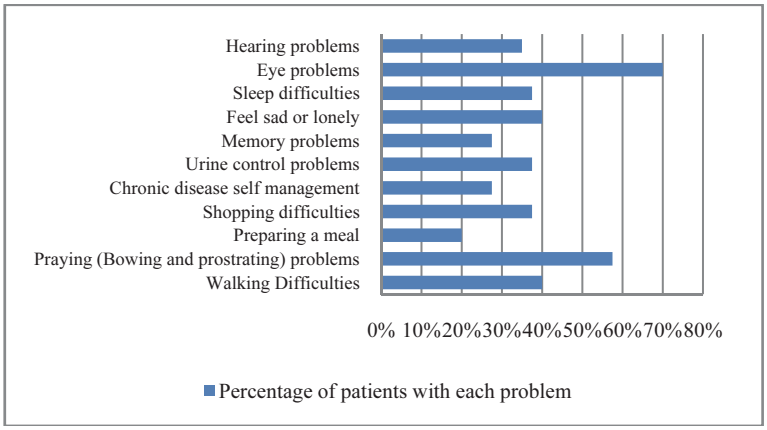

Fig. 3. Patients' difficulties on doing their daily activities.

Concerning medication use, questions targeting patient's awareness about their medications were evaluated. Generally, 83% of patients reported that they are committed to their drug regimens, and only 18% may have missed one day. However, some patients mentioned that their compliance with their drug regimen varied depending upon particular types of drugs. Nevertheless, the number

of prescribed and non-prescribed medications were assessed, with 58% of patients were taking more than 5 prescribed drugs and only 2% were taking more than 3 non-prescribed drugs.

On the subject of prevention of complications associated with the outlined diseases, responses of patients in this regard were assessed. Results revealed high percentage of chronic illness self-care unawareness (Table 2). In the case of diabetic patients, 67% of them indicated that they are consulting patients doing annual ophthalmology visits, annual dental visits 44%, daily feet exam 9%, and nearly 57% of diabetics were not aware what microalbuminurea is. Correspondingly, in detail for patients with diabetes, the frequencies of measuring blood sugar (BS) on a daily bases was assessed. Results showed 62% of diabetic patients are not measuring their BS daily, and only 1 patient was measuring his BS levels before and after meal and at bedtime (Fig. 4).

Among all patients included in this study, 12.5% visited their dietitian regularly, 42.5% of patients were exercising regularly, and 45% of the patients were aware of their current disease information.

Table 2. Prevention of complications assessment[*].

Are you following up these items regularly:	Yes	No	Don't Know
1. Annual ophthalmologist visit	26 (67%)	13 (33%)	None
2. Annual dentist visit	17 (44%)	22 (56%)	None
3. Daily feet exam	23 (59%)	16 (41%)	None
4. Microalbuminurea exam	6 (10%)	11 (28%)	22 (57%)
5. Dietitian visits	8 (13%)	52 (87%)	None
6. Exercise regularly	26 (43%)	34 (57%)	None
7. Current disease information	27 (45%)	33 (55%)	None

Note: Items from 1-4 evaluated only for diabetic patients; otherwise all other items were general for all patients.

[*]*Percentages approximated.*

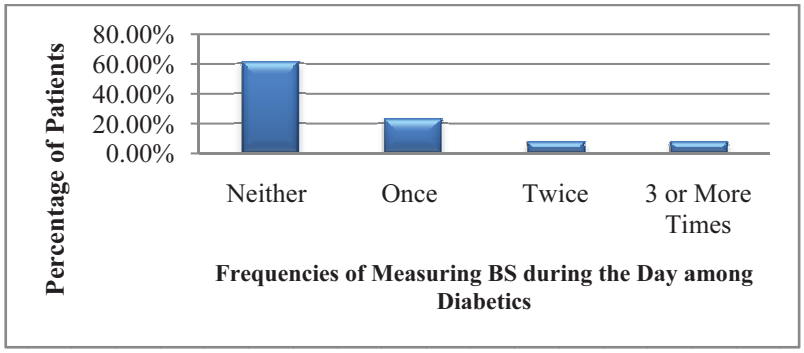

Fig. 4. Frequencies of measuring BS during the day.

Discussion

There is growing aged population in different countries all over the world, therefore there is a need to devise a comprehensive geriatric care assessment. This is defined as a "multidimensional interdisciplinary diagnostic process focused on determining a frail older person's medical, psychological and functional capability in order to develop a coordinated and integrated plan for treatment and long term follow-up[11]. The risk of having diseases such as *DM*, coronary heart diseases, cerebrovascular diseases and osteoporosis grows as the proportion of elderly people increases[12,13]. Chronic diseases are sometimes life threatening, and may cause medical, social and psychological problems that hampers the activities of elderly people and reduce their quality of life (QOL)[14].

This study presents the results of a Pilot-Study to implement an assessment on behalf of the spectrum of clinical care for the surgical geriatric population in Jeddah, KSA. The population of people above 65 year in KSA is 6.7%[15]. Patients 65 years old or more were included, although there is no clear cut definition of elderly by WHO but most countries consider above 65 years to be considered old. However, limited studies are available on determinants of self-care behaviors, including knowledge and attitudes regarding responsibility for health and illness management[16,17]. There are vast cultural differences and our results may be different from those of other studies.

There are changes in social aspects that frequently accompany growing older (*e.g.,* widowhood), and the quantity and quality of social support may be altered[18,19]. In this study, divorced / widowed elderly population constitutes around 27% indicating that a quarter of the elderly are living in isolation with minimum financial resources, which may affect their health and their ability to access the health care system. Living alone contributes to more psychological problems among elderly divorced population. As shown in our study, due in part to the gender gap, older females experience higher poverty rates and lower educational levels than elderly males. Previous studies have shown that poverty was a major barrier to successful treatment outcomes[20]. In the present study, 43% of patients were classified as low income group, which is reflected in low chronic illness self-care management. Health literacy contributes to disparities in achieving good health and those with higher literacy are the one who attain better health care. This study demonstrated that 56% of our patients were educated so they were more aware of their health conditions.

Prevalence of diabetes in the Saudi community is 30%, but goes up to 65% in those population over 70 years (65% in males and 61% in females)[21]. In this study, diabetics accounted for 32% which is much lower than the national figure. Hypertension affects more than a quarter of the adult population. A study showed the significant relation between hypertension and advancing age in both sexes. This is in agreement with results obtained based on national and international studies in almost all populations with diverse geographical, cultural, and socioeconomic characteristics. This indicates the degenerative aging process resulting in thickening and loss of elasticity of arteries, which is a contributing factor for high blood pressure[22].

Hyperlipidemia is reaching higher prevalence rates in KSA. A study showed that hyperlipidemia and hypercholertrolemia are prevalent problems encountered in nearly one half of the adult Saudi population and this rate is increasing with age[23]. Another disease associated with increasing life expectancy, osteoporosis is becoming a major worldwide health problem. The magnitude of the disease may

become of higher magnitude in the developing countries, more particularly in the Middle Eastern countries where low bone mass rated as compared to western countries. The osteoporosis problem will soon be of greater concern in developing countries and in Middle East, since there is an increase in life expectancy resulting in an increase in the aging population. The prevalence of osteoporosis among the Saudi Arabian population is overestimated in women and underestimated in men based on using the US/European data reference rather than the Saudi Arabian reference value[24].

People with co-morbid illnesses report their overall health as ''poor'' or ''fair'' than those with fewer cardiovascular risk factors[25,26]. Some studies found that a diagnosis of congestive heart failure, DM, chronic respiratory illness, or the presence of these four together or more chronic illnesses predicted a clinically significant change in physical health related quality of life (HRQOL) over 4 years[27,28]. In the present study, the most prevalent chronic diseases had a significant influence on the quality of life of the elderly individuals. In addition, a brief clinical nutritional assessment (*i.e,* weight loss, and dietary history) is sufficient to evaluate the nutritional status of individuals. Thus, having a dietary instruction is an important element in geriatric care[29]. There are fewer patients in our study who visited a dietitian. However, the majority of them were multi-medications user, so the probability of drug interactions were more with more complications[30].

Preventive services like, pneumococcal and influenza vaccinations are widely recommended for the elderly population. Our results' rates were low as compared to results of other authors[31-34]. The non-administration of influenza and pneumococcal vaccination in our population may reflect the lower acceptance rate for the vaccine, thus revealing the unawareness of the elders' regarding vaccinations. An integrated approach must assess the presence of associated diseases like diabetes, malnutrition and cognitive impairment. Glycemic control is essential for the prevention of geriatric syndromes and the promotion of comfortable aging[35]. Most of the old people have less knowledge about management and complications of diabetes[36]. In addition, despite the American Diabetes Association

(ADA) recommendations which focus on prevention of complications measures such as annual ophthalmologist visit, annual dentist visit, annual comprehensive foot examination and microalbuminurea exam, results showed unawareness regarding these items[37]. There is urgent need for inter-disciplinary collaboration to educate old people about their health needs[38]. Morbidity used in population surveys is a validated step[39]. Limitations of this study is small size which is not representative of the overall population, but can provide a baseline for future clinical applications.

The present findings emphasize the need for better organization of and quality in health care services for dealing with the chronic conditions in the elderly to minimize complications. Hence, the followings are recommended:

- Cultural based self-care interventions should be tailored towards the elderly who are consistent with their traditional values and beliefs.
- Face to face visits with better scheduling to identify those at risk of developing age related diseases and providing them education to manage these disabilities are essential.
- Isolation of the elderly should be dealt with providing information services, setting the elderly people groups.
- Education about healthy dieting, proper physical exercise should be explained to the elderly to prevent complications associated with chronic illnesses.

Conclusion

Comprehensive Geriatric Clinical Care Assessment noted a lot of geriatric problems, co-morbid conditions prompting timely diagnostic and therapeutic interventions. Further studies and research are needed to deal with cultural aspects of self-care of our ageing population.

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الرعاية الطبية لكبار السن لعيّنة من مرضى الجراحة في مدينة جدة

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المستخلص. الغرض من هذه الدراسة اجراء تقييم للرعاية الطبية لمرضى الشيخوخية في مدينة جدة. قمنا بوضع أداة تقييم لذلك الغرض باللغة العربية وقد تم اختبارالأداة. عينة الدارسة كانت ٦٠ مريضاً عشوائياً أعمارهم فوق ٦٥ عاماً من مرضى عيادة الجراحة بمستشفى جامعة الملك عبدالعزيز بجدة خلال الفترة من سبتمبر ٢٠١٠ –فبراير ٢٠١١. تم سؤالهم عن العمر، الحالة الاجتماعية والجنسية ومستوى التعليم، مستوى الدخل، وجود أمراض السكر وارتفاع ضغط الدم وارتفاع الدهون بالدم، وهشاشة العظام. سئل المرضى أيضاً عن حالة المرض خلال سنة، كماتم تقييم الرعاية للوقاية من المضاعفات. كان متوسط عمر المرضى ٧٠ عاما، ذكور (٥٥٪). نسبة الإصابة بمرض السكر ٣٢٪ وارتفاع ضغط الدم ٩٢٪. وفرط شحوم الدم ٢٤٪، وهشاشة العظام ١٥٪. نسبة من لم يعطوا تطعيم الأنفلونزا ٩٠٪،

مشاكل مرضية بالعين ٧٠٪، مشاكل مرضية بالسمع ٣٥٪، صعوبات في الصلاة والمشي والتسوق ٦٠٪ و٤٠٪ و٣٥٪ علي الترتيب، نسبة مرضى السكر الذين يقومون بزيارة سنوية لأخصائي العيون ٦٧٪ وزيارة سنوية لطبيب الأسنان سنوياً ٤٤٪ وعمل فحص يومي للقدم ٥٩٪. تشير نتائج الدراسة إلى وجود عدد كبير من المشاكل الصحية لهذه الفئة من المرضى مما يتطلب تطوير الرعاية الطبية المقدمة لهم.