

The Prevalence of Functional Impairment Among Elderly Aged 60 Years and Above Attending Klinik Kesihatan Batu 9 Ulu Langat, Selangor

K Y Loh, MMed(FamMed)*, O Khairani, MMed(FamMed)**, T Norlaili, MMed(FamMed)**

Department of Family Medicine, International Medical University, Jalan Rasah, 70300, Seremban, Negeri Sembilan, **Department of Family Medicine, Universiti Kebangsaan Malaysia, Bandar Tun Razak, Cheras, 56000 Kuala Lumpur

Summary

The aim of this study was to determine the prevalence of functional impairment and its associated factors among patients aged 60 years and above attending Klinik Kesihatan Batu 9 Ulu Langat, Selangor. This is a cross sectional community health clinic based study. A total of 260 elderly patients attending the community health clinic were interviewed. They were clinically assessed for functional impairment by using the 9 item Instrumental Activities of Daily Living (IADL) scale. There were 118 (45.4%) elderly male and 142 (54.6%) elderly female with age ranging from 60 years to 92 years with the mean age of 67.5 and 65.5 years for male and female respectively. Chinese form the largest population (42.3%) followed by Malay (36.5%), Indian (19.2%) and others (2.0%). The overall prevalence of functional impairment among elderly aged 60 years and above in this study was 33.5%. Among the functionally impaired, two patients (0.8%) were totally dependent. There were significant associations between functional impairment and older age ($p=0.025$), lower income group ($p=0.010$), lower education level ($p=0.030$) and history of chronic medical illness ($p=0.020$). Functional impairment had no significant association with ethnic group, gender, occupation and living arrangement. For daily activities that were assessed, the commonest impairment was inability to perform shopping (40%) followed by impairment in climbing up staircase (36.6%) and impairment in taking medication (35%). Advanced age, lower income, lower education and history of medical illness are associated with functional impairment. Functional impairment is an important consideration in caring for the elderly patients in the community. These findings have implications in caring of the elderly in which attention need to be paid to activities such as shopping, climbing stairs and taking medication. The use of the IADL scale is feasible for screening of functional impairment among the elderly population in the community.

Key Words: Elderly, Functional impairment, IADL

Introduction

Good health care and improving quality of life have contributed to the population's longevity, with an increasing population of elderly people. In 1991 it was reported that 5.8% of the 18.6 million population in Malaysia were above the age of 60; it is projected to rise to 7.2% by the year 2005¹.

In view of the rising aging population, there is now a need to consider special needs of the elderly particularly in the aspect of health care delivery. Besides managing the common physical illness that is common among the elderly such as diabetes mellitus, hypertension, ischaemic heart disease and cancers, one must not forget problems pertaining to social environment, which need to be addressed as well. One

This article was accepted: 12 October 2004

Corresponding Author: Loh Keng Yin, Department of Family Medicine, International Medical University, Seremban Clinical School, Jalan Rasah, 70300 Seremban, Negeri Sembilan

of the areas, which is absolutely important but yet frequently neglected, is how well the elderly can maintain and take care of themselves. Age should not be a hindrance factor towards physical activities of the elderly³.

In 1969, Lawton and Brody introduced the "Instrumental Activities of Daily Living" (IADL) scale². It was proposed as a measure of a person's ability to prepare meals, shop for groceries, manage money, doing laundry, take medication, getting to places beyond walking distance, doing housework and using telephone. It is a practical and useful set of questions that clinicians can use in the clinic practice to detect unsuspected functional impairment.

In Malaysia, the magnitude of functional impairment among the elderly is still not well documented. The aim of this study is to assess the prevalence of functional impairment of elderly in the community, to ascertain its associated risk factors and identify, which areas of the daily activities are at the highest risk of functional impairment for the elderly in the local population.

Materials and Methods

This is a cross sectional study carried out from 1st January to 31st March 2001 at *Klinik Kesihatan Batu 9, Ulu Langat, Selangor*. The clinic is a semi rural health center, which provides primary care to the local population. Universal convenience sampling was used to obtain the study sample. All elderly attending the clinic during the above period were invited to participate in this study. Sample unit consisted of all elderly above 60 years of age and were mentally sound and agreed to be interviewed. Elderly who refused to participate and suffered from cognitive impairment or psychiatric disorders were excluded. A set of guided questionnaire was used to obtain patient's socio-demographic data. Instrumental Activities of Daily Living (IADL) scale was used to determine the functional status of the elderly. Nine aspects of daily activities were assessed which included the ability to use the telephone, ability to go to places which are out of walking distance, ability to perform shopping independently, ability to prepare meals, ability to do his own housework, ability to do handy job, ability to climb staircase, ability to take medication without help and ability to manage money on his own. This scale was pre-tested among the local population prior to the study. Data was analysed by using the Statistical

Package for Social Sciences (SPSS) version 10 program. Verbal consent was obtained from patients and their relatives. Elderly who had been identified to have severe functional impairment, have had home visits arranged for them and were referred to the appropriate agencies for assistance.

Results

A total of 260 elderly aged above 60 were interviewed. There were 118 (45.4%) elderly male and 142 (54.6%) elderly female. Chinese elderly were the majority (42.3%) followed by Malay (36.5%), Indian (19.2%) and others (1.9%). As for the age group, 73.5% were in their sixties, followed by 23.5% in their seventies and 3% in the eighties and above. The eldest respondent was a 92 year-old Chinese woman. Mean age was 67.5 years for the male and 65.5 years for the female. Sixty percent of the respondents obtained secondary education and 65% had a monthly income of RM1500-2000. Most of the respondents (62%) were staying with their children, 33% of them staying alone, 3% staying with distant relatives and 2% were from institution for the elderly. (Table I)

Functional Status

Out of the 260 respondents, 87 of them were identified as having at least one aspect of functional disability, which gave the prevalence of 33.5%. Two respondents were totally dependent in which they were unable to perform the nine instrumental activities of daily living without getting help, therefore the prevalence of total disability was 0.8% in this study. (Table II)

Severe functional disability is defined as inability to perform 6-9 tasks out of the total 9 tasks being assessed. The eldest category for age 80 years and above was found to have significant association with severe functional impairment ($p=0.025$) as compared to those below 80 years. Severe functional disability was also significantly associated with lower income group earning below RM1500 a month, no formal education and primary education ($p=0.030$) and history of chronic medical illness ($p=0.020$). Of the two totally dependent patients, one of them had a history of stroke a year ago and the other had a hip fracture six months prior to the study. In this study, there were no statistical significant associations between functional impairment with race, sex and living arrangement. (Table II)

Among the nine aspects of instrumental activities of daily living which were being assessed, the common

disabilities were inability to do shopping without help (40%) followed by difficulty in climbing up staircase without assistance (36.6%) and impairment in taking medication (35%). Impairment in taking medication included requiring assistance in preparing the

medication, needing constant reminders of the right dosage and the right time as well as needing some assistance in handling the medication for the patient. (Figure 1)

Table I: Socio Demographic Characteristics of Respondents (N=260)

Characteristics		n	%
Race	Chinese	110	42.3
	Malay	95	36.5
	Indian	50	19.2
	Others	5	1.9
Age (years)	60-69	191	73.5
	70-79	61	23.5
	80 years and above	8	3
Gender	Male	118	45.4
	Female	142	54.6
Education	No formal education	24	9.2
	Primary	75	28.8
	Secondary	156	60
	Tertiary	5	2
Income (Ringgit Malaysia)	<1500	78	30
	1500-2000	169	65
	>2000	13	5
Living arrangement	Staying with children	161	62
	Staying alone	86	33
	Staying with relatives	8	3
	Staying in institution	5	2

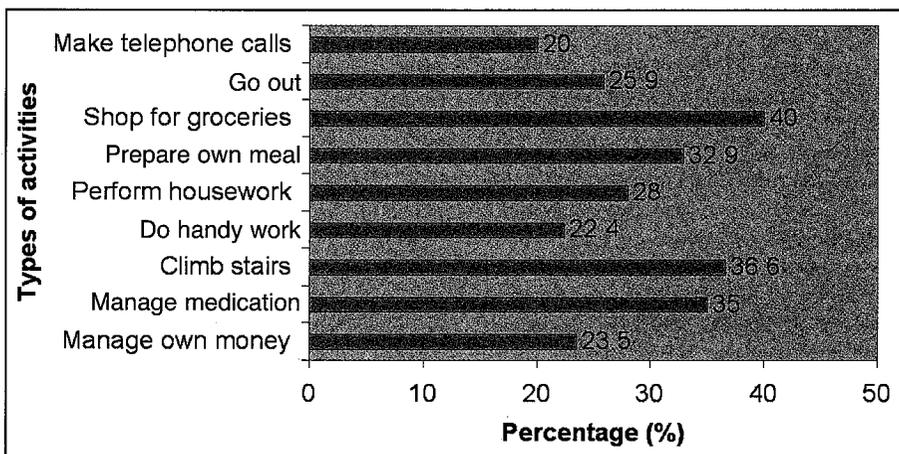


Fig 1: Percentage of elderly needing help with Instrumental Activities of Daily Living (age >=60)

Table II: Association between functional impairment and demographic characteristics

	No Impairment in function	Mild	Moderate	Severe	Total	χ^2	p
Ethnicity							
Chinese	70	22	17	1	110	0.58	p=0.7124
Malay	67	21	6	1	95		
Indian	36	10	4	0	50		
Others	4	1			5		
Age							
60-69 years	90	75	25	1	191	2.83	p=0.025
70-79	35	22	4	0	61		
80 and above	1	5	1	1	8		
Gender							
Male	60	32	25	1	118	0.98	p=0.653
Female	72	45	24	1	142		
Education level							
No formal education	5	12	7		24	1.56	p=0.030
Primary	20	45	9	1	75		
Secondary	80	56	19	1	156		
Tertiary	3	2	0	0	5		
Income							
RM <1500	24	30	23	1	78	2.34	p=0.010
1500-2000	86	53	29	1	169		
>2000	10	3	0	0	13		
Living arrangement							
Children	98	58	5	0	161	0.87	p=0.673
Alone	53	29	3	1	86		
Relatives	5	2	0	1	8		
Institution	4	1	0	0	5		
Illness							
Chronic Medical illness	24	62	10	2	98	1.38	p=0.020
No medical illness	110	45	7	0	162		

Mild impairment: Unable to perform 1-3 tasks

Moderate: Unable to perform 4-6 tasks

Severe: Unable to perform 6-9 tasks

Discussion

Assessment of functional impairment among the elderly is of great importance for the following reasons: firstly, it is important in geriatric health care planning to have an overview of the common physical impairments among the elderly population. Secondly, it is important for the preventive aspect of elderly

health care as early screening for functional impairment may help in reducing secondary morbidity such as reactive depression following physical impairment. Thirdly, effective counseling and advice can be given to carers for the elderly pertaining to which specific area of impairment the elderly is suffering from, which may vary from person to person⁴.

The overall prevalence of functional impairment as obtained in this study (33.5%) does not differ much from worldwide prevalence, which is approximately 10-30%. They have at least one functional impairment out of the total nine aspects of activities being assessed. Those who are totally impaired for all activities are rare, with the prevalence of only 0.8%. However, this figure may not represent the true picture in the community because this study evaluated only elderly patients who were able to attend the health clinic. Some elderly patients would be housebound due to severe functional impairment. This finding is important for health care planning as it helps to estimate the cost of the medical expenses required for the programs in caring for the elderly⁶.

On routine visits to the health care providers, majority of the elderly often do not voluntarily discuss their functional impairments and neither will the family members do so. To many of them, it is a norm for elderly to be physically and functionally impaired because of the ageing process⁵. Others may consider it as troublesome and prefer not to burden their family members with their problems. It is therefore the duty of a primary care health care provider to be alert on this issue. Active screening is a good strategy to identify those who are at risk. As implied in this study, elderly who are in the advanced age, lower income group and lower education level are the susceptible groups. The possible postulated reasons are that the elderly in these groups are unaware of health facilities provided and they are less assessable to health care facilities, and some are socially isolated^{8,9}.

The type of daily physical activities performed by the elderly varies from person to person. It is therefore important to assess the elderly as an individual. The needs and priority of each elderly again is different individually, thus it is crucial to identify which item is the major problem for a particular patient when assessing the functional impairment⁶. The common form of impaired activities are shopping, climbing stairs and taking medications, as found in this study. The ability to use the telephone is also a very important item to be assessed because the telephone may be the only tool of communication in cases of emergencies especially if the elderly person is staying alone.

Literature reviewed showed that the elderly staying in institutions are also susceptible to functional impairments^{2,9}. However in this study the findings were not significant as only a minority of the respondents were from institutions. Most of the Malaysian elderly still have good family support due to the local cultural practice of extended family households. Even if they were staying alone, during weekends and festive seasons children tend to visit their parents and the elders' needs are looked into.

Limitations and Recommendations

This study is a community clinic based study conducted over a short period of time. The results obtained represent elderly staying nearby to the clinic. However, it does not represent the whole district and institutional setting. It is therefore recommended to conduct a similar study, which would include the whole district using random sampling method. A separate study may be carried out in elderly institutions to assess the magnitude of the problem and compare it with the community. Assessment tool for functional impairment need to be designed for the local population by selecting types of activities that are relevant and important to the local community.

Conclusion

Functional impairment in the elderly is an important subject, which should not be ignored as the life expectancy of our population is increasing with time. Primary health care providers should realize its significance and be aware of the magnitude of this problem in the community. Elderly who are at risk, such as advanced age, lower income group, lower education level and those suffering from chronic medical illnesses need to be identified earlier to prevent further morbidity. Special care and advice pertaining to activities such as shopping, climbing staircase, taking medication and using telephone should be provided to them. The use of IADL as a screening tool is an effective way to screen for functional impairments among the elderly in the community.

References

1. The health status of the elderly in the Federal Territory of Kuala Lumpur: A report on the survey conducted by the MMA Committee for care of the elderly 1995-1996 MMA.
2. Lawton MP, Brody EM. Assessment of older people: Self maintaining and instrumental activities of daily living. *Gerontologist* 1969; 9: 179-86.
3. Beck JC, Stuck AE. Preventing disability: beyond the black box. *JAMA* 1996; 276: 1756-757.
4. Manton KG, Corder L, Stallard E. Chronic disability trends in elderly United States populations: 1982-1994. *Proc Natl Acad Sci U S A* 1997; 94: 2593-98.
5. Verbrugge LM, Jette AM. The disablement process. *Soc Sci Med* 1994; 38: 114.
6. Lapierre S, Bouffard L, Bastin E. Motivational goal objects in later life. *International Journal of Aging & Human Development* 1993; 36: 279-93.
7. Kennedy J. Unmet and Undermet Need for Activities of Daily Living and Instrumental Activities of Daily Living Assistance Among Adults With Disabilities: Estimates From the 1994 and 1995 Disability Follow-Back Surveys. *Medical Care* 2001; 39: 1305-312.
8. Gregory PC, Fried LP. Why Do Older Adults Decide They are Having Difficulty with a Task? *American Journal of Physical Medicine & Rehabilitation* 2003; 82: 9-16.
9. Amin SH, Kuhle CL, Fitzpatrick LA. Comprehensive Evaluation of the Older Woman. *Mayo Clinic Proceedings* 2003; 78: 1157-185.