Journal of Gerontology & Geriatric Research

Dawane et al., J Gerontol Geriat Res 2014, 3:3
DOI: 10.4172/2167-7182.1000155

Research Article Open Access

Functional Assessment of Elderly in Pune, India - Preliminary Study

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Rec date: Mar 26, 2014; **Acc date:** Apr 12, 2014; **Pub date:** Apr 14, 2014

Abstract

Introduction: India is experiencing graying of population very rapidly over the last decades. Pune, Known as "Retired Peoples Paradise" is attracting elderly people to settle here due to better Quality of Life(QOL).Though many retired Persons stay in Pune, not many facilities are available to cater to their needs like care and rehabilitation. To develop any meaningful services for the elderly, it is essential to understand their needs. For this purpose, present study was undertaken to assess the functional status of the elderly in terms of their physical and mental health.

Materials & Methods: 100 elderly individuals above the age of 65 were included in this study. A sample of 25 was collected from each quadrant of Pune city in random fashion A computer friendly proforma was prepared by using established standard formats. The proforma included demographic details, basic functional assessment, Activities of Daily living (ADL) and Mini Mental Status Examination (MMSE) (Folstein et.al). Assessment was done by the trained personnel. All the information was analyzed using SPSS.

Results: In the basic functional assessment "feeling of depression", seen in 49% individual was the main significant finding. ADL score and MMSE score was reduced in 81% & 16% subjects respectively .Interrelation amongst this variable was studied. Correlation was studied between age, sex, financial dependence and education with depression, ADL score and MMSE.

Keywords: Activities of Daily living; Mini Mental Status Examination, Depression

Introduction

Remarkable advances in the medical science and improvement in socioeconomic conditions has led to the most striking change in the demography of the world towards ageing process. Ageing of population appears to be a universal phenomenon [1,2]. Demographic trends indicate that the developing countries are ageing faster than the developed countries. The number of persons aged 60 years or older in the world is estimated to be 605 million in 2000. Nearly 71% of the world's elderly population is likely to reside in developing countries out of which more than half i.e. 53 % reside in Asia. India being second populous country in Asia, burden of elderly population is going to be huge. In India number of old people have increased from 5.4% in 1951 to 7.4% in 2001 which increased to 8.14% in census. In Maharashtra 9.9 million persons are enumerated to be above 60 years of age. Of them, 4.7 million are men and the remaining 5.2 million are women, with the majority residing in rural areas. According to the statistics depicted, nearly 1 in 10 elderly in the country resides in Maharashtra which is one of the 28 states in India [3,4].

Pune is one of the big cities in Maharashtra and enjoys the reputation as retired people's paradise. Improving socioeconomic conditions of Pune coupled with safety and healthy environment, Pune is attracting more and more elderly to settle here. This automatically has increased the demand to cater for the needs of elderly. Many changes are known to occur in old age. Reduced functional capacity and increased incidence of many diseases is the mainstay can lead to an inability to meet the demands of daily life [5]. All these factors reduce their agility and productivity segregating them from the society & family. This inevitably puts the psychological pressure on old people [6]. So many-Physical as well as psychological problems are seen to be associated with old age considerably affect the quality of life and will have a major influence on all future care.

Efforts were made to see how many services are developed for the old people. To tackle the medical problems appearing in old, many government & NGOs were seen to be working. Even after significant concessions for investigations and treatment. Medical treatment increases financial burden on the family, incidentally increasing problems for the old. Considering that India is a developing country and many are still below poverty line. Preventive & Promotive measures are very important. In addition early diagnosis and management –other than medical treatment has to be viewed as important facets of caring for old, very few such services appear to exist in Pune.

So, definite need was felt to develop such services for the old. If these are to be developed, we thought we should know the needs of the old people in Pune. Taking broad perspective and holistic approach we decided to assess the overall functional limitations both at physical and psychological level.

Material & Methods

Many measures are developed and by now scientifically authenticated to identify problems in the society. To assess elderly individuals for their general physical and mental capability, testing of these parameters was thought to be important:

1. Basic functions like Vision, Hearing, and General emotional conditions.

2. Ability to perform daily activities.

3. Cognitive function.

Our aim was to collect data across Pune city. For this purpose we have divided Pune city into four quadrants and a sample of 25was collected from each quadrant in random fashion. Sample of 100 individuals above the age of 65 were included in this study. We assessed all the individuals at their home with this we could get an insight into their home environment & could establish free dialogue with them.

A Proforma was available in the "Hand book on Health Care of elderly" jointly prepared by WHO, Ministry of Health and Family welfare and All India Institute of Medical Sciences7 which is considered as a apex institute in the medical field in India. Proforma included in this book covered all –Social, financial, gross functional and medical assessment. We picked up only those concerned with our study-

1) Demographic details, 2) Functional Assessment, 3) ADL (Activities of daily living) & 4) Mini mental status

Questions, observations simple tests were included in this Proforma. This was filled in one to one interview with the elderly subjects conducted at their residence. Interviewers in our study were doctors who interacted with these subjects at their homes. Prior training was given to interviewers in order to obtain uniform reporting.

Data was analyzed by using SPSS19. Descriptive analysis was performed, based on absolute and percentage frequencies and descriptive measures. To compare the mean values of functional evaluation between the genders, the Student's-t test for independent samples was used. In the case of age-group, the Chi square test was used to calculate the analysis of variance. The use of the above-mentioned tests was justified by the lack of homogeneity among the variances. Pearson's correlation was used to check MMSE with education, financial status, ADL. Correlation also used for sex with ADL. All the results were analyzed considering the level of significance < 0.05.

Results

1. Demographic data

Age groups:

To study the observations ,the elderly population was divided into three broad categories i) Age 65-69, ii) Age 70-74, iii) Age 75 and above (Figure 1).

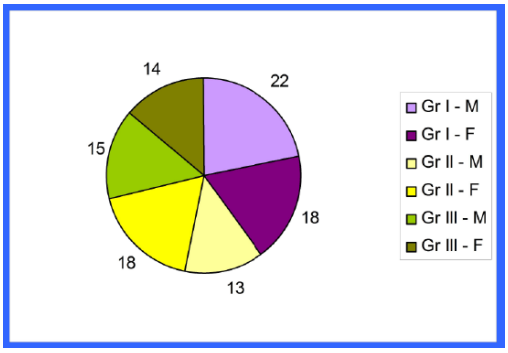

Figure 1: Demographic details of elderly

Living arrangement

From the total samples only three percent of the individuals are staying alone, while 62% are living with spouse and children and 35% with their spouse only. Those who are staying alone belong to the age group of i and ii. In other words, all old people above the age of 75 yrs were staying with the family (Figure 2).

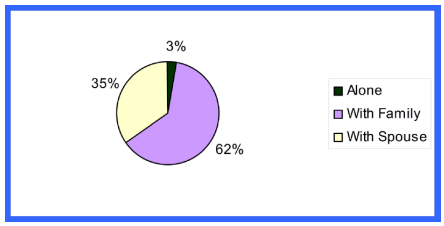

Figure 2: Distribution of elderly subjects based on living arrangements

Educational status:

We considered higher secondary school certificate as the basic to know level of formal education. 26% individuals are below the level of HSC or some of them were illiterate. Numbers of females in the lowest education group were significantly more than males (Table 1).

Sex	<HSC	HSC	≥ Graduation	Total
Male	7	35	8*	50
Female	19*	28	3	50
Total	26	63	11	100

Table 1: Distribution of study subjects based on educational status

Financial status

Financial status is assessed from the monthly income and economical dependency. 47% individuals were dependent on family for financial support, out of which 9% were male and 38% were female. It is very clear that more number of females were dependent (Figure 3).

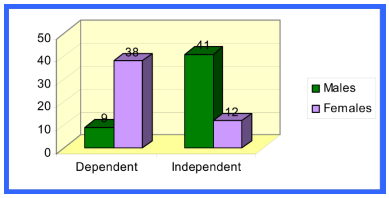

Figure 3: Financial Status

Basic Functional Assessment

Basic Functional Assessment includes the testing of Vision, Hearing, Urinary incontinence & depression. Since depression appeared as the major factor we will consider it separately. Vision & Hearing was only assessed for the basic gross changes. Inability or reduction in vision and hearing was noted.29% individuals-17 males and 12 females were unable to hear the whisper. That means they had hearing impairment. Hearing impairment is increasing with advancing age of course is the expected result. But surprisingly nobody was using the hearing aid. Vision was reduced in 12% individuals cataract was their main problem. Many had got their cataract operated. Problem of urinary incontinence was observed in 11% individuals. We could not get the real magnitude of the problem because they were reluctant to talk about incontinence.

Depression

All the subjects were asked whether they are feeling depressed one or other time. Depression appeared to be the major problem in elderly. More than half individuals appear to be depressed. Depression is more in the females than the males. Surprisingly depression also shows positive correlation with education & financial status. Those who are better educated & financially independent appear to be more depressed. But it was also seen that all three individuals staying alone, though financially independent were also more depressed. Similar results were obtained in our previous survey. This probably is related to adjustment problem. During interview it was perceived that apart from health problems feeling of being neglected by family and friends predominantly contributing factor towards depression (Figure 4).

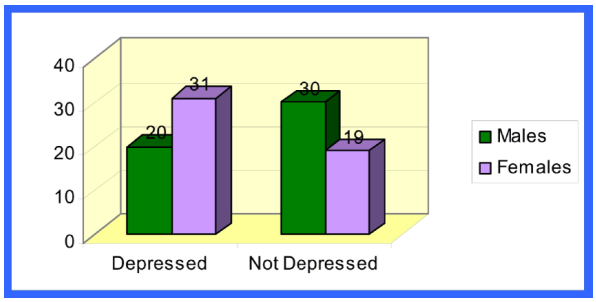

Figure 4: Depression

ADL (Less ADL score shows disability)

ADL score was calculated considering activities involved in daily routine beginning with getting out of bed, using the toilet, bathing, dressing and grooming by themselves, eating without help, mobility within the house and outside& climbing stairs. Bladder/bowel incontinence was also asked. As seen from this table about forty percent individuals have full ADL score. All those with reduced ADL complained about joint pains and restriction of joint movement. It was observed that more severe the arthritis, daily activities increasingly get affected due to reduction in the mobility. Maximally affected activity was climbing stairs, next was squatting and getting up from toilet, followed by ability to move independently outside the home. Hardly two were so debilitated as to require assistance for essentials movements within the home (Table 2).

No. of Individuals	Age Group	Score < 20	Full Score 20
Male N = 50	65-69	8	14
	70-74	5	8
	≥ 75	11	4
	Total	24	26
Female N = 50	65-69	13	5
	70-74	12	6
	≥ 75	14	0
	Total	39	11

Table 2. Activities of Daily Living Score

Comparison between ADL score of male and female shows that distinctly more number of females showed reduced ADL score. Whereas no difference in no of males showing full ADL score or otherwise. ADL score showed positive correlation with educational & financial status. Individuals belonging to low educational &financial strata showed lesser ADR score indicating greater physical debility. ADL score is also related to age, especially in males.

We can see in this table that no of females showing reduced ADL score increases with age while that with full ADL score reduces with age. Even in female not a single lady from senior most age group had full ADL score. Joint pain is the major problems interfering with daily activities of elderly in India.

MMSE

Mini mental status examination concentrates mainly on the cognitive aspects of mental function. Question8 from this list were asked in order and scored immediately. MMSE is divided into five sub parts i.e. to know orientation, registration, attention and calculation, recall and language. MMSE relates more to the dementia than depression. Cognitive impairment is related to dementia. Taking references of recent text books we have divided them in to two groups, those who are having MMSE score below 24 or below and above 24. In our study 20% individual scored 24 or less and have cognitive impairment. In our study we have observed that there was a problem in recall. While interviewing these individuals we have seen that though MMSE score was on the higher side, they themselves were complaining of loss of memory and some were even worried about it.

MMSE has correlation with education, financial status and ADL. Higher is the educational level more is the MMSE score. Financial status and ADL has got similar correlation with MMSE. Though

MMSE is best and brief test, it is a gross test and has more prognostic value than diagnostic one. Only with single MMSE testing, no firm conclusion can be drawn. Test need to be repeated.

Discussion

A functional assessment is a multidimensional and often interdisciplinary diagnostic process, which assesses and quantifies an older adult's medical, psychosocial and functional status [9]. Information gathered in this process is used by practitioners, the patient, and family to develop a comprehensive plan for therapy and future care decisions and can also help in the process of long-term care decision-making.

Normal ageing is associated with diminished visual acuity because of physiologic lens changes, field defects and retinal diseases. Visual impairment has a major effect on older persons; the daily activities of reading, shopping and even walking can become increasingly difficult [10,11]. In present study, there was difference in the incidence of hearing impairment and vision impairment is probably due to the awareness and keenness to reduce disability. Though vision impairment is seen only in the 12% individuals, many were already operated for cataract. Those who had visual impairment suffered from cataract and had collected all information about its operation and had planned the operation.

Hearing loss is the third most common chronic disorder among elderly person [12]. Screening for hearing loss in elderly patients is important because they may not even complain or even recognize that they have a hearing impairment. Hearing impairment was the neglected disability though this disability also leads to isolation of old people by reducing communication. When we are talking about active old, chances of accidents may increase with this disability. So apart from making hearing aids available, awareness needs to be created for using them.

Arthritis is leading the list of problems of old age with 60% individual getting affected by it. This not only reduces mobility but produces depression also. Very few individual appear to know about ADRs of medication and role of physiotherapy. They were not aware of aids and appliances, to help such individuals and their availability is also less.

Next in line is depression, where more than 50% individuals have depression. In Indian setting, consulting a psychiatrist is considered to be a stigma. One of the factors responsible for depression appears to be adjustment problem. This problem can be tackled easily with the help of social workers and clinical psychologist. But such services are presently meagerly available in India.

We cannot comment on exact incidence of dementia. Out of 20 individuals having MMSE score less than 24, some will definitely slip into dementia at latter stage. One case has developed clear cut sigh of dementia. Therefore there is a need for extensive screening of old people. As MMSE is easy and rapid screening tool, use of MMSE only is desirable. But, this has to be repeatedly done to diagnose dementia. More and more cases of dementia are getting reported. So, we also need to develop strategies for caring such individuals.

It is a well-known fact that formalized comprehensive geriatric assessments can result in improved survival, decreased medical costs and improved functional status.13So, according to this study we need to develop the working plan to cover all these problem areas: 1. Health Education, 2. Physiotherapy, 3. Psychotherapy, 4. Vocational training to improve financial status, 5. Aid and appliances.

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