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Research Article

# ASSESSMENT OF MENTAL STATUS, FUNCTIONAL STATUS, QUALITY OF LIFE AND MEDICATIONADHERENCE IN GERIATRICS

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**ABSTRACT**

Aim and objectives: To assess mental status, functional status, and quality of life, medication adherence in geriatrics. It's also the responsibility to save their life by improving their mental status functional status quality of life and medication adherence to improve their life span with happy days till end of life.

Materials and methods: A prospective observational study was conducted in Rajiv Gandhi Institute of Medical Sciences to assess the mental status functional status quality of life and medication adherence in geriatrics using different questionnaire forms.

Results: Out of 143 Geriatrics 72 males was not feeling well, 71 males and 51 females were having sleep problems due to excessive thinking, 81 males were found to have depressive mood. In case of females 54 had weakness, and 50 had general feeling of decrease in activities and performance. Results showed that geriatrics have decrease in mental status after 60 years of age. Decrease in the functional activities showed 47.3% of males and 37.9 % females were no able to get to places by distance, 52.1% females were not able to prepare their own meals, and 41.6% females were not able to do their household work.

Conclusion: The quality of life was improved in geriatrics after guidance by clinical pharmacist on day of discharge and showed improvement in mental and functional status and quality of life only in effective medication adherence patients, but decrease in the mentioned parameters due to socio economic issues, personal habits, no care takers, forgetfulness, no revisits to physician and no medication refilling.

## INTRODUCTION

Maintenance of independence and prevention of disability are primary goals in the clinical care of persons 65 years of age and older. To achieve these goals, it is necessary that all healthcare professionals understand the concept of functional status. However, to fully assess functional status, the patient's psychological state, financial resources, physical function, and social circumstances also must be considered. One of the challenges of maintaining and improving functional status in geriatric individuals is recognizing and managing conditions frequently seen in older adults[1].

Defining "elderly'' is difficult. The geriatric population is often arbitrarily defined as patients who are older than 65 years, and many of these people live active and healthy lives. In addition, there is an increasing number of people who are living more than 85 years, who are often considered as the "older elderly'' population. The aging process is more often associated with physiologic changes during aging rather than purely chronological age. Chronologically, the elderly have been classified as the young old (ages 65–75 years), the old (ages 75–85 years), and the old (age > 85 years)[2].

The term "non-adherence" is preferred to "non-compliance" because non-compliance implies an element of fault or blame on the part of the patient. Non-adherence has been defined in the literature as a patient's passive failure to follow a prescribed therapeutic regimen[3].The same principle applies to dietary regimens, screening tests, and lifestyle modifications. Non- adherence to medication has profound implications on the patient as well as on doctor-patient relationships and interactions, plans of care, and the healthcare system[4].

The decline of each organ system appears to occur independently of changes in other organ systems and is influenced by diet, environment, and personal habits as well as by genetic factors. Several important principles follow from these facts: (1) Individuals become more dissimilar as they age, belying any stereotype of aging; (2) an abrupt decline in any system or function is always dueto disease and not to "normal aging"; (3) "normal aging" can be attenuated by modification of risk factors (e.g., increased blood pressure, smoking, sedentary lifestyle); and (4) "healthy old age" is not an oxymoron. In fact, in the absence of disease, the decline in homeostatic reserve causes no symptoms and imposes few restrictions on activities of daily living regardless of age. Average life Expectancy is now 18 years at age 65, 11 years at age 75, 6 years at age 85, 4 years at age 90, and 2 years at age 100. Yet, as individuals age they are more likely to suffer from disease, disability, and the side effects of drugs, all of which, when combined, make the older person more vulnerable to environmental, pathologic, and pharmacologic challenges.The progressive increase in numbers of older citizens and the concomitant increase in medical expenses necessitated the need to properly manage elderly patients with multiple, interacting problems[5].The pharmacists are in a unique position to influence appropriate medication at both the prescriber and patient level. Patient counseling and monitoring mental and functional status, using his skills to assess the effects of the medication, inform the physician and enhancing compliance by the geriatrics.

## MATERIALS AND METHODS

1. **Place of Study:** Rajiv Gandhi Institute of Medical Sciences (RIMS), Kadapa, A.P. a 750 bedded multi-disciplinary tertiary care teaching hospital.
2. **Period of study:** 2013 February to 2013 July.
3. **Study population:** 143 cases.
4. **Study design:** A prospective observational study.
5. **Inclusion criteria:** geriatric Patients of either sex of above 60 yrs. or who are having co-morbidities with five years history of any major diseases and Polypharmacy.
6. **Exclusion criteria:** patients less than 60 years age and not having a history of any major disease less than five years, TB, HIV and any other immunosuppressive disease patients, hepatic and renal disease patients are excluded from the study.
7. **Study materials**: Patient data collection Proforma, mental status questionnaire, functional status questionnaire and quality of life questionnaire.

**RESULTS**

**I. Patients distribution based on demographic data**

**Patient distribution based on gender**

A total of 143 geriatric patients were selected for the study in which the majority of patients were male with 87 people and female were 56 persons. Refer table 1.

**Patient distribution based on residence**

Out of 143 geriatric patients 78 (47 males and 31 females) resided in urban area and 65 (40 males and 25 females) in rural area.Refer table 1.

**Patient distribution based on age**

Geriatric patients were categorized based on their age group with most patients in the age group of 60-65 years (55 (32 males and 23 females)) and least in the age greater than 81years (10 (7 males and 3 females)).Refer table 1.

**Patient distribution based on education**

In 143 patients 105 (63 males and 42 females) patients either attended only primary school or didn't go to school where as 7 (4 males and 3 females) patients attended tertiary school.Refer table 1.

**Patient distribution based on marital status**

In this study 131 (81 males and 50 females) geriatrics were found to be married and 4 male geriatrics patients were only unmarried. This is shown in the table 1 of demographic data.Refer table 1.

**Patient distribution based on Family type**

Geriatric patients were categorized based on their family status whether they are staying within family (polygamous) or alone (monogamous) with most patients are monogamous (103 (60 males and 43 females)) and polygamous are 40 (27 males and 13 females)).This is shown in the table 1 of demographic data.Refer table 1.

**Patient distribution based on Current work status**

In this study 99 (57 males and 42 females) geriatrics were found to have work in the past 12 months like farming trading ,labors, coolies and 44 (30 males and 14 females) geriatrics didn't have any work at all in the past 12 months due to health problems and poor quality of life.Refer table 1.

**Patient distribution based on Type of work within the last 12 months**

Out of 143 patients 70 (32 males 38 females) were found to have to be working in the past 12 months like self-employment, trading or farming and 13 (8 males and 5 females) patients were found to be government pensioners. Refer table 1.

**II. Assessment of mental status**

The assessment of mental status was done using a mental assessment questionnaire which contains 17 question related to mental thinking and using mental abilities to complete their personal and general tasks. This questionnaire was asked by clinical pharmacist to answer by geriatric patients to know their mental status on their discharge from the hospital also to know how they feel after every visit and treatment from hospital. This study found that there is decrease in their mental activity of geriatrics 72 males were not feeling well ,71 males were having sleep problems due to excessive thinking,81 males were found to have depressive mood,75 males had feeling of weakness,73 males had irritability with mood changes. In case of females 54 females had feeling of weakness, 51 females had sleep problems, and 50 females had general feeling of decrease in activities and performance. These results obtained in table 2after using questionnaire showedthat geriatrics have decrease in mental status.

**Table 1: Demographic data**

| Demographic variable (n=143) | Male | Female |
|---|---|---|
| Gender | 87 | 56 |
| **Residence** | | |
| Urban | 47 | 31 |
| Rural | 40 | 25 |
| **Age** | | |
| 60-65 | 32 | 23 |
| 66-70 | 26 | 16 |
| 71-75 | 13 | 10 |
| 76-80 | 9 | 6 |
| >81 | 7 | 3 |
| **Education** | | |
| Primary school or less | 63 | 42 |
| Secondary school completed | 20 | 11 |
| Tertiary school | 4 | 3 |
| **Marital status** | | |
| Married | 81 | 50 |
| Unmarried | 4 | 0 |
| Widowed | 2 | 6 |
| **Family type** | | |
| Monogamous | 60 | 43 |
| Polygamous | 27 | 13 |
| **Current work status** | | |
| Work within last 12 months | 57 | 42 |
| No Work within last 12 months | 30 | 14 |
| **Type of work within the last 12 months** | | |
| No work at all | **12** | **5** |
| Self-employment/trading/farming | **32** | **38** |
| Government employment | **20** | **8** |
| Private employment | **15** | **0** |
| Government pensioner | **8** | **5** |

**Table 2: Assessment of mental status questionnaire**

| Variable | Male | Female |
|---|---|---|
| 1. Decline in your feeling of general well-being (general state of health, subjective feeling) | 72 | 43 |
| 2. Joint pain and muscular ache (lower back pain, joint pain, pain in a limb, general back ache) | 58 | 53 |
| 3. Excessive sweating (unexpected/sudden episodes of sweating, hot flushes independent of strain) | 69 | 46 |
| 4. Sleep problems (difficulty in falling asleep, difficulty in sleeping through, waking up early and feeling tired, poor sleep, sleeplessness) | 71 | 51 |
| 5. Increased need for sleep, often feeling tired | 64 | 49 |
| 6. Irritability (feeling aggressive, easily upset about little things, moody) | 73 | 39 |
| 7. Nervousness (inner tension, restlessness, feeling fidgety): | 63 | 43 |
| 8. Anxiety (feeling panicky) | 42 | 27 |
| 9. Physical exhaustion / lacking vitality (general decrease in performance, reduced activity, lacking interest in leisure activities) | 68 | 50 |
| 10. Decrease in muscular strength (feeling of weakness) | 75 | 54 |
| 11. Depressive mood (feeling down, sad, on the verge of tears, lack of drive, mood swings, feeling nothing is of any use) | 81 | 41 |
| 12. Feeling that you have passed your peak | 83 | 48 |
| 13. Feeling burnt out, having hit rock-bottom | 77 | 52 |
| 14. Decrease in beard growth | 17 | 0 |
| 15. Decrease in ability/frequency to perform sexually | 82 | 54 |
| 16. Decrease in the number of morning erections/sexual urge | 74 | 52 |
| 17. Decrease in sexual desire | 67 | 49 |

**III. Assessment of functional status**

The assessment of functional status was done using an activity of daily living questionnaire which contains 14questions related to daily activities in their daily life. This questionnaire was asked by clinical pharmacist to answer by geriatric patients to know their ability to complete their daily tasks on their discharge from the hospital also to know how they feel after every visit and treatment from hospital. This study found that there is decrease in the functional activities of geriatrics,47.3% of males and 37.9 % females were no able to get to places by distance,41.8% females were not able to go shopping on their own,52.1% females were not able to prepare their own meals.41.2 % males were not able to walk for 2 km,41.6% females were not able to do their household work 43.7 % males took some help to handle their money,42.4% males took no help to dress and undress self and 51.4% males took no help to take medications by self. The results obtained in table 3 represents that geriatrics were not able to do their daily activities on their own but did few activities with some help.so there also decrease in functional activities.

**Table 3: Assessment of functional status using ADL Questionnaire**

| Activities of daily living(ADL) | Male (n=87(100%)) | Female (n=56(100%)) |
|---|---|---|
| 1.get to places out of walking distance | | |
| Not able | 47.3 | 37.9 |
| Some help | 21.4 | 43.1 |
| no help | 31.3 | 19.0 |
| 2.go shopping to the market | | |
| Not able | 28.5 | 41.8 |
| Some help | 42.6 | 53.9 |
| no help | 28.9 | 4.3 |
| 3.preparing own meal | | |
| Not able | 35.9 | 52.1 |
| Some help | 26.7 | 13.9 |
| no help | 37.4 | 34.0 |
| 4.eat on your own | | |
| Not able | 29.6 | 25.1 |
| Some help | 35.8 | 40.7 |
| no help | 34.6 | 34.2 |
| 5.do self-housework | | |
| Not able | 25.3 | 41.6 |
| Some help | 51.8 | 27.1 |
| no help | 22.9 | 31.3 |
| 6.take medication by self | | |
| Not able | 19.9 | 29.3 |
| Some help | 28.7 | 30.6 |
| no help | 51.4 | 40.1 |
| 7.handle own money | | |
| Not able | 27.9 | 26.3 |
| Some help | 43.7 | 38.7 |
| no help | 28.4 | 35.0 |
| 8.make contact when needed | | |
| Not able | 28.7 | 30.6 |
| Some help | 46.3 | 29.8 |
| no help | 24.0 | 39.6 |
| 9.Dress and undress self | | |
| Not able | 18.9 | 37.1 |
| Some help | 38.7 | 26.7 |

| | | |
|---|---|---|
| no help | 42.4 | 36.2 |
| 10.take care of own appearance | | |
| Not able | 25.9 | 30.6 |
| Some help | 39.7 | 28.9 |
| no help | 34.4 | 40.5 |
| 11.walk 2 km | | |
| Not able | 41.2 | 29.4 |
| Some help | 31.3 | 31.7 |
| no help | 27.5 | 38.9 |
| 12.get in and out of the bed | | |
| Not able | 28.9 | 25.6 |
| Some help | 30.7 | 37.4 |
| no help | 40.4 | 37.0 |
| 13.Bath self | | |
| Not able | 28.3 | 27.9 |
| Some help | 34.8 | 40.7 |
| no help | 36.9 | 31.4 |
| 14.get to the toilet on time | | |
| Not able | 28.6 | 37.8 |
| Some help | 31.7 | 29.5 |
| no help | 39.7 | 32.7 |

### IV. Assessment of quality of life

Geriatric Patient interview was found to be key variable in assessing the quality of life in patients. Patient counseling has become a corner stone for pharmaceutical care and improves patients' quality of life. The quality of life was assessed at baseline with a structured quality of life questionnaire[6] containing 19questions related to their life style. At the end of the study it was found that 117 patients had an improvement in quality of life in geriatrics and results are shown in table-4 with p-value <0.0001(< 0.05 is statistically significant) using one way analysis of variance (ANOVA) and graph pad prism software version 5.01.

**Table 4: Assessment of quality of life Questionnaire**

| S. No. | QOL Questionnaire | On day of admission Yes (%) | On day of admission No (%) | On day of discharge Yes (%) | On day of discharge No (%) | Total No. Of Patients | p-value |
|---|---|---|---|---|---|---|---|
| 1 | Have you brought all your medication with you? Can I see it please? | 50 (34.96%) | 93 (65.03%) | 90 (62.93%) | 53 (37.06%) | 143 | 0.0001 |
| 2 | Have you lost weight? More than 10% in the past 6 months? | 46 (32.16%) | 97 (67.83%) | 94 (65.73%) | 49 (34.26%) | 143 | |
| 3 | Do you have difficulty with reading driving and household task due to poor eyesight? | 52 (36.36%) | 91 (63.63%) | 95 (66.43%) | 48 (33.56%) | 143 | |
| 4 | . Have you or your family any trouble with your hearing lately? | 43 (30.06%) | 100 (69.93%) | 109 (76.22%) | 34 (23.77%) | 143 | |
| 5 | Have you in the past year ever lost urine and got wet? | 93 (65.03%) | 50 (34.96%) | 52 (36.36%) | 91 (63.63%) | 143 | |
| 6 | Have you fallen in the past 6 months? | 57 (39.86%) | 86 (60.13%) | 27 (18.88%) | 116 (81.11%) | 143 | 0.0001 |
| 7 | Are you able to bath, shower or wash yourself? Get to the toilet on your own? | 47 (32.86%) | 96 (67.13%) | 98 (68.53%) | 45 (31.46%) | 143 | |
| 8 | Dress yourself including zips, buttons, putting on shoes and tying Shoelaces? | 52 (36.36%) | 91 (63.63%) | 95 (66.43%) | 48 (33.56%) | 143 | |
| 9 | Get around the house safely? | 50 (34.96%) | 93 (65.03%) | 105 (73.42) | 38 (26.57) | 143 | |
| 10 | Prepare food and do other kitchen chores? | 46 (32.16) | 97 (67.83%) | 103 (72.02) | 40 (27.97) | 143 | |
| 11 | Are you able to do heavy work around the house (scrub floors, wash windows)? | 53 (35.25%) | 90 (64.75%) | 101 (74.59%) | 42 (25.41%) | 143 | |
| 12 | Go shopping for your daily needs, clothes, etc.? | 46 (32.16) | 97 (67.83%) | 107 (74.82) | 36 (25.17) | 143 | |
| 13 | • Get around town (post office, bank, shops) by car or bus by yourself? | 47 (32.86%) | 96 (67.13%) | 103 (72.02) | 40 (27.97) | 143 | |
| 14 | Do strenuous activities like fast walking, carrying heavy shopping, bags, etc.? | 68 (47.55) | 85 (59.44) | 92 (64.33) | 51 (35.66) | | |
| 15 | Do you often feel sad or depressed? | 48 (33.56%) | 95 (66.43%) | 98 (68.53%) | 45 (31.46%) | 143 | |
| 16 | How do you or your care takers feel about your memory? | 52 (36.36%) | 91 (63.63%) | 89 (62.23%) | 54 (37.76%) | 143 | |
| 17 | Do you feel bad about your financial situation? | 47 (32.86%) | 96 (67.13%) | 86 (60.13%) | 57 (39.86%) | 143 | |
| 18 | Do you stay alone? | 99 (69.23%) | 44 (30.76%) | 46 (32.16) | 97 (67.83%) | 143 | |
| 19 | Was the assessment done by clinical pharmacist helpful to improve your quality of life? | | | 117 (81.81) | 26 (18.18) | 143 | |

#Q.No.19=this question was asked at the end of counseling to know how effective was clinical pharmacist role in improvement of their quality of life.

**Medication adherence**

Medication adherence also plays an important role in in improving geriatrics mental status functional status and quality of life. On day of admission all 143 geriatrics were asked about their adherence to their prescribed drugs for their chronic diseases. Later patients were explained the importance of medication adherence during hospital stay for their prescribed drugs and how it would improve their mental status, functional status and quality of life. On day of discharge again all patients were asked again about the change they felt after adherence to their prescribed drugs.it was found that majority of patients showed improvement in quality of life, mental status and functional status. Whereas few patients showed no improvement in their mental status, functional status and quality of life due to socio economic issues personal habits no care takers forgetfulness no revisits to physician and no medication refilling.

**DISCUSSION**

Being clinical pharmacist apart from providing counseling to different diseased patients it's also responsibility to protect special population like geriatrics in improving their mental, functional and quality of life with medication adherence to lead a better life in their end days. Our study showed similar kind of results showed in the study conducted by Dr. Akanni Akinyemi et al[7], with decrease in mental and functional status. The quality of life and medication adherence showed improvement after an overview of guidance in benefits of maintaining quality of life and following prescribed drugs with regular checkups in hospitals.

**CONCLUSION**

Geriatrics are the people whom we respect a lot in the society, apart from giving respect it's also the responsibility to save their life by improving their mental status functional status quality of life and medication adherence to improve their life span with happy days till end of life.The quality of life was improved in geriatrics after guidance by clinical pharmacist on day of discharge and showed improvement in mental and functional status and quality of life only in effective medication adherence patients, but decrease in the mentioned parameters due to socio economic issues, personal habits, no care takers, forgetfulness, no revisits to physician and no medication refilling. Good effective role by the clinical pharmacist helps in maintaining the happy end days in Geriatrics.

**REFERENCES**

1. Rubenstein LZ, Rubenstein LV. Multidimensional geriatric assessment. In: Tallis R, Fillit H, Eds.Brocklehurst's Textbook of Geriatric Medicine, 6th ed. London: Churchill-Livingstone, 2003:291–299.
2. Leon Shargel, Applied Bio pharmaceuticsand pharmacokinetics, 5th edition, 20th chapter.
3. Osterberg L, Blaschke T. Adherence to medication. NEJM 2005; 353:487-97.
4. LaFleur J, Oderda GM. Methods to measure patient compliance with medication regimens. J Pain Palliat Care Pharmacotherapy 2004; 18:81–7.
5. Harrison's principles of internal medicine- 16th edition- published in 2005- chapter 8, page-43.
6. Geriatric assessment, CME Nov/Dec 2004 Vol.22 No.1, page 614-618.
7. Akanni Akinyemi, Joshua Aransiola-Gender perspectives in self-assessment of quality of life of the elderly in south western Nigeria -Journal of Comparative Research in Anthropology and Sociology, Volume 1, Number 1, Spring 2010,ISSN 2068 - 0317.