SCREENING FOR COGNITIVE IMPAIRMENT AND DEMENTIA AMONG ELDERLY PERSONS ATTENDING A TERTIARY HOSPITAL

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ABSTRACT

Cognitive impairment is debilitating condition for elderly in their activities of daily living which can cause problem to self, others and society. Therefore, the researcher aims to screen the cognitive impairment among elderly population at Tertiary Hospital. Cross sectional, descriptive and exploratory design with Purposive sampling technique was used among elderly population at OPD of Tertiary hospital. Mini-mental status examination, activities of daily living, instrumental activities of daily living were used for screening cognitive impairment and dementia. The interview dates were set up for 15 days. Sampling procedure included quota of 20 cases per day and thus, the sample was 300 elderly. Total sample after four persons denied to participate was 296. The mean age of elderly respondents were 71.58 (±5.09). The study revealed that there was no cognitive impairment among 67.6%, mild cognitive impairment among 25.7% and moderate cognitive impairment among 6.8%. The activities of daily living in majority of respondents were 95.3% in full function and least 1% were in severe functional impairment. Instrumental activities of daily living indicated that three-fourths of the respondents 76.7% had high function, 16.2% needed assistance and 7.1% had low function. Age, living with status is significantly associated with cognitive impairment. Screening of cognitive impairment is necessary to identify the impairment among elderly which enhances the awareness of cognitive impairment.

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INTRODUCTION

Cognitive impairment refers to problems with learning and memory, language, executive function (managing daily work and life), attention, perceptual motor skills (interacting with the environment), and social cognition (interacting with other people).[1]

Cognitive impairment is commonly assessed using screening tools such as the Mini-Mental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA) and the cognitive subscale of the Alzheimer's Disease Assessment Scale (ADAS-cog).[2] Many elderly individuals with dementia do not receive clinical cognitive evaluations.[3] Individuals who may benefit from targeted screening include racial/ethnic minorities and persons who have lower educational attainment, any functional impairment, or attend medical visits alone.[4] In England and Wales, screening tests such as the MMSE have been commonly used as part of the assessment for dementia.[5] Mild Cognitive impairment (MCI) is the term for individuals who fall between the cognitive changes of aging and early dementia.[6] Global burden of dementia is estimated to reach 81.1 million by 2040.[7,17] The prevalence and burden of the dementia syndrome are high after age 65. The majority of patients with early dementia are undiagnosed in primary care practices. A brief interview screen can detect dementia with reasonable accuracy.[8] The concept of cognitive impairment intervening between normal ageing and very early dementia has been in the literature for many years. It is suggested that the diagnosis of MCI can be made in a fashion similar to the clinical diagnoses of dementia and AD.[9] Recognition and documentation of dementia rates increased with advancing stage of disease.[10] The historical practices of care giving to elderly people, the living arrangements with joint family and familial responsibilities toward elders that once centered around or within the patriarchal family network are changing in line with the Western culture, individualistic or emotionally-nucleated family systems. Over 1200 young people leave their natal homes each day for remittance and career goal purposes leaving the elderly in rural areas at Nepal.[11] The incidence of dementia in a Liver pool community study confirmed by six year follow up was 9.2/1000 cases per year, broken down into Alzheimer's type (6.3/1000), vascular(1.9/1000) and alcohol related (1.0/1000). Rates approximately trebled with every ten year of age.[12] Cognitive impairment varies from strict clinical criteria for mild cognitive impairment (MCI)to definitions of cognitive decline used in population-based studies, which cover a broader range of dysfunctions.[13] Already 68.0% of people with dementia live in low and middle income countries, but by 2050 this will rise to 71.0%. The fastest growth in the elderly population is taking place in China, India, and their south Asian and western Pacific neighbours.[14] Patients with moderate to severe impairment were significantly older than patients with no impairment (76.2 years and 67.4 years, respectively).[15] WHO Dementia Report published in 2012 highlighted the exponential rise of dementia in the elderly population worldwide, especially in low-and middle-income countries.[16] There may be over 135,000 people with dementia in Nepal.[17] As population aging and increased lifespan expectancy, cognitive impairment remains a high prevalence in seniors.[18] Timely detection of dementia is an important goal of clinicians and public health professionals alike for better management and prevention of complications.[19] Screening for cognitive impairment or early diagnosis of cognitive impairment improves patient, caregiver, family, or clinician decision making or other important outcomes nor causes harm. The aim of this study is to screen for cognitive impairment and dementia in the elderly people visiting OPD in a tertiary hospital.

MATERIALS AND METHODS

A cross sectional, descriptive and exploratory design was applied with purposive sampling technique. The average OPD patients of elderly people visit hospital by 20 persons at medicine OPD. The interview dates were set up for 15 days. Thus, the sample was 20 x 15 =300 cases. Total sample size of 296 taken (four participants denied to participate). For sampling procedure, there were a quota of 20 cases per day and when total 296 was reached, then was stopped. This study was conducted in Department of Medicine OPD of Nepal Medical College.

Target population: Elderly population of aged 65 years old

Operational definition:
Cognitive impairment:
≤ 9 Severe
10-18 Moderate
19-23 Mild cognitive impairment
24-30 Normal

Activities of daily living (ADLS): Clients are scored yes/no for independence in each of the six functions. A score of 6 indicates full function, 4 indicates moderate impairment, and 2 or less indicates severe functional impairment. SCORING: 6 = High (patient independent) 0 = Low (patient very dependent).

Instrumental activities of daily living (IADLS): A summary score ranges from 0 (low function, dependent) to 8 (high function, independent) for women and 0 through 5 for men to avoid potential gender bias.

Environmental: Age, education, occupation, lonely, ADLS, IADLS

Dementia: A chronic or persistent disorder of the mental processes caused by brain disease or injury and marked by memory disorders, personality changes, and impaired reasoning.

Screening: A screening test is done to detect potential health disorders or diseases in people who do not have any symptoms of disease.

Elderly: Age from 65.

Research instrument (Tools)

Questionnaire (demographic questionaire)

Mini-mental status examination, Activities of daily livings (ADLS) and instrumental activities of daily livings(IADLS)

Data collection procedure: Interview with the respondents

Pretest of Instrument: Pretest of instruments was done on similar setting and it was reliable.

Inclusion criteria for patients: Age from 65 years and above irrespective of sex.

Exclusion criteria: Deaf, mentally retarded and age less then 65 years old.

Ethical consideration: The participants were explained about the purpose of the study and informed written consent was obtained. None of the participants were forced for participation. Ethical approval was taken from Nepal Medical College Institutional Review Committee (Ref: 074-078/079). A formal administrative permission was obtained from the authorities of the proposed settings. The data was entered in SPSS-16. In statistical analysis, descriptive analysis was used. After completing the data, the health education was given to cases about cognitive impairment.

RESULTS

The mean age of elderly respondents were 71.58 (±5.09). Table 1 shows over one-half of respondents were male (52.7%) and female participants were (47.3%). Most of the respondents were married (94.4%) and least were unmarried (4.4%). Majority of respondents educational status were illiterate (74%) and least of the respondents were educated upto literate as well as higher secondary (4.1%). Regarding occupational status, about two-

fifths were farmers (40.9) and a minority were involved in business (10.1%) and 11.5% were not working. Majority of respondents were living with son (88.9%) while few were living with either a brother or sister (1.4%). Most of the spouses of elderly were alive (75.7%) and about 20% had died. An equal number of respondents were residing in urban (51.7%) and rural areas (48.3%).

The study revealed that there was no cognitive impairment among two-thirds (67.6%), mild impairment was seen among 25.7% and among 6.8% moderate cognitive impairment was seen (Table 2). The activities of daily living assessment showed that in majority

Table 1: Socio-demographic characteristics of respondents (n=296)		
Variables	**n**	**%**
Age		
65-70	148	50.0
71-75	101	34.1
76-80	24	8.1
81-99	23	7.7
Gender		
Male	156	52.7
Female	140	47.3
Marital status		
Married	281	94.9
Unmarried	13	4.4
Divorced	1	0.3
separated	1	0.3
Education		
Primary	36	12.2
Secondary	17	5.7
Higher secondary	12	4.1
Literate	12	4.1
illiterate	219	74.0
Occupation		
Farmer	121	40.9
Business	30	10.1
Others	90	30.4
No work	34	11.5
Living with		
Son	263	88.9
Daughter	15	5.1
Brother	4	1.4
Spouse	4	1.4
Alone	10	3.4
Spouse		
Alive	224	75.7
Dead	59	19.9
Residing in		
Rural	143	48.3
Urban	153	51.7

Table 2: Level of cognitive impairment		
Level	**n**	**%**
Moderate (10-18)	20	6.8
Mild (19-23)	76	25.7
No cognitive impairment (24-30)	200	67.6
Total	**296**	**100**

Table 4: Scoring instrumental activities of daily living (IADLS)		
IADLS	**n**	**%**
Low function	21	7.1
Needs assistance	48	16.2
High function	227	76.7
Total	**296**	**100.0**

Table 3: Scoring activities of daily living		
Activities of daily living	**n**	**%**
Severe functional impairment	3	1
Moderate impairment	11	3.7
Full function	282	95.3
Total	296	100

of respondents (95.3%) were in full function and 1% had severe functional impairment (Table 3). Instrumental activities of daily living showed that most of the respondents 76.7% had high function, 16.2% needed assistance and 7.1% had low function (Table 4). Age, living with status was significantly associated with

Table 5: Association of cognitive impairment with selected demographic variables				
Variables	**Level of cognitive impairment**			**P value**
	Mild	**Moderate**	**No cognitive impairment**	
Age				
65-70	5	38	105	
71-75	6	24	71	0.003
76-80	3	8	13	
81-99	6	6	11	
Education				
Illetrate	18	58	143	
Primary education	0	12	24	
Secondary education	2	0	15	0.113
Higher secondary	0	4	8	
Literate	0	2	10	
Occupation				
No work	0	15	19	
Farmer	8	22	91	
Business	0	7	23	0.009
Retired	4	5	12	
Others	8	27	55	
Partner				
Alive	14	56	154	0.368
Dead	6	18	35	
Living with				
Alone	0	0	10	
Daugher	3	5	7	
Brother	0	0	4	0.003
Son	17	67	179	
Spouse	0	4	0	

cognitive impairment while education, spouse (live or dead) was not significantly associated with cognitive impairment (Table 5).

DISCUSSIONS

Early detection of cognitive impairment may allow for earlier treatment. In this study, no cognitive impairment were in highest level which is incoherence with the study done by Stump et al,[21] Zhang et al,[22] Sach et al.[24] This study is in contrast with the study done by Wood et al.[25]

Disability is the main problem that affects the health and quality of life of the elderly.[22,23] In this study elderly people who cannot complete any item independently, he or she will be considered to be disability of ADL, otherwise he or she will be healthy is similar to the study done in china.[22] The study showed that ADLS and IADLS was in high function is in contrast with the study done in southeastern Poland.[23]

Socio-demographic variables age, living with status, occupation is significantly associated with cognitive impairment is in contrast with the study done by Patel and Sing.[26] Age is significantly associated with cognitive impairment is similar to study done in India.[27]

This study concludes that ageing population should be given priority, screening is a basic tool to identify the cognitive problem and provides awareness about ageing within the public and policy maker.

Limitations: The study is done in small sample size. Generalization cannot be done from small population. Only the screening tools which was freely available was used (mini-mental status examination, Activities of daily living, Instrumental activities of daily living) to screen the cognitive impairment and dementia. No further evaluation was done by the researcher for diagnosis.

Implications: Large size study need to be done and further research is needed to generalize. It aids in further research, policy maker by its finding to give more emphasis on mental health issues like cognitive impairment and dementia which is a neglected issues in Nepal. It affects the elderly day to day life as well as family life. Family support the elderly with the time, money, material and themselves and suppose this responsibility as a burden. Therefore, from policy level awareness of cognitive impairment, early recognition and screening as well as referral should be included in health facility for elderly population which can aids as preventive aspects for cognitive impairment and dementia. It also helps relatives to cope with emotions in that stage of life.

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