Cognitive Impairment Among Old ages

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Abstract:

Background: Cognitive Impairment, refers to trouble in remembering, learning and concentration, which might affect the quality of day to-day life. Cognitive impairment is becoming a major public health problem, Patients with mild cognitive impairment can revert to normal cognition, but many times progresses to Alzheimer's disease.

Objectives: To explore the levels of cognitive impairment among the elderly, and to determine its association with some socio-demographic characteristics.

Method: A cross sectional study was conducted by selecting 533 old people from the attendees of 13 geriatric friendly primary health care centers in Baghdad. The measurement of cognitive impairment was based on the Mini Mental State Examination scale

d among 29.5%, severe cognitive impairment in 4.3%. Mild and severe cognitive impairment were significantly higher among the ages of 60-74 years, females, Housewives, married, those lived with families, illiterate, and financially dependent.

Conclusion: Mild cognitive impairment is the prominent feature among our elderly. It is important to notice that the current levels of cognitive impairment can't be overlooked, and establishing an early screening program, with adoption of cognitive behavioral therapy and life style management, to avoid progression to Alzheimer disease is a fundamental.

Keywords: Cognitive impairment, cognition, elderly, MMSE.

Introduction :

Cognition, is a brain -founded capabilities an individual requires to accomplish his functional independence. [1] Cognitive Impairment (CI), refers to trouble in remembering, learning and concentration, which might affect the quality of day to-day life. [2] According to Cleveland Clinic (2023) there are common signs of CI including memory loss as; Disremembering recent events, replicating the same stories, fail to recall names, appointments, misplaces items. Language problems in recalling the desired words, difficult consideration a written or verbal material. Distracted attention, struggles with problem solving. Difficult to accomplish duties as paying bills, shopping, taking medications, and driving. [3] Cognitive impairment ranges from Mild CI (MCI), with a minimal functional impairment, may be explored through a person's self-criticism, or as measured using an assessment scale [4] to severe CI (SCI) when a person not be able to recognize people, practice language, or complete purposeful movements.[5]

Mild cognitive impairment is the intermediate stage between normal cognition and initial dementia where a person develops some CI that is not so seriously affect the quality-of-life [6]. People with MCI, tend to have symptoms of depression and evading of social rendezvous as a coping mechanism. [7] Sometimes a person with MCI can return to normal cognition, with lifestyle changing including dietary intervention. Nonetheless many times MCI progresses to more serious forms of dementia such as Alzheimer's disease (AD). [6,8]

Cognitive impairment is becoming a major public health problem, as old people aged 60 years and over are increasing Worldwide. [9] Also the greatest known risk factor of CI and Alzheimer's diseases is increasing age [1]

The shortage in epidemiological studies concerning Cognitive impairment among elderly in our vicinity, where even there is no announced valid statistics for the exact number of the associated diseases related to CI, was an important motivation for implementing this study.

The current study was conducted to explore the levels of cognitive impairment among elderly of 60 years and above, in Baghdad City. And to study the associations of levels of cognitive impairments with some socio-demographic characteristics.

Methods:

A cross-sectional study has been carried out on 533 of apparently healthy people, aged 60 years and more, selected through purposive sampling, during the period from 1st September 2022 through February 2023. The study conducted at

13 Geriatric Friendly PHCs (GFPHCs), chosen randomly from 5 health care sectors in Al-Karkh and Al_Rusafa Health Directorates (HDs) in Baghdad City. After obtaining the official approvals from administrative authorities and medical care personnel, the data had been collected from all qualified elderly patients of ≥ 60 years age who attended these GFPHCs after explanation of the study objectives, and acquiring their oral consents. Then the researcher started face-to-face interviews, to fill the questionnaire form with the responses of participants. Patients with previous history of CVA, neurological diseases, vision or hearing impairment and traumatic brain injury, were excluded from the sample.

The study instrument composed from two parts**;** Socio- Demographic information of the sample which include (age, gender, occupation, marital status, living place, educational level, economical independent, smoking and disease history. The 2nd part included, the measurement of cognitive impairment among elderlies, using the Mini Mental State Examination (MMSE) scale. It is a set of 11 questions, each with an average score between 1-3. Related to 6 domains, including orientation to time and place, attention/ concentration, short-term memory, language skills, visuospatial abilities, and ability to understand and follow instructions. A person can get a maximum possible score of 30, a doctor can score a person's level of CI accordingly; 24–30: no impairment, 18–23: mild CI, ≤ 17: severe CI [11]. Analysis of data was carried out using Statistical Packages for Social Sciences- version 28. Data were presented in frequency, percentage, mean and SD. The significance of difference of percentages were tested using Pearson Chi-square test. Statistical significance was considered when P value ≤ 0.05.

Results :

Results obtained shows that 186 (34.9%) of the sample was 60-64 years of age, about 30% of them aged between 65-69 years. The age components of the sample decrease with increasing age, the least constituent was those over 85 years old, making up (1.7%) of the sample (Figure 1). The mean age of this sample is 67.6±6.3. Male entails 62.1% of the sample (Figure 2).

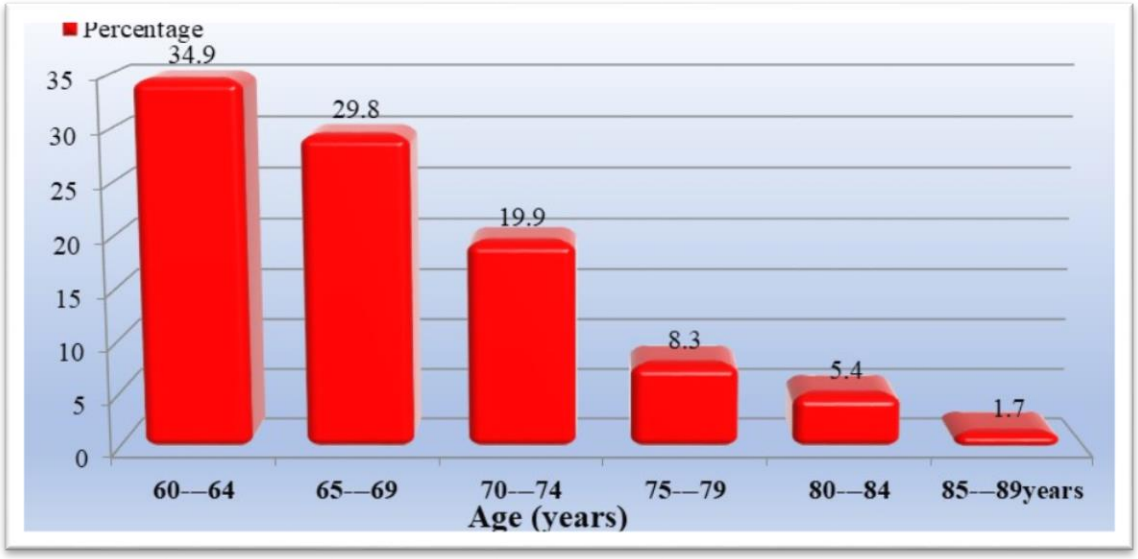

Figure 1: The age distribution of the studied sample.

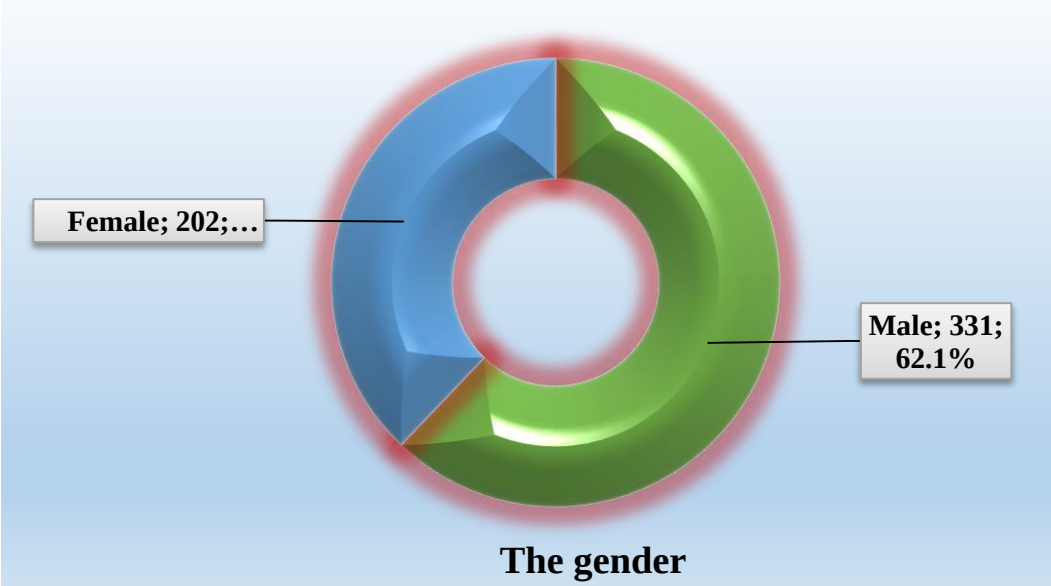

Figure 2: The sex distribution of the studied sample.

Table 1:depicts that, the majority of the sample, 257 (48.2%) was retired, 31.5% of them were women mainly housewives, 10.4% of them were unemployed. The majority of the elderly sample (65.3%) were married, one-quarter of them were widowed, 85% of them were lived with their families. More than one-quarter (25.5%) of the sample graduated from colleges or higher level of education, more than one-half of them can read and write with primary, intermediate and secondary school certificates, 17.6% of the sample were illiterate. The major portion of the sample (58%) was financially independent, 82.9% were non-smokers.

Table 1: The socio-demographic characteristics of the studied sample

		No (533)	%
Occupation	Retired	257	48.2
	Housewife	168	31.5
	Worker	39	7.3
	Governmental employee	14	2.6
	Unemployed	55	10.4
Marital status	Married	348	65.3
	Widowed	136	25.5
	Divorced	22	4.1
	Single	27	5.1
Place of residence	Alone	25	4.7
	With family	453	85.0
	Elderly home	55	10.3
Educational level	Illiterate	94	17.6
	Read & write	45	8.4
	Primary	118	22.1
	Intermediate	69	12.9
	Secondary	71	13.3
	College & higher	136	25.5
Financial independent	Yes	309	58.0
	No	224	42.0
Smoking	Yes	91	17.1
	No	442	82.9

The majority of the elderly sample (353; 66.2%) had normal cognitive functions (MMSE scores = 24-30). Severe cognitive impairment (MMSE scores = 0-17) was detected among (23; 4.3%) of the elderly sample, while Mild cognitive impairment (MMSE scores = 18-32) was noticed among 157 (29.5%) of the elderly (Table 2).

Table 2: The level of cognitive impairment among people included in the study.

	Severe cognitive impairment (0-17)	23	4.3
	Mild cognitive impairment (18-23)	157	29.5
	No cognitive impairment (24-30)	353	66.2

There is a significant gradual decrease in the percentages of normal cognition with increasing age within the sample, a higher significance levels of severe cognitive impairment found among 65-69 and 70-74 years old age groups, while mild cognitive impairment has a significant increase level amongst 60-64 years age and to less extent among 65-69 and 70-74 years old groups (p = 0.011). Elderly females were more significantly affected by mild and severe cognitive impairment than elderly males, (p = 0.0001) (Table 3).

Table 3: The level of cognitive impairment, according to the age and gender.

		Severe cognitive Impairment No.=23		Mild cognitive impairment No=157		No impairment No=353		
		No	%	No	%	No	%	
Age (years)	60---64	2	8.7	55	35.0	129	36.5	0.011*
	65---69	7	30.4	39	24.8	113	32.0	
	70---74	5	21.7	36	22.9	65	18.4	
	75---79	4	17.4	12	7.6	28	7.9	
	80---84	3	13.0	12	7.6	14	4.0	
	85---89	2	8.7	3	1.9	4	1.1	
Gender	Male	4	17.4	76	48.4	251	71.1	0.0001*
	Female	19	82.6	81	51.6	102	28.9	

*Significant difference between percentages using Pearson Chi-square test (χ^2-test) at 0.05 level.

Table 4: shows that, women who were housewives had CI of mild and severe levels more significantly than other elderly, while retired, were significantly with better cognitive functions. Married elderly had better cognitive performance than single person, widowed had high levels of mild and severe CI (p=0.0001. The majority of elderly who lived with their families, significantly had mild and severe CI, compared to those lived alone or in Elderly Care Houses (p =0.019), while the percentages of normal cognition seemed to be significantly lower with decreasing educational levels down to highest rates of mild and severe CI were among illiterate (p =0.0001). Financially dependent elderly, significantly had more CI of mild and severe levels, than economically independent people (p =0.0001). Significant higher percentages of mild and severe CI were among elderly nonsmokers (p =0.037).

Table 4: The level of cognitive impairment, according to the socio-demographic characteristics.

		Severe cognitive impairment No.=23		Mild cognitive impairment No.=157		No impairment No. =353		
		No	%	No	%	No	%	
Occupation	Retired	4	17.4	52	33.1	201	56.9	0.0001*
	Housewife	18	78.3	78	49.7	72	20.4	
	Worker	-	-	7	4.5	32	9.1	
	Govern employee	-	-	2	1.3	12	3.4	
	Unemployed	1	4.3	18	12.7	41	10.2	
Marital status	Married	11	47.8	86	54.8	251	71.1	0.0001*
	Widowed	7	30.4	55	35.0	74	21.0	
	Divorced	1	4.3	5	3.2	16	4.5	
	Single	4	17.4	11	7.0	12	3.4	
Residence sites	Alone	1	4.3	11	7.0	13	3.7	0.0001*
	With family	13	56.5	129	82.2	311	88.1	
	Elderly house	9	39.1	17	10.8	29	8.2	
Educational level	Illiterate	17	73.9	58	36.9	19	5.4	0.0001*
	Read & write	2	8.7	26	16.6	17	4.8	
	Primary	3	13.0	48	30.6	67	19.0	
	Intermediate	1	4.3	11	7.0	57	16.1	
	Secondary	-	-	9	5.7	62	17.6	
	College & higher	-	-	5	3.2	131	37.1	
Financial independent	Yes	4	17.4	65	41.4	240	68.0	0.0001*
	No	19	82.6	92	58.6	113	32.0	
Smoking	Yes	1	4.3	20	12.7	70	19.8	0.037*
	No	22	95.7	137	87.3	283	80.2	

*Significant difference between percentages using Pearson Chi-square test (χ^2-test) at 0.05 level.

Discussion:

The majority of this study sample was 60-69 years age, this is largely expected result, as the scopes of the elderly in our community decreases with the mounting age. Adding to that, people aged 60-69 years, have more liability to visit PHCs than those who are older than them. Similarly, In India about three-quarters of elderly were at age of 60-70 years.[12] While in Ethiopia, nearly half of the sample were at age (60-74) years. [13]

The commonest portion of elderly people (63.1%) in the present study were male. This figure is consistent with that in Ethiopia, where males represented 64.7% of the elderly sample. [13]

In this study, the demographic parameters of occupation, marital status, living status, educational levels, were all in concordance with that affirmed in 2018 in Iran,[14] while Han et al, in their study, which conducted in Shizhong District of Jinan City/ China found that more than half of the elderly were with secondary school education. [15]

Existing study portrayed that, 4.3% of our elderly were with SCI, and 29.5% with MCI. This percentage is better than that in Iran, where it has been found that more than half of the elderly had MCI [14] Whereas, in Beirut, Lebanon, where a cross-sectional study, conducted on 337 ≥ 60 years people, the MCI was among 14.8%. [16]A meta-analysis study, in China in 2022, indicated that the prevalence of

MCI between elderly was less than one-fifth [17] This disagreement might be attributed to the fundamental difference of the culture and lifestyle habits between societies.

Mild and severe CI between old people in this study, seemed to be significantly higher in the age groups (60-64) (65-69) and (70-74). These identical proportions have also been observed in China in a study used MMSE to assess CI, where the finding revealed that cognition decline among elderly with increasing age. [18] In Ethiopia the result revealed that CI increased among 60 to 74 years of age [13] Mild and severe CI were significantly higher between elderly women than in males. This finding fully agreed with that recorded in a descriptive study carried out in Lebanon and Ethiopia, Sex hormone fluctuations and genetics, might contribute to CI variations between genders. [16,13]

This study noticed that mild and severe CI rates were significantly higher, between housewives, unemployed, married and widowed, living with families, illiterate, non-smokers and financially dependents elderly. while In China, CI found to be more in elderly female, over 80 years, not married, illiterate, financial dependence, and non-smoker persons. [19] Moreover, the results of a study conducted in USA, showed that CI significantly increased among the widowed and elderly living alone [20]. In Saudi Arabia: a cross-sectional study found that MCI significantly associated with elderly females of low level of education and low income.[21] Harmoniously, In India, CI was significantly associated with poverty [18] As economic independency and education, are probably linked to a lower risk of CI, since a high income educated people have always had the ability to afford better healthcare, nutrition and lifestyle.

In conclusion, mild cognitive impairment, was the prominent feature among Iraqi elderly. Severe cognitive impairment, was to less extent. Mild and severe cognitive impairment were more pronounced with increasing age, females especially housewife more affected than males, married or widowed, those lived with families, exaggerated the condition. Illiterate and financially dependents people agonized more with Mild and severe cognitive impairment. It is important to notice that the current levels of cognitive impairment can't be overlooked, and establishing an early screening program, to predict an early stage of cognitive impairment is a fundamental, with a primary adoption of cognitive behavioral therapy, nutritional, and life style management. To avoid progression to Alzheimer disease.

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Conflicts of interest
There are no conflicts of interest

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