Comparative Study of Cognitive Functioning of Aged Women 60+ of Jammu and Srinagar

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ABSTRACT

The present study was carried out among the aged women of Jammu and Srinagar Districts of the state of Jammu & Kashmir, in order to assess their cognitive functioning status. A sample of 120 aged women of various urban wards of Jammu and Srinagar districts was selected by using random sampling technique. To assess the cognitive functioning of the respondents Informants Questionnaire on Cognitive Decline in the Elderly (IQCODE) and Mini Mental State Exam (MMSE) were used. Statistical analysis was done using SPSS and frequency, percentage, mean plots and coefficient of correlation were computed. Results reveal that 38.3 % of the respondents from Jammu rated as Much worse by their informant,whereas 43.3 % of the respondents from Srinagar rated as Not much change by their informants. Age wise 100 % and 90 % of the respondents from both of the districts in the age group of 80 + years rated as much worse by their informants. MMSE is a performance test where the respondents themselves complete the cognitive tasks. Results reveal that 73.3 % of the respondents from Jammu and 40 % from Srinagar have mild to moderate cognitive impairment.Age wise it was seen that all the respondents in the age group of 70-80 years and 80+ years have mild to moderate cognitive impairment. Significant differences was seen in age wise and district wise.The mean plots of the scores of respondents on IQCODE and MMSE vis a vis their educational qualification. It was seen that as the level of education decreases the scores on IQCODE move towards "Much Worse" category, similarly it was also concluded that as literacy decreases the scores on MMSE move towards "Mild to Moderate" Cognitive Impairment. Results also reveal that correlation was positively significantly correlated with IQCODE and MMSE, whereas education is negatively significantly correlated with age. The need for health education during later years of life is stressed.

Keywords: *Aged women,Cognitive Functioning, IQCODE, MMSE*

Introduction

The process of becoming older, a process that is genetically determined and environmentally modulated. To sum up the state of research into aging is well beyond the confines of this space (and this writer's talents). However, here is

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one type of research into the genetics of aging (Rogina, 2000). Most developed world countries have accepted the chronological age of 65 years as a definition of 'elderly' or older person, but like many westernized concepts, this does not adapt well to the situation in Africa. While this definition is somewhat arbitrary, it is many times associated with the age at which one can begin to receive pension benefits. Although there are commonly used definitions of old age, there is no general agreement on the age at which a person becomes old. The common use of a calendar age to mark the threshold of old age assumes equivalence with biological age, yet at the same time, it is generally accepted that these two are not necessarily synonymous (Health statistics and information systems). In 2010, an estimated 524 million people were aged 65 or older8 percent of the world's population. By 2050, this number is expected to nearly triple to about 1.5 billion, representing 16 percent of the world's population. Although more developed countries have the oldest population profiles, the vast majority of older peopleand the most rapidly aging populationsare in less developed countries. Between 2010 and 2050, the number of older people in less developed countries is projected to increase more than 250 percent, compared witha 71 percent increase in developed countries(Global Health and Aging).By mid-century, India's 60 and older population is expected to encompass 323 million people, a number greater than the total U.S. population in 2012(Census of India). As per details from Census 2011, Jammu and Kashmir has population of 1.25 Crores, an increase from figure of 1.01 Crore in 2001 census. Total population of Jammu and Kashmir as per 2011 census is 12,541,302 of which male and female are 6,640,662 and 5,900,640 respectively. In 2001, total population was 10,143,700 in which males were 5,360,926 while females were 4,782,774(Jammu and Kashmir Population Census data 2011).

Cognitive Functioning During Old Age

As people age, they change in a myriad of ways both biological and psychological. Some of these changes may be for the better, and others are not. This book primarily concerns the normally aging brain, the neuroanatomical and neurophysiological changes that occur with age, and the mechanisms that account for them. It is not primarily about the behavioral or cognitive concomitants of those changes. Nevertheless, there is ample evidence that alterations in brain structure and function are intimately tied to alterations in cognitive function. The complexity of both the neural and cognitive functions, however, makes exact mapping between brain and behavior extraordinarily difficult, and so these relations remain largely speculative, although ultimately testable. Establishing such links between brain and cognition is the principal goal of cognitive neuroscience (Glisky, 2007).

Objectives

The objectives of the present study are:-

i) To assess Cognitive Functioning of aged women (60+) belonging to middle SES families from Jammu and Srinagar Districts.

ii) Analyze the association of age and educational qualification with Cognitive Functioning of aged women

Research Design

An empirical field investigation with the support of a structured questionnaire and anthropometric instruments was conducted among the sample respondents living in urban agglomerations of Jammu and Srinagar city (J&K State). The criteria included only such women who were in the age group of 60+years and who were not employed in any organized or unorganized sector and had no means of earning an income Multistage sampling technique was used for selecting the sample. The list of urban areas of Jammu and Srinagar city was obtained from the local municipal offices. Random selection of locations in the Jammu and Srinagar city areas was done. The sample, fulfilling the criteria for the present study was selected till the required sample was obtained. Informants Questionnaire of Cognitive Decline in Elderly (IQCODE) and Mini Mental State Exam (MMSE) were used for the sample. For this tool, Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE) is a brief questionnaire which uses information provided by an informant (typically a close relative) to assess a person's change in cognitive functioning over last ten years. The questionnaire is often used as a screening test to detect dementia and MMSE is a performance test, which tests the individual's orientation, attention, calculation, recall, language and motor skills were used. Both qualitative and quantitative methods were employed for data analysis. With the use of SPSS software, Frequency, Percentages, Mean Plots, Correlation were computed for analysis and interpretation.

Results and Discussion

1) Education of the Respondents

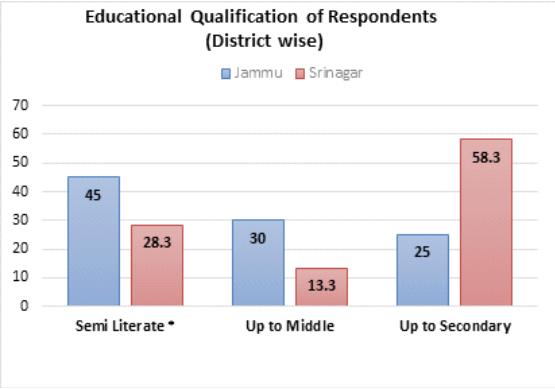


Fig. No. 1.1.1 (a): Educational Qualification of the Respondents (District Wise)

***Semi Literates**: According to Joshi and Ghose (2007), Semi-literate is that adult or adolescent who has low levels of formal education.

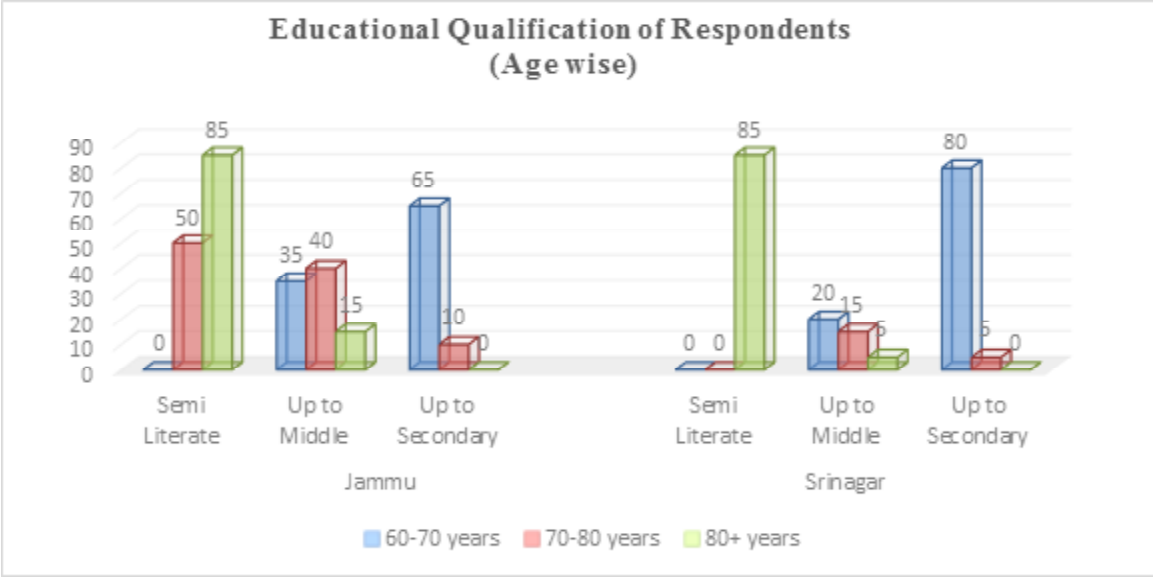


Fig. No. 1.1.1 (b): Educational Qualification of the Respondents (Age wise)

Fig. 1.1.1(b) depicts the district wisedistribution of sample according to literacy level. 45% of the respondents from Jammu and 28.3% of the respondents from Srinagar were semi literates,whereas 13 % and 13.3 % of the respondents from Jammu and Srinagar were educated up to middle class.Results also reveal that 25 % of the respondents from Jammu and 28.3 % from Srinagar were educated up to secondary class respectively.

In Jammu district, in the age group of 60-70 years 65 % of aged women were educated up to secondary class, 35 % were educated up to middle class,none of the respondents in this age group were semi literates.10%respondents in the age group of 70-80years were educated up to secondary class, 40% were educated up to middleclass and 50% were semi literates. 85 %of the respondents in the age group of 80+ years were semi literates and 15 % were educated up to middle class.

In Srinagar district, in the age group of 60-70 years 80 % of aged women were educated up to secondary class, 20 % were educated up to middle class, none of the respondents in this age group were semi literates. 5 %respondents in the age group of 70-80years were educated up to secondary class, 15 % were educated up to middleclass. 85 %of the respondents in the age group of 80+ years were semi literates and 5 % were educated up to middle class.

All the women in the semi-literate* category could read the religious text.

2. Cognitive Functioning of the Respondents

i. Informant Questionnaire on Cognitive Decline in Elderly (IQCODE).
ii. Mini Mental State Examination (MMSE).

2(i) Informants Information's about Cognitive Functioning of Respondents.

Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE) is a brief questionnaire which uses information provided by an informant (typically a close relative) to assess a person's change in cognitive functioning over past ten years. The questionnaire is often used as a screening test to detect dementia.

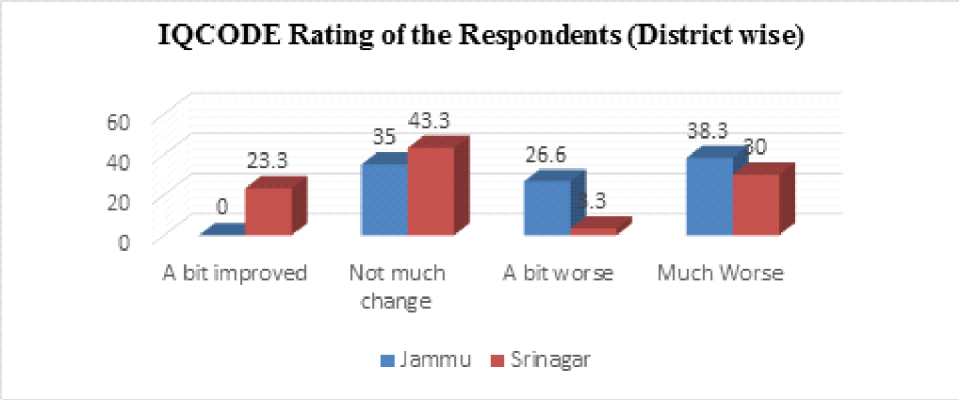


Fig. No. 2.1.1(a): IQCODE Rating of the Respondents (District wise).

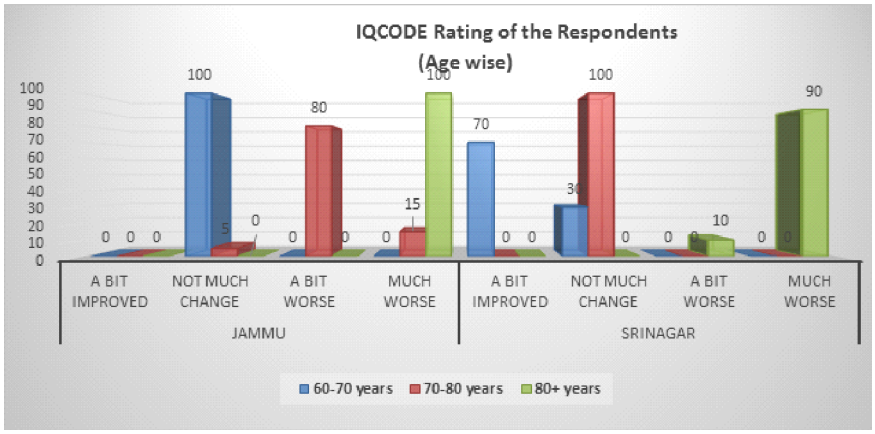


Fig. No. 2.1.1(b): IQCODE Rating of the Respondents (Age wise).

Results given in Table No. 2.1.1(a) and (b) reveal that 38.3 % respondents from Jammu have been rated as '*Much Worse*' whereas 43.3 % in Srinagar have been rated as '*Not Much Change*' 30 % respondents from Srinagar have been rated as

'*Much Worse*' and 35 % of them from Jammu have been rated as '*Not Much Change*' Chi square analysis shows significant differences (pd"0.01, 26.03) in IQCODE rating, between the two districts. Age wise results reveal that 100% of the sample in the age group of 80+years from Jammu and 90% of the respondents from Srinagar have been rated in the '*Much worse*' category of IQCODE by their informants. Eighty percent of the respondents from Jammu in the age group of 70-80years have been rated in the '*A bit worse*' category, whereas 100% of the sample from Srinagar has been rated in the '*Not Much Change*' category of IQCODE by their informants. Results further reveal that 100% of the respondents in the age group of 60-70years from Jammu and 30% of the sample from Srinagar have been rated in the '*Not Much Change*' category of IQCODE by their informants. Age wise Chi square analysis shows significant differences (pd"0.01, 98.63**) from Jammu, and pd"0.01, 92.30**) from Srinagar in IQCODE rating.

2(ii) Mini Mental State Exam (MMSE)

MMSE is a performance test where the respondents themselves complete the cognitive tasks.

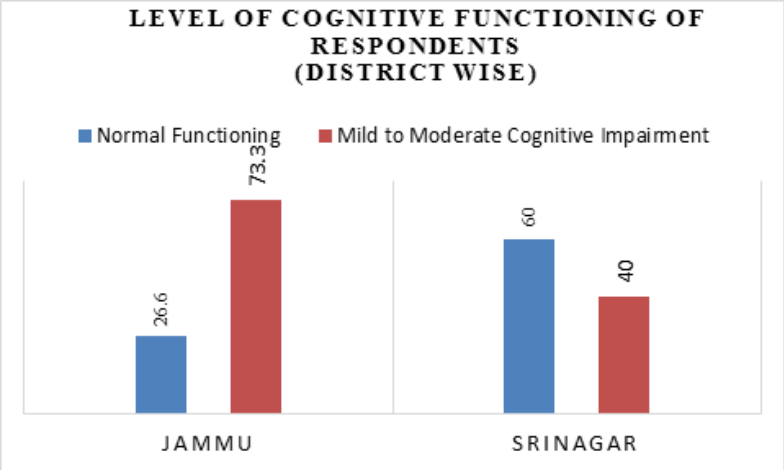


Fig. No. 2.2.1: Level of Cognitive Functioning of Respondents from both Districts.

Fig. No. 2.2.1 reveals that 73.3 % of the respondents from Jammu and 40 % of respondents from Srinagar fall in the Mild to Moderaterange of Cognitive Impairment, whereas 26.6 % of the respondents from Jammu and 60 % of the respondents from Srinagar fall in Normal range of Cognitive Functioning. None of the respondents falls in the level of Severe Cognitive Impairment on MMSE.

Table No. 2.1.1: Distribution of Respondents on Levels of Mental State (Age wise).

Age group	Regional comparison	Levels of MMSE		χ^2
		Normal Functioning (Range 25-30)	Mild–Moderate Impairment (Range 18-24)	
60-70years	Jammu n=20	14(70)	6(30)	Jammu (29.3**) Srinagar (46.6**)
	Srinagar n=20	20(100)	-	
70-80years	Jammu n=20	2(10)	18(90)	
	Srinagar n=20	16(80)	4(20)	
80+years	Jammu n=20	-	20(100)	
	Srinagar n=20	-	20(100)	
Total	Jammu n=60	16(26.6)	44(73.3)	13.57**
	Srinagar n=60	36(60)	24(40)	

**Significant at level of 0.01 *Significant at level of 0.05

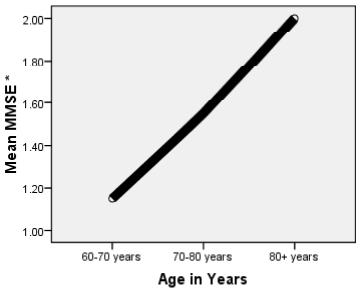
Table No 2.1.1 further shows that in the age group of 60-70 years 70 % respondents from Jammu and 100 % from Srinagar, fall in the range of Normal Cognitive Functioning. In the age group of 70-80 years, 90 % of the respondents from Jammu fall in the range of Mild to Moderate of Cognitive Impairment, whereas 20 % of the respondents from Srinagar fall in the range of Normal Functioning. In the age group of 80+ years all the respondents from both of the districts fall in the range of Mild to Moderate Cognitive Impairment.Chi square shows significant differences both district wise and age wise.

3) Association of:

Mean plots was used for Association between Age,Education and Cognitive Functioning.

* IQCODE: 1=Much improved,2=A bit improved,3=Not much change,4=A bit worse, 5=Much worse.

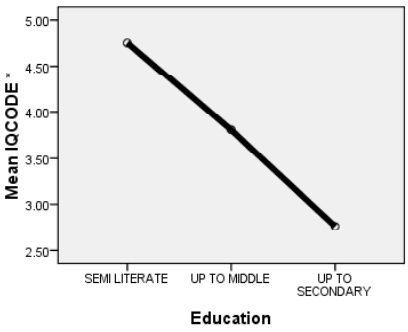
Fig. No.2.2.2 (a): Association of Age and IQCODE



* MMSE: 1=Normal Cognitive Functioning,2=Mild to Moderate Cognitive Impairment.

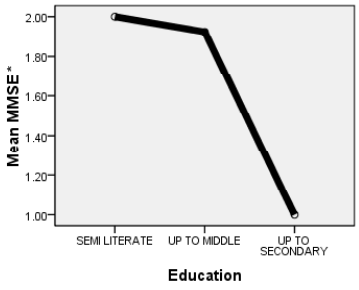
Fig. No.2.2.2 (b): Association of Age and MMSE

The figures 2.2.2 (a) and (b) show the mean plots of the scores of respondents on IQCODE and MMSE vis a vis their age. It can be seen that as age increases the scores on IQCODE move towards **"Much Worse"** category, similarly fromfig no 2.2.2(b) it can be concluded that as age increases the scores on MMSE move towards **"Mild to Moderate"** Cognitive Impairment.



* IQCODE: 1=Much improved,2=A bit improved,3=Not much change,4=A bit worse,5=Much worse.

Fig. No.2.2.2 (c): Association of Educational Qualification and IQCODE



* MMSE: 1=Normal Cognitive Functioning,2=Mild to Moderate Cognitive Impairment

Fig. No.2.2.2 (d): Association of Educational Qualification and MMSE

The figures 2.2.2 (c) and (d) show the mean plots of the scores of respondents on IQCODE and MMSE vis a vis their educational qualification. It can be seen that as the level of education decreases the scores on IQCODE move towards "Much Worse" category, similarly from fig no.2.2.2 (b) it can be concluded that as literacy decreases the scores on MMSE move towards "Mildto Moderate"Cognitive Impairment.

4) Relationship among variables

Table No. 2.2.2: Relationship of Age with Education and Cognitive Health

Correlation	Ager
Education	-.762**
IQCODE	.887**
MMSE	.700**

** Correlation is significant at the 0.01 level (2-tailed).

Table no.2.2.2 shows that IQCODE IS positively significantly correlated with IQCODE (pd"0.01, r= .887) and MMSE (pd"0.01, r= .700), whereas education is negatively significantly correlatedwith age (pd"0.01, r=-.762).

Conclusion and Observation

A healthy life style reflects a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. The present research study is empirical in nature. The scope of the study extends to the Jammu and Srinagar Districts where Cognitive Functioning status of 60+ age group of women living in the Jammu and Srinagar city of Jammu and Kashmir State was studied 120 women were selected using random sampling technique.The results of the present study reveal that most of the women from both of the districts were semi literates. They have not been to formal schools but they were able to read religious books. All of them were homemakers and had never worked for earning.Present study reveals that to assess the cognitive functioning of the respondents Informants Questionnaire on Cognitive Decline in the Elderly (IQCODE) and Mini Mental State Exam (MMSE) were used. The informant's reports reveal that most of the respondents from Jammu and Srinagar were either in the category, of 'Not much change' or 'Much worse'. Many of the respondents from Jammu were, reported to be 'A bit worse' by their informant's. Age wise significant differences were seen in the cognitive functioning of the respondents. Respondents falling in the category of 'Much Worse' increases in later age groups.MMSE is a performance test where the respondents themselves complete the cognitive tasks. Results alsoreveal that district wise majority of the respondents in Jammu and Srinagar show Mild to Moderate cognitive impairment. Age wise significant differences were seen in both of the districts. Present study reveals that age and educational level was strongly associated with IQCODE and MMSE. Health systems and

education need to be geared up to facilitate health of aged women as the census 2011 shows that female elderly population is more than male population(1022:1000).Females are also expected to live a longer life hence efforts should be made to make these years qualitatively better for them.

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