



“ QUALITY OF LIFE AND ITS CORRELATES IN THE GERIATRIC POPULATION WITH DEMENTIA: A STUDY FROM EASTERN INDIA “

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**ABSTRACT**

**Background :** Dementia is one of the leading cause of disability in geriatric population . Dementia is associated with a reduced Quality of Life (QoL) the cause of which is multifactorial .Qol is a very important outcome measure of management in persons with dementia . **Objectives :** The objectives of this study were to determine the clinico social profile in the geriatric population under study and to find out the quality of life and its correlates in the persons with dementia under study **Material & Method:** Observational, descriptive study with cross-sectional design. The study was done in 432 geriatric population (>60 years) in the Rural Field Practice Area of a urban Medical College , Kolkata and in the Old Age Home and day Care Centers of a leading Geriatric NGO in Kolkata ., Kolkata .**Results:**441 (51%) of the study population were male and 423 (49%) were female. In persons with dementia age of the person was negatively co-related with the Cornell Brown score. Per capita income was positively co-related with the Cornell Brown score. Number of care givers was positively co-related with the Cornell Brown score. Cornell Brown score was higher in the persons with dementia who have a family history of dementia. Cornell Brown score was significantly higher among the female and the difference was statistically significant. **Conclusion:** In Geriatric Persons with dementia quality of life is to be assessed properly and efforts are taken to be taken measures so that their quality of life can be better.

**KEYWORDS :** Quality of life, correlates, dementia, Geriatric

**INTRODUCTION :**

Quality of life (QoL) is a complex concept, associated with expectations, patterns, and concerns, surrounding the physical and psychological domains, freedom, social contact, environment, and spiritual aspects.<sup>1</sup> In dementia, QoL involves cognitive functioning, activities of daily living, social interaction, and psychological well-being.<sup>2</sup>

Dementia involves many cognitive areas and cognitive deficits cause major deficiency in social as well as workplace functioning. Based on etiology there are four major types of dementias: Alzheimer's disease, vascular dementia, dementia of Lewy bodies, fronto-temporal dementia. Dementia can also be cause by prion disease, Parkinson's disease, brain injury, HIV and other medical and neurological conditions, it can also be caused by various substance used. Among all dementia patients 50 to 60 percent are having similar type of dementia, dementia of the Alzheimer's type.<sup>4</sup>

Dementia is one of the main cause of disability in geriatric population, and it has a main effect by decreasing the capacity to live individually, which needs increasingly multifaceted care.<sup>5</sup>

When dementia is diagnosed and careservices exist, they often are patchy, fragmented, inaccessible, expensive and not suited to meet the needs of people suffering from dementia or their families.<sup>6</sup> This notonly leads to increased suffering for people with dementia and their carers, as well as impacting significantly on thefinances of the family through indirect costs of illness andloss of productivity, but also undermines the credibility ofthe health services and the practice and science of medicine itself. With demographicageing, comes the problem of dementia and India is expected to have one of the largest number of elders with dementia. In 2015, an estimated 4.1 million persons aged over 60years had dementia in India.<sup>7</sup> This is estimated to rise to 6.35 million by 2025 and to 13.33 million by 2050. This indicates that the burden of dementia in India is already significant and is expected to rise rapidly over the next two to three decades. The cost of dementia care in India in 2010, was estimated to be US\$ 3.4billion, with more than half being informal care cost (US\$1.9 billion), nearly one third being direct medical cost (\$1billion) and the rest being direct social cost.<sup>8</sup>

The objectives of this study were to determine the clinico social profile in the geriatric population under study and to find out the quality of life and its correlates in the persons with dementia under study.

**MATERIAL & METHOD :**

This study was observational, descriptive study with cross-sectional design. The study was done in the Rural Field Practice Area of a Government Medical College of Kolkata and in the geriatric facilities of, a leading NGO working in Geriatric care in Kolkata .The prevalence of dementia among geriatric population (>60 years) was greatly varied in various studies in India.<sup>9</sup> Thus a pilot study was conducted in the study site to find out the prevalence of dementia where it came to be 10 % .Taking this prevalence by applying the formula  $z^2pq/l^2$  the required sample size of the study by taking an allowable relative error of 20% came to be 864. The study was done both in rural and urban settings. Half (432) of this required sample size was taken from the rural settings and the other half (432) from the urban settings .

Inclusion Criteria of the Study was Age of the person  $\geq 60$  years; and ability to understand Bengali.

Institutional Ethical Clearance was taken from the Institutional Ethics Committee of the concerned Medical College . Consent was obtained from all study participants.

All the 864 geriatric persons included in the study were screened by MMSE Bengali Instrument of which 78(9%) were found to have Dementia (Screener Diagnosis). Quality of life was assessed in these persons by Bengali validated version of Cornell Brown Scale .

**RESULT AND ANALYSIS :**

Majority, 441 (51%) of the study population were male and 423 (49%) were female. 453 (52.4%) of the study population were Muslim, followed by 389 (45%) of Hindu. Among the study population 207 (24%) had primary education, followed by 177 (19.9%) were educated upto middle school. Residence of 477 (55.2%) study population were rural and 387 (44.8%) were belonged to urban residence. Majority, 487 (56.4%) of the study population belong to lower middle class, 17.2% belong to upper middle class, 16.6% belong to middle class and 9.8% belonged to lower class according to B G Prasad Socio Economic Scale 2014. (Table 1)

**Table 1 : Distribution of study population according to pertinent socio-demographic factors (n=864)**

Attributes		Frequency (n=864)	Percentage
Sex	Male	441	51.0
	Female	423	49.0

Literacy status	Illiterate	41	4.7
	Preschool	140	16.2
	Primary	207	24.0
	Middle school	172	19.9
	Secondary	146	16.9
Social class	Higher secondary	44	5.1
	Graduate and above	114	13.2
	Upper middle class	149	17.2
	Middle class	143	16.6
	Lower middle class	487	56.4
Religion	Lower class	85	9.8
	Hindu	389	45.1
	Muslim	453	52.4
Occupation	Others	22	2.5
	Retired	189	21.9
	Housewife	377	43.6
	Own business	73	8.4
Residence	Government service	53	6.1
	Others	172	20
	Urban	387	44.8
	Rural	477	55.2

In persons with dementia age of the person was negatively co-related with the Cornell Brown score. Per capita income was positively co-related with the Cornell Brown score. Number of care givers was positively co-related with the Cornell Brown score. (Table 2)

**Table 2 : Correlation of Cornell Brown Score (CBS) with different socio demographic variables in study population with dementia (n=78)**

		Age	Per Capita Income	CBS
Age	Pearson Correlation	1	-0.175	-0.266*
	Sig. (2-tailed)		0.125	0.019
	N	78	78	78
Per Capita Income	Pearson Correlation	-0.175	1	0.179
	Sig. (2-tailed)	0.125		0.116
	N	78	78	78
CBS	Pearson Correlation	-0.266*	0.179	1
	Sig. (2-tailed)	0.019	0.116	
	N	78	78	78
No of care givers	Pearson Correlation	-0.104	-0.178	0.212
	Sig. (2-tailed)	0.364	0.118	0.063
	N	78	78	78

In the study population Cornell Brown score was negatively co-related with age, positively correlated with per capita income and MMSE score. Correlation with MMSE score was statistically significant. (Table 3)

**Table 3 : Correlation (Pearson) between Cornell Brown Score and Age, Per Capita Income and MMSE in study population with dementia (n=78)**

		Correlations			
		CBS	Age	Per Capita Income	MMSE
CBS	Pearson Correlation	1	-0.202	0.202	0.960**
	Sig. (2-tailed)		0.076	0.076	0.000
	N	78	78	78	78
Age	Pearson Correlation	-0.202	1	-0.175	-0.176
	Sig. (2-tailed)	0.076		0.125	0.122
	N	78	78	78	78
Per Capita Income	Pearson Correlation	0.202	-0.175	1	0.094
	Sig. (2-tailed)	0.076	0.125		0.415
	N	78	78	78	78
MMSE	Pearson Correlation	0.960**	-0.176	0.094	1
	Sig. (2-tailed)	0.000	0.122	0.415	
	N	78	78	78	78

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

Mean Cornell Brown score was higher among the rural population and the difference of score between rural and urban population was statistically significant. CB Score among the nonsmokers was higher than the smokers and the difference was statistically significant. CB Score was higher among the diabetic population than the nondiabetic population but the difference was not statistically significant. CB Score was higher in the persons with dementia who have a family history of dementia and the difference was statistically significant. CB Score was significantly higher among the female and the difference was statistically significant. CB Score in persons with dementia did not significantly vary between those with psychiatric disorder and those without psychiatric disorder. (Table 4)

**Table 4 : Univariate analysis to find out the association between CB Score and Residence, smoking, diabetes, family having dementia, gender, Psychiatric Disorder in study population with dementia (n=78)**

Group Statistics								
	Smoking	N	Mean	Std. Deviation	Std. Error Mean	t value	P value	Significance
CBS	Urban	20	15.00	1.076	0.241	2.130	0.013	Significant
	Rural	58	18.12	4.429	0.582			
CBS	Smoker	24	15.21	2.449	0.500	2.606	0.001	Significant
	Non Smoker	54	18.26	4.327	0.589			
CBS	Diabetic	71	17.46	4.252	0.505	1.834	0.738	Non significant
	Non diabetic	7	15.86	0.690	0.261			
CBS	Family having dementia	48	19.27	3.913	0.565	2.940	<0.001	Significant
	Family not having dementia	30	14.20	1.769	0.323			
CBS	Male	24	15.75	2.172	0.443	2.718	0.048	Significant
	Female	54	18.02	4.537	0.617			
CBS	Presence of Psychiatric Disorder	34	17.38	5.170	0.887	1.272	0.472	Non significant
	Non presence of Psychiatric Disorder	44	17.27	3.060	0.461			

It was also found that the difference of mean Cornell Brown score in the different educational categories varied greatly and the difference of score between different educational classes was statistically significant. Difference of mean Cornell Brown score in the different occupational class varied greatly and the difference of score between different occupational classes was also statistically significant. Mean Cornell Brown score was higher among the Hindu population but the difference was not statistically significant

**DISCUSSION :**

In the present study 51% were male and 49% female. This finding was almost same in the study conducted by K.Seby et al where 50.9% of the study population were male and 49.1% were female.<sup>10</sup> In the study population majority (52.4%) were Muslim and 45% were Hindu. Coming to the occupation majority (43.6%) were house wife, 21.9% were retired persons. Coming to the educational status of the population majority (24%) were educated upto primary school, 19.9% upto middle school, 16.9% upto secondary education. 44.8% of the study population were residing in urban area and 55.2% in rural area. 16.6% of the study population were in class III of Prasad Socio Economic Scale while 17.2% were in class IV of Prasad Socio Economic Scale. In the study conducted by Karmakar N,et al it was found that 43.4% belonged to upper lower class and 14.5% belong to lower middle class.<sup>11</sup> In 48.7% of study population psychiatric disorder were present. In the study conducted by Das SK et al it was found that Behavioral and Psychological Symptoms of Dementia (BPSD) was present in 70.9% of cases and the commonest psychiatric abnormalities were depressive syndrome (43.8%).<sup>12</sup> It was found that 24.9% of the study population were addicted to smoking, 8.2% had diabetes. Study conducted by K Poddar et al found that 8.3% of the geriatric study subjects were smoker and 29.9% were suffering from diabetes.<sup>13</sup>

Cornell Brown Score was calculated for quality of life in persons with dementia. It was found to be negatively correlated with age. Its relationship with per capita income was non significant. The Cornell Brown Score was positively correlated with MMSE and correlation was found to be significant. The difference between Cornell Brown

Score in the urban and rural population was found to be significant. The difference of mean of Cornell Brown Score was statistically significantly different between smokers and non smokers. The difference of mean of Cornell Brown Score between those having family history of dementia with those not having it was found to be significant. The difference of mean Cornell Brown Score between male and female was found to be statistically significant. The difference of Cornell Brown Score in different groups of education was found to be significant. The difference of Cornell Brown Score and different classes of education was found to be non significant. The difference between Cornell Brown Score in different groups of religion was found to be non significant.

#### CONCLUSION:

Dementia is emerging as an important public health problem. With the increasing ageing population its public health importance is going to increase day by day. Quality of life in persons with dementia is an important outcome measure of the well being of the persons with dementia. Coordinated efforts from all sectors is needed to make the quality of life of geriatric persons with dementia better. More Research is needed in this regard. In this present time with the launch of Ayushman Bharat where comprehensive packages for the care and management of elderly care is been designed we hope prevention and management of dementia in geriatric persons will improve in India.

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