Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/13262
DOI URL: http://dx.doi.org/10.21474/IJAR01/13262

RESEARCH ARTICLE

ELDERLY DEPENDENCY IN INDIA: FINDINGS FROM CENSUS DATA

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Manuscript Info

Manuscript History
Received: 10 June 2021
Final Accepted: 14 July 2021
Published: August 2021

Key words:-
Dependency Ratio, Elderly, Economic Dependency

Abstract

The changing demographic profile resulting in ageing of population has thrown many new challenges in the social, economic and political domains in India due to the huge number of aged population. The economic support to the older persons is very much dependent upon the earning ability of the adults. The study mainly focuses on the quantum of dependency burden and assesses the dependency burden in relation to the prevailing economic situation. The old age dependency ratio (OADR) in India estimated as ratio of population 60+ to that of 15-59 years is found to be 0.14 and the old age economic dependency ratio (OAEDR) is much higher at 0.23. Both OADR and OAEDR is highest in Kerala followed by Punjab and Haryana among the major states in India. Elderly dependency is high in most of the states and the economy is not prepared to bear the burden. The Economic Dependency ratio is almost three times the total dependency when we add the number of non workers 15-59 years in the dependent group and eliminate non workers 15-59 years from the economically active group in India. The unemployment rates are found to be quite high in states where the elderly dependency burden is higher. Increased longevity demands higher savings rates to cater to the needs of the old-old group. So the benefit of having a large working age population remains to be tapped through creating more employment opportunities.

Introduction:-

Aging is a universal phenomenon and natural biological process of life cycle. It is not a disease or some condition to be cured. Population ageing is becoming a major concern all over the world, both for developed and developing countries. In India, as well as in countries across the globe, population is aging very rapidly. The increasing life expectancy and declining fertility bringing about changes in the age structure is said to be fuelling India's population growth. India is home to 13 per cent of the World's older population. Global population projections show that in India, the number of older persons is projected to grow by 64 per cent during 2015-30 (United Nations, 2015). Five countries (China, India, the United States, Japan and the Russian Federation) accounted for half of the World's population aged 60 years or over in 2015. The five countries with the largest number of oldest-old persons are China, the United States, India, Japan and Germany and these countries together accounted for 48 per cent of the World's oldest-old in 2015 and 19 countries held three quarters of the global population aged 80 years or over.

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Aged population (60+ years) in India as per Census of India 2011 is 10,38,49,040 out of which 53 million are females and 51 million are males. Both the share and size of elderly population has been increasing over time. From 5.6 percent in 1961 the proportion has increased to 8.6 percent in 2011. The growth rate of elderly is now double that of the overall growth rate of population. Life expectancy at birth in India climbed from 37 years in 1950 to 65 years in 2011. So the life expectancy level has increased dramatically from the time of independence to the present, with further increases projected over the next two decades. Population projection in India shows the aged population to be 9.6 percent of the total population in 2021 and is projected to increase to 15.5 percent by 2036 which would be about 2.29 million in absolute numbers (Registrar General of India, 2019).

Wide interstate variations are observed in the proportion of aged population. Decreasing fertility and increasing life expectancy leads to continued ageing of population and States across India are at different levels of fertility transition. So in the States that are already into replacement levels of fertility the proportion of aged population is higher. Kerala, the first State to achieve replacement levels of fertility 3 decades earlier (in 1987) has the highest proportion of aged population (12.6 percent). Goa (11.2 percent), Tamil Nadu (10.4 percent), Punjab (10.3 percent) and Himachal Pradesh (10.2 percent) closely appear in the list of States that are rapidly ageing. National level projected population shows the aged proportion in Kerala to reach 22.8 percent by 2036 which means nearly one in four Keralites to be aged in another 15 years when the proportion of children would be 17.7 percent of the total population much less than the aged (Registrar General of India, 2019)

When recent studies continue to highlight the key challenges to be the reduced mobility, social and structural barriers, wage loss, familial dependencies, and declining social engagement (Dey et al., 2012), poverty is mentioned as the single most pressing challenge to the welfare of older person and also a multiplier of risk for abuse (Shenoy, 2014). With increasing longevity and debilitating chronic diseases, many elder citizens now need better access to physical infrastructure. Since the past decade, studies have been emphasising that geriatric services require strong emphasis under public health system. Some studies had highlighted geriatric care is relatively new in many developing countries like India and very few physicians have specialized in geriatric care and are also unaware of the clinical and functional implications of aging (Ganghadharan, 2003; Inge and Nath, 2008; Krishnaswamy et. al., 2008). Programmes and policies have been addressing the problems of the aged and specific focus has been laid on geriatric care in particular. However, at the other side of the spectrum, such higher aged population proportional to the total population and the associated problems occurring also raises concerns primarily on quantum of the active work force population who have to support the aged population.

The changing demographic profile resulting in ageing of population has thrown many new challenges in the social, economic and political domains especially in India due to the huge numbers. Important challenges triggered with growing elderly population is the provision of health care, financial assistance, and social and emotional support. The changing family values, living arrangements, and lifestyles are crucial areas of concern. Indian traditional joint family system had been the main shelter for aged persons. Even presently they are regarded as respectable in family, but in the wake of urbanization and modernization this joint family system is fast disintegrating, giving birth to neutral families and thus neglecting them. And hence living arrangements are cropping up as an issue. This has largely been due to factors such as mobility of people in search of livelihood. The families have thus been forced to leave behind the elderly parents, grandparents. Those who need emotional and social support are thus deprived of care. Elderly family members who are healthy and lead an active life support the families by involving themselves in household activities like buying milk, vegetables from the market, picking up or dropping the grandchild at the school, etc. But those who are inactive due to old age related health problems are deprived of the care they need and are often left to the care of maids. These and other issues are addressed by the Government in the National Policy for Elderly, which has available provisions for extension of support for the institutionalized elderly care apart from the larger participation of the voluntary and community sector.

Of the major changes that would emerge with growing aged population is the dependency burden which would describe the consequences the country will have to face in terms of economic burden. The familial support for the aged is fluctuating due to the prospective shifts in the age structure of the population which suggest that the extent of the problems is due to the past trends in fertility rates and that in general it will tend to become greater and probably be very serious around 2025. The overall dependency burden in India reduced to 646 in 2011 due to the decline in fertility. The projected total age dependency ratio is expected to decline further to 536 by 2036. However the Old Dependency ratio (ratio of 60+ to 15-59) is projected to increase from 138 to 231 during 2011-2036 (Registrar General of India, 2019). In India, 47 percent of elderly were financially dependent on others and partial dependency

was noted among 23 percent (NSSO 75th round). So for a deeper understanding of the dependency burden in India, this study mainly focuses on the quantum of dependency burden and assesses the dependency burden in relation to the prevailing economic situation.

Data and method

To understand the ageing phenomenon the most important source of data is the decadal Census of India publications from the Office of the Registrar General & Census Commissioner, India Ministry of Home Affairs, Government of India. Apart from the Census of India publications, the study uses the Sample Registration System that provides information on the life expectancy. The study also uses findings from various publications on the subject to substantiate the findings wherever necessary.

Univariate analysis employing simple percentages elicits the quantum of dependency among elderly. Simple correlation technique is employed to bring out the relationship between dependency and economic situation.

$$\text{Total dependency ratio} = \frac{(P_{0-14} + P_{60+})}{P_{15-59}}$$

$$\text{Old Age Dependency Ratio} = \frac{P_{60+}}{P_{15-59}} \text{x} 100$$

A modified method of estimating dependency as measured by Bhagat and Unisa (2006) is attempted here. The authors argue that not all those aged 15-59 years are employed or generate income. Similarly all those aged 60 years and above are not economically inactive. So with changes in the numerator and denominator the measure becomes

$$\text{Old Age Economic Dependency Ratio} = \frac{P_{\text{nonworkers } 60+}}{P_{\text{workers } 15-59}}$$

Location Quotient (LQ) is a simple measure. It compares the achievement of a sub-areal unit in a particular aspect to the achievement of the whole country in the same aspect. This measure reflects whether the sub-areal unit is performing above or below the national average. Location Quotient (LQ), in case of Old age Dependency is defined as follows,

$$\text{Location Quotient LQOADR} = \frac{\text{OADR of a particular State}}{\text{OADR of India}}$$

When the Location Quotient is below 1, it indicates that the sub-areal unit (states) are having dependency below the national average and vice-versa.

Although the study here concentrates on the elderly dependency, it is justifiable to understand the dependency of the total population especially the economic dependency. So the economic dependency of the total population is measured here similar to the concept addressed earlier by including the inactive population or the non workers by the Census definition. Zamaro et. al (2008) has calculated refined measure of economic dependency ratios which are used here.

$$\text{Economic Dependency Ratio 1} = \frac{P_{0-14} + P_{60+} + P_{\text{nonworkers } 15-59}}{P_{\text{workers } 15-59}}$$

Further if we consider the workers and non workers among the aged population, a refined measure would be

$$\text{Economic Dependency Ratio 2} = \frac{P_{0-14} + P_{\text{non workers } 60+} + P_{\text{nonworkers } 15-59}}{P_{\text{workers } 15-59} + P_{\text{workers } 60+}}$$

In a country like India with a huge workforce population, a comparison of the Adult dependency with that of old age dependency would also be of great importance because in most of the countries the old age dependency is the offshoot of adult dependency. Adult dependency is defined as the number of non-workers in the age group 15-59 divided by number of workers in the age group 15-59 (per 100 adult workers).

$$\text{Adult Dependency Ratio} = \frac{P_{\text{nonworkers } 15-59}}{P_{\text{workers } 15-59}}$$

To what extent the elderly are dependants and how this dependency is changing with respect to the economic dependency is very important for macro policy formulation and hence the attempt.

Simple correlation is done to find out the relation between dependency ratio and selected socio economic variables: per capita income, percent urban, literacy.

Findings

It is a common understanding that with India's demographic transition, improvement in life expectancy has resulted in a huge elderly population. Their living arrangement as depicted by the household wise distribution point to severe problem of loneliness and the adult economically active age group has a huge burden to support. The lack of support has forced them to lead a lonely life.

Coupled with this, the disability among aged population also inflates the dependent population. Table 3.1 draws inference on the proportion of aged living alone in households as discernible from the Census of India 2011 data sources.

Table 3.1:- Percentage distribution of Aged population in Single member Households, India 2011.

STATES	Total population of Single member households	Lonely Aged member	Male Aged	Female Aged
India	4976133	48.3	27.2	72.8
Major states				
Andhra Pradesh	715938	62.2	19.5	80.5
Assam	61891	28.3	27.4	72.6
Bihar	267661	54.1	36.5	63.5
Chhattisgarh	169739	48.4	25.6	74.4
Delhi	28192	19.8	40.5	59.5
Gujarat	218804	46.2	27.3	72.7
Haryana	45632	38.2	35.9	64.1
Himachal Pradesh	35002	40.8	30.5	69.5
Jammu and Kashmir	14603	38.0	43.2	56.8
Jharkhand	71403	37.9	29.2	70.8
Karnataka	260148	44.5	18.9	81.1
Kerala	169606	52.6	21.3	78.7
Madhya Pradesh	357526	49.6	34.9	65.1
Maharashtra	218804	46.2	27.3	72.7
Odisha	208809	45.8	28.2	71.8
Punjab	64261	41.7	42.3	57.7
Rajasthan	181310	44.5	30.9	69.1
Tamil Nadu	445123	66.2	21.5	78.5
Uttar Pradesh	483406	40.5	44.3	55.7
Uttarakhand	46757	37.6	27.2	72.8
West Bengal	320108	43.5	21.2	78.8
Minor states				
Arunachal Pradesh	2380	13.4	50.2	49.8
Goa	8416	43.4	24.3	75.7
Manipur	3995	37.6	28.6	71.4
Meghalaya	5611	27.0	38.8	61.2
Mizoram	2231	19.6	45.9	54.1
Nagaland	5820	25.1	33.9	66.1
Sikkim	1158	17.4	62.0	38.0
Tripura	12590	43.0	24.7	75.3

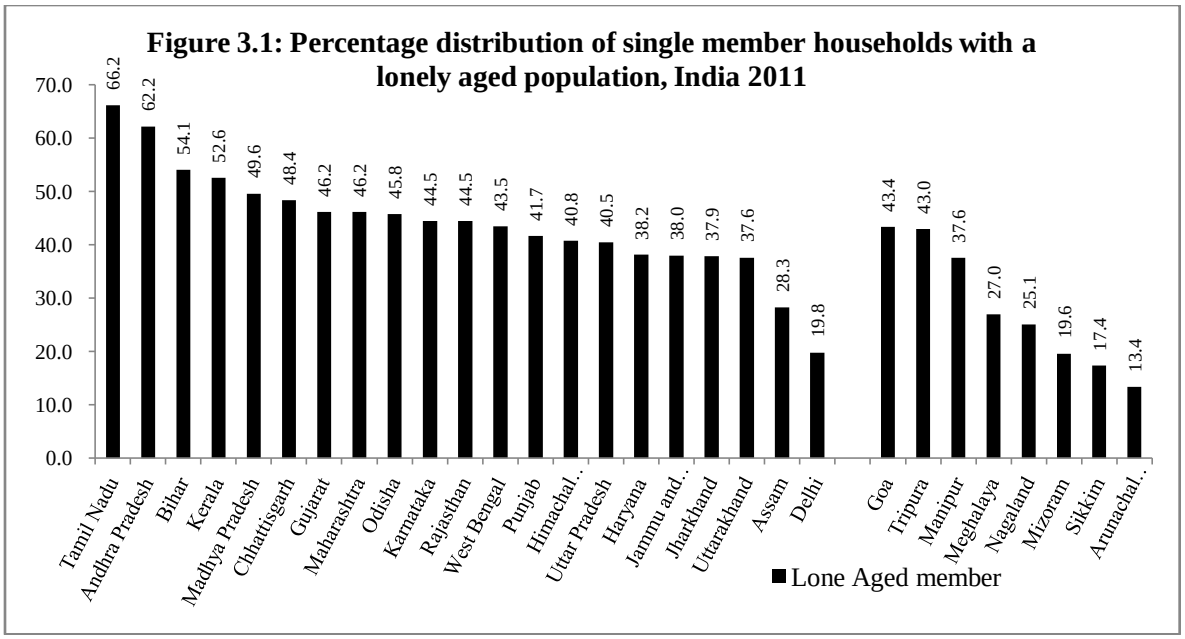


Table 3.1 and Figure 3.1 present information on the gender wise distribution of households with lonely aged member. Over 4 in five single member households with lonely aged member have a lonely female aged person in the states like Karnataka (81.1 percent) and Andhra Pradesh (80.5 percent). West Bengal, Kerala and Tamil Nadu follows closely with around 78 percent lonely aged member households in this category. In all the major states the females face more problem of loneliness. Among the minor states, only in Arunachal Pradesh and Sikkim male elderly remain lonely in single member households than females.

Disability among elderly

When the subject of elderly dependency is dealt with, one of the most important aspects that needs careful scrutiny is the disability among the elderly. The disabled group form the dependent group who need support, physically, emotionally and also financially. So the level of dependency among the elderly is examined here.

Table 3.2:- Percentage distribution of elderly by disability status, India 2011.

STATES	PERSONS	MALES	FEMALES
India	20.1	18.1	22.5
Major states			
Andhra Pradesh	21.7	20.2	23.5
Assam	22.4	20.2	25.1
Bihar	14.0	14.0	14.1
Chhattisgarh	28.0	23.9	32.6
Delhi	21.3	18.1	26.0
Gujarat	17.5	15.0	20.8
Haryana	22.7	19.9	26.6
Himachal Pradesh	31.4	28.0	35.7
Jammu and Kashmir	23.2	21.5	25.5
Jharkhand	19.2	17.8	20.9
Karnataka	16.6	15.3	18.2
Kerala	29.5	25.6	33.7
Madhya Pradesh	21.5	18.7	25.3
Maharashtra	17.3	16.0	19.1
Odisha	26.4	24.5	28.6
Punjab	18.6	17.4	20.2
Rajasthan	35.7	28.8	43.8

Tamil Nadu	16.1	15.8	16.5
Uttar Pradesh	15.9	14.9	17.2
Uttarakhand	24.0	20.8	27.8
West Bengal	18.1	16.6	20.1
Minor states			
Arunachal Pradesh	18.1	16.9	19.5
Goa	28.0	24.3	31.9
Manipur	15.4	15.3	15.5
Meghalaya	12.3	11.5	13.3
Mizoram	19.0	18.1	20.1
Nagaland	24.1	23.0	25.4
Sikkim	24.9	25.3	24.4
Tripura	20.7	17.9	24.2

Among the disabled population, one in five are elderly persons in India. Gender differentials are visible with the proportion of disabled aged females (22.5 percent) being greater than males (18.1 percent). Among the disabled population in the major states, the proportion of disabled elderly population is highest in Rajasthan (35.7 percent) followed by Himachal Pradesh (31.4 percent), Kerala (29.5 percent), Chhattisgarh (28 percent). The districts occupying the bottom position in the list of elderly disabled population is Uttar Pradesh (15.9 percent) and Bihar (14.0 percent).

Goa tops the list of minor states with 28 percent of the disabled population being the aged population. Meghalaya has the least percentage of elderly disabled population (12.3 percent).

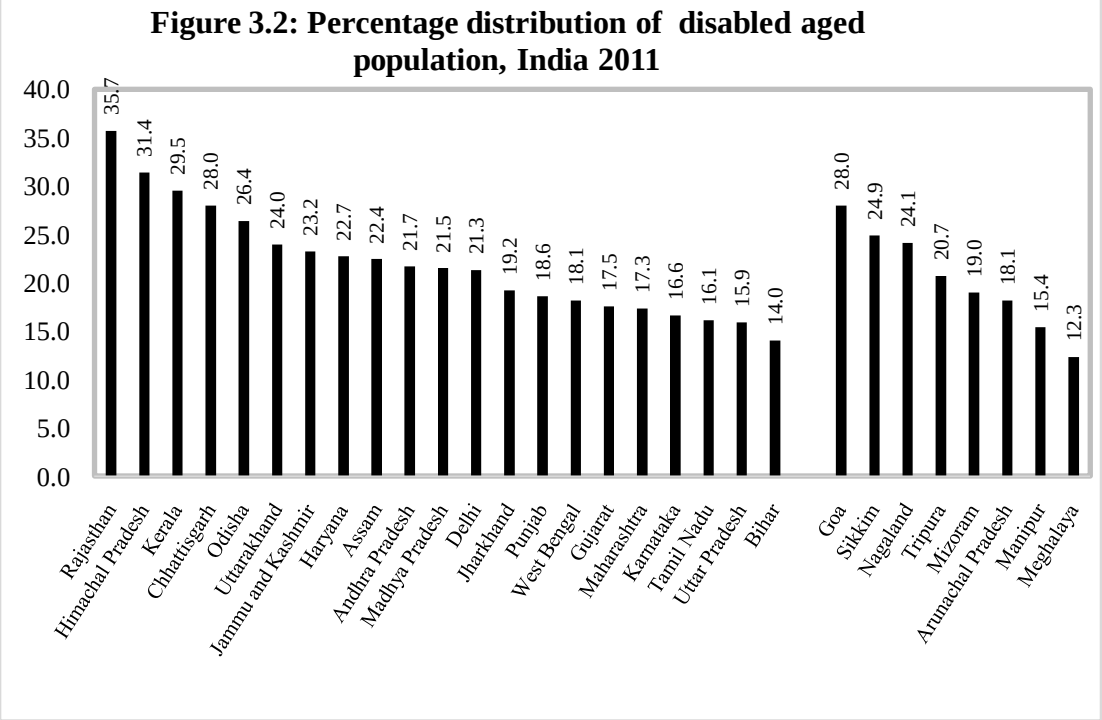


Table 3.2 and Figure 3.2 shows the gender differentials in disability in India. When 22.5 percent of the disabled females are elderly, the males are at slightly greater advantage with 18.1 percent disability. State wise differentials show that among female and male disabled population, Rajasthan (43.8 percent) has the highest share of elderly disabled and it is least in Bihar. In general female elderly bear a greater brunt of disability in all the states with the differentials being wider in Rajasthan, Himachal Pradesh, Kerala etc and narrow gender differentials in Bihar, Tamil Nadu UP and Karnataka. Among the minor states, Goa has the highest disability burden among females whereas Sikkim has slightly more males elderly disabled population percentage.

Widowhood

Yet another demographic event to be considered while assessing elderly dependency is the proportion of elderly widows/widower. Life without a husband or a wife among elderly makes them more dependent in the family. Here the percentage widowed are furnished in Table 3.3.

Table 3.3:- Percentage distribution of elderly by widowhood, India, 2011

States	Percentage widowed		
	Total	Male	Female
India	31.5	14.6	47.8
Major States			
Andhra Pradesh	34.5	12.4	54.2
Assam	34.6	12.4	57.5
Bihar	26.2	16.3	37.5
Chhattisgarh	36.0	17.8	51.6
Delhi	30.1	15.5	44.9
Gujarat	32.0	15.5	46.6
Haryana	27.8	15.8	39.5
Himachal Pradesh	33.9	15.1	51.6
Jammu and Kashmir	28.6	16.6	41.8
Jharkhand	31.3	15.8	46.9
Karnataka	33.6	10.9	54.2
Kerala	35.7	8.8	57.6
Madhya Pradesh	31.1	16.6	44.8
Maharashtra	29.6	11.9	45.4
Odisha	32.0	15.2	48.8
Punjab	28.4	17.7	39.2
Rajasthan	31.1	15.1	45.6
Tamil Nadu	35.1	13.7	55.6
Uttar Pradesh	28.9	19.2	39.4
Uttarakhand	33.8	15.5	51.4
West Bengal	34.1	10.8	57.2
Minor states			
Arunachal Pradesh	29.1	14.9	44.5
Goa	33.7	9.7	53.8
Manipur	26.6	12.3	40.9
Meghalaya	33.0	12.3	52.2
Mizoram	27.3	13.9	40.7
Nagaland	23.5	10.4	38.6
Sikkim	28.1	18.4	40.0
Tripura	37.0	12.7	60.5

Nearly one in three elderly are widowed. Gender differentials are evident as 47.8 percent of the female elderly persons are widowed in comparison to 14.6 percent among males which is evidently due to the increased life expectancy among females compared to males in India. So a substantial proportion of females live without spouse which makes them more dependent on their families.

A state wise comparison points to wide differentials varying from 35.7 percent in Kerala to 26.2 percent in Bihar among the major states and from 37 percent in Tripura to 23.5 percent in Nagaland. If the gender differentials by states are analysed, maximum gender differential is found in Kerala where 57.6 percent of the elderly remain widowed in comparison to 8.8 percent among males. Life expectancy favour females in Kerala which is reflected in the proportion widowed. Karnataka, Assam, Andhra Pradesh and Tamil Nadu also show similar wide gender differentials corresponding to the gender differentials in life expectancy. Among the minor states, Tripura, Goa and Meghalaya also show wide gender gap in widowhood among elderly. It is 12.7 percent among males and 60.5

percent among female elderly in Tripura, 9.7 and 53.8 percent among males and females respectively in Goa and 12.3 and 52.2 percent among males and females respectively in Meghalaya.

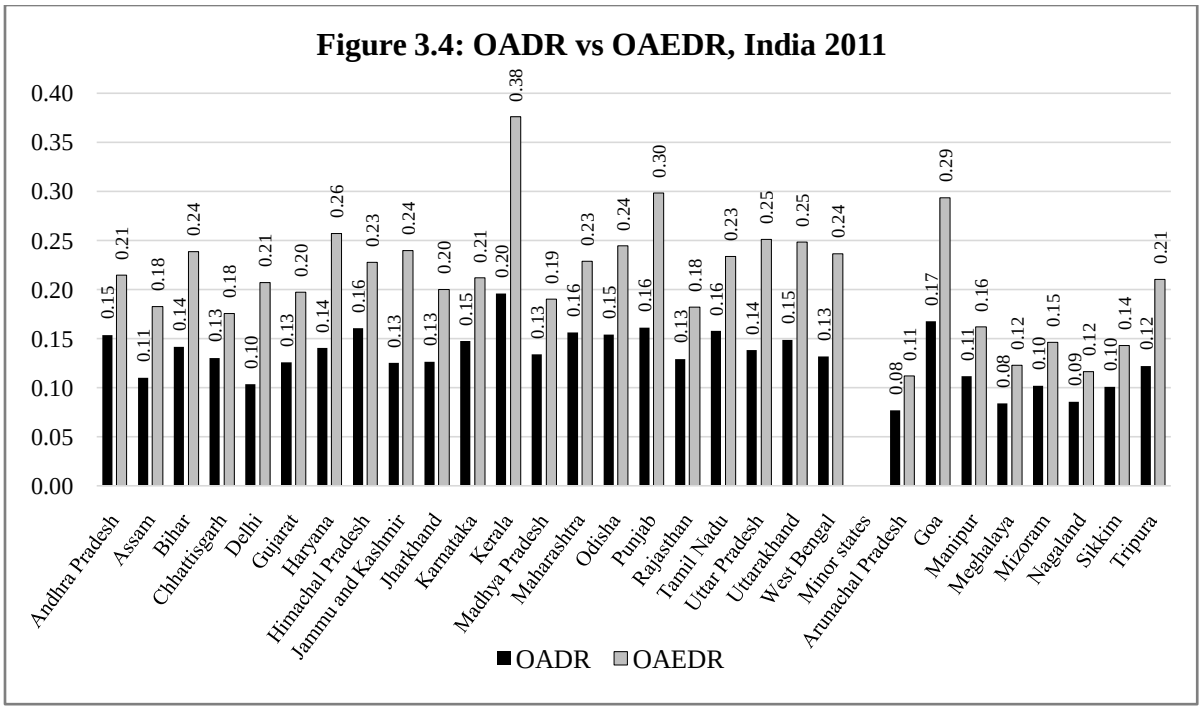
Dependency Ratio

Now the magnitude of this dependency is assessed using the most common measured and widely used Dependency Ratio. Table 3.4 draws inference on this aspect.

Table 3.4:- Elderly Dependency Burden in India 2011

STATES	Old Age Dependency Ratio (OADR)	Old Age Economic Dependency Ratio (OAEDR)	Location Quotient LQOADR	Adult dependency (15-59)	Relative Dependency
India	0.14	0.23		0.71	0.200
Major states					
Andhra Pradesh	0.15	0.21	1.08	0.54	0.251
Assam	0.11	0.18	0.77	0.75	0.146
Bihar	0.14	0.24	1.00	0.48	0.264
Chhattisgarh	0.13	0.18	0.92	0.40	0.238
Delhi	0.10	0.21	0.73	1.09	0.153
Gujarat	0.13	0.20	0.89	0.68	0.200
Haryana	0.14	0.26	0.99	0.92	0.203
Himachal Pradesh	0.16	0.23	1.13	0.42	0.270
Jammu and Kashmir	0.13	0.24	0.88	0.90	0.170
Jharkhand	0.13	0.20	0.89	0.61	0.183
Karnataka	0.15	0.21	1.04	0.56	0.242
Kerala	0.20	0.38	1.38	1.02	0.293
Madhya Pradesh	0.13	0.19	0.94	0.51	0.206
Maharashtra	0.16	0.23	1.10	0.33	0.449
Odisha	0.15	0.24	1.09	0.65	0.243
Punjab	0.16	0.30	1.13	1.02	0.214
Rajasthan	0.13	0.18	0.91	0.48	0.223
Tamil Nadu	0.16	0.23	1.11	0.62	0.231
Uttar Pradesh	0.14	0.25	0.97	0.99	0.146
Uttarakhand	0.15	0.25	1.05	0.78	0.192
West Bengal	0.13	0.24	0.93	0.85	0.197
Minor states					
Arunachal Pradesh	0.08	0.11	0.54	0.55	0.086
Goa	0.17	0.29	1.18	0.84	0.288
Manipur	0.11	0.16	0.79	0.55	0.141
Meghalaya	0.08	0.12	0.59	0.55	0.103
Mizoram	0.10	0.15	0.72	0.52	0.146
Nagaland	0.09	0.12	0.60	0.43	0.085
Sikkim	0.10	0.14	0.71	0.46	0.151
Tripura	0.12	0.21	0.86	0.76	0.176

The old age dependency ratio (OADR) in India estimated as ratio of population 60+ to that of 15-59 years is found to be 0.14. If expressed in percentage it would mean that for every 100 persons 15-59 years there are 14 elderly dependents. Frank Hobbs (2004) pointed that the conventional dependency does not point to the actual economic dependency. He suggested that instead of OADR, the economically inactive population should be divided by economically active population to get at economically dependent ratio. If this measure is assumed to be a crude one with the denominator not reflecting the actual economically active population, a refined measure would be including only the working population as base. Hence the old age economic dependency ratio (OAEDR) thus calculated is much higher at 0.23.



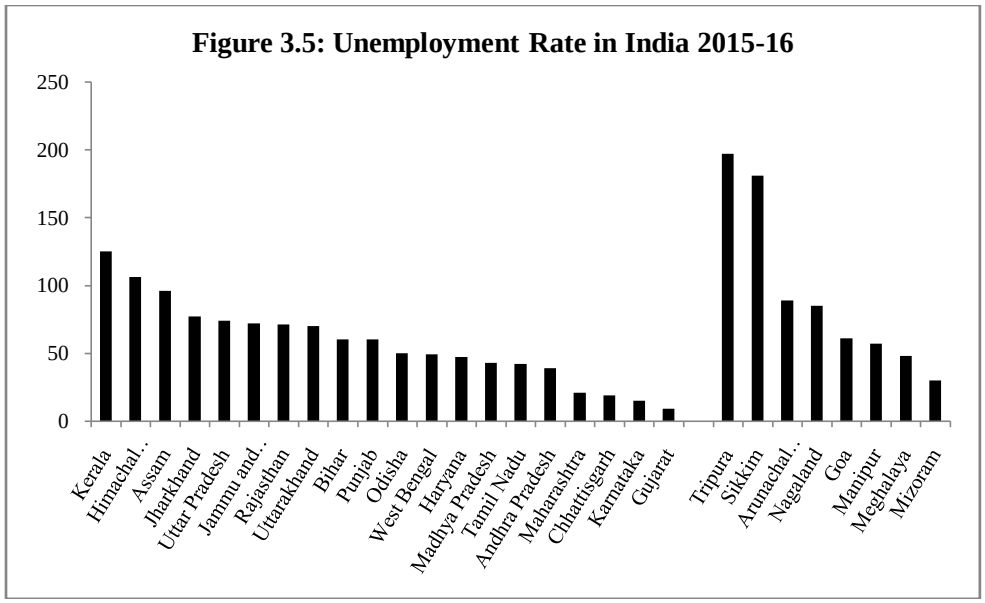
Both OADR and OAEDR are highest in Kerala followed by Punjab and Haryana among the major states in India. The larger north Indian states like UP, Uttarakhand, Bihar etc too show higher dependency burden with OAEDR being higher than OADR. Kerala and Punjab also shows wide differentials if OADR and OAEDR are compared which means that a large population in the working age group remains unemployed which leads to higher OAEDR.

So the benefit of having a large working age population remains to be tapped through creating more employment opportunities in such states. The low employment rate, which forms the reason for high OAEDR could be due to two reasons, the first being that the regular flow of high income in the form of remittance discourages the propensity to work by eligible working class and the second the census enumeration might suffer from the coverage error as the population which resides abroad might be left out. The elderly dependency might have been also increased due to the return of emigrant old age population as they retire from work (James, 1994). Dependency burden is comparatively lesser in Assam, Rajasthan, Chhattisgarh. Among the minor states, Goa has the highest dependency burden and also shows wide difference between OADR and OAEDR. Arunachal Pradesh has the least dependency ratio.

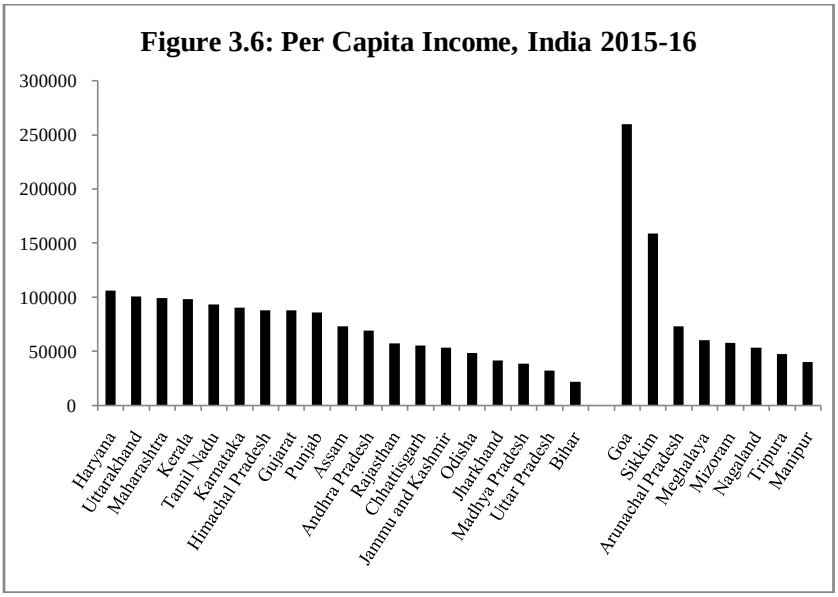
Table 3.4 also gives the location coefficient which gives an idea of how the states are placed relative to the dependency ration of the country. Eleven major states have LQOADR below 1. Those above the value of 1 has largely failed to bring down the dependency burden and Kerala is a fore-runner in this regard.

Old age dependency is considered to be the offshoot of adult dependency. The adult dependency ratios (Table 3.4) show a great burden of adult dependents in India. In most of the states, adult dependency (15-59) is much higher than old age economic dependency. The relative dependency is found to be much lower than one, which indicates the adult dependency is higher than that of the aged population.

A look at the unemployment rates as depicted in Figure 3.5 shows unemployment to be highest in the Kerala where the proportion of aged is the highest. Punjab, Karnataka and Tamil Nadu with higher aged population proportion are better placed than Kerala in this regard. The two minor states of Tripura and Sikkim have higher unemployment rate seven more than Kerala.



If the Per capita income (at current prices) in India is seen, it is found that Haryana has the highest per capita income in India closely followed by Uttarakhand, Maharashtra and Kerala. Odisha, Jharkhand, MP, UP and Bihar remains the states with low PCI.



Goa, although a minor state in terms of population, reports the highest PCI for any state. Sikkim too is well placed than other larger states in India. So Goa is the only state well placed to support the dependency burden in contrast to Kerala which has the greatest elderly dependency burden under conditions of high unemployment rate and low PCI.

A simple correlation analysis is performed to find the association between the elderly dependency burden and selected variables. How urbanized a state is likely to have some influence on dependency burden due to more opportunities for employment and living conditions. Similarly level of literacy is also assessed due to the chances of better opportunities for highly literate states for income generation activities. However old age dependency is not observed to have any strong association with proportion of urban population and literacy. Adult dependency too do not have much relation.

Table 3.5:-Correlation coefficients: Dependency ratios and socio- economic variables, India 2011.

Variables	Old age dependency ratio	Old age economic dependency ratio	Adult dependency (15-59)
Per capita income	0.367	0.403	0.039
Percent urban	0.096	0.225	-0.050
Percent literacy rate	0.173	0.222	-0.041

So elderly dependency is high in most of the states and the economy is not prepared to bear the burden. But the question still remains as to how long the economically active group of population will have to support. Life expectancy at age 60 years will show the expected number of years a person at age 6o is likely to survive. Data taken from SRS reports is available only for the major states in India.

Table 3.6:- Expectation of life at age 60 years in States in India

	Total	Male	Female
India	18.1	17.3	18.9
Major states			
Andhra Pradesh	18.5	17.7	19.3
Assam	16.7	16.1	17.4
Bihar	17	17.2	16.7
Chhattisgarh	15.6	14.5	16.7
Delhi	20.4	19.4	21.3
Gujarat	19	17.7	20.3
Haryana	18.9	17.7	20.4
Himachal Pradesh	20.4	18.5	22.5
Jammu and Kashmir	21.8	20.1	24
Jharkhand	17.2	17.1	17.3
Karnataka	17.5	16.6	18.3
Kerala	20.1	18.1	22
Madhya Pradesh	16.9	15.9	18
Maharashtra	19.2	18.7	19.6
Odisha	18.1	17.3	19
Punjab	20.8	20.1	21.5
Rajasthan	18.7	17	20.5
Tamil Nadu	18.6	17.6	19.6
Uttar Pradesh	16.7	16.1	17.4
Uttarakhand	20	17.9	22.1
West Bengal	18	17.4	18.6

It is found that those states which have higher dependency burden also have higher life expectancy at age 60 years. On an average a person aged 60 years in Kerala and Punjab, the two states with higher dependency burden, is expected to live 20 years more.

Similar situation exists in other southern states and also Uttarakhand, Haryana etc. In all these states both the OADR and OAEDR are quite high and aged persons in these states are expected to live another 18-20 years. This means that longer duration of support needs to be given and the stress on the working age group are more.

To understand the elderly dependency and the burden on the working age group, the total dependency and the economic dependency ratios are also assessed. The total dependency ratio includes children 0-14 years and those aged 60+ as the dependent population and those aged 15-59 as the working age population supporting the dependent population.

The first measure (EDR1) adds the number of non workers 15-59 years in the dependent group and eliminates non workers 15-59 years from the economically active group. The second measure (EDR2) is a more refined form of EDR1 which eliminates workers aged 60+ from the dependent group and adds them to the economically active group. Table 4 presents the values thus calculated.

Total dependency values in India indicate that there are 65 dependents for every 100 persons in the working age group. But EDR1 is almost three times the total dependency when we add the number of non workers 15-59 years in the dependent group and eliminates non workers 15-59 years from the economically active group in India (1.8).

Table 3.7:-Total Dependency ratio, India 2011

	Total dependency ratio	**Economic dependency ratio1 (EDR1)**	**Economic dependency ratio 2 (EDR2)**
INDIA	0.65	1.8	1.6
Major states			
Andhra Pradesh	0.56	1.4	1.2
Assam	0.65	1.9	1.7
Bihar	0.91	2.5	2.1
Chhattisgarh	0.66	1.3	1.1
Delhi	0.52	2.2	2.0
Gujarat	0.59	1.7	1.5
Haryana	0.62	2.1	1.9
Himachal Pradesh	0.57	1.2	0.7
Jammu and Kashmir	0.70	2.2	2.0
Jharkhand	0.77	1.8	1.6
Karnataka	0.56	1.4	1.2
Kerala	0.56	2.2	1.9
Madhya Pradesh	0.71	1.6	1.4
Maharashtra	0.58	1.6	1.3
Odisha	0.62	1.7	1.4
Punjab	0.56	2.2	1.9
Rajasthan	0.73	1.6	1.4
Tamil Nadu	0.52	1.5	1.2
Uttar Pradesh	0.78	2.6	2.2
Uttarakhand	0.67	2.0	1.7
West Bengal	0.55	1.9	1.7
Minor states			
Arunachal Pradesh	0.67	1.6	1.4
Goa	0.49	1.7	1.6
Manipur	0.59	1.5	1.3
Meghalaya	0.80	1.8	1.6
Mizoram	0.63	1.5	1.3
Nagaland	0.65	1.4	1.2
Tripura	0.55	1.7	1.5
Sikkim	0.51	1.2	1.1

The dependency reduces slightly if we eliminate workers aged 60+ from the dependent group and adds them to the economically active group (1.6). These values tell us the real burden of dependency. Bihar has the highest total dependency ratio (0.91) and Delhi and Tamil Nadu (0.52) the least value among the major states. Among the minor states, the total dependency ratio varies between 0.80 in Meghalaya to 0.51 in Tripura. In all the states the EDR1 is almost 2 to 3 times the total dependency ratio.

Discussion:-

The results of present study show that a significant proportion of Indian older people are dependents. The study shows that in India and states, elderly women enter into old age as more dependants. The economic support to the older persons is very much dependent upon the earning ability of the adults. In a country like India there is a huge elderly dependent population, which is a serious limiting factor in providing economic and social support. Old age is a period when dependency on external sources is high and the role played by social organizations and other institutions and the family, police is important in safeguarding and enhancing the quality of life of the elderly in this regard. The health risks faced by the elderly in India include those related to mental health and chronic diseases such as diabetes, hypertension and dementia which affect activities of daily living and increase dependency in old age.

Elderly dependency as highlighted by the old age economic dependency which is much higher than the conventional old age dependency. There are interstate variations. The demographic transition has been slow in some states and faster in others like Kerala. So the growth in elderly population and their issues vary. The dependency problems vary according to the economic situation of the respective states. The dependency issues are hence specific to the respective states. The economic situation in the states, the working population and the income generating activities matters a lot in the kind of support the elderly gets. Social norms also play an important role. The nuclearisation of families is reflected in the living arrangements and a substantial proportion of aged live alone in households.

Disability among the elderly population is found to form a substantial share and this group forms the most dependent one. The kind of support needed is also different and the health expenditure incurred would also run high. The strain on the care givers in such cases would be more. The National Policies for Persons with Disabilities (2006) works towards prevention, rehabilitative measures, providing assistive devices, economic rehabilitation comprising both wage employment in organized sector and self-employment and reservation in Government jobs. In addition to this, what is needed is the financial support to the care givers owing to their opportunity cost in income generation activities.

As argued by Bhagat and Unisa (2006) and Chandrasekhar et. al (2006) the dependency ratio must be defined not as the ratio of actual non-workers to workers in place of the conventional definition that considers the ratio of the non-working age to working age population. The ratios thus calculated for finding elderly dependency and also the total economic dependency in India shows much higher values which call for drafting policies that can help exploit the window of opportunity created by a demographic bulge in the working age groups. The refined measure shows the need for absorption of more number of people into work to the available labour force. The unemployment rates also are found to be quite high in states where the elderly dependency burden is higher. In addition to this need, disability, dependency due to widowhood and increased longevity demands higher savings rates to cater to the needs of the old-old group. The change in the pattern of the disease burden due to increased longevity has already strained the health sector. This has however resulted in implementation of new programmes like the National Programme for the Health Care of Elderly and the National Policy on Older Persons (NPOP). To tackle problem of loneliness Government of India initiative like the Maintenance and Welfare of Parents and Senior Citizens Act 2007 has to be strictly implemented. Conducting social motivational programmers to broadcast the benefits of a joint and extended family and also to make people realize that elders are not burden. The prospect of engaging the elders in the workforce can be explored.

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