Review Article

Geriatric population in India: Demography, vulnerabilities, and healthcare challenges

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Abstract

Global pandemic due to corona virus disease (COVID-19) has exposed vulnerabilities of the geriatric population all over the world. India has been adding progressively increasing number of elderly to its population. This is happening with increasing life expectancy and decreasing mortality. In comparison to children, the population as well as deaths in elderly are rising with changing demography. The elderly population has its own vulnerabilities based on education, socioeconomic condition, gender, place of residence etc. They are affected by various non-communicable diseases which form predominant cause of morbidity and mortality like cardiovascular diseases, stroke, cancer, respiratory illnesses etc. The elderly also contribute to various kinds of disabilities like movement, vision, hearing and in many cases multiple disabilities. They are also more vulnerable to mental health problems and cognitive impairment. The article also suggests a way forward in dealing with rising geriatric age group and its associated problems. The programs supporting this population are largely scattered which needs to be consolidated to include social security, pension and food security along with health benefits. The approach to health care of the elderly needs a comprehensive strategy instead of the present fragmented approach where different disease based programs for non-communicable diseases, cancer and mental health cater to specific health issues of the elderly. Greater awareness, training and skill building in geriatric health for primary care physicians need focus and energy. Prioritizing training and research in this field including the need for more geriatricians has been highlighted.

Keywords: Disability, elderly, geriatrics, mental health, non communicable diseases

Global pandemic because of coronavirus disease (COVID-19) caused by severe acute respiratory syndrome coronavirus 2(SARS-CoV-2) has disproportionately affected the elderly population worldwide. Increasing age is a significant risk factor associated with death because of COVID-19.[1] The pandemic itself has also led to disruption of care for non-communicable diseases all over the world.[2] Majority of these services are used by the geriatric population. Their plight around the world has been highlighted by this pandemic.

Elderly or senior citizens have been defined in the National policy for older person 1999 as people with age more than 60 years.[3] The Indian National Census in 2011 showed that the number of elderly population is increasing steadily and the growth has been more in the last decade than previous decades.[4] The burdens of healthcare problems in the elderly population are different from those faced by children and pregnant women who have been the focus of our healthcare priorities since independence.

This review summarizes the present situation of elderly in the country in terms of demography, healthcare challenges, and the vulnerabilities these bring with them.

Changing Demography

India is undergoing a demographic transition from a population with high fertility, high birth rates, and higher death rates to a population with low fertility, low birth, and death rates [Figure 1].[5]

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Received: 01-09-2020 **Revised:** 05-10-2020
Accepted: 14-10-2020 **Published:** 19-01-2021

Access this article online

Quick Response Code:

Website: www.jfmpc.com

DOI: 10.4103/jfmpc.jfmpc_1794_20

How to cite this article: Malik C, Khanna S, Jain Y, Jain R. Geriatric population in India: Demography, vulnerabilities, and healthcare challenges. J Family Med Prim Care 2021;10:72-6.

As this happens, we see a steady increase in population of elderly in India with 8.6% of the population above age of 60 years as per 2011 census which is projected to go over 10% by 2020. The decadal growth rate of elderly population between 2001 and 2011 census has increased for the first time since independence. Also, the absolute number of elderly women has outnumbered elderly men in the last two decades.[4]

Elderly versus Child

As per United Nation Population Division (UNPD) data, the percentage share of population age 0–4 years is projected to decrease from 14.4% in 1950 to 8.5% in 2020 whereas that of the elderly (>60 years) is projected to almost double from 5.4% in 1950 to 10.1% in 2020. Deaths in children (0–4) are also projected to drop from 41.8% of total deaths in 1950–55 to 9.8% in 2015–2020, whereas elderly contributed to 16.5% of total deaths in 1950–55 which is projected to increase to 58% of total deaths in 2015–2020.[5]

Disadvantages that Elderly Population Faces

Our elderly population in India has high rates of illiteracy (56%) as per census 2011.[4] They are economically dependent partially or fully on others (65%) for day to day maintenance.[6] Within this vulnerable group, elderly women and rural elderly are especially vulnerable.

Women, apart from having higher rates of illiteracy (literacy rate in women versus men: 28% versus 59%), economic dependency (more than 80% versus less than 50%), also suffer from gender-based discrimination in addition to class- and caste-based discrimination prevalent in our setting.[6] Rural elderly who constitute close to 70% of the total elderly population have lower level of education than their elder counterparts along with lower levels of long-term savings for old age, thereby compounding their crisis in times of vulnerability.[4]

This vulnerability is also seen in the form of elder abuse. As per a report based on a survey of urban elderly from 23 cities, 25% of elderly confirm being victim of one form of abuse or other.[7]

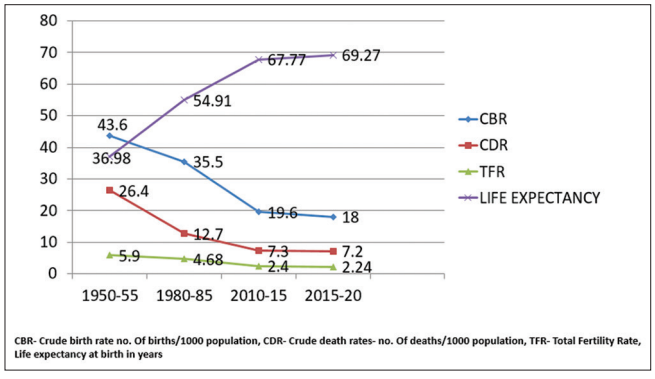

Figure 1: United Nation Population division data with projections- India[5]

Diseases Common in Elderly

Global Burden of Diseases 2017 estimated a total of 990,9501 deaths in India. Around 59% of them were estimated to be in elderly population.[8] It estimates cardiovascular diseases, chronic respiratory diseases, stroke and cancer as the top most diseases causing death in elderly population. This conclusion based on estimates is not too dissimilar from the Sample Registration System data (2010–2013).[9]

To estimate the morbidity along with mortality, GBD estimates Disability adjusted life years (DALYs) which takes into account years of life lost because of premature deaths and years lost as a result of disability because of diseases. As per data on DALYs, the same four diseases are leading causes of DALYs lost in India for the elderly.

A number of other studies done in smaller settings in India also point to hypertension, diabetes, heart diseases, and respiratory illnesses as major causes of morbidity in elderly.[10-12]

This picture mirrors the causes of death and disability in all adults (age >18), the data for whom also shows the above four causes as amongt the top causes of death and disability [Tables 1 and 2].[8]

These are diseases which are chronic in nature, increase with age as various organ system functions deteriorate, are asymptomatic for a long duration, have common lifestyle related risk factors, and need long-term follow-up and care. They are different from communicable diseases both in terms of their prevention and treatment in all the above aspects.

Disability in Elderly

The census 2011 collected information on 8 different types of disabilities which are related to: (1) speech, (2) hearing, (3) seeing, (4) movement, (5) mental retardation, (6) mental illness, (7) any other, and (8) multiple disabilities.

20.5% of all disabled belonged to those aged >60 years which constitutes more than 58 lakh with disability. Movement (25%) and vision disability (25%) are two most common types. Hearing

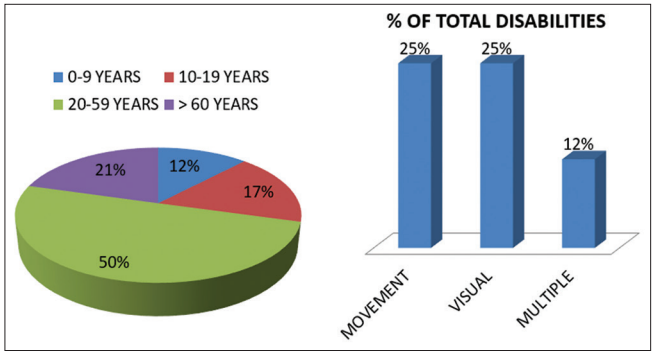

Figure 2: Comparison of population size, DALYs and deaths in children and elderly[8]

disability is seen in 12% of elderly disabled. 12% have multiple disabilities [Figure 2].[13]

These disabilities can lead to various unintentional injuries and falls. As per GBD 2017 estimates, these unintentional injuries and falls can lead to loss of more than 52 lakh and 32 lakh DALYs, respectively, in this age group.[8]

Smaller studies, done in both urban and rural settings, show musculoskeletal problems, visual problems, and hearing impairment as common causes of disability.[10-12]

Given the increasing life expectancy and improving access to medical facilities, an increase in the prevalence of cognitive impairments is expected. As per community-based survey done to detect cognitive impairment in Kerala, an Indian state with highest life expectancy, the prevalence of dementia was 4.86% in those aged >55 years and 6.44% in those aged >65 years.[14] The prevalence of dementia was estimated to be 5.1% in a study done in Uttar Pradesh.[15]

Cognitive impairment, which is considered as a precursor for dementia, is also highly prevalent as found in various community-based prevalence studies. It was estimated to be around 26% by a study based in Kerala and 25% by a study done in Gujarat.[16,17]

National Mental Health Survey 2015 (NMHS-15) was a nation-wide effort to collect data on mental health disorders in adults >18 years of age on a nationally representative sample of 39,532 individuals across 12 selected states of India.[18]

According to the survey, both lifetime and current prevalence of common mental disorders and severe mental disorders was higher in elderly in comparison to that for all adults >18 years. The prevalence of any substance abuse is also higher in elderly (27.78% vs. 22.40%). This is especially true for tobacco use whose prevalence in elderly is 26.34% as compared to 20.89% in adult >18 years [Table 3].

Prevalence of mood disorders and depression is also more common in elderly. As per GBD 2017 estimates, mental disorders lead to 27.19 Lakhs DALYs lost, 15.1 lakhs are because of

Table 1: Top 5 causes of death based on GBD estimates 2017[8]

Cause of death	Total no. of deaths	% of all deaths	% of deaths of total deaths in elderly (age >60 years)
CVD[1]	1888333	19.05%	32.41%
Chronic respiratory diseases	1087587	10.97%	18.66%
Stroke	557417.3	5.62%	9.56%
Neoplasms	552343	5.57%	9.47%
Respiratory infections & T.B[2]	465368	4.69%	7.98%

[1]CVD - Cardiovascular diseases, [2]T.B.- Tuberculosis

Table 2: Top 5 causes of DALYs lost based on GBD estimates 2017[8]

Cause of DALYs lost	Total no. of DALYs lost	% of all DALYs lost	% of DALYs of total DALYs in elderly (age >60 years)
CVD[1]	33525141	6.97%	26.15%
Chronic respiratory diseases	21683109	4.51%	16.91%
Neoplasms	10441274	2.17%	8.14%
Stroke	10384862	2.16%	8.10%
Respiratory infections & T.B[2]	8271753	1.72%	6.45%

Table 3: Prevalence of mental health illnesses in India based on National mental health survey 2015-16[18]

AGE GROUP	DISORDERS	LIFETIME PREVALENCE (RANGE)	CURRENT PREVALENCE (RANGE)
TOTAL	ANY MENTAL DISORDER	13.67% (13.62-13.74)	10.56% (10.51-10.61)
AGE >60	ANY MENTAL DISORDER	15.11% (14.95-15.27)	10.9% (10.76-11.04)
TOTAL	COMMON MENTAL DISORDERS*	12.3% (12.25-12.36)	10.04% (9.99-10.09)
AGE >60	COMMON MENTAL DISORDERS	13.64% (13.48-13.79)	10.38% (10.24-10.52)
TOTAL	SEVERE MENTAL DISORDERS**	1.93% (1.91-1.96)	0.77% (0.75-0.78)
AGE >60	SEVERE MENTAL DISORDERS	2% (1.93-2.07)	0.68% (0.64-0.72)
TOTAL	ANY SUBSTANCE USE		22.40%
AGE >60	ANY SUBSTANCE USE		22.78%
TOTAL	MOOD DISORDERS	5.61%(5.57-5.65)	2.84% (2.81-2.87)
AGE >60	MOOD DISORDERS	7.31% (7.19-7.43)	3.65% (3.57-3.74)
TOTAL	DEPRESSIVE DISORDERS	5.25%(5.21-5.29)	2.68% (2.65-2.71)
AGE >60	DEPRESSIVE DISORDERS	6.93% (6.82-7.05)	3.53% (3.44-3.61)

*Common mental morbidity represents a group of disorders which are highly common and are often misdiagnosed as physical illnesses in primary care settings leading to their mismanagement and resulting in long term disability. It includes depression (excluding severe depression with psychotic symptoms), neurosis and substance use disorders (excluding tobacco use disorders).[18] **Severe mental disorder represents a group of disorders with greater morbidity and mortality requiring intensive and prolonged care. It includes bipolar affective disorders, non-affective psychosis and severe depression with psychotic symptoms.[18]

depressive disorders and 4.69 lakhs are because of substance abuse every year.[8]

A prevalence study of psychiatric disorders done in rural Karnataka showed a prevalence of around 33% with depression being the most common psychiatric disorder.[19]

The way forward

As is evident, the numbers of elderly are going to increase with increasing life expectancy in the coming decades. The problems of the elderly are chronic, multiple, multi-factorial, needing long-term follow-up. The socioeconomic support that they have as of now both from their family and the state is inadequate to meet the demands especially in terms of healthcare needs.

Add to that the fact that our healthcare system with all its imperfections has catered to and designed to provide maternal and child care and prevention and treatment of communicable diseases. We therefore lack not only in resources and manpower but also in experience and expertise in dealing with such health problems at such a large scale.

Given the problems, we suggest the following things as a way forward:

1. A comprehensive framework for pensions, social security, and food security would go a long way to meet various elderly needs. As highlighted above, this population has various vulnerabilities apart from healthcare problems pertaining to their place of residence (rural versus urban), literacy, gender, dependency on children, etc., All of these would be vital determinants of healthcare needing government interventions in the form of legislations, schemes, and programs with the elderly population at the center of these welfare measures.
2. Approach elderly health in a way similar to maternal and child health, improving their physical, mental, and social wellbeing and providing long term care for chronic health problems both at the same time. At present there are disease specific programs like those for non-communicable diseases, mental health, etc., Various provisions of these programs relevant to elderly should be combined in a way to provide for a comprehensive elderly care program taking care of all major chronic health problems. National policy on senior citizens 2011 has some of these features which if implemented would be steps in the right directions.[20]
3. Recognition of elderly care as part of primary care and universalization of the same. This is of utmost importance in southern states where elderly form a significant percentage of population and have longer life expectancy than northern part of the country. An effective referral system for secondary and tertiary care in the public health system is of utmost importance given the resource intensive nature of illnesses that affect this population and the support and expertise needed. Palliative care and disability care and support has to be included in this along with preventive and therapeutic support for chronic diseases like diabetes and hypertension. Upgradation of sub-centers as health and wellness center and introduction of mid-level healthcare providers should provide for such comprehensive primary healthcare in the public health system as envisaged by the government of India in the Ayushman Bharat scheme.[21]
4. Prioritize training of manpower [doctors, mid-level healthcare providers, nurses, Accredited social health activists (ASHA)] to meet the healthcare needs of the elderly. Although already on the move, the training process needs to be fast tracked to be able to meet largely unmet need of primary care for the rural elderly. Apart from technical training in dealing with non-communicable diseases, a context specific sensitization of healthcare manpower to elderly issues at every level is also needed.
5. Research on elderly healthcare problems, healthcare delivery, treatment protocols for Indian settings, monitoring and evaluation of elderly care programs and palliative care should be prioritized and promoted actively by each state based on their local disease pattern. This will help in better prioritization, planning, and building a cost-effective healthcare program for the elderly.
6. More geriatricians- residency in geriatrics in all medical colleges and geriatric health awareness and training in undergraduate and relevant postgraduate courses would help build the required expert manpower for improving the state of health in this vulnerable age group.

At the level of an individual primary care physician, greater awareness about healthcare issues of the elderly is needed. Training and continuous education about approach and management of their common problems like hypertension, diabetes, heart disease, stroke, common neurological and mental health problem should be prioritized. Diagnostic skills like reading and interpreting electrocardiograms and computed tomography scans (CT scans), cancer screening for common cancers, mental health assessment, neurological and disability assessment will help addressing needs of the elderly. Adding newer skills like psychological counselling for common mental disorders, behavioral counselling for tobacco and alcohol use disorders, pain and palliative care management at primary care level, risk based assessment of cardiovascular diseases, and counselling for non-pharmacological interventions for diabetes and hypertension can make primary care physicians address the growing burden of non-communicable diseases. Triage and referral mechanisms need strengthening to improve continuity of care. Use of telecommunication and web based support for primary care physicians for training and consulting individual patient would help both the patient and primary care providers. This would be especially true in rural and underserved parts of the country.

Conclusion

Elderly population is on the rise in our country given the demographic change since independence. They form a sizeable vulnerable group needing urgent attention and support. The

health problems specifically the non-communicable diseases faced by these groups are also the health problems identified as priorities areas for our population as a whole. There is a need to have interventions in health care at both policy and program levels keeping this group at the center of attention. A greater level of integration of care is needed while focusing on elderly as a population.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Williamson EJ, Walker AJ, Bhaskaran K, Bacon S, Bates C, Morton CE, *et al.* Factors associated with COVID-19-related death using OpenSAFELY. Nature 2020;584:430-6.
2. Mikkelsen B, Riley L, Cowan M. COVID-19 and NCDs. Who [Internet]. 2020;#NextGenNC: 5. Available from: https://www.who.int/docs/default-source/ncds/ncd-covid-19/for-web---rapid-assessment---29-may-2020-(cleared).pdf?sfvrsn=6296324c_14&download=true.
3. India. Ministry of Social Justice and Empowerment. National Policy for Older Persons. New Delhi:1999. 2020.
4. India. Ministry of Statistics and Programme Implementation. Elderly in India-Profile and Programmes. New Delhi:2016. 2020.
5. United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, Online Edition Rev 1. 2020.
6. Ministry of Statistics and Programme Implementation. National Sample Survey Office (NSSO). Key Indicators of Social Consumption in India-Health. New Delhi. 2015 Jun.
7. Helpage India. Elder Abuse in India-Changing Cultural Ethos & Impact of Technology. 2018. 2020.
8. Institute for Health Metrics and Evaluation (IHME). GBD Compare. Seattle, WA: IHME, University of Washington, 2015. Available from: http://vizhub.healthdata.org/gbd-compare. [Last accessed on 2020 Aug 18].
9. Census India. SRS Bulletin 2013;48. Available from: https://censusindia.gov.in/vital_statistics/SRS_Bulletins/SRS_Bulletin-September_2013.pdf. 2020. [Last accessed on 2013 Sep 02].
10. Lena A, Ashok K, Padma M, Kamath V, Kamath A. Health and social problems of the elderly: A cross-sectional study in Udupi Taluk, Karnataka. Indian J Community Med 2009;34:131-4.
11. Pandve HT, Deshmukh P. Health survey among elderly population residing in an urban slum of Pune city. J Indian Acad Geriatr 2010;6:5-8.
12. Purty AJ, Bazroy J, KarMalini, Vasudewan K, Veliath A, Panda P. Morbidity pattern among the elderly population in the rural area of Tamil Nadu, India. Turk J Med Sci 2006;36:45-50.
13. India. Social Statistics Division. Disabled Persons in India-A statistical profile. 2016. 2020.
14. Mathuranath PS, Cherian PJ, Mathew R, Kumar S, George A, Alexander A, *et al.* Dementia in Kerala, South India: Prevalance and influence of age, Education and gender. Int J Geriatr Psychiatry 2010;25:290-7.
15. Poddar K, Kant S, Singh A, Singh TB. An epidemiological study of dementia among the habitants of Eastern Uttar Pradesh, India. Indian Ann Acad Neurol 2011;14:164-8.
16. Mohan D, Iype T, Varghese S, Usha A, Mohan M. A cross-sectional study to assess prevalence and factors associated with mild cognitive impairment among older adults in an urban area of Kerala, South India. BMJ Open 2019;9:e025473.
17. Patel RM, Singh US. Prevalence study of cognitive impairment and its associated socio-demographic variables using mini-mental status examination among elderly population residing in field practice areas of a medical college. Indian J Community Med 2018;43:113-6.
18. Gururaj G, Varghese M, Benegal V, Rao GN, Pathak K, Singh LK, *et al*, NMHS collaborators group. National Mental Health Survey of India, 2015-16: Prevalence, patterns and outcomes. Bengaluru, National Institute of Mental Health and Neuro Sciences, NIMHANS Publication No. 129, 2016. 2020.
19. Nair SS, Raghunath P, Nair SS. Prevalence of psychiatric disorders among the rural geriatric population: A pilot study in Karnataka, India. Cent Asian J Glob Health 2015;4:138.
20. India. Ministry of Social Justice and Empowerment. National Policy for Older Persons. New Delhi: 2011. 2020.
21. Government of India, Ministry of Health and Family Welfare, Ayushman Bharat: Comprehensive Primary health Care through Health and Wellness Centres, Operational Guidelines. Available from: http://nhsrcindia.org/sites/default/files/Operational%20Guidelines%20For%20Comprehensive%20Primary%20Health%20Care%20throughout%20Health%20and%20Wellness%20Centers.pdf.