

# Preventive Geriatrics

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**Abstract**—This paper addresses the common diseases and issues that affect the elderly and disease prevention strategies with regard to the elderly. India comprises of 35.5% elderly population. A major portion includes individuals with respiratory and neurological diseases namely bronchitis, asthma, stroke among others. This paper also delves into Preventive geriatrics which includes methods ranging from vaccination to early detection of disease leading to proper treatment or significant aid to prevent the onset of disease. Analysis of the aforementioned issues aids in understanding the ideal method to reduce morbidity in Indian Elderly population.

**Keywords:** Disease Prevention, Vaccination for Elderly, Geriatrics, Morbidity in Elderly, Mortality.

## MATERIALS AND METHODS

This study was carried out by interacting with several elderly individuals dwelling in my neighborhood and close by areas. Furthermore, reading of texts regarding the objectives or preventive medicine and geriatric care were carried out. The statistical analysis was done through collection of data provided by the UN and the Government of India on the basis of officially conducted surveys and census every decade. Also, various types of vaccines and their usage in elderly were studied.

### 1. INTRODUCTION

Elderly individuals are people who are above the age of sixty. When individuals fall into this age bracket, they become more prone to injuries and diseases due to diminished activity of vital organs and structural changes in the body. The weakening of the immune system causes a high mortality rate.

As the age advances it is difficult to take the corrective health measures. This includes neurological, respiratory, cardiac, gastrointestinal diseases as well as hormonal imbalances, cardiovascular diseases, diabetes mellitus and Alzheimer's and cancer. In India, stroke and asthma are leading cause of death in the elderly.

Preventive geriatrics is a branch of geriatrics, which deals with prevention and control of disability in order to improve the quality of life of elderly individuals.

The process of ageing cannot be prevented; however, some of the effects can be inhibited and slowed down.

In order to do so, several methods have been designed. These methods include leading a healthy lifestyle, medication, vaccination and physical therapy.

Vaccination is the process of administering a vaccine, which is made of an inoculated or heat-killed bacterium in order to prevent the body from several diseases. Types of vaccinations include influenza, pneumococcal and tetanus among others.

However, the pertinent question regarding Vaccination is the effectiveness of this method and the proportion of individuals that receive it. The ratio of the elderly who receive the vaccine to those who do not is symbolic of the divide between urban and rural India as well as low awareness.

Medication has been present since several years to treat a multitude of diseases. The aforementioned top killers of the elderly (asthma and stroke) have designated medicines that work, but they are still causing the highest percentage of mortality.

Another method used in Preventive Geriatrics is a healthy lifestyle. In India, this generally includes the practice of Yoga along with common walks in the morning and constantly being engaged in some type of work to keep the mind active. Lifestyle further includes regular exercise, dietary habits and meditation. This has proven to be one of the ideal methods to prevent diseases.

Through the course of this paper, the aforementioned methods will be analysed and statistics will be interpreted in order to make a conclusion as to which method is ideal for the different groups of elderly (young, middle and old) as well as any potential side effects. The different types of vaccination their usage and effects have been compiled.

### 2. DISEASES AND DISABILITIES IN ELDERLY

The following statistics taken from National Sample Survey 2004 represent the proportion of elderly that are affected by various chronic diseases and disabilities.

Number of elderly persons reporting a chronic disease (per 1000 persons)

National Sample Survey 2004

Type of disease	Rural		Urban	
	Males	Females	Males	Females
Whooping Cough	8	6	4	2
Ulcer	37	54	30	24
Joint problem	30	40	26	45
Hypertension	23	53	50	59
Heart	95	59	165	162
Urinary	78	28	89	33
Diabetes	30	52	68	36
Cancer	18	36	25	25

Population Census 2011 data reveals that Locomotor disability and Visual Disability are the most prevalent disabilities among elderly people. Almost half of the elderly disabled population was reported to be suffering from these two types of disabilities.

#### Number of disabled per 100,000 - Different disabilities

Place	Type of disability							
	Visual	Speech	Hearing	Locomotor	Mental Retardation	Mental Illness	Any other	Multiple Disability
Rural	1467	182	1043	1425	86	86	595	708
Urban	931	230	844	1029	89	93	580	386

Furthermore, accidents related to falling on hard surfaces as well as road accidents give rise to a multitude of disabilities which restricts the elderly and leads to early death.

#### PREVENTIVE METHODS

Prevention methods of morbidity in elderly primarily emphasize on Pre-Geriatric Care, exercise and health Awareness. Primary preventive methods include vaccination, drug administration and counselling methods. Secondary

methods comprise of early detection of the disease through the annual health checks and proper treatment. While tertiary methods focus on managing the existing disease to prevent functional loss. It includes rehabilitation and counselling.

#### a) PRIMARY PREVENTION

The purpose of primary prevention is to reduce the risk of a disease/condition from setting in. This can be divided into three parts: -

- i) **Immunization**- Prevention through vaccination
- ii) **Chemoprophylaxis**- Prevention of disease through drug therapy. However, for this side effects and costs shall be considered.
- iii) **Counselling**- Prevention through behavioural change. In this age of television and social media, this has become easier for the aged population.

#### i) IMMUNIZATION

Vaccines can prevent dangerous diseases such as Whooping Cough and Influenza. Donna Arnett, Chair and Professor of Epidemiology at the University of Alabama at Birmingham, USA has drawn the attention by stating, "When you have any kind of chronic condition, such as cardiovascular disease, you don't have the physiological reserves that healthy individuals have to fight an infection." Patients with heart disease, especially heart failure, may be more vulnerable to dangerous complications that can occur from getting the flu.

The risk of disease can be reduced before it starts by eliminating or reducing the risk factors.

The diseases and their preventive vaccination frequency for the elderly population have been tabulated below:

S.N.	Disease	Vaccination for elderly
1.	Influenza	Vaccines should be given to all adults over 65 annually.
2.	Pneumococcal Infection	All individuals above 65 years should be vaccinated for upper respiratory tract infection. Re-vaccination after every 6 years.
3.	Tetanus and Diphtheria	A primary dose (for those whose vaccination status is not known) and re-vaccination after every 10 years are required as per guidelines.
4.	Herpes Zoster	Adults above 65 should be vaccinated irrespective of vaccination status. A single vaccine provides adequate immunity to battle Herpes.
5.	Meningococcal	For preventing meningitis this vaccine must be given as a single dose at the earliest possible.
6.	Typhoid vaccine	Single dose and booster dose after every 3 years is prescribed to the elderly.
7.	Hepatitis A	An initial dose and second dose 6-18 months after the initial dose significantly reduces the risk.
8.	Hepatitis B	Three doses 0, 1, 6 months apart are needed for prevention.

## ii) CHEMOPROPHYLAXIS

The following prophylactic medications have been found to be effective for prevention of diseases and their effects in the elderly:

S.N.	Medicine	Effects
1.	Aspirin	It is effective in preventing stroke. High-risk patients without any evidence of disease must also take aspirin daily. It is essential in reducing risk in coronary disease as it is a blood thinner.
2.	Anti-tubercular medicine	This medicine has been found effective as the treatment against early signs of tuberculosis in elderly.
3.	Calcium and Vitamin D supplements	These are helpful in reducing osteoporotic fractures in the elderly.

## b) SECONDARY PREVENTION

Secondary prevention of disease and frailty is the most beneficial for the elderly who are healthy (especially young elderly in age bracket of 60-70 years). The disease is detected and treated at an early asymptomatic stage, minimizing the probability of morbidity and mortality.

S.N.	Disease	Prevention
1.	Cardiovascular Disease	Exercise is the best as a preventive measure in most cases of cardiovascular disease.
	a) Cholesterol and Lipid Disorders	Studies show that cholesterol is not as strongly related to coronary heart disease after age 70. <i>Regular exercise reduces the risk of cardiovascular disease and an increase in intensity is even more helpful (but in controlled amount).</i>
	b) Hypertension	Risk from hypertension increases with increasing blood pressure for all ages. Screening with regular visits is necessary to avoid complications such as orthostatic hypotension, which may contribute to falls which can be fatal.
2.	<b>Cancer</b>	
	a) Breast Cancer	Regular yearly mammographic screening is the only way to address this type of cancer. Risk factors include a family history of the same and first pregnancy after the age of 30 as well.
	b) Cervical Cancer	It is largely preventable. Screening women using Papanicolaou (Pap) test is an important strategy that can prevent cervical cancer from developing. <i>However, for women above older than 65, it is not recommended as potential harms of screening are likely to exceed benefits.</i>

c) Prostate Cancer	Though it is prevalent, morbidity is lower for this than other types of cancer. <i>The benefits of screening for prostate cancer are up to the age of 70 years. Men older than 70 to 75 years are unlikely to benefit from screening.</i>
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## c) TERTIARY PREVENTION

In tertiary prevention, the existing disease is managed to control further functional loss. Management of such diseases is improved by use of disease specific methods which are summarized below:

S.N.	Disease	Prevention
1.	Arthritis	Most common disease affecting elderly and its severity increases with age. Management of this disease can be done by moderate exercise programs, which may reduce pain and improve the functionality in cases of arthritis of knee/hip. Regular pain killers help in controlling symptoms of arthritis.
2.	Chronic Obstructive Pulmonary Disease (COPD)	Quitting smoking is essential to prevent COPD. Furthermore, usage of inhalers and training of patients regarding energy conserving behaviour decreases the problems of COPD.
3.	Frailty (Weakness, weight loss..)	Healthy diet and light weight training is the only action that can help in frailty in older elderly.
4.	Prevention of Accidents	
	a) Falls	The elderly become vulnerable to fall injuries. Counseling and avoidance of alcohol are effective and required. Flooring material shall be non-slippery and not very hard.
	b) Home hazards	Burns from excessively hot water and even electrical appliances may be dangerous for older elderly. Elderly with diminished capacities shall be monitored against such harms and kept away from the kitchen and such appliances.
	c) Driving hazards	Due to slowed reaction time, driving can be hazardous. The elderly are recommended to drive in day time and on familiar routes. It is also advised that the elderly use shoulder belts and lap belts.

## CONCLUSION

'Prevention is better than cure' is the statement that has been emphasised throughout the due course of this paper. The elderly are a group of the population that have been neglected for a great period of time in India.

In developing countries, the focus is mainly on infrastructural improvement and education in order to improve literacy and awareness. Although this is a relatively unknown field to most, it is a pressing issue that needs to be dealt with as the elderly population will continue to rise with improved medical facilities and infrastructure.

In order to prevent diseases, as mentioned previously there are three types of preventive methods – primary, secondary and tertiary. Primary prevention refers to reduction of risk of diseases and illnesses while secondary serves the purpose of preventing disease within the young elderly mainly. Tertiary prevention is the management of an existing disease or condition to avoid any further loss.

These categories include timely vaccinations; full body testing's with focus on particular areas and healthy eating habit. Another practice that is extremely renowned in India is Yoga. Yoga not only helps individuals physically fitter, it also equips them for handling mental stress and better lifestyle as a whole.

Furthermore, an integral role in Preventive Geriatrics is that of physicians. Geriatric care has not gained much momentum in India as it has in the Western world. This development needs to be brought about at the same pace if not faster in India. Nursing needs to be more effective and there must be better physician education in geriatric pharmacology.

In addition to physicians, another essential part of this type of medicine is the spreading of awareness and reduction in the variability in medicine through standardised guidelines that must be followed.

With the aforementioned ways, India can undergo a surge in development. The need of the hour, as mentioned previously, is to focus on the care for neglected part of the once productive population which has a right to live with dignity and comfort.

The government and the youth need to make a collective effort and reach out to those who are unaware to make this initiative a success in India.

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