

## **“Corollary of Nutritional Factors on Morbidity and Health Status of Elderly Population”**

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### **Abstract**

The proposed study is concerned with the healthcare conditions, nutritional intake and morbidity status of the elderly population in India. The rise in average life expectancy across developing countries has resulted in a greater number of people living above a certain age, producing new socio-economic challenges and policies for the governments for their well-being and survival. Nutrition holds the greatest importance in the lives of the elderly, particularly those suffering from diseases and are under medical treatment. Nutrition is intricately linked with the health and morbidity status of the elderly population. Several factors influence the availability of nutritional intake in old age; some of them being psychological, physiological and social. The proposed study aims to assess the underlying factors that influence nutritional intake in the elderly population, and their outcomes on the health and morbidity status of these people.

**Keywords:** Health, Nutrition, Morbidity, Public Health, Elderly Population, Old Age.

### **Introduction**

“You do not heal old age, you protect it, you promote it and you extend it”.

- Sir James Sterling Ross (Yadav & Mishra, 2016).

As medical services continue to improve across the world, life expectancies of populations across countries continue to increase. This causes rapid changes in service systems on the part of the governments to cater to the needs of the elderly. Governments need to strategize comprehensive policies to allocate more resources for making benefits available to the elderly. The rise in aging population has eventually led to increased attention about their well-being and resource allocation. As a middle income developing country, India cannot escape this phenomenon and demographic transformation is eventually leading to its population aging. This is revealed through census data, where the proportion of elderly people, aged above sixty years, has increased over the years. The average life expectancy of Indians has nearly doubled from thirty-two years in 1947 to over sixty-three years in present times (Katta et. al, 2011).

The rise in aging population brings a host of challenges at different levels, albeit from an individual to a community level, scaled up to a national level. While old age cannot and should not be considered as a disease in itself, the probability of being a host to diseases increase simultaneously with the rise in age. Elderly people are more vulnerable to diseases, both from physical and mental point of view. A developing country like India lacks access to basic medical service facilities at rural levels, where a significant proportion of the

population resides. Coupled with the lack of a sufficient social and economic support, this causes complications in the morbidity status of aging populations in such scenarios.

The availability of nutritious food is an important contributor to the wellbeing of the health of the elderly. Nutritious food helps in fighting diseases and keeping the aging population fit. Thus, making nutritious food available to the elderly comprises of a new socio-economic challenge that India faces in the present times. Scientific advancement has reached a point where dietary approaches and availability of nutritious food can play a role in reducing age-related degenerative diseases, betterment in the quality of living standards, and focusing on the cost and expense of health care. Aging as a process is complex in itself. It may lead to simultaneous changes in factors pertaining to psychology, physiology and perceived social status of the elderly that may its impact on their daily lives including their nutritional intake (Ahmed, & Haboubi, 2010).

An increase in life expectancy is accompanied with a set of challenges. Living a greater number of years does not guarantee living in good health conditions for all of those years. As science continues to explore the complexities associated with old age, we notice a transition in recent decades – elderly people attach greater importance in survival through disabilities from disease compared to death from diseases in earlier times (Manandhar, 1995). This leads to the importance of nutritious food and better health facilities to combat disabilities owing to diseases for elderly people, in order to survive a greater period of time. Thus, finances associated with long term nutrition intake and medical care occupy greater importance in the minds of working age population and people about to become elderly. Nutritious food and medical care continue to support elderly people against some of the chronic diseases that cannot be cured completely, by helping them to reduce the effects of independent functioning of the body in their daily activities that are lost owing to these diseases. This perceived reduction in the loss constitutes to be the ‘cure’ for these people affected by diseases (Besdine, 1990).

The proposed study aims to assess the health, nutritional status and morbidity status of the elderly population in India – how increases in aging population affect them psychologically and physiologically, the different underlying factors owing to old age, and the ways in which the elderly population continues to strive for living a greater number of days in their daily lives as life expectancy improves all around and infectious diseases come under control. Representing a generation of people when healthcare facilities, hygiene and life expectancy were not so prominent, the proposed study looks to find out how the elderly population in the present day and age tries to adapt to newer technologies in aspiration of surviving a longer life.

### **Nutritional Factors and Pertinence of Public Health**

Nutrition holds the greatest importance in the lives of the elderly, particularly those suffering from diseases and are under medical treatment. Now, no single definition exists of the ‘elderly’ constitute of. Several international organizations such as the United Nations

consider the elderly to be above sixty years of age, deduced on the upper population quintile of a country. However, depending on the average life expectancy of the population, the upper quintile may differ for individual countries (Wahlqvist et. al, 1994). Several factors such as malnutrition, exposure to diseases, excessive physical labour and harsh conditions of living, common in developing countries, often lead to acceleration of biological aging of populations in these countries compared to their developed counterparts (Kalache, 1991).

Healthy nutrition becomes extremely critical for the elderly since diet related health problems may cause significant deterioration and impairment, leading to disabilities, to elderly people. This in turn leads to deterioration in the quality of life, with probabilities of morbidity and mortality rising in tandem, in many cases. As elders remain malnourished from nutritious diet, they become more prone to infections with their injuries taking a greater amount of time to heal. This corresponds to extended stays in the hospital with rising medical costs, as recovery from surgeries become more critical for them (Wellman, 1999). Lack of proper dietary intake may lead to several problems for the elderly which includes bad oral health leading to losing teeth, depression affecting appetite, disability of motor functions in the body leading to loss of independent functioning in day to day activities, polypharmacy and increasing instances of underlying acute pain or chronic diseases. A reduction in food intake for the elderly patient may lead to multiple side effects including “anorexia, nausea, food aversions, somnolence and disinterest in food” (Wellman, 1999).

### **Dynamics of Health Care Expenditures in Connection with Aging Population**

Aging population has huge impact on the dynamics of health care expenditures (Payne et. al, 2007). Health care costs of the elderly population are usually connected with either “aging, death, or some combination of the two”. An increase in elderly population above a particular age having primary focus on maintaining health may lead to higher medical expenditure costs. This leads to challenges concerning economic growth and development in future, as dependency factor of the elderly comes in. The financial integrity of healthcare systems, social service benefits and pensions thus become important (Sharma, Mazta, & Parashar, 2013).

Aging typically results in a deterioration of certain organs and structures. This contributes to a reduced effectiveness of physiological functions followed by an increase in risk factors for particular diseases. A decrease of bone density results of osteoporosis and fractures, cartilage degeneration leads to musculoskeletal disorders, muscle loss leads to functional weakness, reducing immune function causes increased infection and cancer, and increased neuronal degeneration leads to reduced cognitive and dementia capability. Health-activity in terms of sickness activity refers to the behaviours individuals perform in response to symptom perception. Elderly patients are commonly believed to be more reluctant to receive medical attention for illnesses (Kirkwood, & Ritter, 1997; Grimley, 2000).

Elderly people often form a high risk category with the accumulation of known and unknown risk factors over time for various morbidities. An assessment of current demographic profile

finds that individuals who live longer do not necessarily spend all their time in good health. Thus, it becomes imperative to assess the quality of life (QoL) of elderly people necessary. The QoL can also be affected by social environments and living conditions (Joseph et. al, 2015). The current era of rapid urbanization and social change has led to a deterioration of family values and family support system, economic instability, social alienation, and elderly violence contributing to a host of psychological diseases (Jamuna, & Reddy, 1997). In the event of negligence of care, the elderly can take legal action against their family members as required by Article 41(5) of the Indian constitution. There are provisions of welfare for elderly people from the government. Yet, underuse of the current government facilities is another area of concern due to negligence and other factors.

### **Morbidity Gauging**

When morbidity patterns were analysed according to age, the results showed a clear indication of the elderly population experiencing greater risks associated to ailments (according to the National Sample Survey Organization, ailments are defined to be injuries, illness, poisoning and sickness) in comparison to people from lesser age groups pertaining to all residential locations and different genders (NSSO, 2006). Elderly people suffer most from cardiovascular disease, circulatory disorders and cancers, while non-older people face a greater risk of death from infectious and parasitic disorders (Shrestha, 2000; Kosuke & Samir, 2004; Alam, 2006). There have been emerging outbreaks of chronic noncommunicable diseases (NCDs) in developed countries progressing through demographic change, that are mostly lifestyle-based diseases (Gruenberg, 1977; Waite, 2004). By comparison, the rapid population change in India was not accompanied by a similar epidemiological shift from transmissible diseases to NCDs (Agarwal & Arokiasamy, 2010).

### **Nutritional Factors and Health Status in Indian Context**

Indian elderly people have a greater tendency to suffer from chronic diseases compared to acute illness. NCDs, especially cardiovascular, metabolic and degenerative disorders, and communicable diseases are increasing (Ingle & Nath, 2008). Though elderly people primarily die from cardiovascular disease (Jha et. al, 2006), several chronic diseases cause similar distress: “chronic bronchitis, anemia, high blood pressure, chest pain, kidney problems, digestive disorders, vision problems, diabetes, rheumatism, and depression” (Roy, 1994; Angra et. al, 1997; Shah & Prabhakar, 1997; Raju, 2000; Kumari, 2001). At the same time, the frequency of morbidity among elderly people due to re-emerging contagious diseases is very high, with substantial variations throughout genders, residential areas and socio-economic status (Goldman, Korenman, & Weinstein, 1995; NSSO, 1996; Radha et. al, 1999; Rajan, Misra, & Sharma, 1999; Gupta & Sankar, 2002; Kumar, 2003; Sudha et. al, 2006; Mini, 2008). It is estimated that the NCD-related impairment will rise and lead to a higher percentage of the total national disability, in line with the population's aging (Kowal et. al, 2010).

It is widely recognized that one should intake a variety of nutrients including carbohydrates, fats, proteins, minerals and vitamins to carry out daily activities in life. In most foods consumed daily, these nutrients are found to be in varying proportion. Our diet therefore needs to be well-balanced in order to have all the nutrients in sufficient proportions. However, the majority of India's population still faces the nutrition deficiency problem. This includes both population below and above poverty line i.e., people from both APL and BPL categories. The BPL and APL groups have different nutrient shortages, which is a troubling nutritional security condition. The number of households deprived of calories have expanded over the years. India needs to undertake its proposed National Nutrition Policy very seriously. The long-term initiatives proposed include “increasing food production, poor people's buying power, public distribution system, community engagement, women's status, and nutrition studies” (Kumar, 2017). Changing diets and growing the nutrient-rich food production and consumption is the long-term objective — the two strategies need to be complementary.

### **Anorexia of Aging**

Food consumption and appetite decline with increase in age. The elderly people remain less hungry and more satiated before meals. This leads to smaller meals and lesser snacks during a day. The average daily intake of food has been found to reduce up to 30 per cent between twenty years and eighty years of age (Wurtman et. al, 1988). As the elderly spend less energy daily with an increase in age, this contributes to an overall decrease in energy levels in their body. However, studies have found the decrease in energy intake to be much greater than decrease in energy expenditure in the elderly, leading to an eventual loss of body weight (Morley, 1997). Morely referred this to as the “anorexia of aging”, the phenomenon of a greater decrease in appetite and energy intake with the rise in age. Cross sectional studies have found body weight and body mass index to increase up to the age of sixty, after which, both of them continue to decline simultaneously (Villareal et. al, 2005).

There are three different mechanisms through which weight loss occurs in the bodies of the elderly people – wasting, cachexia and sarcopenia (Roubenoff, 1999). Wasting as a process is involuntary in nature, and primarily occurs due to poor dietary intake owing to either diseases or being psychologically affected in old age. Cachexia is also involuntary in nature; however, it involves losing fat-free mass such as muscles, tissues, bones, skin or internal organs as well as losing body cell mass. This affects catabolism in the body resulting in a change in body consumption leading to a weaker immune system. Cachexia has often been attached with many chronic diseases such as cardiovascular failure or rheumatoid arthritis. It has its presence in malignancy as well. Finally, the eventually decline in skeletal muscle mass in older people, which causes the major change in their psychology after a certain age, is referred to as sarcopenia (Evans, 1995). This occurs due to a decrease in physical activity or lack of exercise in older age which in turn contributes to muscle loss. Moreover, hormonal, cytokine and neural activities also play their part in causing sarcopenia.

**Materials and Methods**

To understand the impact of external factors such as financial well-being and lifestyle, which differentiates between elderly people living above and below the poverty line, on the nutritional food intake and its outcome on the health and morbidity status of these people, this study undertakes the following framework. Personal attributes of self-control and financial measures form the independent variables. Personal attributes of self-control can be divided into two parts

– Perceived Constraints and Personal Mastery. Financial well-being is also measured in two parts – psychosocial and lifestyle questionnaire. Life Satisfaction, Perceived Health Status, Number of Visits for Professional Health Care and Medication use form the dependent variables. Mini Nutrition Assessment Scale will be used as a moderator variable.

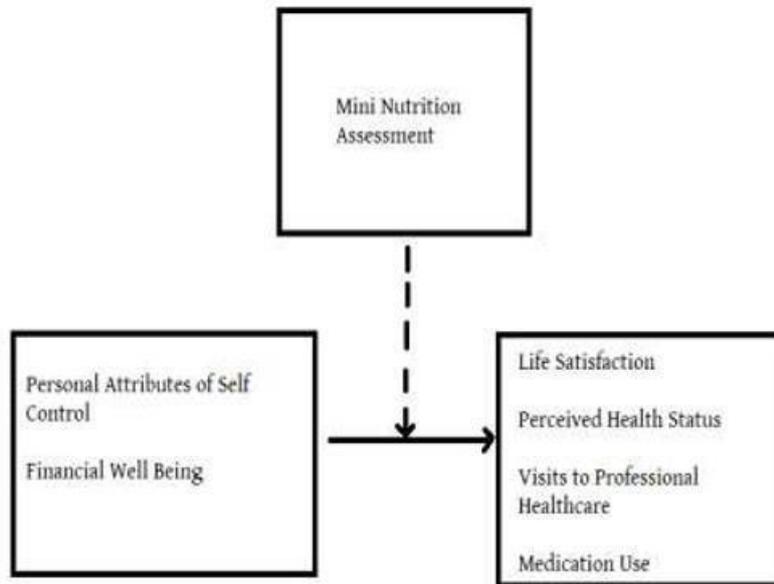


Figure 1: Framework of the Proposed Study  
(Dotted Line shows Moderating Effect)

**Hypothesis**

***Hypothesis 1:** Nutritional Intake of the elderly have a direct positive effect on their wellbeing and life satisfaction, as well as their health status in terms of financial resources available to them.*

***Hypothesis 2:** Personal Attributes of Self Control in the elderly population have a direct positive effect on their life satisfaction and health status, in terms of their daily nutritional food intake.*

## Conclusion

The well-being of the human body in older age is intricately attached with sumptuous nutritious intake. Food is essentially enjoyed by human beings through taste and smell, the senses of which continue to decline with age. This can result in reduction in food intake owing to loss of interest in food. The appetite of older people gets less diversified which may lead to micronutrient deficiencies. To avoid this, studies have found that increasing flavour in food can lead to improvement in nutritional intake and subsequent increase in body weight in elder nursing home patients (Mathey et. al, 2001).

Old age can be generally defined by time-altered changes in the biological, psychological, and health-related capacities of a person and their consequences for the subsequent changes in the roles of the person in the economy and society (Irudaya & Mishra, 1995). The challenge of ensuring the well-being of those people in need of physical, psychological or emotional treatment is overwhelming for a nation whose majority of the population is barely capable of living above the poverty line. Another component of this welfare lies of supplying the elderly with accessible and appropriate treatment, taking into consideration the pathologies of old age. Socio economic insecurity is another concern for the elderly, except the frailty associated with weak physical conditions in old age.

Thus, statistics available for the elderly point out to new socio-economic and medical challenges in future. Policy makers and program managers need to take decision actions to solve these challenges. Solutions to improve the living standards and quality of life for the elderly people in India need to be explored from all angles and dimensions.

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