

Aging Trend and Situation in Nepal

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How to cite this paper: Chalise, H.N. (2023) Aging Trend and Situation in Nepal. *Advances in Aging Research*, 12, 39-48. <https://doi.org/10.4236/aar.2023.123003>

Received: April 20, 2023

Accepted: May 28, 2023

Published: May 31, 2023

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Abstract

Aging is a natural lifelong process until death. The proportions of the older population are increasing rapidly in Nepal too. There are 2.97 million older people in Nepal as of the 2021 census which is a 38.2% increase compared to the previous census of 2011. The proportion of the older population reached 10.21% of the total population of Nepal. During this decade, Nepal's average population growth rate is 0.92% and the older population growth rate is 3.29% per year. On the other hand, Nepal's total fertility is below replacement level, infant mortality is around 23 per thousand live births and average life expectancy is now around 71 years. The median age of Nepal is 25 years and the index of aging increased rapidly from 23.3 in 2011 to 36.7 in the 2021 census of Nepal. These indicators show aging is taking place rapidly and the caregiving burden may increase rapidly in the coming days due to the tendency of migration of the young population to other countries. In this context, the Nepal government needs to focus on how to manage the population and provide quality services and social security for the growing older people of Nepal.

Keywords

Aging in Nepal, Older People of Nepal, The Index of Aging, Nepal

1. Introduction

Aging is a natural, lifelong process that starts at conception and concludes with death. Growing older and maturing is connected to aging. As a result, we have all aged since our birth [1]. Population aging is occurring around the globe at different rates. Regardless of a country's degree of development, the share of the population aged 60 or over is predicted to rise significantly globally [1]. Longer lifespans and falling fertility rates together cause aging [2]. Education and technological advancements, as well as improvements in medical, food distribution,

and public health, all played a role in people living longer [3]. On the other hand, as people age, their physical and cognitive abilities deteriorate and the prevalence of chronic diseases and disabilities rises [4].

Individuals 60 years and older are considered older people in Nepal [5]. In the last couple of decades, the life expectancy of the Nepalese is increasing rapidly [2] [6] and the elderly population growth rate is higher than the total population growth rate [2]. A report shows that it is projected to increase rapidly in the coming days further [7].

In Nepal, the family serves as the primary caregiver for its elderly members, assisting them with daily tasks and providing them with various forms of support [2] [8] [9] [10]. The latest situation shows traditional norms and values eroding [9] due to shrinking family size and increasing migration of youths for looking prosperous future. This article aims to analyze the aging trends and situation of older people in Nepal using the 2021 census data of Nepal.

2. Methods

This Paper has utilized the 2021 census data of Nepal and past data published by the Central Bureau of Statistics of Nepal [11]. Further, many published articles focusing on issues of older people from Nepal including the author himself are included. Past and present data on fertility, mortality, life expectancy, aging index, proportion, and population growth rate are utilized to discuss in this paper.

3. Results

3.1. Fertility, Mortality, and Life Expectancy

Table 1 shows the fertility, mortality, and life expectancy trends in Nepal from 1952 to 2021. Crude Birth Rate (CBR), Total Fertility Rate (TFR), Crude Death Rate (CDR), and Infant Mortality Rate (IMR) are decreasing rapidly. In the last 70 years, CBR decreased from 45.0 to 20.0 live births per thousand population. CDR decreased from 36.7 to 6.3 per thousand population. IMR also decreased rapidly from as high as 250 to approximately 23 per thousand live births in a year. The family size of Nepalese people also decreased from 5.4 to 4.4 *i.e.*, by one member in the last 70 years. The life expectancy of Nepalese was around 27 - 28 years in 1952 which increased to nearly 72 years in 2021. It shows the life expectancy of Nepalese increased by 42 years in the last 70 years. In other words, Nepalese gain life expectancy by 2 years in every 3.5 years. If the latest life expectancy from 1991-2021 is analyzed, in the last 30 years it is increased by nearly 18 years.

3.2. The Growth Rate of the Population and Older Population of Nepal

Table 2 shows the trend of population growth and older people's growth rate in the last 70 years of Nepal. The size of the total population and older people is continuously increasing. The total population size increased by 253% and older people's size increased by 627%. According to the 2021 census of Nepal, the total

Table 1. Decreasing fertility, mortality, and increasing life expectancy.

Census Year	CBR	TFR	CDR	IMR	Family size	Life Expectancy	
						Male	Female
1952	45.0	-	36.7	250	5.4	27.1	28.5
1961	47.0	-	27	-	5.3	37.0	39.9
1971	43.0	6.3	21.4	-	5.5	42.1	40.0
1981	44.0	6.3	13.5	117	5.8	50.9	48.1
1991	41.6	5.6	13.3	97	5.6	55.0	53.5
2001	34.0	4.1	10.3	64	5.4	60.8	61.0
2011	24.0	2.5	7.3	40.5	4.9	66.6	67.9
2021*	20.0	1.8	6.3	23	4.4	71.0	73.0

*Some data for 2021 are estimated from different sources.

Table 2. Total population growth rate and 60+ population growth rate.

Census Year	Population		Population growth rate		% of older Population
	Total	60+	total	older	
1952	8,256,625	409,761	-	-	5.00
1961	9,412,996	489,346	1.65	1.79	5.20
1971	11,555,983	621,597	2.07	2.42	5.40
1981	15,022,839	857,061	2.66	3.26	5.70
1991	18,491,097	1,071,234	2.10	2.26	5.80
2001	23,151,423	1,504,311	2.24	3.40	6.50
2011	26,494,504	2,154,003	1.35	3.59	8.13
2021	29,164,578	2,977,318	0.92	3.29	10.21

population growth rate in the intercensal decade is 0.92% which is quite low in the last 70 years of history of the scientific census of Nepal. On the other hand, the growth rate of older people (3.29%) is quite high, and further, the difference between these two groups of the population is seen highest ($3.29 - 0.92 = 2.7$) in the last 70 years. Further, the proportion of older people 60 years and older is continuously increasing. In the last decade, the older population increased by 38.2%. The latest data shows the percentage of older people is 10.21% in Nepal. This is the highest in the history of Nepal.

3.3. Measurement of Population Aging in Nepal

For the measurement of the tempo of an aging population, different tools are developed. Among them, the most commonly used and easy to understand is the percentage of older people in the total population. Other measures are dependency ratio, index of aging, and median age. **Table 3** shows the trends of the proportion of older people, dependency ratio, index of aging, and median age from 1981 to 2021. The proportion of older people is increasing consistently

Table 3. Old age dependency ratio, index of aging and median age.

Year		% 60+ Population	Dependency Ratio	Index of Aging	Median Age*
1981	Both	5.7	10.8	13.8	19.9
	Male	5.9	11.2	13.9	
	Female	5.5	10.3	13.6	
1991	Both	5.5	11.2	13.7	18.9
	Male	5.6	11.6	13.5	
	Female	5.4	10.8	13.8	
2001	Both	6.5	12.0	16.5	19.3
	Male	6.6	12.3	16.3	
	Female	6.4	11.7	16.7	
2011	Both	8.1	14.3	23.3	21.7
	Male	8.2	15.1	22.6	
	Female	8.0	13.6	24.0	
2021	Both	10.21	14.19	36.7	24.6
	Male	10.13	14.33	34.1	
	Female	10.29	14.06	39.5	

*Data of median age is extracted from

<https://www.statista.com/statistics/422741/median-age-of-the-population-in-nepal/>

but the proportion of older women is now exceeded the proportion of older male. The old-age dependency ratio is the ratio of the number of elderly people at an age when they are generally economically inactive (*i.e.* aged 60 and over), compared to the number of people of working age (*i.e.* 15 - 59 years old) expressed per hundred people. Data shows that old age dependency is increasing consistently in the last four decades and it is reached more than 14. The Aging Index refers to the number of the elderly population (aged 60 years and over) per 100 individuals younger than 14 years old in a specific population. Thus, the higher the index is, the older the population results. The index of aging was 13.8 in 1981, which increased to 23.3 in 2011 but now it reached 36.7. It shows the alarming situation that the number of children below 15 years is decreasing and the older population is increasing. Median age divides the population into two parts of equal size, that is, there are as many persons with ages above the median as there are with ages below the median. An increase in median age also indicates an increase in older people in directly as well. The below table shows the median age of Nepal is increasing in every census and now it is expected around 25 years.

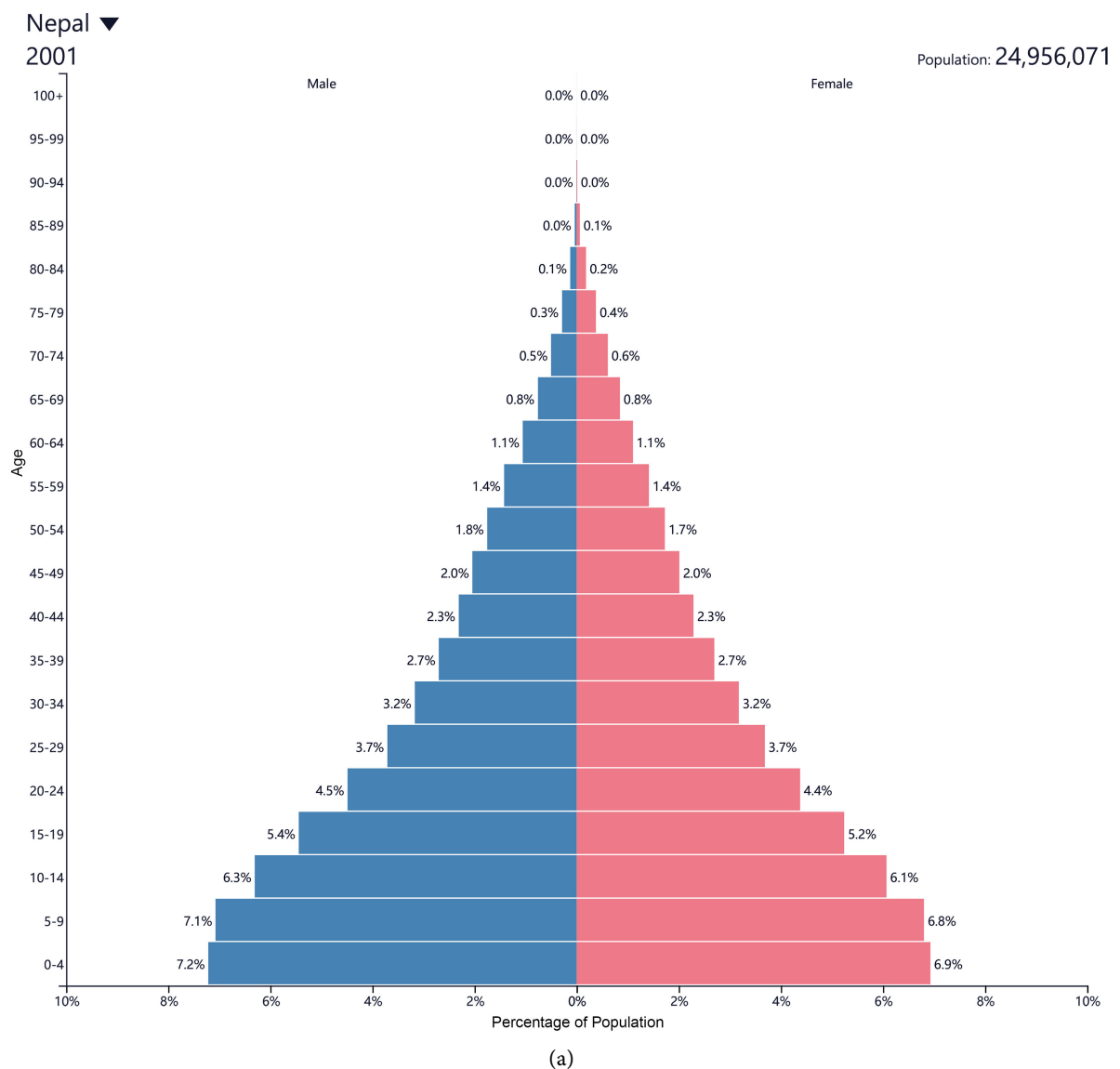
3.4. Changing Age and Sex Structure of Nepal-Population Pyramid

A population pyramid, also known as an “age structure diagram” or “age-sex pyramid,” is a graphic representation of the distribution of a population by age and sex. It often has the shape of a pyramid when the population is expanding.

From one glance at the population pyramid, it also gives some indication of how the population of that country is aging. A broader base indicates having many births and a young population. As the base starts to shrink, it indicates the population is going to age in the coming days.

Figure 1(a), Figure 1(b) shows the population pyramid of Nepal extracted from the online “population pyramid”. It gives some idea of how the age and sex structure of the population is changing.

This two-population pyramid shows how the age and sex structure of the Nepalese population is changing in the last two decades 2001 to 2021. The baseline population has started to shrink, the population in middle age is bulging and the population in older age is also expanding slowly. The shrinking bar in the lower age group is the result of decreasing fertility and the parallel shifting of the bar in the higher age group is the result of health facilities and improvement in infant and child mortality.



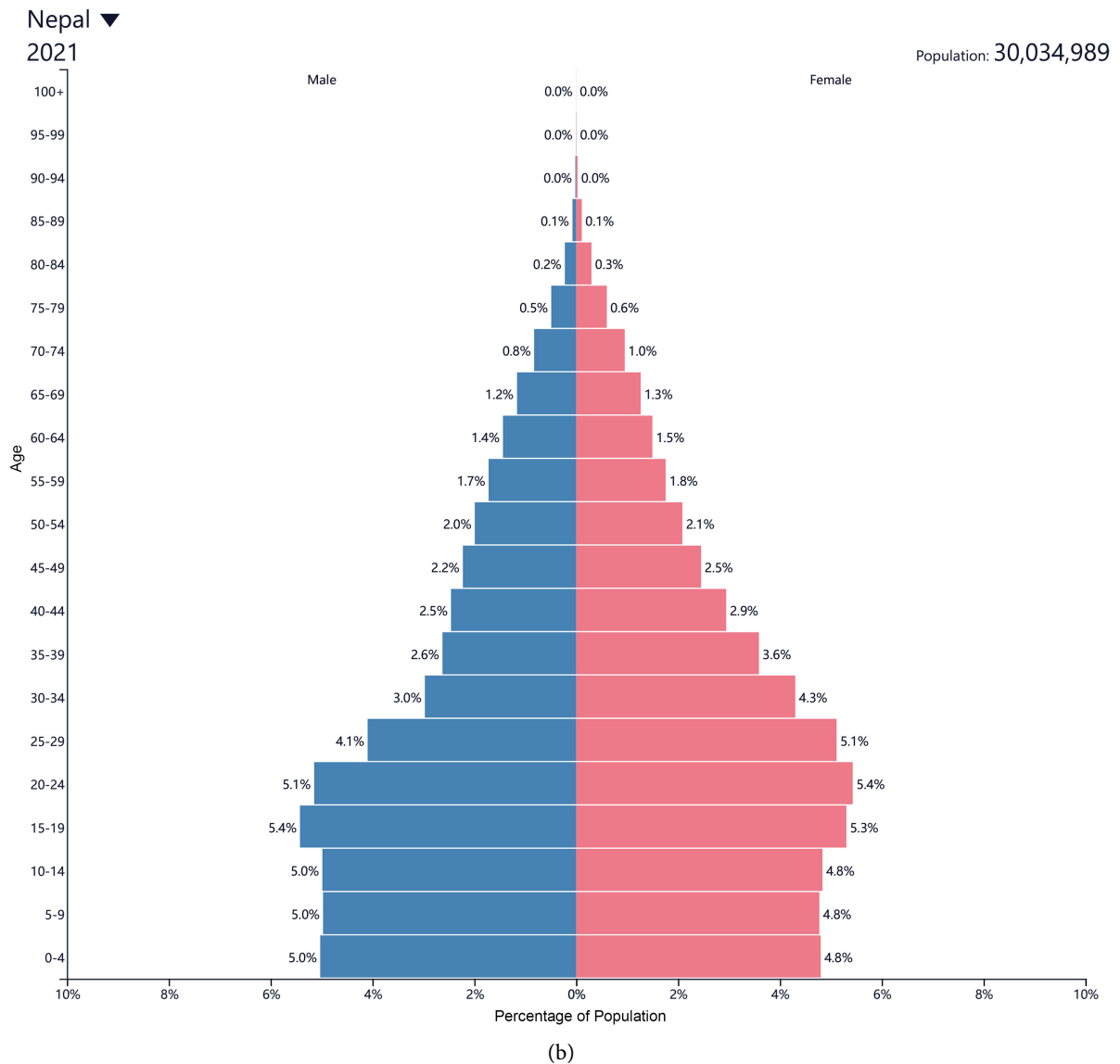


Figure 1. Population pyramid in 2001 (<https://www.populationpyramid.net/nepal/2001/>) (a) and 2021 (<https://www.populationpyramid.net/nepal/2021/>) (b) of Nepal.

4. Discussions

In Nepal, older populations are increasing rapidly [2] [12] [13] and show a tendency that will further increase in the coming days as well [7]. Studies show older persons have a low immune system and are vulnerable to different types of diseases with increasing age [14]. With the rapid increase of older people Nepal may face challenges in social, demographic, economic, health, and care of older people in the coming days.

During the 1950s, life expectancy of Nepal was quite low (about 28 years) due to a high infant mortality rate and high crude death rate. However, a continuous decrease in the infant mortality rate has led to an increase in the life expectancy of Nepalese newborn babies [4] [13]. Consequently, during the second half of the 20th century, life expectancy in Nepal increased from 27 to 60 years and now

it is expected around 70 years [6]. In other words, a Nepalese baby born in 2021 has a life expectancy of more than 40 years greater than one born 65 years earlier. Advances in health care, access to antibiotics, and improved nutrition during the twentieth century all may have contributed to this improvement.

In Nepal, the family, as a social institution, is the main source of support and care for its older members, helping them with day-to-day activities and giving them all kinds of support [8] [15]. Most Nepalese people follow the Hindu religion. Nepali Hindu society, like Indian Hindu society, is structured partly by the notion of life that has four stages (ashramas) and that life is driven by four goals: Brahmacharya (sexual abstinence or the life of a student), Grihastha (Marital life or householder), Vanaprastha (life in the jungle) and Sannyasa (asceticism). Each life stage prepares for the next stage, with the final goal of attaining redemption, moksha, from the cycle of rebirth. In the fourth and final stage of life, sannyasa, an individual is expected to sever all worldly ties in order to realize full inner spirituality [9] [16]. Hinduism contributes to the Nepali value system through the goal of Dharma. Dharma means duty and refers to the responsibilities a person has in his everyday life according to his place in the life cycle [9] [17]. The values of Hinduism are embedded in everyday life. Knowledge of customs and norms and compliance with these traditions is expected not only by family members but by the surrounding community as well [9] [16] [18].

Decreasing fertility is not taken seriously by Nepali policymakers. The latest estimates show that the TFR of Nepal is below the replacement level of fertility. Studies from many countries show that once fertility reaches below replacement level naturally fertility starts to decline. It may indicate that the child population will start to decline now. The population pyramid of Nepal also indicates that the child population is decreasing rapidly compared to two decades ago. Further different measures of the older population also indicate either aging is taking rapidly or in a state to take place rapidly. As the proportion of older people is increasing and the out-migration of the younger population is increasing rapidly, Nepali older people may face some challenges taking the traditional care system [7] [8] [19].

Increasing life expectancy is also associated with increasing different types of diseases in later years of life [14]. Different studies from Nepal show Nepalese older people have problems with loneliness [20], depression [21], sleep disorder [22], functional disability [4] [19] [23], elderly abuse [24] [25] [26], and suffering from different chronic diseases [27] [28] and older people have a low quality of life [29] [30]. Having different types of health problems is associated with an increasing tendency of functional limitations in activities of daily living. It will increase the caregiving burden of older people [19].

On the other hand, the traditional living system of the Nepali elderly is also started to change [31]. The living arrangement of the elderly in Nepal is contingent on their level of support [2] [10] [15]. In particular, the availability of care from a spouse or child may be essential to the well-being of the very old or frail elderly [32]. The older people depend on their children, particularly sons, for

support and security in their old age in Nepal. The latest community study from Nepal shows the highest proportion of older people were living with Son/daughter-in-law (66.3%), followed by 11.6% living with a spouse, 6.2% living alone, 6.1% with a daughter/son-in-law, 4% unmarried son/daughter, 2.3% with grandchildren, 1.4% brother/sister-in-law, 1.3% with other family members and 0.9% others. It shows the majority of older persons were living with family members (81.3%), followed by spouses (11.6%), alone (6.2%), and others (0.9) [31]. Further, as the social security system of Nepal is not well developed [15] [33] Nepal may face further problems to maintain the healthy aging [34] [35] quality of life of Nepalese older people [29] [30] [36].

5. Conclusion

In recent decades, fertility and mortality are decreasing rapidly in Nepal. On the other hand, the proportion of older people is increasing rapidly. The total fertility rate of Nepal is below the replacement level and is expected to fall further in the coming days. The average family size is decreasing and traditional living arrangements and caregiving systems are also in crisis due to the migration of young people. The caregiving burden of older people is expected to increase in the coming days. Nepal needs to formulate some policies on how to care for older people can be provided so they can live healthy and quality of life in the coming days.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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