

Nutritional Situation of Bangladesh during Bangla Fourteenth Century

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Introduction

The Bangla Fifteenth Century has just started. The past Century carries utmost importance in terms of political, economic, scientific, and social advancement. The World has achieved tremendous success in agricultural and industrial growth, treatment and control of infectious diseases, and improvement of various communication media. Concepts of health and nutrition and its relation to basic economic and political factors were ignored, or at least not given enough emphasis by the nutritionists. They often concentrated on scientific, nutrient related issues rather than the basic economic and political factors that are far harder to handle and change. During the last quarter of the Fourteenth Century, the relationship between poverty and malnutrition have been pointed out, but whether nutrition and income are tightly or loosely linked remains univocal¹.

Historically Bangladeshi economy is highly dominated by agriculture with 80.4% of its population living in the rural areas. Agricultural production of this country is largely subsistence in nature and a very high proportion of the rural population works as day laborers

in the agricultural sector. Diet of the rural population of this country is highly dominated by cereal (rice and wheat), curry made of fish, vegetables, and lentils. However, the national nutrition survey done by the Institute of Nutrition and Food Science (INFS), University of Dhaka in 1981-82 shows the dominance of cereals in the diet of female compared to that in the male. The proportion of animal protein of the rural households' food basket found to be insignificant (INFS : 1962-64, 1975-76, 1981-82).

This paper seeks to describe the trend of nutritional situation of the rural areas of Bangladesh during the Bangla Fourteenth Century (1894 A.D.-1994 A.D.). In this study, we have shown per capita per day adequacy of calorie and protein^a, and average height and weight of the rural boys aged seven to ten years to describe the nutritional situation.

Materials and Methods

Great Bengal^b was well known for its fertile agricultural land, bountiful rice, ponds full of fish, and wealth that used to attract people from different parts of the world. However, no survey data are available during that period to describe the nutrition situation of this part of the rural Bengal except a survey

done in 1937 by Wilson and Mitra². Until 1918, concept of different vitamins and its influence on different human organs was not clearly known³. One reason for not conducting much population based studies in the rural areas of the then Bengal during the first quarter of the 20th Century was due to unrest during the independence struggle against the British regime. As a result, most of the health studies during that period were conducted between the prisoners and soldiers⁴. After the 1937 survey conducted by Wilson and Mitra, the first nutrition survey in Rural Bangladesh (the then East Pakistan) was conducted by the Ministry of Health, Pakistan, in collaboration with the University of Dhaka in 1962-64⁵. The second and the Third survey were done in 1975-76⁶ and 1981-82⁷ respectively by the INFS, University of Dhaka. After the 1981-82 survey, no national nutrition survey has so far been done except the Child Nutritional Status Survey, 1989-90 conducted by the Bangladesh Bureau of Statistics (BBS). But, this survey covered only children aged less than five years. Apart from the above surveys, we have taken data from the two studies done by the Research and Evaluation Division (RED) of BRAC^{8,9}. The authors observed severe scarcity of nutrition data specially before the 1962-64 national nutrition

survey. The study conducted by Wilson and Mitra in 1937 is the only available source of relevant data before the 1962 Survey. Moreover, in that study the height and weight data of the rural boys aged seven to ten years are available as line graphs. For this study, we estimated average height and weight at different ages from those graphs. Due to unavailability of raw data of the survey conducted in 1937, we could not calculate anthropometric indices to describe and compare nutritional status of the children.

Results

Calorie and Protein

It is revealed from the survey done in 1937, the rural population of Bangladesh was able to meet 121% and 173% of their average per capita per day requirement for calorie and protein respectively (table 1). It reduced to 83% and 103% respectively in 1992. The per capita daily adequacy in terms of percentage of requirement for both calorie and protein was declining since 1964 (figure 1). The rate of decrease in per capita daily consumption of calorie and protein from 1937 to 1992 was 32% and 40% respectively. A sharp decline in per capita per day protein consumption was observed between 1937 (78.4 gm./capita/day) and 1964 (57.5 gm.) capita/day).

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- a. *Per capita per day calorie and protein requirement are 2273 kcal and 45.3 gm. respectively (INFS : 1981-82).*
 - b. *Bangladesh and West Bengal, a province of India jointly termed as 'Great Bengal' before the independence of Pakistan and India from the British rule in 1947.*

Table 1. Per Capita Per Day Calorie and Protein Adequacy in Bangladesh from 1937 A.D. to 1992 A.D.

Year	Per Capita Adequacy (%)	
	Protein (gm)	Calorie (kcal)
1937	173	121
1964	127	101
1976	129	92
1982	107	85
1992	104	83

Height

Average height of the rural boys aged seven, eight, nine, and ten years in 1937 were 117 cm, 119 cm, 126 cm, and 130 cm respectively (table 2). A sharp decline in average height of boys in the above age group was observed in 1964, followed by an increasing trend up to 1976. The trend was again

downwards from 1976 to 1982, but it again went up from 1982 onwards (figure 2). Average height of rural Bangladeshi boys aged ten years approached almost near to 1937 levels in 1992. However, the overall trend in average height of the rural boys aged seven to ten years old followed a decreasing trend from 1937 to 1992, but it was more visible among the seven and eight year old boys.

Table 2 : Average Height (cm) of the Rural Bangladeshi Boys from 1937 A.D. to 1992 A.D.

Year	Age of Boys in Year			
	Seven	Eight	Nine	Ten
1937	116.8	119.4	125.7	129.5
1964	105.0	112.5	118.7	122.5
1976	109.0	116.0	120.0	124.0
1982	109.0	111.0	118.0	121.0
1992	112.3	114.5	122.9	129.5

Weight

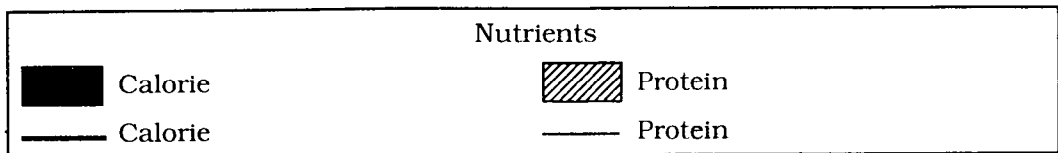
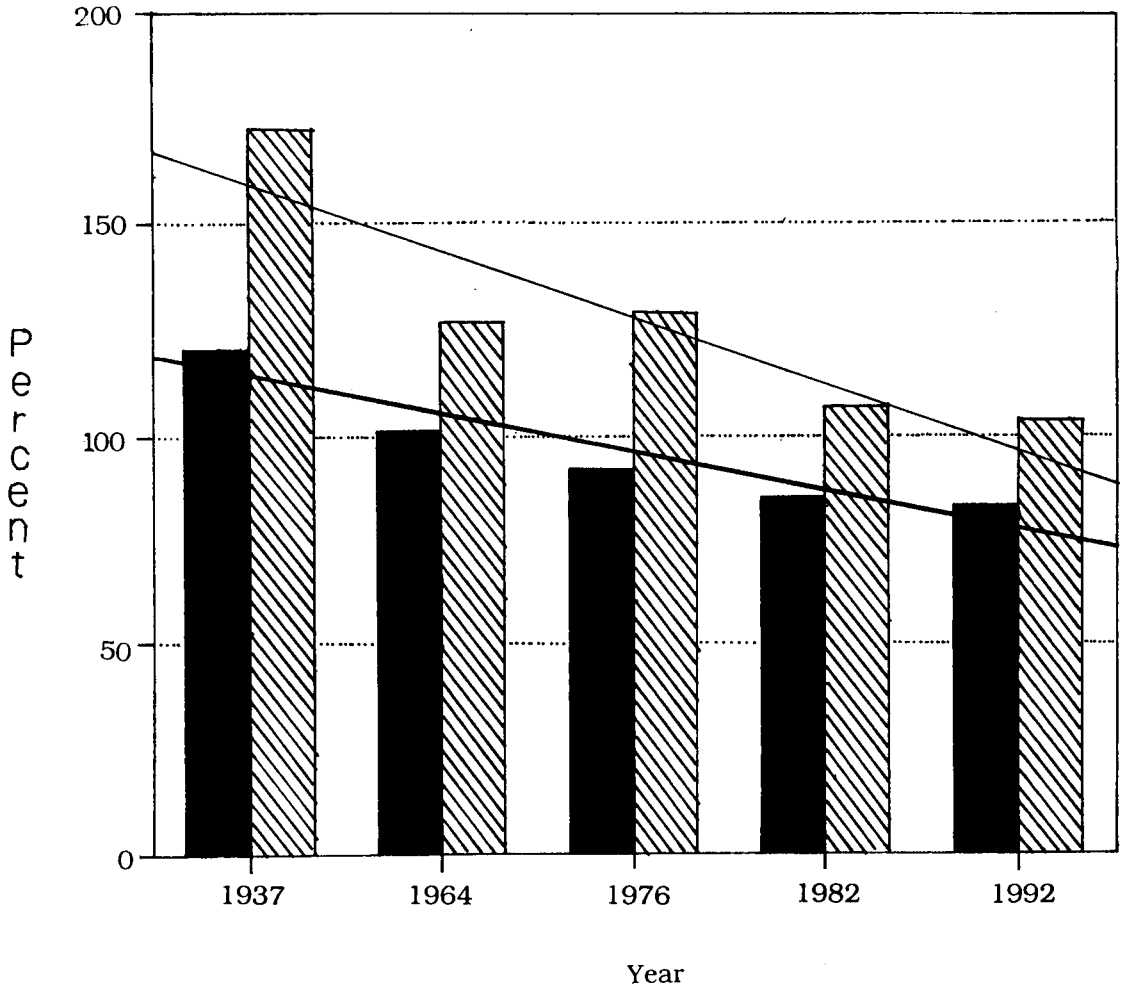
Table 3 and figure 3 show average weight and its trend among rural Bangladeshi boys aged seven to ten years from 1937 to 1992. The average weight of the rural Bangladeshi boys followed the similar trend as to that of

height. But the reduction in average weight was much visible for all the age groups from 1937 to 1992. The boys aged seven to nine years and ten years in 1992 were 6% and 11% higher respectively than that of their counterparts in 1937.

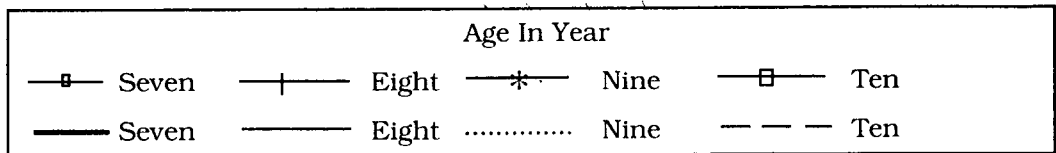
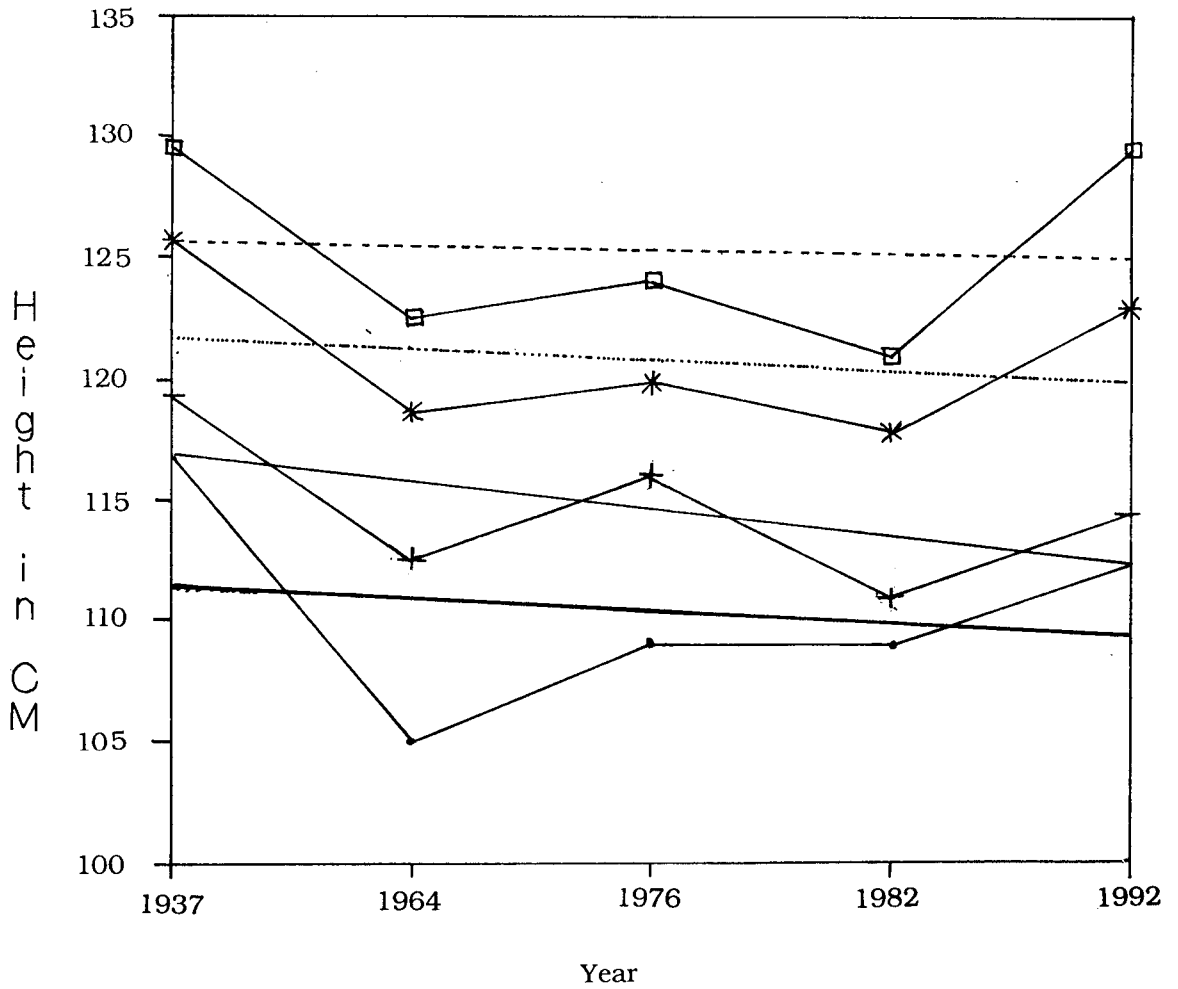
Table 3. Average Weight (kg) of the Rural Bangladeshi Boys from 1937 A.D. to 1992 A.D.

Year	Age of Boys in Year			
	Seven	Eight	Nine	Ten
1937	18.6	20.0	23.0	25.0
1964	16.0	18.0	20.0	22.0
1976	16.3	18.5	19.9	21.4
1982	15.7	16.9	19.5	21.0
1992	17.5	18.8	21.7	22.2

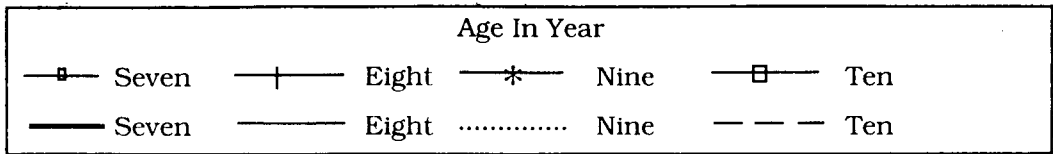
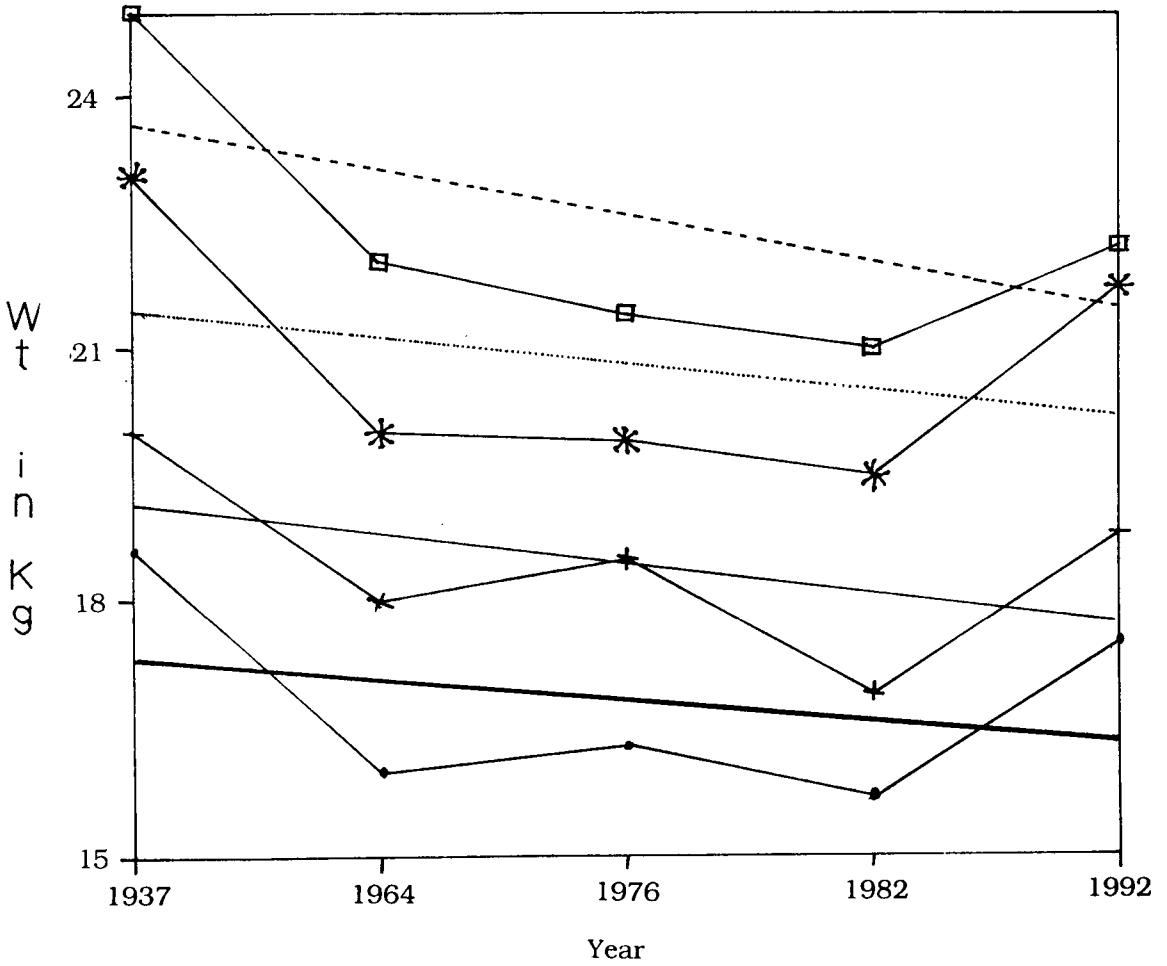
Per Capita Calorie and Protein Adequacy in Bangladesh from 1937 to 1992



Average Height of the Rural Bangladeshi Boys from 1937 to 1992



Average Weight of the Rural Bangladeshi Boys from 1937 to 1992



Discussion

Nutritional status is an outcome of various interrelated both food and non-food factors. Food intake and health status equally affect nutrition of an individual. Different environmental factors, such as, increased population, poor hygiene, environmental pollution, deforestation, desertification, salination etc. adversely affect health and nutritional status of human and other animals¹⁰. Many authors have attempted to relate health and nutritional status of the children^{11,12} to large family size, high parity, illiteracy of parents, single parentage, maternal age, short stature of mother, low per capita land availability and poor access to social services.

In this paper we analyzed historical data on nutritional situation of the population of Bangladesh, and have attempted to look at its trend over time. Unfortunately very scanty information on past nutritional situation is available. We found that per capita daily adequacy of both calorie and protein have been declining since 1937, but the rate of decline was very sharp between 1937 and 1964. Per capita per day calorie adequacy had gone down below the level of requirement after 1964 and since then it has been maintaining a downward trend. In 1992, a Bangladeshi individual living in a rural area could meet about 83% of his/her calorie requirement compared to his/her counterpart in 1937

who met 121% of the requirement. It further confirms that the total cereal availability in Bangladesh is comparatively less in proportion to its population growth.

A similar trend is observed in terms of per capita daily adequacy of protein in Bangladesh, but the trend is more flat compared to that of calorie. Different nutritional surveys confirmed the consumption of inferior quality of protein by the rural households. Per capita daily consumption of protein derived from the animal sources ranged about 9-11 percent during 1937 to 1982.

Although per capita daily protein adequacy is in excess of the actual requirement, the general quality of protein has remained poor throughout the years (Wilson & Mitra : 1937, INFS: 1975-75, 1981-82).

Data on height and weight of the children in the rural areas of Bangladesh are not available before 1937. The first nutritional survey in the rural areas of Bangladesh was conducted in 1964 by the then East Pakistan Ministry of Health. Comparable data are, however, available only for boys aged seven to ten years. Average height and weight declined during 1937 to 1964, and 1976 to 1982, with an upward trend during 1964 to 1976 and 1982 to 1992. However, the rate of decline is highest during 1937 to 1964 and the rate of improvement is highest during 1982 to 1992.

During 1937 to 1964, the Great Bengal Famine hit the country in 1942 that continued up to 1944. The death toll for the famine was put at three to four million¹³. During the famine, the index of wholesale price of rice went up from 100 in December 1941 to 428 in May 1943 and the food shortage was worse in the rural areas compared to urban areas¹³. Among survivors, the adolescent girls and female children had suffered from severe food shortage and different degrees of nutritional deficiencies for a long period. A severely malnourished adolescent young woman or a female child of the 1943-44 period may have given birth to another malnourished child in the mid fifties who never could reach his/her normal height and weight. This may partially explain the sharp decline in average height and weight of the rural Bangladeshi boys aged seven to ten years reflected in the nutritional survey conducted in 1962-64.

The 1974 famine of Bangladesh caused severe damage to the health and nutritional status of the rural

population, especially to the landless laborers. Different authors had been described the effects of the 1974 famine on the rural population of Bangladesh elsewhere¹⁴.

The reduction in average height and weight of the rural Bangladeshi boys aged seven to ten years evident from 1976 to 1982 national nutrition surveys may be due to the long term impact of the above disaster. Since the early eighties the Government of Bangladesh in collaboration with some NGOs have launched several Primary Health Care, and Nutrition programs. Some health and demographic indicators show tremendous improvement since 1981 (table 4). Increase in average height and weight since 1982 may partially be the impact of those MCH, Primary Health Care, and Nutrition programs. The other factors of anthropometric improvements during the 1980s and onwards may be due to the intensification of primary health care programs and increased access to different communication media.

Table 4 : Some Selected Health and Demographic Indicators

Indicators	Year	
	1981	1991
Infant Mortality Rate (IMR)	111.5	91.0
Crude Birth Rate (CBR)	34.1	32.9
Crude Death Rate (CDR)	11.9	11.5
Persons Per Physician	8810	5216
Per Capita Govt. Expenditure on Health and Family Planning	24 Taka	76 Taka

Source : Bangladesh Bureau of Statistics (BBS)

It is apprent from the discussion that during the Bangla Fourteenth Century East Bangla (now Bangladesh) having experienced two major famines and historic struggles of liberation against the then colonial British rulers and the then Pakistani autocratic regimes may have significantly contributed to the declining trend of the nutritional status of the growing children and mothers.

However, we can now hope to have a prosperous and healthy Fifteenth Bangla Century as evidenced by nutritional improvements from the 1982 and 1992 data.

Summary

In this paper, we analyzed historical data and attempted to describe nutritional situation of the rural areas of Bangladesh during Bangla Fourteenth Century (1894 A.D. to 1994 A.D.). Severe scarcity of nutritional data before 1962-64 was evidenced. Nutritional survey data before 1937 in this part of the then Great Bengal is not available. Our analys is is based on data taken from the 1937 nutritional

survey conducted by wilson & Mitra, the 1962-64 nutritional survey conducted by the Ministry of Health, East Pakistan, the 1975-76 and 1981-82 survey conducted by the Institute of Nutrition and Food Science (INFS), Dhaka University, and the 1992 nutrition data collected by the Research and Evaluation Division (RED), BRAC. In this paper, per capita daily adequacy of calorie and protein, and average height and weight of the rural boys aged seven to ten years are used as indicators to describe the nutritional trend from 1937 to 1992. Per capita daily adequacy of both calorie and protein has been declining since 1937 in the rural areas of Bangladesh. However, the decline in calorie adequacy than that of the protein is much severe. A declining trend is obsrved in terms of average height and weight of the rural boys aged seven to ten years since 1937 with a sharp drop between 1937 and 1964. However, both height and weight show an increasing trend since 1982, but still remaining below the 1937 level.

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