CHAPTER II

POPULATION TRENDS AND HEALTH IMPLICATIONS

Population trends always have a direct relation with the prosperity and progress of a place. The study of population trends is relevant to health and hygiene. Health conditions are obviously a determinant of mortality and fertility and consequently of quantitative population trends.

The size of the population and its growth in Goa were influenced by economic conditions of life that were based predominantly on agriculture and its impact on the health conditions. Majority of the people could be called poor. The prevailing living standards were responsible for the level of nutrition, lack of hygiene and diseases. Since most people lived in chronic economic stress they could not afford to spend much on food and basic amenities. The diet of the majority of people was faulty due to poverty and certain irrational food habits sanctioned by tradition. Faulty diet was responsible for many diseases prevailing in Goa. It also affected the ability of the people to work. Poor diet together
with lack of hygiene, polluted water and scarcity of food led to morbidity and mortality. The vulnerable age group were pregnant women, infants and children. This chapter has two sections. Section one will deal with population changes in pre-census period. Section two deals with population trends in census period that is from 1881 to 1961.

I. Pre-Census Period

The population figures for the pre-census period for the district of Goa are not complete nor very accurate. The information available is restricted to areas where the Jesuits and other missionaries exercised their missions. It is based on Church records. They are the prime sources of population figures since the early centuries of Portuguese regime. Parish registers were started as a result of the Council of Trent (1545-1563). Parish registers provide some information about socio-economic problems and specially the health conditions of the time. Figures for births and deaths for the first centuries are not available.

The Jesuit records reveal that in 1603 the population of Salcete consisted of 34,238 inhabitants.¹ This number went up in 1606 to 35,500.² In 1608 Salcete had 82,200 Catholic inhabitants. The increase in Catholic population was due to large scale conversion and natural growth.
The total population of Ilhas, Bardez and Salcete between 1631-1643 was 1,22,840 inhabitants. Out of these 60,000 were Catholics and 40,000 non-Catholics. Among these were 22,840 soldiers. In the late seventeenth century the total population of Ilhas consisted of 30,000 inhabitants. Salcete had 80,000 inhabitants and the population of Bardez was about 70,000.3

Between 1719-1721, the total population of Ilhas taluka consisted of 70,186 inhabitants including 62,328 Christians. Among the Christians there were 1,038 Portuguese. The non-Christian population of this taluka consisted of 7,719 Hindus and 39 Muslims.4 At the same time Salcete had 66,965 inhabitants: 64,916 Catholics, including 76 Portuguese, 2,280 Hindus and 153 Muslims. The population of Bardez in the north of Goa was 1,19,490 with 1,05,260 Christians, 13,330 Hindus and 900 Muslims.5

In 1723 the total Catholic population (including slaves) of the city of Goa, adjoining islands, Anjediva, Salcete and Bardez consisted of 1,81,565. In 1749 the population of Ilhas taluka amounted to 52,781 including 1,156 Portuguese, 5,573 Hindus, 11 Muslims and 2,218 slaves. The city of Goa had 368 Timoris, Chinese and Bengalis. In the meantime the total population of Salcete was 65,182 including 1,539 Hindus, 45 Muslims, 294 Europeans and 803 slaves. In
the case of Bardez the population was 61,171 with 351 Portuguese, 5,567 Hindus, 147 Muslims and 433 slaves. The island of Anjediva had only 817 inhabitants -- 36 whites, 32 Hindus, 1 Muslim and 11 slaves.\(^6\)

The total Catholic population of Goa (Bardez, Salcete and Ilhas) was 1,79,175 in 1773.\(^7\) In 1775 this number decreased to 1,68,079. This could be due to epidemics and famines.\(^8\) In 1790 Bardez, Ilhas, Salcete and Ponda had 1,36,844 Catholic inhabitants.\(^9\) This number rose to 1,69,019 around 1795.\(^10\)

In the year 1810 the population of Ilhas amounted to 31,586. During the same year the population of Bardez, Salcete, Ponda, Canacona, Bicholim, Pernem and Tiracol were 22,071, 69,287, 32,620, 32,583, 14,583, 8,723, 23,293 and 456 respectively. The figure must have been higher as most of the births, deaths and marriages were not registered. Salcete had a total population of 69,287. About 2,077 births took place in this taluka. The Catholic population of Goa was around 87,039 in 1810.\(^11\) In 1820 the Catholic population of Goa was 1,24,097.\(^12\)

In 1825 the population of Goa amounted to 2,60,000 including 1,000 Europeans (Portuguese) and their descendants.\(^13\) As per the census carried out in Goa in the
In the year 1878, there were a total 7,641 births, 5,816 deaths and 3,039 marriages. Between 1600 to 1700 the population of Goa declined. This decline can be attributed to many epidemics that broke out during the period including the ones that took place in 1618, 1635, 1648 and the wars with Shivaji. During this conflict many people migrated to the neighbouring kingdoms. Famines too must have contributed to the decline in population. For instance during the famine of 1630 about 4-6 persons died daily due to scarcity of food. Jesuit missionaries daily fed about 900 persons with boiled rice and canjee. In Salcete there was acute shortage of food.
resulting in many deaths mainly among children. However, between 1700-1800 there appears to be a rise in population even though epidemics continued to take a toll of life. This could be as a result of the acquisition of New Conquests during this period.

II. Census Period

The Anglo-Portuguese treaty of December 26th, 1878 paved the way for the uninterrupted decennial series of substantial censuses starting from 1881. The British Government had agreed to supply salt to Estado da India and wished to know the exact population of the territory. The British Government asked the Portuguese Government to carry out a census. In August 1899 Portuguese Government ordered that decennial census should be carried out in all Portuguese colonies from 1900 onwards. The censuses have been a major sources of information on trends of population and its character. The other official demographic data such as registration of births was started much later. The censuses specially in the early period are not fully reliable. Sometimes door to door enumeration was not carried out. The regedor (justice of peace) was asked many times to fill up the forms.
The first census was carried out on 17th February 1881. The census took into account all population present and those temporarily absent. The census of 1881 gives 4,45,263 as the total population of Goa. In 1900 Goa had 4,75,513 inhabitants. This population steadily increased up to the third census of 1910 which registered 4,85,752 inhabitants. Between 1881-1900 there was increase of 30,250 persons - a rise of 6.75%, whereas during the decade 1900-1910 the population showed a marginal increase of 10,239 persons which was an increase of 2.36%. During this period large number of Goans living in Bombay returned to Goa panic-stricken due to plague that ravaged Bombay between 1896-1914. 17

The mortality rate was high in Goa. The Government appeared to be concerned with the problem. It appointed a committee to investigate the causes. The high mortality could be associated with poor standards of living, lack of medical facilities and epidemics of cholera, plague, smallpox as well as endemic diseases such as malaria, typhoid, and tuberculosis. The mortality caused by malaria was high in Sanguem taluka where the disease existed in endemic form. Between 1900-1910 about 6,000 inhabitants died in Sanguem due to malaria and more than 15 villages disappeared from the map. Malaria was also responsible for the disappearance of four villages in Canacona (South Goa). 18
During 1910-1921 a decrease was noted in the population of Goa. The decrease of 3.55% was attributed to emigration and epidemics, particularly to the pandemic of influenza and to certain economic conditions. Ilhas taluka was densely populated until the nineteenth century. After this period Bardez emerged as the most densely inhabited region. This density decreased after 1931 because of emigration flow.

An increase of 35,787 inhabitants was registered in the decade 1921-1931, presumably because of expansion of port activities at Marmagao and absence of severe epidemics as well as famines. Between 1931-1940 the population of Goa rose from 5,05,281 to 5,40,925 - a percentage growth of 7.05%.

In the decade 1940-1950 the increase in population was low. Only 6,523 persons were added. Between 1950-1960 there was a mere 1.21% increase. In the early 1950s many Goans on account of economic blockade left Goa because their family earners in the rest of India could not remit money to Goa freely. At the same time, the blockade gave impetus to the development of ore extraction. The emergence of mining brought about a shift of population to the mining areas of Sanguem, Bicholim, Quepem and Satari. The population of these talukas noticed an increase of 44.6%, 26.95%, 27.41% and 17.05% respectively.
A corresponding increase of population was also experienced in Marmagao port region. Around 1961 there were 5,89,997 inhabitants in Goa, including 3,30,219 in the Old Conquests and the remaining in the New Conquests.\textsuperscript{20}

The increase in population in the mining areas were not only due to working facilities but also due to control of diseases such as malaria. In 1950s malaria campaign was carried out at Canacona, Sanguem and Quepem talukas. As a result malaria that was endemic in these areas almost disappeared. During this period Government agencies made strenuous attempts to improve the conditions of health by controlling diseases. Although financial reasons did not permit large scale policy measures, still it was responsible for marked decline in mortality in the last decade of colonial era. Improvement of nutrition, immunization and mass public health measures helped in deep reduction of infectious and parasitic diseases from the beginning to the end of a life span.

Before 1914 all births were not registered in Goa. Catholics registered births at their respective parishes at the time of baptism. The compulsory birth registration in the territory of Goa, Daman and Diu was started in 1914, with the publication of the Civil Registry Code. Every new born had to
be registered within 30 days, failing which the parents were to be fined.

Despite the law making birth registration compulsory, many births remained unregistered particularly in rural areas either through neglect of the parents or their ignorance. Births many times were registered only at the time of a child going to school or at the time of a marriage.

Birth rates were high among the Muslims. In the year 1900 the birth rate in Goa was 17.65%. The following year a decrease was noticed with 16.83%. In 1910 the crude birth rate was 59.87% and in 1920 it was 52.82%. A total of 15,805 births took place in 1921 out of these 7,974 were Catholics and 7,831 were non-Catholics.

Still births were common in Goa throughout the period due to lack of medical aid and other factors. Most of these still births were not registered.

Sex ratio

Sex ratio was favourable to males during the years 1848 and 1881 with 980 and 990 females per thousand males. This could be because males were better looked after in the early days of birth and very often survived diseases.
Pronounced preference for sons led to poorer feeding and neglect of daughters. Women spent a considerable part of adult life pregnant or nursing. They suffered from higher level of infectious diseases. Along with poorer nutrition, lack of knowledge of asepsis in delivery contributed to the adult female excess of deaths over males through child bearing ages largely from maternal mortality, tuberculosis and malaria.

The following table show excess of females over males between 1900 to 1931. 21

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
<th>Excess of female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>2,25,825</td>
<td>2,75,973</td>
<td>50,148</td>
</tr>
<tr>
<td>1910</td>
<td>2,61,596</td>
<td>2,86,646</td>
<td>25,050</td>
</tr>
<tr>
<td>1921</td>
<td>2,52,096</td>
<td>2,79,856</td>
<td>27,760</td>
</tr>
<tr>
<td>1931</td>
<td>2,79,398</td>
<td>3,00,572</td>
<td>21,174</td>
</tr>
</tbody>
</table>

The highest number of females per 1,000 males was in 1950. In this year there were 1,128 females for 1,000 males. However, in 1960 there was a slight decline with 1,066 females for 1,000 males.

The ratio in favour of the females was due to variety of factors. Among these emigration was an important one. Large number of Goans migrated to British India and East Africa right from the nineteenth century. It started during the
British occupation of Goa at the time of Napoleonic wars when many Goans went to work in British ships anchored at Marmagoa. Later when the ships moved to British India the staff went along. Bardez, Salcete, Ilhas, Sanquelim and Pernem had excess female rate between 1900-1931. Excess of the females could be attributed to the fact that the above mentioned talukas had large paddy fields where women labour was required. Until 1950s Satari, Bicholim, Sanguem and Quepem talukas had more women then men. This trend changed due to development of mining industries as more men worked in the mines.

Marital Status

In 1848 there were around 56.64% married persons, 4.53% widowers, 5.12% widows and 30.50% unmarried persons in Goa. The highest number of married people were found in New Conquests among non-Christian inhabitants probably because among the non-Christians marriage was a necessity and girls did not remain unmarried after certain age. In 1948, Bicholim had the highest percentage of married people (79.51%), followed by Pernem (75.75%) and Canacona (72.98%). Salcete had the highest number of unmarried persons (50.23%), apparently because it had large number of minor population or many people in the taluka married late or never. 22
The census of 1851 gives 45% married persons, 41% unmarried and 14% widows and widowers. The marital distribution of population based on 1881 census suggests that there were 48% unmarried persons, 39% married persons and nearly 13% widows and widowers. The highest number of married people according to census of 1881 was found in Pernem (46.93%).

The census of 1900 reveals that there were 47.47% unmarried, 39.71% married and rest widows and widowers. Salcete still continued with the highest number of unmarried population.

Single persons maintained excess over married persons throughout the census of 1900, 1931, 1940, 1950 and 1960. Again Old Conquests had relatively lower proportion of married persons compared to New Conquests. People from Old Conquests usually migrated to other countries, thus delaying marriages. The economic conditions of the time also might have compelled some people to postpone their marriages. On the other side in New Conquests girls were married early as an assurance to the husband of purity and chastity. There were more married women then men particularly among Hindus. Hindu men often had two or more wives who lived in the same house.
Divorces were few in Goa specially among Christians as it was not encouraged by the society. The census of 1931, 1940, 1950 and 1960 show negligible percentages for divorced persons namely 0.02, 0.02, 0.02 and 0.04 respectively. 25

In 1950 only 17% of women of 15 and above remained unmarried. Among the men the percentage of unmarried was 33%. Unmarried men were more then unmarried women particularly in the age group of 20-34 years. Men usually married after completing their studies and when they were settled in life. 26

According to census of 1950, there were in that year 1,923 married women and 355 married men with less than 15 years of age. 27 Among those was one man and one below 1 year. 28 Married state must have had its effect on mortality, both physical and psychological. This was particularly so for women who were liable to extra risks to health arising from childbearing. Bereaved women and more particularly men, must have suffered poorer health than those still married and their mortality was higher too specially in the years immediately following the loss of the partner.

Fertility Behaviour

The fertility of a population depends on the first place, on the fecundity of its members, that is, on their
ability to achieve conception. A wide variety of cultural practices influenced fertility. Fertility was evidently related to age at marriage, marriage practices, post-partum sexual activities, religious norms, birth control practices and by health and mortality status of the population.

Among the above mentioned factors probably the most important factor that reduced fertility in Goa and rest of India was the widespread practice of extending breast feeding till the infant was 36 months old. This practice was reinforced by Hindu custom that required abstinence from or at least limitation of sexual intercourse during the period of lactation. Similar regulations existed at time of religious festivals. Hindus were prohibited to have sexual relations on the anniversary day of the dead parents, nights previous to the anniversary, in the day time, at sunset, midnight and during an eclipse.

The poor health and nutritional conditions responsible as they are for spontaneous abortions, still births and excessive mortality in reproductive age groups must have had a pronounced effect on fertility. The level of fertility was associated with the incidence of malaria. Birth rates were low in areas were malaria was endemic. Women in these areas frequently experienced miscarriages and abortions. Other important causes of still births included anemia, pelvic
deformity and venereal diseases. Epidemics and famines also affected fecundity.

In Goa marriage age varied among different communities. Christians had the highest mean age at marriage while the Hindus had the lowest. Although there were laws forbidding early marriages, child marriages prevailed in Goa. In the Gauda class girls married between ages of 5 to 9 years. Hindu girls also married early sometimes before reaching puberty. Early marriages contributed to high fertility rate as well as high maternal and infant mortality. Christians girls married between 20-30 or even in older age. Hindu males married at any age.

Married couples had large families, specially among the poor class. In the healthy villages the average number of births to each marriage was 6 to 8 children and in unhealthy areas 2 to 4 children. Barren people were few. Infant mortality was one of the many factors that contributed to large families. Women who lost their infants had shorter lactation and non-ovulatory periods before becoming fecund again and in part because they needed more children to replace those they lost. They continued to bear children even at later ages. Men and women wanted to have as many children as they could or "as many as God wills".

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The census of 1940 for the first time revealed the number of children born and those that survived. The records available show that there were 3 Hindu women with 20 or more children each. About 64 women gave birth to 15 to 18 children each, out of these women 37 were Catholics, 24 Hindus and 2 Muslims. 29

In 1940, there were 3,541 children for every 1,000 Catholic mothers, 3,531 children per 1,000 Hindu mothers and 3,903 children for every 1,000 Muslim mothers. It was noticed that fertility rate was high among Muslims women compared to Hindu and Catholic women. 30

The high Muslim fertility followed general pattern of fertility among Muslims around the World. In Muslim tradition the permanent state of celibacy is considered abnormal for men and unthinkable for able bodied women. 31 The Catholic Church also fostered the doctrine of large families. Majority of the Catholics believe that children are a gift of God. Hindu scriptures emphasize numerous children as blessings of God, but there was lack of central authority to enforce these tenets.

The highest number of unwed mothers were among the Hindus. In 1940 there were 942 unwed mothers with 2,898 children. This high number of unwed mothers among the Hindus
was due to the fact that many women from this community were 
*bailadeiras* (temple dancers) who often engaged in prostitu-
tion. According to the census of 1940 there were 64 
Catholic unwed mothers with 117 children in Goa. The rate 
might have been higher. Many did not register the births of 
their illegitimate children.

The period from 1950-1954 show a higher birth rate 
among the Catholics (36.98%) even though many of these women 
had their husbands abroad. The birth rate among the Hindus for 
the same period was 24.7%.  

**Population density**

Population density is a demographic index which helps 
to evaluate density of population in a given area. There are 
various reasons for this density in certain areas. The density 
of population has its impact on health and hygiene.

We know that the city of Goa was over-populated in the 
sixteenth and seventeenth centuries. This overcrowding had 
its impact on health and hygiene of the place. The inhabitants 
suffered from all kinds of diseases some of which erupted many 
times in epidemic form. Potable water was not sufficient to 
meet the needs of the population. Facilities for disposal of
waste were primitive. These conditions contributed to infections and diseases which finally led to the decay of the city.

In 1848 Salcete taluka had the highest concentration of population namely 358 persons per sq. km. followed by Ilhas, Pernem, Ponda and Bardez. Velhas Conquistas were highly populated because of better socio-economic conditions. They were the first to profit from various health improvements introduced by the Government. These areas had many waterways and roads. Many inhabitants from this region migrated to British India and British Africa. They sent regular remittances home thus helping to create better standard of living.

The census of 1931 showed that the density of population was 153 inhabitants per sq. km. Ilhas, Salcete, Bardez, Marmagoa and Ponda had density above average, while Pernem and Sanquelim had medium density and Sanguem, Satari, Canacona and Quepem had low density. These last four talukas had large areas but small population. Poverty, poor hygiene and malaria were responsible for the low density of population. However, the density of Bardez taluka began to decline after 1931. One of the causes for the decline was emigration.34

During the years 1940, 1950 and 1960 the density of population in Ilhas was 423, 440 and 478, in Salcete it was 417, 428, and 426 whereas Bardez registered 402, 391, and 369.
Marmagoa showed an increase of population of 100 persons per sq.km. probably due to port activities. In the early 1950s many people left their land on account of economic blockade. At the same time the blockade gave an impetus to the development of ore extraction. The emergence of mining brought about a shift of population to the mining areas of Sanguem, Bicholim, Quepem and Satari. These talukas saw an increase in population by 44.6%, 26.95%, 27.41% and 17.05% respectively. A graph in the appendix shows percentage distribution of population religion-wise in Goa from 1881 to 1960.

Standards of literacy

Literacy index is one of the factors that helps to evaluate the development of a place. The early census in Goa defined as "literate" those who were able to read and write. The literacy rate increased in Goa from 10.91% in 1881 to 17.5% in 1931 and 31.23% in 1960.

The Old Conquests had the highest number of literate and educated persons. Among the Old Conquests talukas Bardez had a high literacy rate, even though it had less number of schools per 100 sq.km. This could be because of greater contacts with the outside world and better economic condi-
tions. In its turn literacy helped to maintain better living conditions.

Among the New Conquests talukas Ponda had higher literacy rate of 7.85% in 1881. It rose steadily to 14.2% in 1921 and 22.46% in 1960. Minimum literacy rate was in Satari. The literacy rate was higher among the Catholics and Muslims. Many Hindus knew to read and write in more than one language.

Mortality and Morbidity

Mortality is one of the three components of population change. The other two are fertility and emigration. Mortality has played a dominant role in determining the growth of population, the size of which fluctuated in the past mainly in response to variations in mortality. Mortality is an important indicator of health conditions of a population. In fact it is total absence of health.

The W.H.O. defined death as follows: Death is the permanent disappearance of all evidence of life at any time after birth has taken place. Unlike births, events of deaths had to be registered in Goa. No corpse could be buried or cremated unless the death was registered in the parish or with civil authority.
The causes of high mortality rate were primarily epidemics, famines and wars. Poverty, malnutrition, insanitation, diseases, lack of medical care were the long term underlying cause of morbidity and mortality. Insanitation and lack of potable water promoted cholera, typhoid, fever malaria, dysentery or diarrhoea as well as hookworm diseases and other helminthic infections. Malaria led to morbidity and death. Tuberculosis also killed people. About 1,513 persons died of Tuberculosis in Bardez between 1915-1924. Majority of them suffered from pulmonary tuberculosis. The highest number of death due to the disease occurred in Mapuça followed by Aldona and Siolim.

Mortality rate was high in the sixteenth and seventeenth centuries. One estimate claims that between 1604-1634 about 25,000 soldiers died in the Royal Hospital in the city of Goa. Among these 500 died every year of syphilis and other sexually transmitted diseases. A report dated 1655-1656 says that out of 3,000 soldiers who arrived from Portugal in 1655 about 1010 died in the Royal Hospital. Again in September 1699 a total of 100 soldiers died in the same hospital. Another document of the early seventeenth century states that 15-25 patients died daily in the Royal Hospital of various diseases. Manucci, the Italian traveller mentions that between mid seventeenth century and early 18th century around 25 patients died everyday in the hospital. Upto mid seven-
teenth century about 22 governors died of dysentery and fevers. In 1876 a total of 573 patients died of fevers in the Military Hospital of Goa.\textsuperscript{42}

Recurrent epidemics and diseases killed many people in the late nineteenth and twentieth centuries. Tuberculosis killed large numbers in the Old Conquests. It was considered the worst killer after malaria in the post World War I era. Tuberculosis was associated with substandard living.

Most of the records available about mortality do not indicate the cause of death. In Goa most deaths occurred outside the hospitals and when they took place in homes they were largely unattended by doctors. The cause of death was occasionally stated by the informant. There was a tendency to record the cause of death as "natural death" even in case of a new born infant. A study of Parish registers of Anjuna (Bardez) between 1930-1961 reveal that majority of deaths occurred due to senility, cardiac and brain problems, bronchitis and cirrhosis of liver.\textsuperscript{43}

\textbf{Infant and child mortality}

Infant mortality was by far the largest source of deaths. Even now, about 40,000 children under the age of five
die in the world of preventable causes every year. Around 150 million children under five are malnourished despite the fact that the medicine has made tremendous progress and there are better sanitation and standards of living. Infant mortality is a sensitive index of general health status of a place.

Infant mortality (0-1 year) was high in Goa during the colonial period. The situation improved only during the last few decades of the Portuguese rule in Goa due to immunization against infectious diseases such as cholera, tetanus, typhoid, smallpox, tuberculosis as well as better nutrition.

Figures concerning infant mortality are difficult to obtain particularly concerning early period. Many infant deaths and still births were not registered due to neglect and ignorance. However, among the Catholics most infant deaths were registered in the Church at the time of burial.

In the early twentieth century in Sanguem taluka around one third of the new born children died. The percentage of still births was 8% in the same taluka. In 1927 about 1,614 infants died in Goa. During the same period there were 501 still births. The following year infant mortality in Goa amounted to 1,700 and still births to 670. About 2,000 infants died in Goa in the year 1941. The highest number of
Infant mortality was in Salcete. A total of 652 still births took place during the same period. Between 1931-1941 about 158 Catholic infants died in the village of Anjuna (Bardez). During the same period in Carmona there were 147 infant deaths. About 42 Catholic children died at Anjuna between 1942-1945 and again from 1952-1961 around 16 infants died in the same parish, victims of various diseases. Infants who survived death in the early period suffered from various physiological and morbidity problems.

Infant mortality can be divided into two major groups -- neonatal (within the first month of life) and post-neonatal mortality (after the first month but within the first year). Most neonatal mortality resulted from genetic defects or from infections or injury received at the time of delivery. Neonatal deaths were due to mother's poor nutrition during pregnancy, poor midwifery services and largely as a result of tetanus because the cord was not cut or was not tied in a sterile way. This infected the umbilical stump.

Tetanus was one of the most common causes of infant mortality throughout the period. In 1914 about 22% of the deaths among infants were caused by tetanus in the villages of Aldona and Moira of Bardez taluka. That explains why sotvi was considered a curse of Durga Devi. The disease was known as sotvi as it usually appeared on the 7th day of the birth.
Goddess Devi was worshiped in a special way to avoid disease. Houses of the lower strata lacked basic amenities. It is not surprising therefore, that death due to tetanus occurred. Second cause of neonatal mortality was nutritional status of the mother. Complication during pregnancy, delivery and low weight babies were closely related to maternal weight and height.

Infant mortality was high among economically backward class. These infants suffered from malnutrition and were vulnerable to all kinds of infections. Infants of the low income group were breast fed upto 36 months, but the milk was inadequate because no supplementary food was there excepting water mixed with jaggery that was administered to clear the intestines. The water used was often not boiled and it was fed with the help of a piece of cloth dipped in water and then squeezed into the mouth of the child. Children under five were most susceptible to the ill effects of malnutrition. Statistics show that more than 28% of the deaths, during the early decades of this century were registered among children below five years of age. During the years 1938-40 and 1948-50 the mortality rate upto one year compared to general death was equal to 21% and 22% respectively. Poor diet had its effects on the height and weight of the poorer children as compared to the children of the upper classes.
In an inquiry carried out in 1943 among 36 families of school-going children from Panjim primary school, it was found that 11% of the children in the family died before school-going age. This percentage rose to 12% in 1951. Out of 673 students more than half suffered from lack of vitamins and tongue fissures which were signs of malnutrition.

Malnutrition was mainly due to poverty and lack of knowledge of dietics. Even in conditions of poverty the education of women might have helped in improving the nutritional status and health.

Another fatal infection among the infants was pneumonia and bronchopneumonia. The infection that in combination with nutritional status was often fatal in children was diarrhoea. A child suffered from diarrhoea at least 8 to 10 times in a year. Diarrhoea often led to dehydration and many times to rapid death. In Goa it was responsible for large number of deaths under the age of five. Diarrhoea could have been prevented by proper nutrition, clean food, water and general hygiene.

Dysentery, measles and malaria also took heavy toll of life. Many still births were results of malaria. These were the children whose mothers had suffered from malaria. Superstitious beliefs played an important part in taking a
toil on the infant life bound by traditions of customs and
castes to the observance of habits which were conducive to
infections and diseases. Linschoten, the Dutch traveller says
that once he went to the house of a Canarin to ask for water
to drink, and he saw the woman washing her newly born with
cold water. After the wash the infant was placed on a fig
leaf as it was believed this would bring the child good
health. 51

Few inoculations were available in Goa to prevent
infections such as measles, whooping cough, diphtheria,
typhoid and tetanus. Even when they were introduced people
influenced by superstitious beliefs were reluctant to subject
their infants for such inoculation. Alcoholism and syphilis
among the parents also led to infant mortality. Many
undiagnosed causes of the time might have contributed to still
births and infant mortality among them Rh negative
incompatibility of the parents.

As a result of improved antenatal and intra-natal care
plus increasing availability of medicine, establishment of
maternity homes in rural areas, expansion of education and
means of transport, mortality incidence among infants declined
in the last few decades.
Maternity deaths

Childbearing is a term that can be used to refer to human procreation from conception throughout birth, puerperium and early parenthood with all its physical, psychological and social ramifications. Childbearing was a difficult process in Goa as still is in many developing countries. Around 2,30,000 women still die in South Asia during pregnancy and childbirths.

Such high mortality rate was the result of the conditions surrounding the pregnant mothers before, during and after the delivery. Antenatal care did not exist in Goa during those days. No prenatal tests were carried or urine examined. The swelling of the feet was paid little attention. This often led to eclampsy.

Deliveries during major part of the colonial period was conducted at home. A wide spread custom required that the young woman returned to her mother's house for the birth at least of her first child. The birth was attended by a dai a woman of low caste or a servant in the house. The dai had no formal training. It was a hereditary skill or lack of skill that was greatly responsible for high infant mortality. According to certain cultural norms prevailing mainly among Hindus, the actual event of birth was considered ritually
impure. That is the one of the reasons for lack of hygiene in the delivery room. The dai had little knowledge of hygiene and even less of obstetric science.

In New Conquests throughout Portuguese regime very few doctors were available. Poverty and poor transport facilities prevented the people in need to seek help of trained doctors. No wonder they had to be contented with dais and quacks. At the same time people resorted to their Gods, Goddesses, saints and healers at the time of the delivery.

During the 1st Sanitary Conference 1914, it was suggested that dais should be prevented from practising their trade due to high infant and maternity deaths. Further, it was suggested that trained nurses from Bombay should be sent to rural areas to educate the women in matters of hygiene. A proposal was made that village Communidades should contribute towards the upkeep of nurses in the village. These suggestions were not accepted by concerned authorities.

Childbirth among the people mainly Hindus was looked down upon as unclean process and women were treated as out-caste for a varying period usually for 40 days. She was confined to the worst corner of the house, where no member could attend her without being unclean. She was kept in most unhygienic conditions under strict diet.
Dais rarely made preliminary examinations of the patients. They were usually called once the labour set in. She examined the patient with unwashed hands to find out if the head was straight in the middle. In case the head was not in the middle she would do so by external manipulation. Many dais did not take the trouble to do this examination as they did not understand the position of the head. The dai not only conducted mature deliveries but also abortions. The result was high mortality rate due to the methods used. They were at loss in complicated cases such as when the child's legs appeared first or when the umbilical cord got entangled around the child's neck. There was no cleanliness in the delivery room.

There were five major, though common reasons for the deaths of the mothers in Goa during colonial time. At the top of the list was haemorrhage which required immediate treatment. This was not possible as in rural areas medical facilities were not available and lack of transport made it impossible for her to seek help in urban areas. Dais had often no idea how to control such problem and many times a mother bled to death.

Obstructed labour was another cause which required immediate surgery. Such things were unheard especially in rural areas for a long time. In urban area where hospital
facilities were available women oftentimes refused to avail of such facilities. Often mothers contracted infection and fevers soon after delivery due to unhygienic conditions around. In those days there were no antibiotics to control such infections. High blood pressure also led to death. The largest number of maternal deaths occurred during abortions. Abortions performed by quacks in filthy conditions led to death due to haemorrhage or sepsis.

Furthermore, in Goa most girls especially of the lower strata married early, even before they completed their growth. Poor body built and stature were major causes of obstetric risks. Women had large number of children due to religious influence. High mortality led to economic necessity of bearing many children so that some may survive to provide much needed manual labour in agriculture. More births were needed to ensure surviving adults when the parents became old. All these factors contributed to maternity deaths.

Mortality rate decreased to a large extent in the last decade of the Portuguese rule in Goa. Increasing availability of medicine, absence of major epidemics, better standards of living, expansion of education, improvement in medical facilities helped the decline of mortality specially among the vulnerable groups of mothers and children.
Despite all that has been said Goans enjoyed greater longevity. There are references to several old people in the sixteenth century. The age is sometime mentioned as 90 and 117 years and once even as 120 years. In 1931 there were 4 (1 male and 3 females) in Salcete, 2 males in Bardez, 1 in Pernem, 1 in Satari of about 105 years of age.\textsuperscript{54} There were eleven individuals over 94 years, 34 with 95 years.\textsuperscript{55}

The census of 1950 states that there were about 6,638 persons between the ages of 80-89. There were 283 persons of 100 years and above and about 1,000 of 90 years and above.
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(1) ARSJ: Goa 33, I, fl. 116.

(2) ARSJ: Goa 33, I, fl. 185.

(3) ARSJ: Goa 35, Annual letter, fl. 324.


(5) Ibid., fls. 35-50.


(8) PP: RC, 1775-1783, fls. 1-130.

(9) PP: RC, 1784-1797, fls. 126-144. In the cholera attack of 1786 in Marmugao alone about 911 died of the disease. Around 500 persons died in the cholera attack of 1897.

(10) Ibid., fls. 217-236.


(12) Ibid., fls. 121v-130.

(13) HAG: MR. 203 B, fl. 579.

(15) ARSJ: Goa 34, II, Goana Historia 1648-1649, fl. 290.

(16) Appendix 2-A.


(19) J.C. Almeida, Alguns aspectos demograficos de Goa, Damão e Dão, Panjim, 1967, p. 92 says: The epidemic of influenza killed thousands of people in Goa. There were 48 deaths for every thousand persons in 1918 and 25 deaths for every thousand person in 1920.

(20) Appendix 2-B.

(21) Census of 1931.

(22) Census Report 1950.

(23) Census Report 1881.


(25) Harish C. Shrivastava, "Demographic History and Human Resources", Goa Through the Ages, ed., Teotonio R. de Souza, New Delhi, 1989, p. 65. The data used by him from the Historical Archives Goa and Census volumes have been given by me.


(29) Census Report 1940.

(30) Loc. Cit.,


(32) Census Report 1940.


(34) Census Report 1940.

(35) Appendix 2-C.

(36) Appendix 2-D.

(37) Census Reports, 1921-1960.

(38) Peter Cox, Demography, Bombay, 1976 (reprint), p. 163.

(40) Filipe F. de A. Mascarenhas, *A Luta Antituberculosa em Bardes, Nova Goa, 1923*, p. 27.


(42) *Estatistica Medica dos Hospitais das Provincias Ultramarinas referida ao ano 1876*, Lisboa, 1883, p. 201.


(44) *Time Newsmagazine*, n.40, October 1, 1990, pp. 2 and 37-43.


(47) PP: Parish Registers of Carmona, 1931-1941.


(49) *Appendix 2-E*.


(52) Alfredo Antão, "Algumas notas sobre mortalidade infantil..."

(54) Census Report 1931.