

POPULATION TRENDS AND PUBLIC HEALTH IN LATIN AMERICA

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INTRODUCTION

As they have in other fields of human endeavor, recent successes in public health have brought new problems, new responsibilities and new opportunities. A parallel situation is that of automation. It has presented society with problems of unemployment and with responsibilities for new types of training and retraining of workers. Yet, automation may offer new opportunities for the good life and for a new step forward along the tortuous road of social evolution.

In the field of public health the success in reducing the death rate in underdeveloped areas during the past 20 years has exceeded the expectations of the most optimistic. The new sets of problems are those posed by unmanageable population growth. They are the new problems of reducing birth rates, a far more complicated and tedious task than that of reducing death rates. The new opportunity is that of the health professions broadening their approach to encompass reproduction as well as mortality. It is the opportunity to be concerned with population characteristics and dynamics and their relation to health.

By way of introduction one may note that the term "public health," as ordinarily used, has reference to human beings. In this elementary sense population is necessarily related to health. However, the concern here is to consider how certain types of population characteristics and changes are related to the health conditions of a pop-

ulation. Actually the relation may often be “two-way” rather than “one-way.” Often an *inter-relation* is found between health and population as is indeed the case in other types of social and physical phenomena. In fact, it will become clear that the inter-relation of population trends and public health often involves a complex of many other variables, all of which are more or less inter-related. Although statistical devices exist for “partialing out” the influence of specific factors in multiple causation, these devices themselves generally leave a residue of unassignable influences which is frequently simply labeled “inter-action.”

Content of paper

This paper purports to examine the general relation of health to the growth, size, density, distribution and characteristics of population and to the components of population change, fertility, mortality and migration. For each subject a few general observations may be made before applying the case to Latin America.

RATE OF GROWTH, SIZE AND DENSITY

No uniform type of relation may be found between health and rate of growth, size or density of population. True, the great growth of world population during the past three centuries was initiated and sustained by decreases in mortality resulting from improvements in health. The same can be said regarding the even higher rates of growth that have been observed in the so-called underdeveloped areas of Latin America, Asia and Africa. However, the nature of the reciprocal impact of growth, size or density of population on the health of the people depends much upon the economic level and stage of technical development of the area or country considered. Thus, the rapid increase of population and of population density in a city or area of high level of living and technical development may cause some temporary problems of garbage and sewage disposal and problems of milk distribution and water supplies, but one would hardly expect to find such increases in size or density to be deleterious to the health of the people. Also, students have been unable to estab-

lish any firm relation even between mental health and urbanization.

In agricultural societies with low levels of living, on the other hand, population growth and increasing population density generally spell increasing economic difficulties and enhancement of problems of health. Whether the effect is the same if increasing population growth or increasing density accrues primarily as the result of migration or from natural increase is a debatable point. On the surface, one would seemingly find little to choose between shacktowns and rural slums.

As with the case of population density, health has no uniform relation to spatial distribution or to urban-rural distribution of the population. Much again depends upon the stage of technical development.

In underdeveloped areas of today low levels of health tend to prevail in both rural and urban areas. As already indicated, shacktowns bring an intensification of health problems, but despite this the outlook for improved sanitation and state of the public health is perhaps more favorable in urban than in rural areas.

Thus a complex of factors is involved in the general subject of interrelation of health and population growth, size and density regardless of the continent or area under consideration. The details of those interrelations, however, may differ by area. Attention may now be turned to the nature of the interrelations of health and population change in Latin America as compared in particular with North America.

CONDITIONS OF EARLY SETTLEMENT

Interesting points of similarity and of difference occur with respect to settlement of the two continents of the Western Hemisphere. Christopher Columbus is, probably erroneously, acclaimed in both continents as the discoverer of *America*. Of Italian birth, his voyages were under Spanish auspices. Hence the earliest settlements in both North America and Latin America were those of the Spanish. The later course of history was such that Latin America was settled mainly by the Spanish and Portuguese, and North America by the English, Spanish, French and other European groups. In both continents, aboriginal "Indians" were encountered. In neither

continent was the treatment accorded the Indians something of which one can now be especially proud. Negroes, captured in Africa, were brought to ports in North and South America and sold as slaves. Countries in both continents later freed their slaves and imposed immigration restrictions against Asiatics and other nonwhites.

Until a few years ago population growth in Latin America lagged behind that of North America. Possibly, several reasons could account for this. The two chief mother countries may have differed in their ability to send colonists. The conditions of land settlement, such as the royal grants of land and the homesteading provisions of the United States, may have contributed. Perhaps the most important factors, however, were the earlier and longer steps toward industrialization and modernization in North America than in Latin America.

Until the advent of World War I virtually no restrictions were placed on immigration from Europe, and several years during 1900–1910 the number admitted to the United States exceeded one million.

With the end of World War I, immigration to the United States virtually ceased and, furthermore, the decline of the birth rate accelerated. The population of the United States increased only seven per cent during the ten-year period between 1930 and 1940. The increase was about ten per cent for Canada during the 1931–1941 decade.

The baby boom after World War II boosted the birth rates to the levels of the early 1920's in the United States and Canada and gave this and other modernized countries a renewed experience of high rates of population growth. The underdeveloped areas of the world, however, especially those of Latin America, experienced striking and rapid reductions in death rates after World War II. Since birth rates have thus far remained at high levels, these countries are experiencing high rates of population growth.

The average annual percentage increase during 1960–1965 was 2.8 per cent for Latin America as a whole. The average rate for Latin America not only exceeds that of North America, but also that of any other continent as a whole, i.e. Australia, Europe, Asia or Africa.

The rate of population growth during 1960–1965 varied by

country in Latin America, from a low of about 1.7 per cent per year in Argentina, Puerto Rico and Uruguay to a high of 3.9 per cent per year in Costa Rica.¹ The average for the continent as a whole—2.8 per cent—is a heavy burden for an area that is beset by economic problems. The continuation of a 2.8 per cent increase doubles a population in 25 years. The production of food must increase at an equal rate simply to maintain existing low levels of average per capita consumption. Likewise, expenditures for health and education must double within the next 25 years simply to maintain the existing low standards afforded by present per capita expenditures for these purposes. That alone indicates why persons interested in public health activities in Latin America see the relevance of slowing the rate of population growth.

CHARACTERISTICS OF POPULATION

Marked interrelations may be found between health and characteristics of a population. The characteristics of a population determine in large part the nature of the health problems to be found in that population, and health conditions in turn impinge upon the characteristics of the population.

The composition of a population by sex has bearing on health in that certain illnesses and conditions are restricted to or are more common to either males or females. However, since countries, cities and communities generally do not vary greatly in the proportion of males and females, the characteristic of sex per se is not a major determinant of differentials in health conditions in time or space.

Age

Age is a factor of cardinal importance in health. The health problems to which one is exposed vary greatly with age, and the age distributions of populations may vary greatly. Countries with a long history of high fertility tend to have a high proportion in the young age group. In most of the countries of Latin America, Africa and Asia, upwards of 50 per cent of the people are under 20 years of age and less than five per cent are 65 years of age and over. In Nicaragua,

58 per cent of the population was under 20 in 1963, and 2.9 per cent was 65 and over. The situation was approximately the same for Costa Rica. At the other extreme was Uruguay with 36.2 per cent of its population under 20 and 7.7 per cent 65 years old and over in 1963. Argentina was about the same in 1960. For Chile the proportions for 1960 were 49.7 per cent under 20 and 4.2 per cent 65 years of age and over.²

The age group "under 20" includes ages at which death rates are relatively low (5–20) as well as those at which mortality is high (0–5). Underdeveloped countries also have relatively heavy loads of infants and children and they tend to be short on medical facilities for guarding the health of infants and children. For both these reasons the major health problems are those affecting infants and young children. Gabaldon's study of leading causes of death below five years of age in 13 Latin American countries pointed up the importance of diseases of early infancy, gastroenteritis and colitis, influenza and pneumonia and bronchitis.³

In technically advanced countries the health toll exacted by advancing age has been lightened considerably by advances in medical science and public health. Because of the long history of declines in the birth rate in modern Western countries, however, the relative importance of the people under 20 is lower than that of long ago and the relative importance of persons 65 years of age and over has increased. Thus, unlike the situation in the underdeveloped countries, the chief health problems in the technically advanced countries are those associated with aging, including heart disease, cancer and mental health.

Several points of clarification may be in order. Because of the post-war baby boom and the unexpected persistence of high birth rates in the United States, the proportion of persons under 20 was higher in 1960 than in 1950. The proportion of persons 65 years of age and over also increased. This increase at each end of the age scale has been described as a simultaneous trend toward younger and older age distribution.

In the second place, contrary to popular belief, the past decreases in the *relative* importance of the young age groups and the increases

in the *relative* importance of the old age groups in modernized countries have been due almost wholly to declines in fertility and not, as formerly believed, to the joint effects of declines in fertility and declines in mortality. Since the declines in mortality were mainly those of young people their effect was to increase the proportions of young people.

Until about 1950, the aging of populations in modern countries was believed to be due to the joint effects of declining fertility and declining mortality. Research by Valaoras (1950), Lorimer (1951), Sauvy (1954), Coale (1956), Stolnitz (1956) and Hermalin (1966),⁴ however, have indicated that, during the years preceding about 1940, the increasing proportionate importance of aged persons could be accounted for almost entirely by declines in fertility. It should be emphasized here that aging in the above context refers to the *percentage distributions* of the population by age. Declines in mortality were responsible for increases in the *number* of aged persons. Declines in fertility, however, were almost solely responsible for increases in the *proportion* of aged persons in the United States and other modernized countries up until about 1940. Coale⁵ has demonstrated that with existing declines in fertility in Sweden during 1860–1950, the age distribution in 1950 would have been virtually the same as it actually was in 1950 if mortality had not declined at all. The reason is that past declines in mortality have been concentrated mainly in the younger ages. They served, in fact, to inflate the proportions of youngsters and hence to reduce the proportion of oldsters in the population.

It should also be emphasized that, to the extent that *future* declines in mortality are concentrated among the older age *groups*, the future declines in mortality may work hand in hand with any future declines in fertility that may occur to decrease the proportion in young ages and to increase the proportion in the older ages.

Whatever may be the future trends in North America and Europe, the factor of age distribution has special relevance to health conditions in Latin America. Most of the countries of that continent have the age distributions characteristic of high fertility countries—i.e. a high proportion of children and young people and a low proportion

of old people. Not surprisingly, the chief causes of death and sickness are those relating to children. To the extent that fertility declines in Latin America, a lowering of proportions in young age groups may be expected along with a rise in the proportion in older age groups and hence a shift from a preponderance of childhood and infectious diseases to a greater preponderance of chronic illnesses such as cancer, heart disease and mental illness.

Socioeconomic Characteristics

A marked relationship exists between health conditions and the socioeconomic characteristics of a population. To some extent it is summed up in the adage regarding the vicious circle: "poverty brings poor health and poor health brings poverty." This counsel of despair is somewhat compensated by the challenging adage that public health is purchasable.

One of the stereotype descriptions of Latin America is that its inhabitants are either very poor or very wealthy and that no broad middle class exists. Although this may be only a half truth, low average levels of economic status do exist in Latin America. Levels of income, occupational status and educational attainment are low in both rural and urban areas of all Latin American countries in comparison with the United States.

The work of the World Health Organization in underdeveloped areas has demonstrated that in areas infected with malaria, death rates can be reduced radically by the simple and relatively inexpensive device of spraying homes and mosquito-breeding places. However, to get people actively interested in improving their health and in planning family size are difficult tasks at best and more difficult if the people live under conditions of harsh poverty and if they are untrained and uneducated.

COMPONENTS OF POPULATION CHANGE

The relation of health to the components of population change is not unidirectional. Changes in the relative magnitudes of fertility and mortality bring direct change in the growth of the population. Popu-

lation growth, conversely, impinges upon the health of the people. Unsatisfactory economic and social conditions prompt the movement of people from rural to urban areas. Migration into urban areas often creates economic, social and health problems in the cities.

Fertility

Fertility probably has not increased substantially in Latin America, but the number of living children probably has increased because of reduction in maternal and child mortality. Considerable reduction in fertility probably has occurred in Argentina and Uruguay. Reduction in the crude birth rate has also occurred in Puerto Rico, but a considerable and possibly a major part of the reduction in this case is due to emigration of young potential parents away from the island. The recorded birth rate for Cuba reached a low of 25.4 per 1,000 population in 1955–1959. The recorded rate then rose to 35.1 in 1962.⁶ By and large, fertility has remained high in Latin America, and high fertility is supported by the beliefs of the Catholic Church which encourages early marriage, large families and uncontrolled fertility.

To the parents of a large family the relation of fertility to health of children and mothers is an elementary one. The few pesos earned by the laborers often must be stretched to feed and clothe several children. This applies both to farm laborers and to the urban workers. Sometimes the extra pinch occasioned by an extra child may not be so sharp in rural as in urban areas, but it may often be even sharper. The pinch of poverty itself may sometimes be worse in rural slums. In the rural areas are found some of the worst cases of malnutrition of children.

On the basis of obstetrical experience in Scotland, Baird has “concluded that the essentials for easy and efficient childbearing are youth and first class physical development and nutrition. If in such women the first child is born by the age of 20, the total is restricted to four, and the last is born before the age of 30, the perinatal mortality would be very low, probably less than 15 per 1,000 from all causes, given a good standard of obstetric care.”⁷

Further research is needed, but it also seems likely that high

fertility and ill health go hand in hand. This is especially likely with respect to health of children and mothers. A situation that is at once cause and effect of this type of relationship is the one of abortions.

Abortions

Although abortion is as ancient as mankind, it seems to have become an especially serious problem in relatively recent times among the poor in certain areas of Latin America. The underlying cultural background and the motivations are complex and varied. To some, abortion is a silent revolt against the miseries and hardships imposed by high fertility. To others, it may be the removal of a potential barrier to employment of the mother. The high percentage and use of provoked abortion came to light before the later fanfare for family planning. In fact, the discovery of the prevalence of abortions appears to have set off the activity of the family planning.

In Japan, abortions were legalized after World War II. Performed in hospitals under therapeutic conditions and under provisions of health insurance, abortions were probably the chief means for halving Japan's birth rate in a decade. They probably were no serious health hazard in Japan. Being illegal and often crudely provoked in Latin America, however, they are a serious health hazard. Armijo and Monreal have reported that abortions accounted for two-fifths of the maternal deaths in Chile in 1963. They further report:⁸

Abortion was responsible for 8.1 per cent of all admissions to hospitals run by the National Health Service; for 20.4 to 67.1 per 100 patients admitted for deliveries; for 35 per cent of surgical operations in several obstetrical departments surveyed, and for 17.7 per cent of transfusions and 26.7 per cent of the total blood volume used in emergency departments in Santiago.

Statistical studies of abortion have thus far been more frequent in Chile than in other countries of Latin America. Little is known about trends in Latin America as a whole, but Armijo's studies have indicated substantial proportions of pregnancies terminate in illegal abortion.

Requena has also studied abortion and family planning in the Quinta Normal District of Santiago.⁹ This, like other similar projects

in Santiago, is one in which abortion is used to justify family planning projects in Chile. In fact, a common truism not at all lost on the Catholic clergy, is that the Catholic Church will not only permit, but even encourage a demonstration project in family planning if its purpose is described as “abortion prevention.”

The findings on prevalence of abortions and differentials by economic status differ. The findings of Armijo and Monreal differ from those by Requena with respect to magnitudes of prevalence. They agree in indicating higher rates of abortion among the poor than among the wealthy. Françoise Hall’s study of a cross-section of women in Lima, Peru, in contrast, indicates a direct rather than inverse relation of abortion to economic status.¹⁰

Mortality

Recent population growth in Latin America, as in other underdeveloped areas, has been implemented by sharp declines in mortality, mainly infant and child mortality. Marked reductions have occurred in infant mortality and in mortality from such diseases as malaria, diarrhea and enteritis. Nevertheless, as Gabaldon has pointed out, most of the main causes of death in Latin America today were the main causes of death in the more developed countries at the beginning of the Century.¹¹ An important exception is the high toll from traffic accidents in Latin America—an unimportant cause of death in any country in 1900.

Morbidity

Mortality does not tell the complete story of the health of a country or people. Some diseases exact their toll by debilitation rather than by fatality. They do not kill outright and directly, but weaken the body and diminish the spirit. Thus, in Egypt and other countries, Bilharzia infests a large proportion of the rural people but does not kill them. In certain parts of Latin America this and other parasitic and infectious diseases exist. Malnutrition among groups of low economic status is common. Lethal to infants, certain forms of dysentery and diarrhea attack adults and leave them uncomfortable and interfere with their efficiency. Lay terms such as “Brazilitis” and

“Chileitis” are sometimes used to describe various forms of non-amoebic dysentery. Some of the inhabitants keep paregoric or various forms of patent medicines such as Vio-Formo on hand. Tourists and workers from the United States carry their own pet remedies and have their own pet taboos regarding foods.

In 1965, Horwitz and Burke stated that the proportion of the urban population living in houses connected with sewerage systems was only 17 per cent in Middle America and 47 per cent in South America. They also stated that “There exist great deficiencies in housing, in water supplies, in sewerage systems, and in control of contamination of air and water.”¹²

Migration

The previously important but diminishing role of international migration in peopling of Latin America has been ably described by Neiva and others.¹³ International migration is now unimportant even for transfer of residence from one Latin American country to another.

Internal migration, however, especially rural-urban migration, is an important component of population change in Latin America. Largely irrelevant to population size of a total country, internal migration may affect greatly, and even drastically, the population size of given areas and cities.¹⁴

Shacktowns of Latin America are the direct products of rapid population growth and migration. They result directly from migration from rural areas, but an additional factor is the existence of uncontrolled fertility and poverty. Shacktowns are an extreme manifestation of the unplanned and unwonted bulging of the city population. Flocking to the cities with no money, no education, no jobs and no skills, many migrants from rural areas drift to the shacktowns found on the periphery of virtually every sizable city in Latin America. Doubtless, many know in advance what they will find and not find in the shacktowns, for friends and neighbors have preceded them. Some probably regard shacktowns as a necessary first step in the transition from rural or village to urban life. The shacktown area itself may go through something of a transitional stage. Thus, one

might drive first through the older part of shacktown. Cardboard has been replaced by sturdy wood plank or weather board, rough plank or even smooth flooring has been installed, bootleg electricity somehow has been obtained. Water taps are more frequent, and even a few water toilets may be found. Driving further out one might find the very frontier where shacktown is being extended by newly arrived persons. Rough pieces of plank, heavy cardboard and flattened pieces of tin are being nailed to jerry-built framing.

The potential hazards of shacktowns as they now exist are well known. They are fire hazards, health hazards and political hazards. Without sewage facilities and frequently with only a single distant water tap, the places are generally filthy. Frequently beyond the city limits, the areas have no effective access to community services such as those of sanitation, schools, lights, water and police protection. Policemen, social workers and teachers are loath to enter the areas and the education and welfare tends to be neglected.

Encouraging Developments

Despite the above description, developments in recent years have been encouraging. These may be listed as inter-related propositions as follows:

1. Grass roots interest in family planning has been rising. This has not been fostered from without, but has grown up from within. Among the evidences of this have been the surprising increases in abortions among married women in certain areas of Latin America and the sterilizations in Puerto Rico. The abortions have not by any means reached the proportions of Japan and probably will not because abortions have not been legalized as they have in Japan and because substituting other means of family planning may be relatively more rapid in Latin America than it was in Japan.
2. Abortion has provided a rationale for sponsorship of family planning programs that is acceptable to the Catholic Church and to medical groups. Although Latin America is largely Catholic, the Church is not only tolerating, but in some cases participates in projects that include advice and assistance in family planning. Projects involving participation in or sponsorship of Church groups are

usually those of the rhythm or "safe period" method. However, repeated instances have been noted of either overt or tacit acceptance of the use of other means of family limitation if the stated objectives are those of reducing the prevalence of induced abortions.

3. Perhaps more important than acceptability of family planning by the Catholic Church in Latin America has been its acceptability by medical and public health groups in that area. In the United States the birth control movement began as a feminist movement, and only recently has it become respectable in medical circles. In Latin America the family planning movement is relatively recent, but from its beginning it appears to have attracted the sponsorship of medical and public health groups. As an example the 1967 Conference of the International Planned Parenthood Federation will be held in Santiago. The program and local arrangements are largely in the hands of medical people affiliated with the University of Chile and local hospitals.

4. Latin America as in other areas of the world has markedly speeded up projects involving the use of the intrauterine device and a greatly expanded research in biology of reproduction. As elsewhere, much of this has been the result of assistance by the Population Council and the Ford Foundation. Santiago, however, has become virtually a world center of research on abortions and other aspects of reproduction and population control. A well-known intrauterine device is named for Dr. Jaime Zipper of Santiago. Santiago also offers a pattern for efforts and coordination of research on reproduction in the Committee on Population Dynamics which was set up under the stimulus of the Pan American Health Organization to coordinate the various research on demography, family planning, anthropology, genetics and child health in various university and research groups in Santiago.

5. In Latin America, as in North America, medical schools and schools of public health increasingly tend to incorporate demography and population into their curricula and areas of research. Instances are the formation of the Division of Population within the Association of Medical Faculties of Colombia, the institution of the existing experimental course in Medical Demography within the School of Public Health in the University of Chile, the formation of a Popu-

lation Center to serve the medical school as well as other schools in the University of Sao Paulo and the increasing emphasis on population within departments of preventive medicine in medical schools throughout Latin America.

6. In a broad sense the recent increase of interest in population on the part of schools of public health has been a new interest in components of population change other than mortality and morbidity. Schools of public health have long been interested in mortality and morbidity. Their interest in fertility has been restricted in the past to their interest in infant and maternal health. They have been interested in fertility and migration because these need to be taken into account in estimating populations for given areas. Now schools of public health are interested in fertility and migration because of the direct and major implications for public health. For instance, the idea is increasingly accepted that spacing of children has relevance to the health of mothers and children and to the welfare of the family and the community. Also growing is the idea that responsible parenthood is essential to public health and that its implementation is the essence of preventive medicine.

7. The great increase in population in the underdeveloped areas has been responsible for the rapid reorientation of approaches to problems of health. These have been especially noteworthy in Puerto Rico, Colombia, Chile and Brazil. These and other countries of Latin America realize that schools of medicine and public health need good vital statistics and census data to help them assess the nature and dimensions of their problems and the effectiveness of their efforts and to guide them in their plans for the future. They must know the size and characteristics of the populations with which they deal, the health conditions of the people, the conditions of their work, their educational levels and training skills. They must be vitally concerned with the dynamics of population induced by the flow of births, deaths and migration. As Irene Taeuber has succinctly put it, "Demography is basic to health science; health science is basic to demography."¹⁵

Priority of Future Efforts

More basic data are badly needed in the fields of both population and health in Latin America. High priority should, therefore, be

given to strengthening the population census and the civil registration procedures. Special surveys such as the fertility surveys carried out by CELADE and the studies sponsored by PAHO are examples of means of securing demographic and health data in the absence of good registration materials. Increased facilities for education and training in demography and the health professions should also have high priority. A continued special effort must be made to put more demography and social science in the schools of medicine and public health and to encourage the demographic training centers to be closely affiliated with other social sciences and with public health. Much interdisciplinary union is needed among teaching, training and research in public health, demography and the social sciences.

As for the general questions of priority of tasks in developing countries, one must realize that the economic, social and demographic problems are so closely related that a purely sequential approach is not only undesirable, but also virtually impossible. Simultaneous improvements are needed in employment and income, education and training, health and sanitation, and implementation of existing desires for family planning. Efforts must be coordinated, but wide opportunities exist for various types of international, national and private agencies to assist in the challenging task of helping Latin America and other developing areas to attain higher levels of living.

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