Since 1960, when the National Health System was established, major progress has been made in the health of Cuba’s children. The system’s first priority was to reduce infant and maternal mortality and morbidity, improve nutrition, and combat infectious diseases. These efforts have resulted in a decline in the infant mortality rate from 46.7 per 1,000 live births in 1969 to 17.3 in 1982. Life expectancy in Cuba is now 73.5 years, and malaria, poliomyelitis, diphtheria, and tetanus of the newborn have been eradicated.

As part of its effort to improve child health, Cuba conducted a National Child Growth Study in 1972. This study sampled 55,000 children ranging in age from birth to 20 years. Results (Jordan, 1973, 1979, 1980; Jordan, Bebelagua, Ruben, & Hernandez, 1980; Jordan, Ruben, Bebelagua, & Hernandez, 1977; Jordan, Ruben, Hernandez, Bebelagua, Tanner, & Goldstein, 1975) show that Cuban children grow and develop very similarly to children in developed countries (Eveleth & Tanners, 1976). Similar studies have been planned to take place every 10 years (the year after each national census) to monitor physical growth and nutrition. Thus, the second National Child Growth Study was conducted in 1982. The standardization project on which this chapter reports was a part of that larger 1982 Growth Study.

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PROJECT DESIGN

Sampling Procedure

In May of 1982, a random (probability) sampling of the entire population of Cuba under the age of 20 was undertaken to study the growth of Cuban children. This sampling was based on the national census conducted in 1981, which put the population of Cuba at 9.7 million, of which approximately 4 million were under age 20 (Censo, 1983). The census divided the country into 14,150 districts, which were then grouped into macrodistricts each having a population of about 3,500 inhabitants. For the purposes of the study, 98 macrodistricts were randomly selected, yielding a set of 128,800 eligible children.

The size of the sample that was needed to allow adequate information about the growth of Cuba's children was estimated to be 30,000, but the sample was increased to 35,000 to allow for nonrespondents. Maps of the randomly selected 98 macrodistricts and lists of their residents were supplied by the census office, and members of the Women's Federation (with the help of the Small Farmer's Association for rural areas) visited every house. They updated the lists to include all children under 20 and every woman more than 6 months pregnant. These lists were then sent to a central office in Havana where a computer calculated decimal age, classified individuals into age groups, and randomly selected children to be examined from those who were eligible. The selection ratio was one in 3.6, for a total of 35,000 out of 128,800. The entire procedure (listing residents, processing data, and selecting children to be examined) took about 50 days. All children born during this interval were included in the sample.

Subjects

Two special subsamples were randomly selected from the main sample. These included a group of 9,000 children under the age of 6½ years who would be involved in the standardization of the Denver Developmental Screening Test (DDST) (Frankenburg & Dodds, 1967; Frankenburg, Goldstein, & Camp, 1971), and another group of children from 3.5 to 20 years who would receive physical fitness and functional capacity tests recommended by the International Biological Program (Weiner & Lourie, 1969). Of the 9,000 children selected for the DDST subsample, 8,246 were examined. Because this was a random sample of children from Cuba's entire population, no attempt was made to exclude apparently deviant children from the survey. Thus, children who were small for gestational age at birth, who were preterm, twins, breech deliveries, and so on, were also included; they will be separated in a later stage for