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THE HEALTH CARE SYSTEM OF SQUATTER SETTLEMENTS IN BRAZIL, IN CASE OF DISEASES AND MORTALITY

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ABSTRACT

A research is made about the health care system of squatter settlements in Brazil, in case of diseases and mortality. Definition of a squatter settlement is mentioned to make a beginning.The physical, the social and the legal defining characteristics of the squatter settlements are examined. The aim of this research is to analyze and compare the built form of squatter settlements in Brazil, focusing specifically on the health care system, kind of diseases and rate of mortality. Also, information about the living conditions in surrounding area will be given, to get an idea about the reasons of diseases.

The method of the research is to put forward the preexisting condition of Brazil about the health status, health care and diseases. Also, to analyse the mortality in squatter settlements and to make a literature review about the effort to provide public health and welfare in that region. Information was obtained about the infectious and chronic diseases, mortality and child health in Brazilian squatter settlements. Research was made on themortality rate, causes of death and disorders of the squatter settlements in Brazil. In conclusion, the method of the research was to put forward the preexisting condition of Brazil about the health status, health care and diseases. The importance of health benefits, social security, sanitation services and an organized health care system are mentioned to conclude this research about the Brazilian Squatter Settlements.

Keywords: Squatter settlements, health care, diseases, mortality, Brazil.

1. INTRODUCTION

The title of my research is “The Health Care System of Squatter Settlements in Brazil, in Case of Diseases and Mortality”. In introduction, general information about the topic will be given.

2. DEFINITIONS OF A SQUATTER SETTLEMENT

In this part, definition of a squatter settlement is mentioned to make a beginning. A squatter settlement therefore, can be defined as a residential area which has developed without legal claims to the land and permission from the concerned authorities to build; as a result of their illegal or semi-legal status, infrastructure and services are usually inadequate.There are essentially three defining characteristics that helps us understand squatter settlement: the Physical, the Social and the legal with the reasons behind them being interrelated.

2.1. Physical Characteristics

A squatter settlement, due to its inherent "non-legal" status, has services and infrastructure below the "adequate" or minimum levels (Figure-1). Such services are both network and social infrastructure, like water supply, sanitation, electricity, roads and drainage; schools, health centres, market places etc. Water supply, for example, to individual households may be absent, or a few public or community stand pipes may have been provided, using either the city networks, or a hand pump itself. Informal networks for the supply of water may also be in place. Similar arrangements may be made for electricity, drainage, toilet facilities etc. with little dependence on public authorities or formal channels (Srinivas, H., 1998).

Figure-1. A Squatter Settlement in Brazil.

2.2. Social Characteristics

Most squatter settlement households belong to the lower income group, either working as wage labour or in various informal sector enterprises. On an average, most earn wages at or near the minimum wage level. But household income levels can also be high due to may income earners and part-time jobs. Squatters are predominantly migrants, either rural-urban or urban-urban. But many are also second or third generation squatters (Srinivas, H., 1998).

2.3. Legal Characteristics

The key characteristic that delineates a squatter settlement is its lack of ownership of the land parcel on which they have built their house. These could be vacant government or public land, or marginal land parcels like railway setbacks or "undesirable" marshy land. Thus when the land is not under "productive" use by the owner, it is appropriated by a squatter for building a house. It has to be noted here that in many parts of Asia, a land owner may "rent" out his land for a nominal fee to a family or families, with an informal or quasi-legal arrangement, which is not however valid under law (Srinivas, H., 1998).

In general, there are several attributes that act as generative forces and determine the quality and size of a settlement. Such attributes could be either internal to the settlement or external (Table-1):

Table-1. Internal Attributes External Attributes.

Internal Attributes	External Attributes
Religion/Ethnicity	Land owner
Work place	Tenure security
Place of origin	Municipal/city government policies
Language	Length of stay in city
Length of stay in settlement	
Investment in housing	
Construction activity	
Presence of renters	

3. AIM OF THE RESEARCH

The aim of this research is to analyze and compare the built form of squatter settlements in Brazil, focusing specifically on the health care system, kind of diseases and rate of mortality. Also, information about the living conditions in surrounding area will be given, to get an idea about the reasons of diseases.

3.1. Development Area / Pilot Region

It is stated that, by 1991 Brazil was the world's sixth most populous country, with about 2.7 percent of the world's 5.3 billion people or 147,053,940 inhabitants. Then, the average age of the Brazilian population has increased as a result of a continued decrease in mortality and fertility. So, this caused so many health problems in the country (Rex A. Hudson, 1997). For that reason, Brazil is selected as the pilot region in this research (Figure-2).

Figure-2. Brazil, as the Pilot Region.

3.2. Migration & Urbanization in Brazil

It is stated that the rural poor in the country's interior are practically invisible to the urban upper and middle classes. Socioeconomic inequality involves subtle forms of residential, educational, and workplace discrimination. Also, one of the most important and distinct inequality in the country is about the opportunities about the health care. That’s the reason of selecting the topic and stating the problem, in this research.

4. METHODS

The method of the research is to put forward the preexisting condition of Brazil about the health status, health care and diseases. Also, to analyse the mortality in squatter settlements and to make a literature review about the effort to provide public health and welfare in that region.

5. THE HEALTH CARE SYSTEM IN BRAZIL

As is typical in demographic transitions, declines in mortality preceded declines in fertility in Brazil, but the process took only a few decades rather than centuries, as it did in developed countries. The death rate started to fall in the 1940s because of the expanding public health system, urbanization, and sanitation (Rex A. Hudson, 1997).

5.1. Infectious and Chronic Diseases in Squatter Settlements

Perinatal conditions were responsible for 47.1 percent of total infant mortality, ranking first among the causes of reported deaths for those under one year old in 1988. The leading cause of mortality among children one to four years of age, at 24.5 percent of all deaths in 1988, was infectious and parasitic diseases, particularly diarrheal diseases (Figure-3). External causes, specifically traffic accidents and homicide, accounted for the greatest share of registered deaths for the cohort aged five to forty-nine. Among the elderly population sixty years and above, deaths resulting from diseases of the circulatory system amounted to the highest percentage (50.3) of the total in 1989. Those diseases were also the leading cause of mortality for the entire nation, with higher ratios in the wealthier Southeast (36.2 percent) and South (37.2 percent), relative to the impoverished North (23.2 percent) and Northeast (29.3 percent). Although the proportion of deaths has shifted to older population groups, regional variations continue to hold, such that over a quarter of deaths afflicts the below-five age range in the North.

Figure-3. Infectious and Parasitic Diseases Among Children One to Four Years of Age.

Expanded immunization coverage in recent years has favored a drop in mortality ascribed to vaccine-preventable diseases, from 12.9 percent in 1979 to 2.4 percent in 1988. In 1993 vaccination of Brazilian children less than one year old under the National Immunization Program reached 68.5 percent for diphtheria, pertussis, and tetanus, 92.3 percent poliomyelitis, 77.7 percent measles, and 98 percent tuberculosis. Although tuberculosis persists as a principal

source of morbidity and mortality, particularly with the onset of the human immunodeficiency virus (HIV), its incidence and death rates have been steadily on the decline.

Control measures have proven effective in reducing the prevalence and outbreak of other infectious and endemic diseases, including cholera, Chagas' disease (American trypanosomiasis), yellow fever, and schistosomiasis (bilharzia). However, the number of registered cases of malaria, which 42.9 percent of the Brazilian population is at risk of contracting (mainly in the Amazon region), grew from 52,000 cases per year in 1970 to about 600,000 in the 1980s, with some improvement since then. Other communicable diseases either have been reintroduced, as in the case of dengue (breakbone fever) since 1986. Infectious tropical diseases reflect poor sanitary conditions as well as discrepancies in the standard of living between Northern and Southern Brazil, where such diseases ranked third and last, respectively, among the six leading causes of death in 1989.

Leprosy (lepra) remains a serious problem in Brazil's high poverty areas, where the disease is spreading most rapidly. In October 1996, an average of 100 new cases was being reported each day. As many as half a million Brazilians are afflicted with leprosy.

The incidence of acquired immune deficiency syndrome (AIDS) in Brazil has also reached epidemic proportions, from 490 in 1985 to 103,262 cumulative cases by March 1, 1997, the fourth highest reported prevalence in the world. Based on 1996 data from the Pan American Health Organization (PAHO), homosexuals and/or bisexuals constitute 45 percent of the cumulative cases; intravenous drug users, 27 percent; heterosexuals, 20 percent; and others, 8 percent. The incidence was highest among young adults; 60 percent of those suffering from AIDS in 1994 were in the twenty-five to thirty-nine age-group. What began as a disease of homosexuals and recipients of blood transfusions quickly spread to heterosexuals and intravenous drug users. HIV infection attributed to needle-sharing during drug use increased from 3.0 percent of the cases in 1986 to 24.5 percent in 1992-93 and from 5.0 percent to 23.4 percent for heterosexual transmission, altering the male-to-female ratio from 100:1 in the 1980s to 4:1 in 1994. The surge in the proportion of women contracting the virus has resulted in part from a rise in perinatal transmission, the predominant mode of infection for the 12,000 infants and children diagnosed with AIDS in 1994 (Rex A. Hudson, 1997).

The overall reduction in the number of new cases of the above infectious diseases, on the one hand, and the conspicuous rise in the incidence of chronic and degenerative diseases, on the other, indicate the occurrence of an epidemiological transition in Brazil. However, the transition is not complete; the two types coexist as major causes of death. Diseases of the circulatory system, including cerebrovascular and heart diseases, currently claim first place as the leading cause of death among the entire population (34.3 percent in 1989). The degenerative diseases have contributed to steep rises in the cost of health care, especially for the elderly.

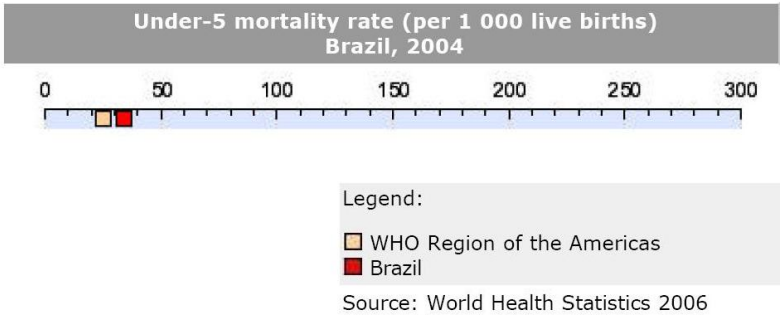
5.2. Mortality in Squatter Settlements

As is typical in demographic transitions, declines in mortality preceded declines in fertility in Brazil, but the process took only a few decades rather than centuries, as it did in developed countries. The death rate started to fall in the 1940s because of the expanding public health system, urbanization, and sanitation. The crude death rate in 1995 was eight per 1,000 population, a notable decrease from the 1960-65 rate of 12.3. The 1995 level, which is similar to that of developed countries, resulted from the age structure being still relatively younger (Table-2).

Table-2. Mortality Rate (WHO, Mortality Country Fact Sheet, 2006).

Summary	Year	Males	Females	Both sexes
Population (millions)	2005	91.9	94.5	186.4
Life expectancy (years)	2004	67	74	70
Under-5 mortality (per 1 000 live births)	2004	38	31	34
Adult mortality (per 1 000)	2004	237	127	
Maternal mortality (per 100 000 live births)	2000		260	

Source: World Health Statistics 2006

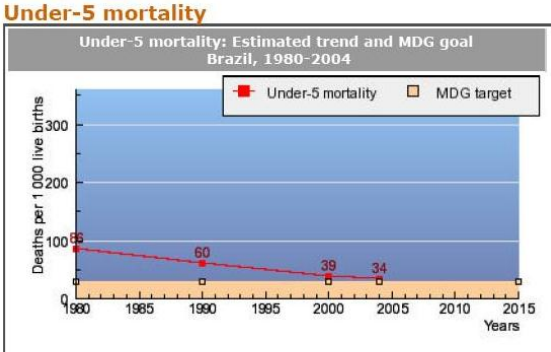


Source: World Health Statistics 2006

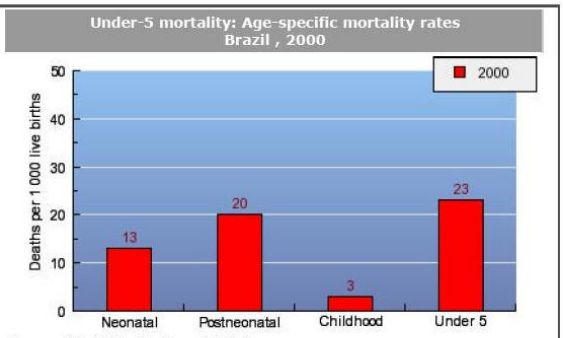
Life expectancy at birth, which is a measure of mortality that is not affected by different age structures, began to rise in Brazil in the 1940s. It increased from 42.7 years in 1940 to 52.7 years in 1970 and 67.1 years in 1995. It is projected to reach 68.5 years in 2000 and 75.5 years in 2020. Life expectancy for women is about seven years greater than that for men, but the differential is decreasing(Table-3).

Table-3. Mortality (WHO, Mortality Country Fact Sheet, 2006).

Under-5 mortality



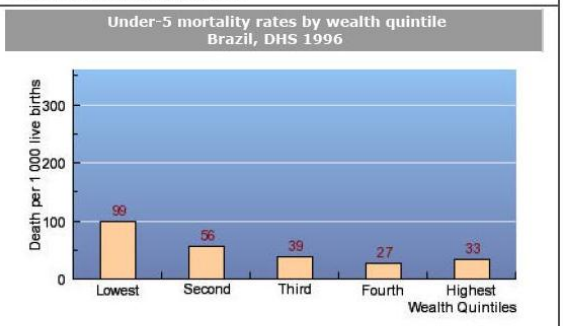
Source: i) WHO mortality database ii) World Health Statistics 2006



Source: World Health Report 2005

Under-5 mortality: for highest and lowest quintiles Brazil, DHS 1996			
Wealth/assets quintiles	Lowest	Highest	Ratio
	99	33	3.0
Sex	Males	Females	Ratio
	60	53	1.1
Urban/Rural	Rural	Urban	Ratio
	79	49	1.6
Mother's education quintiles	None	Higher	Ratio
	119	37	3.2

Note: rate per 1 000 live births for 10-year period preceding the survey
Source: DHS 1996

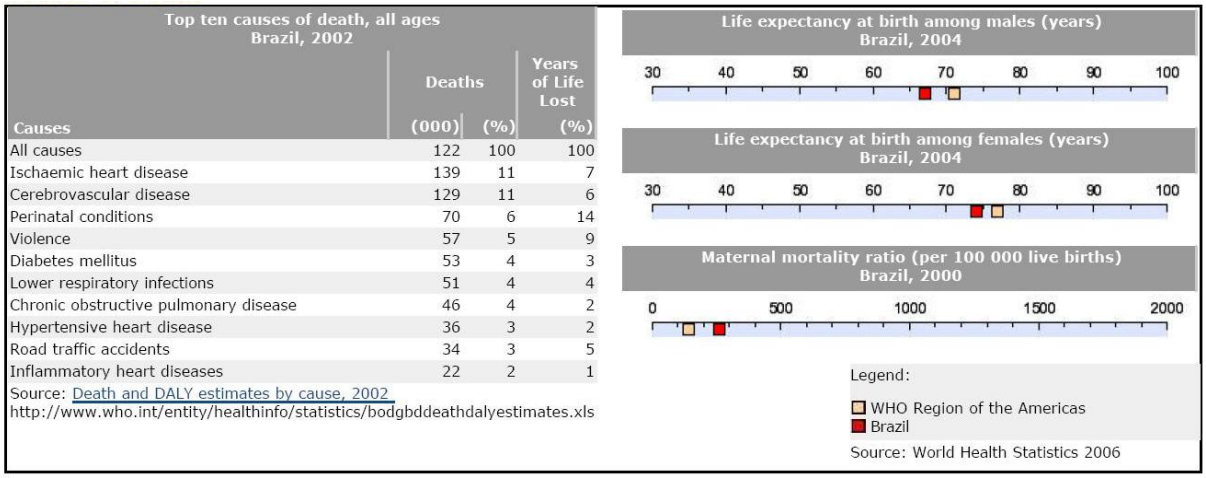


Note: rate for 10-year period preceding the survey
Source: DHS 1996

A decline in mortality has occurred in all regions, but strong regional variations in life expectancy persist. The lowest levels are found in the Northeast (65.4 years in 1995) and the highest in the South (69.4 years in 1995), slightly higher than the Southeast. The North and Center-West regions have levels of life expectancy close to the national average. Within the socioeconomic strata, higher life expectancy is strongly associated with higher family income. Mortality is generally higher in rural than in urban areas, except for the lowest income groups.

In the past, the principal causes of death in Brazil were infectious and contagious diseases, especially diarrhea and intestinal parasites among infants, as well as tuberculosis, measles, and respiratory diseases. As these were brought under control in the postwar period, primarily in the more developed regions, degenerative diseases such as cardiovascular disorders and cancer became proportionately more prevalent (Table-4). Deaths from external causes, including violence and traffic accidents, also gained importance.

Table-4. Causes of Death (WHO, Mortality Country Fact Sheet, 2006).



Top ten causes of death, all ages
Brazil, 2002

Causes	Deaths (000)	Deaths (%)	Years of Life Lost (%)
All causes	122	100	100
Ischaemic heart disease	139	11	7
Cerebrovascular disease	129	11	6
Perinatal conditions	70	6	14
Violence	57	5	9
Diabetes mellitus	53	4	3
Lower respiratory infections	51	4	4
Chronic obstructive pulmonary disease	46	4	2
Hypertensive heart disease	36	3	2
Road traffic accidents	34	3	5
Inflammatory heart diseases	22	2	1

Source: Death and DALY estimates by cause, 2002
http://www.who.int/entity/healthinfo/statistics/bodgbddeathdalyestimates.xls

5.3. Child Health in Brazilian Squatter Settlements

As a response to the need for more information about health problems in poor urban communities, a health survey was conducted in Rocinha, the largest squatter settlement, or favela, in Rio de Janeiro. A fifteen-day recall period was used to measure gastro-intestinal disorders, acute respiratory infections, and infections of the throat, ears, eyes in 600 children under 5 years of age (Reichenheim M., Harpham T., 1989) (Figure-4).

The respective prevalence of the three categories was 44, 79, and 14 per cent(Table-5). Taking only severe episodes into account, the prevalence was 4, 12, and 2.5 per cent, respectively. Risk factors aredetermined to be such as household income and environmental conditions (socioeconomic status), migration status, maternal stress, magnitude of separation between child and mother (Reichenheim M., Harpham T., 1989).

Figure-4. Disordersin Brazilian Squatter Settlements.

Table-5. Causes of Death in Children Under-5 (WHO, Mortality Country Fact Sheet, 2006).

Distribution of causes of death among children under 5 years of age Brazil, 2000-2003

Causes	Deaths[b] (%)	Regional average (%)
Total neonatal deaths	100	100
Neonatal causes[a]	38	44
HIV/AIDS	0	1
Diarrhoeal diseases	12	10
Measles	0	0
Malaria	1	0
Pneumonia	13	12
Injuries	3	5
Others	33	28

a. Includes diarrhoea during neonatal period
b. Sum of individual proportions may not add up to 100% due to rounding.

Annual estimated proportions of death by cause for neonates Brazil, 2000

Causes	Deaths[c] (%)	Regional average[c] (%)
Total neonatal deaths	100	100
Neonatal tetanus	1	1
Severe infection[a]	19	18
Birth asphyxia	23	19
Diarrhoeal diseases	1	1
Congenital anomalies	11	15
Preterm birth[b]	38	38
Others	7	8

a. Includes deaths from pneumonia, meningitis, sepsis/septicaemia and other infections during the neonatal period.
b. Includes only deaths directly attributed to prematurity and to specific complications of preterm birth such as surfactant deficiency, but not all deaths in preterm infants.
c. Sum of individual proportions may not equal 100% due to rounding.

6. CONCLUSION

In conclusion, the method of the research was to put forward the preexisting condition of Brazil about the health status, health care and diseases. Also, the mortality in squatter settlements - the risk factors are analysed and a literature review about the effort to provide public health and welfare in that region, is made, to find alternative solutions for the problems(Figure-5).

Figure-5. Public Health and Welfare Problems.

These solutions are;
-Increasing health benefits and social security,
-Providing sanitation services (The lack or deficiency of basic sanitation services has been associated with the persistence of diarrhea as well as outbreaks of contagious diseases, including cholera),
-Building an organized health care system, supported by the states and municipalities to provide health funds and facilities to the poor living in the squatter settlements of Brazil.

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