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GROWING OLD IN SAO PAULO, BRAZIL

Assessment of ^{the} Health Status and Family Support of the
Elderly ^{People} of ~~Different Socio-Economic Strata~~ Living in
the Community in different socio-economic strata

by

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Thesis submitted for the
Degree of Doctor of
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and Tropical Medicine,
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ABSTRACT

This project was the first to collect data about the elderly population living in the community in Sao Paulo, Brazil. The main hypothesis guiding the study was that the social class of the elderly person is the basic determinant of well-being in old age. A multidimensional functional assessment questionnaire was developed, yielding information on five dimensions of the elderly person's functioning: socio-economic status, physical health status, independence on the activities of daily living, mental health status, and social interaction. The sample was geographically stratified by social class using the sub-districts of Sao Paulo (administratively defined areas) as stratification units. Three sub-districts were selected and a total of 303 interviews were conducted. The results showed strong associations between living in the poor area, being a migrant, having a large family, living in a multigeneration household, reporting more chronic diseases, having more psychiatric disorders and perceiving less satisfaction with life in general. Although life in a multigeneration household was also associated with more availability of help in case of need, such living arrangement did not seem to compensate for the burdens of poverty. Some priorities for future research in the area are discussed, and the implications for policy making are outlined - the differences between the areas called for profound social changes if well-being in old age is to be a goal.

To Paula with love.

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INTRODUCTION

This thesis is concerned with the ageing process and the well-being of the elderly. An issue that has, in many aspects, been extensively explored in the literature. The principal aim, however, is to concentrate on a neglected aspect of the ageing process as it affects the elderly in the Third World.

The leitmotiv for the study is the fact that population ageing is no longer a phenomenon largely restricted to the affluent countries of Europe and North America. Increases in the elderly population have consistently been observed in Third World countries, and the prospect is for these countries to have rapid declines in mortality and fertility rates, thus 'compressing' the ageing process. Demographic projections have, in fact, shown that by the middle of the next century Third World populations should have a very similar age structure to the affluent West. Yet very little is known about the elderly and the determinants of their well-being in Third World countries.

This study acknowledges the need for baseline information about the elderly in Brazil and focuses on the elderly population in Sao Paulo - the largest metropolitan area in South America and leading industrial centre of the country. It attempts to develop a methodology for multidimensional functional assessment of the elderly population in Brazil,

to ascertain whether social class is a main determinant of well-being in old age and how prevalent the multigeneration household is in an urban centre like Sao Paulo. It also seeks to examine to what extent multigeneration households buffer the disadvantages of old age and influence the subjective perceptions of the elderly person about the ageing process.

Background

The twentieth century has witnessed a radical change in expectations of life and death: people are no longer worried about whether they are going to reach old age or not, but of the quality of life to expect when they grow old. Experience in most affluent countries has shown that as the population starts to live longer and to reproduce at lower rates there is an increase in the proportion of elderly people in the total population, and a change in the nature of the economic exchanges in society. More people become economically inactive and, at the same time, the demand for social support and health care increases due to a growing prevalence of chronic illnesses and disabilities among the population. The consequences of the ageing process for the social services and health care systems can hardly be overemphasised. Although the proportion of elderly people actually dependent on institutional care is, in general, very small (around 5%) the resources consumed by them are considerable; the percapita expenditure upon an

elderly person can be six times the expenditure upon an infant, in countries with a welfare system (Maxwell, 1974). In the Third World where countries still have high infant mortality rates a rapid increase in the proportion of elderly people will have dramatic implications for public policies in the health and social care sectors.

Brazil is one of the countries that will face massive increases in the number of elderly people in the foreseeable future, and very little is known about their socio-demographic characteristics, health status, living standards, use of services, and social support systems. Similar to most other Third World countries, Brazil's priorities have been directed to the health of the economy - dependent on a complicated conjunction of international interests and the well-being of a minority of the population - rather than to the economy of health. The last 25 years have witnessed a series of political upsets under military rule and lately to reinstate the democratic order in Brazil. In fact, maladministration of public funds, lack of planning, and above all a strong economic dependency on external funds and technological know-how (Banta, 1986), have, so far, prevented what is the 8th largest economy in the world providing a minimum standard of living for at least two thirds of its 130 million population (Singer, 1981).

Nevertheless, the technological advances of modern industrial societies are also becoming increasingly available in the health sector and preventable deaths are being avoided, even in areas where the standard of living is still very low. As fertility rates have also declined in recent years, the population has started to age in demographic terms and Brazil can expect its 'boom' of elderly people by the beginning of next century.

In Sao Paulo there are many factors which are likely to pose serious threats to the well-being of the growing elderly population: rapid population growth mainly due to migration, major socio-economic inequalities across the different geographic areas of the city, lack of any institutional infrastructure for the care of the elderly (apart from universal access to hospitals), a high rate of criminality and violent deaths, and financial pressures from international banks concerning the servicing of foreign debt. An inflation rate of 30% per month has been recently recorded and illustrates the tension to which people have been submitted.

Although poverty and deprivation in old age have been examined in the literature, very few studies have addressed the different realities and problems of the elderly population living in countries with a dependent economy, like most Third World countries.

Gerontological surveys (done mainly in the affluent countries) describe the elderly population as a group of people with common characteristics and a defined set of needs. They fail to recognise the elderly as an aggregate of different social classes with different needs. Hence their recommendations tend to reinforce the class differentials which, in capitalist societies, work to the disadvantage of the elderly in the lower socio-economic strata.

In 1982, the United Nation's World Assembly on Ageing acknowledged the central role played by the family in the support of elderly people as the absolute majority of them are not institutionalised, and living independent lives in the community. There has been little dispute that the most beneficial and cost effective way of caring for the aged is by keeping them in the community as long as they are able and wish to (UN, 1982). That means adequate community services from the State and strong family support. Although the nature and extent of this support varies widely within as well as between countries, there has been an increasing awareness that any improvement of the general well-being of the elderly must begin within the context of the family. For the elderly in the Third World, there is a prevailing belief that socio-cultural factors will ensure the necessary family support and somehow compensate for the

social inequalities and lack of formal care.

The question of whether the family unit can continue to cope alone with the increasing prevalence of those physical and mental disabilities requiring constant care, becomes of paramount importance for policy makers. Few countries have managed to retain the elderly in the community in a dignified position through self-care and family support. The alternative option of institutionalisation of the elderly has, in fact, been developed in many affluent countries with considerable financial implications (Maxwell, 1974).

Brazil must find resources to meet the needs of a large population of elderly by 2025. A large proportion of these people, because of the conditions of their earlier lives, will probably be in poorer health than their peers in affluent countries. It will also be a population with a high proportion of migrants from rural areas thus never totally integrated into the industrial work force. Family support in these cases will depend on children who are at best earning marginal wages. It is therefore reasonable to assume that the societal capability to cope with increasing demands for social services will be seriously tested in the near future. There has not been, however, any systematic attempt to cope in a definitive manner with the potential social, economic, and institutional problems raised by the ageing population in Brazil.

Functional assessment of the elderly has become a key word in policy making for the care of the elderly. Many instruments have been developed in order to assess the well-being of the elderly population and their needs in terms of care. It has been agreed that such an assessment has to be multidimensional, encompassing not only health status, but also independence in daily living activities, social support and economic stability of the elderly person (Fillenbaum, 1984). Continuous assessment has been prescribed in order to promote the adequate placement of the elderly according to their needs in terms of care - i.e. home care, residential or hospital care. This kind of information has become vital in assessing the well-being of the elderly and for determining the adequate use of resources.

Structure of the Study

The study is introduced by a background discussion of the ageing process, conceptualising the Demographic Transition and its main determinants, declining mortality and fertility rates. The Demographic Transition experienced by most European countries in the beginning of the century is compared to the one being experienced by most Latin American countries in the last thirty years, emphasising the tendency for the latter to be 'compressed' (in time). The case study of Sao Paulo is given as an example of such a Demographic Transition, and as a background of the study area.

Society's attitudes towards the elderly are discussed in the context of several theories - Modernisation, Disengagement and Structural Dependency - which are critically analysed in terms of their ability to explain the present role of the elderly in society. Special attention is paid to the impact of retirement in old age, as well as the role of institutions and informal care, in the well-being of the elderly.

The last section of the introduction reviews major studies concerning the functional capacity of elderly people living in the community. The OARS methodology (Duke University, 1978) is described in detail as it is the most widely used and properly validated multidimensional functional assessment methodology. Some major methodological issues are discussed in more detail - how to stratify the elderly by social class, how to measure health status, and the importance of subjective assessments of the elderly.

The methodology section starts with the objectives and hypothesis being tested. A detailed description is given of the construction of the first Brazilian Multidimensional Functional Assessment Questionnaire. The survey design is explained with emphasis on the socio-economic stratification of the sample, using Sub-districts (geographically and administratively defined areas) as stratification units. The results are presented for the sample as a whole, and for each Sub-district, using basic statistics. Apart from the

main socio-demographic and socio-economic variables, some basic dependent variables are defined: degree of disability in the activities of daily living, psychiatric disorder (mental health screening's score), household type, and perceived well-being. A multivariate analysis at the end attempts to produce a model of interrelationship amongst those variables.

Finally, the results are discussed in the light of what has been described in the literature, and some conclusions are drawn and used to support recommendations to the Health Secretary in Sao Paulo.

The Importance of the Study

The present study has in common with many other studies done elsewhere the objective of producing a comprehensive profile of the elderly population living in the community, which can be used to support policy making. As this is the first survey to attempt such an assessment in Brazil, one of the main concerns was to develop an instrument based on a previously validated one, and to adapt it to the Brazilian reality so that it could be further utilised in the future, enabling longitudinal comparisons. For the same reason, special attention was paid to the methodology of sampling, so that it could be replicated in other urban areas of the country.

Where the present study differs from most others is to have a sample of elderly people clearly stratified by social class by means of a simple and operational method. Hence, social class differences can be evaluated much more than they have been in other studies.

Perhaps the most important variable to be analysed in the Brazilian context is the type of household in which the elderly are living. Empirical data is needed concerning the prevalence of multigeneration households and its influence upon the well-being of the elderly living in the community.

PART I - BACKGROUND

"...so much happier is the old man's condition, than that of the young; because he has already attained, and is sure of what the other only wishes and hopes for; he has lived long already." (Cicero, who died 64 in 42 BC)

I.1 - Ageing: a World-Wide Phenomenon

Although the fountain of eternal youth is yet to be discovered, one of the main goals in the history of human kind has been achieved: the prolongation of the life span. Compared with the ancient Romans, for instance, the population in industrialised affluent countries, in 1980, had an expectation of life at birth almost four times as long - 20 years and 73 years respectively (UN, 1985; McPherson, 1983) (1).

Society has also started to age - in population terms - as the proportion of people reaching older ages increases, thus increasing the mean age of the population (Grimlat, 1982). By the middle of this century one third of the World's population already had an expectation of life at birth of 70 years (UN, 1985).

The ageing process has been a phenomenon traditionally associated with the economic development of affluent

Footnote (1) - The biological limit of human life does not appear to have ever been much over 100 years (Fries, 1980) - the Guinness Book of Records accepts as documented only five persons living beyond the age of 112 years, the oldest being a Japanese man who died 114 years old in 1980.

industrial countries, but nowadays it has become a global reality. By 1960, for instance, more than half of those aged 60 and over were living in the Third World (WHO, 1984; Kalache et al., 1987). Demographic projections indicate that until the year 2000, three quarters of the projected increase in the world's elderly population will occur in the Third World countries, making the over sixties the fastest growing age-group in these countries. There, high fertility rates until the recent past (1970s) have ensured that a large number of people will now experience a higher expectation of life. Latin America alone will, until the year 2000, increase its population aged 60 and over from 23.3 to 78.2 millions (236%), more than twice the rate of increase for its general population - 363.7 to 803.6 millions (120%) (United Nations, 1985; Siegel and Hoover, 1982). Among the 11 largest populations of people aged 60 and over, in absolute terms, eight will be in developing nations by the year 2025. Brazil, for example, will have the sixth largest elderly population in the world by then (WHO, 1984; Kalache and Gray, 1985; Kalache et al., 1987).

1.1.1 - The Demographic Transition: Conceptual Framework

In essence, the demographic transition has been referred to in the literature as a process in which a decline in mortality rates (ie. an increase in the expectation of life) is followed by a decline in fertility rates - increasing the proportion of elderly people in the

population. (Demeny, 1974; Siegel and Hoover, 1982; McPherson, 1983; Myers, 1985; Warnes, 1985; Kalache et al., 1987; Ramos et al., 1987).

While discussing the demographic transition it is important to understand the interaction between mortality and fertility rates, and how it influences the age structure of a population. Grimblat (1982) illustrates the issue with four hypothetical examples. In a initial stage (A), a given population shows a low expectation of life at birth (eg. 40 years) and a high fertility rate (eg. 3.5 births/women 15-44). This was a situation experienced by all countries in the world in a distant past, and is still experienced by most African countries nowadays. It implies a very young age structure - with a high proportion of children (aged 0-14) (46%), and a low proportion of elderly people (65 +) (2.3%) in the total population. In a second stage (B), the expectation of life increases substantially (eg. up to 75 years) but the fertility rate remains high (eg. 3.5 births/women 15-44). This is a situation that some Latin American countries like Brazil experienced between the 1950s (when mortality rates started to fall) and the 1970s (when fertility rates also started to fall). It results in a fair increase in the proportion of children (46% to 50.4%) and a negligible increase in the proportion of elderly (2.3% to 2.4%). In a third stage (C) a marked decline in fertility is obtained (eg. down to 1.0 birth/women 15-44) without any increase in the initial expectation of life (eg. 40 years).

This is a situation reflecting an effective birth control programme in a high mortality population. This indicates a decrease in the proportion of children (46% to 16.7%) and a marked increase in the proportion of elderly (2.4% to 14.9%). Finally, in a last stage (D), the expectation of life increases (eg. up to 75 years) and fertility is reduced (eg. down to 1.0 birth/women 15-44). A situation that has been experienced by most affluent countries lately. Such combination produces a massive increase in the proportion of elderly (2.3% to 18%) and decrease in the proportion of children (46% to 19%) in the population.

Contrary to what common sense seems to indicate, declines in mortality rates alone, have, historically, only had a marginal influence on the age-structure of the population. It is when the fertility rates actually decline that the age structure of the population starts to change and the mean age of the population begins to increase. (Grinblat, 1982; Jones, 1981). Figure 1.1.1 gives a schematic view of the transition from a youthful population to an aged population, displaying the four stages of the demographic transition.

Both fertility and mortality rates are high in traditional, less affluent societies, and both are low in modernised, economically affluent societies. Population growth through natural increase is consequently low at both ends of the conventional development/modernisation spectrum. However, as mortality tends to fall in advance of fertility, through

its earlier response to modern economic and social influences (Jones, 1981), the tendency is to have considerable population growth between the beginning and the end of the Demographic Transition (Figure 1.1.2).

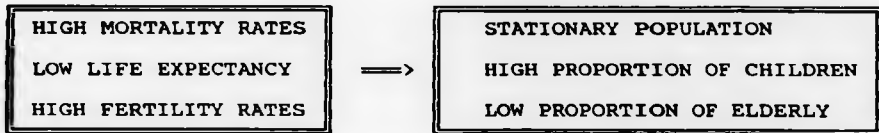
1.1.2. - The 'Compressed' Demographic Transition in Brazil

Historically, population ageing is a recent phenomenon, to which even the most affluent countries are still trying to adapt. Mortality rates, in Europe, started to fall in the late 1700s, but the second stage of the demographic transition (mortality decline) is considered to have started only by the end of last century, when life expectancy at birth was around 45 years (Jones, 1981). Similarly, fertility rates are believed to have fallen in pre-industrial Europe but significant fertility reductions (the third stage of the Demographic Transition) occurred only after a consistent mortality decline had occurred. Crude birth rates of about 30 to 33 births per 1000 population achieved in the pre-modern transition are further, appreciably reduced to around 18 births per 1000, in response to modernisation forces which gathered momentum in Europe since the late nineteenth century (Jones, 1981).

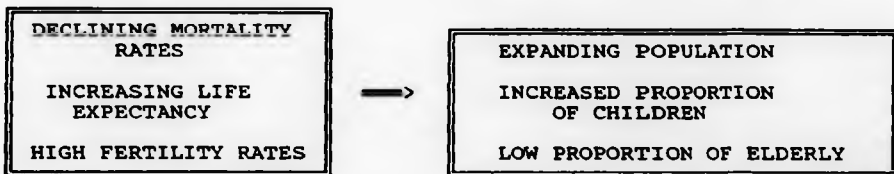
The mortality decline, in Europe, was due to a combination of several factors associated directly or indirectly with economic development, that is to say, improved nutrition, better sanitation and housing conditions, and increased

Figure 1.1.1 - Stages of the Demographic Transition

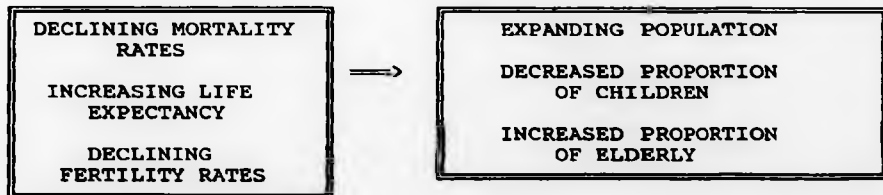
FIRST STAGE



SECOND STAGE



THIRD STAGE



FOURTH STAGE

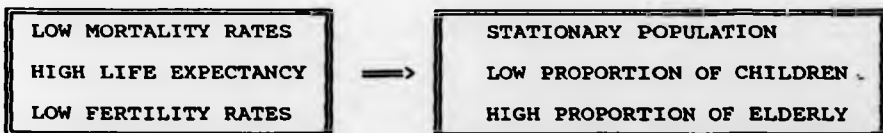
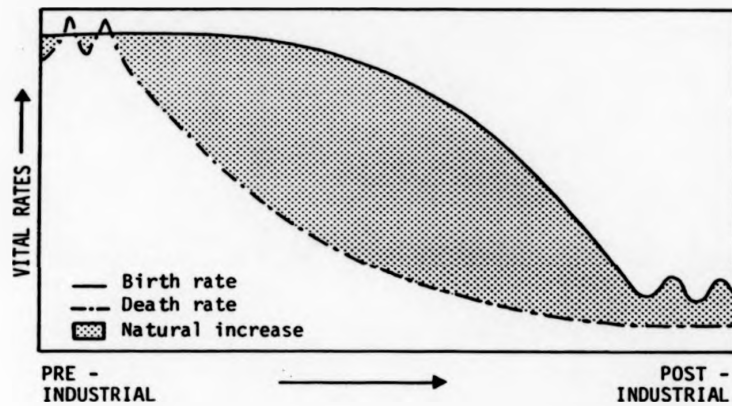


Figure 1.1.2

THE STANDARD DEMOGRAPHIC TRANSITION



manufacturing output. Mortality rates started to fall well before the deployment of effective medical measures to avoid premature deaths and prevent a number of diseases (e.g vaccines, antibiotics, diagnostic devices, and etc...) (Fries, 1980; McKeown, 1979). As modernisation and development gradually transformed traditional agrarian societies in bureaucratic urban societies with low mortality rates, changes in the norms and values relating to child-bearing and parenthood (socially regulated marriage patterns) tended to reduce fertility levels (Jones, 1981).

In Brazil, life expectancy remained low until the 1950s when mortality rates began to decline. Since then there has been a rapid decline in mortality rates and a steady increase in the expectation of life (Ramos et al., 1987). Although there is a relationship between development and mortality decline in Brazil, the rapidity of the mortality decline, suggests that factors other than general development have contributed to the recent mortality reductions. They are believed to be essentially medical and public health programmes implemented with technology and drugs not available in the past (Banta, 1986; Jones, 1981). In other words, improvements in the health status have been achieved but dissociated from real improvements in the socio-economic status of the majority of the population, and without real reductions in the socio-economic inequalities across the country (Yunes et al., 1974; Monteiro, 1982; Barros, 1984; Kalache et al., 1987; Ramos et al., 1987).

The third stage of the demographic transition - the fertility decline after the increase in the expectation of life - started, for most Third World nations, less than two decades ago. By then, birth rates were still much higher than in Europe at the beginning of the century. In Brazil, from 1965 to 1982, fertility rates were reduced by 30%, dropping from more than 6 children to 4 children per woman aged 15 to 44 (Hugo, 1985; IBGE, 1985). As generally agreed by demographers (Jones, 1981; Arriaga, 1970; Gendell, 1967), urbanisation has probably been the main factor affecting fertility rates in less affluent countries (2). Since 1940, the proportion of the population living in urban areas, in Brazil, has increased dramatically - from 31%, in 1940, to 68%, in 1980 (see Figure 1.2.2). In addition there has been a progressive incorporation of women into the labour force. The proportion of economically active women in the 25-59 age-group, in Brazil, has increased from 30% to 41% in a ten years period (1973-83) (while the proportion of men has remained constant around 92%) (IBGE, 1985). The need to limit family size, thus developed in a context of urban constraints on large families and women's commitments outside the household, together with the growing

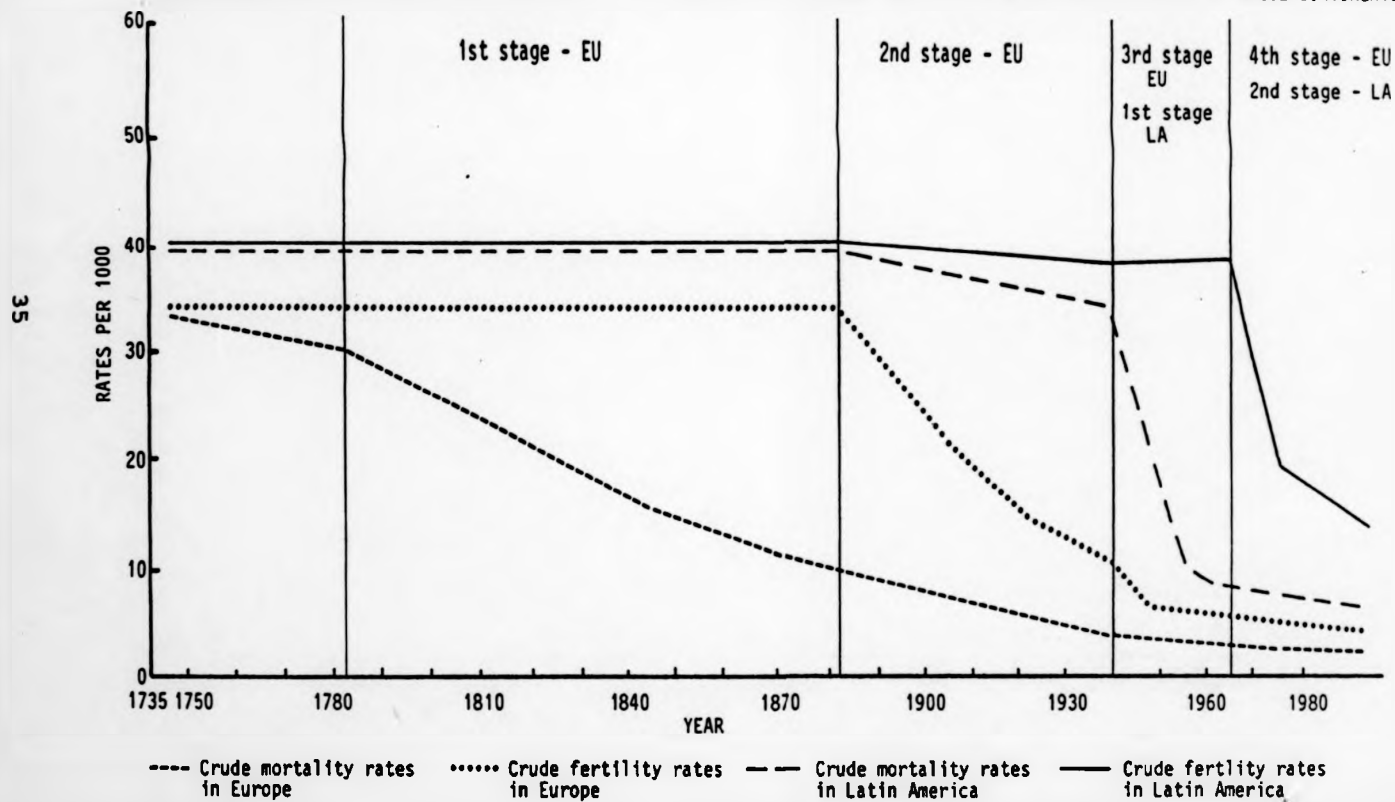
Footnote (2) - Internal migration to urban areas usually promotes the breakdown of extended kinship systems, seen in rural areas, and places the physical and emotional costs of child-rearing much more centrally on parents (Jones, 1981). In addition, in an urban industrial context, the labour value of children diminishes as the family is no longer the basic productive unit as in peasant societies, and a new attitude towards family size tends to be rapidly assimilated (Arriaga, 1970).

availability of contraceptives through health centres and out-patient clinics (CPD, 1983).

Figure 1.1.3 gives a schematic view of the secular trend in mortality and fertility rates for the average European country and the average Latin American country. What is most impressive is the rapidity of the demographic transition in the latter as compared with the former. A similar level of mortality and fertility rates achieved in Europe in the 1930s, was attained in Latin America in the 1970s, after only 30 years of demographic transition. By 2075, both regions will then have reached a comparable age structure with roughly 63% of the population aged 15 to 65 years, 19% aged less than 15 and 18% aged 65 and over (Grinblat, 1982). Thus the Latin American countries which started the demographic transition in the 1950s, will achieve a similar age structure to that of the European countries roughly 125 years after the demographic transition started. An age structure that took the European countries almost 200 years to achieve. There is, therefore, reason to believe that the demographic transition has been compressed in Latin America, forcing early decisions regarding the consequences of the ageing process if policies are to be appropriately adapted to the changing scene.

Figure 1.1.3

STAGES OF DEMOGRAPHIC TRANSITION - SCHEMATIC IN TWO HYPOTHETICAL COUNTRIES ONE IN EUROPE (EU) AND ONE IN LATIN AMERICA (LA), BASED ON THE EVOLUTION OF THE AVERAGE CRUDE BIRTH RATES AND CRUDE MORTALITY RATES IN THESE CONTINENTS



Life Expectancy Differentials

Life expectancy has been increasing for most countries in the world but there are still important differences between the affluent countries and the Third World that have to be put into perspective. It is also important to understand the differences in life expectancy of different age-groups, as well as gender differences, for they tend to affect countries regardless the stage of economic development.

The general trend is for the differences between the expectation of life at birth in European and Latin American countries, for instance, to be drastically reduced. Figure 1.1.4, shows the projected changes in life expectancy at birth for several regions of the world from the middle of this century until the year 2025. The last 30 years have witnessed a world-wide increase in life expectancy, particularly in Asian and Latin American countries. In Brazil, since the industrialisation process had started in the middle of this century, there has been a consistent increase in life expectancy. In 1950, for instance, life expectancy at birth was 45 years - only 11 years greater than in 1900 and actually 20 years less than in Europe at the time. By 1980, it had increased to 60 years only 12 years less than that in Europe. United Nation's projections for the year 2025, suggest that the difference will be reduced to four years, and that life expectancy at birth will increase to 72 years for an average person in Brazil

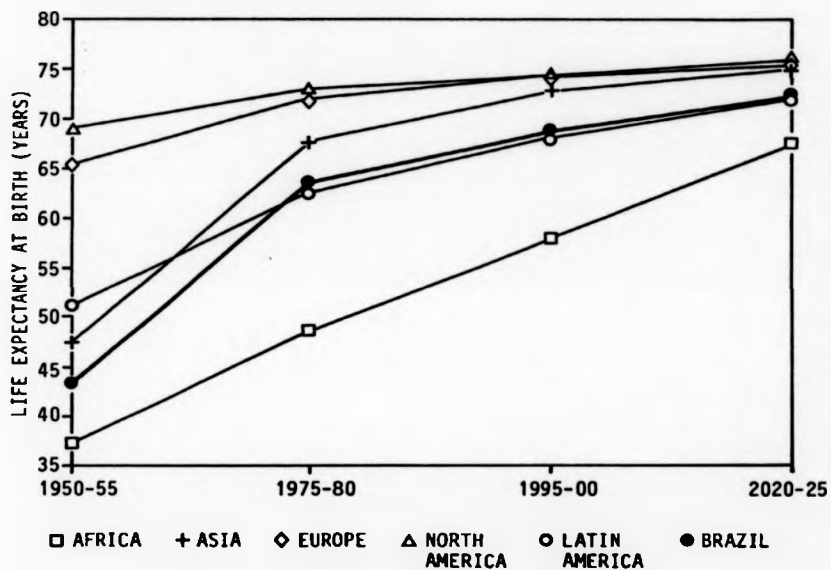
(Siegel & Hoover, 1982; UN, 1985; IBGE, 1985) (3).

However, in a country of continental dimensions like Brazil, with considerable socio-economic inequalities (Yunes, 1974; Merrick, 1974), there is a need for a regional understanding of the ageing process, for different regions are in different stages of the Demographic Transition (Jones, 1981). Figure 1.1.5, shows the expectation of life for the main regions in the country, since 1950. There is a tendency for sharp increases in the expectation of life at birth to occur in all regions. But unlike the pattern of change seen in Figure 1.1.4, the differentials between the 'wealthy' South and the 'poor' North-East, for example, do not seem to be diminishing. Indeed, it appears that the difference in life expectancy at birth between the two regions in the period, has actually increased, from 15 years in 1950 (54 and 39 years, respectively), to 16 years, in 1980 (67 and 51 years, respectively) (IBGE, 1985). Similarly, the expectation of life also tends to vary considerably between different social classes, in a same population. The 1980 census showed that when different socio-economic groups were compared, there was a 15 year difference in life expectancy at birth between the richest and the poorest sectors of the Brazilian population (IBGE, 1985).

Footnote (3) - As life expectancy at birth, in most affluent countries, approaches the average biological limit of the human life (around 85 years), one should expect it to gradually stabilise (Siegel & Hoover, 1982).

Figure 1.1.4

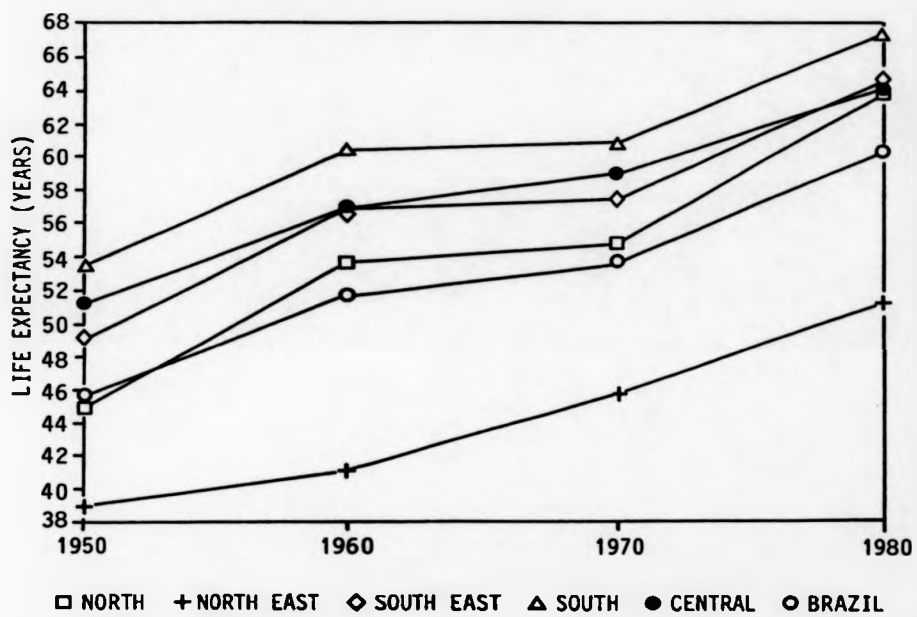
LIFE EXPECTANCY AT BIRTH (1950 TO 2025)
Regions of the world and Brazil



SOURCE : United Nations (1985)

Figure 1.1.5

LIFE EXPECTANCY AT BIRTH
Regions of Brazil, 1980



SOURCE : IBGE (1985)

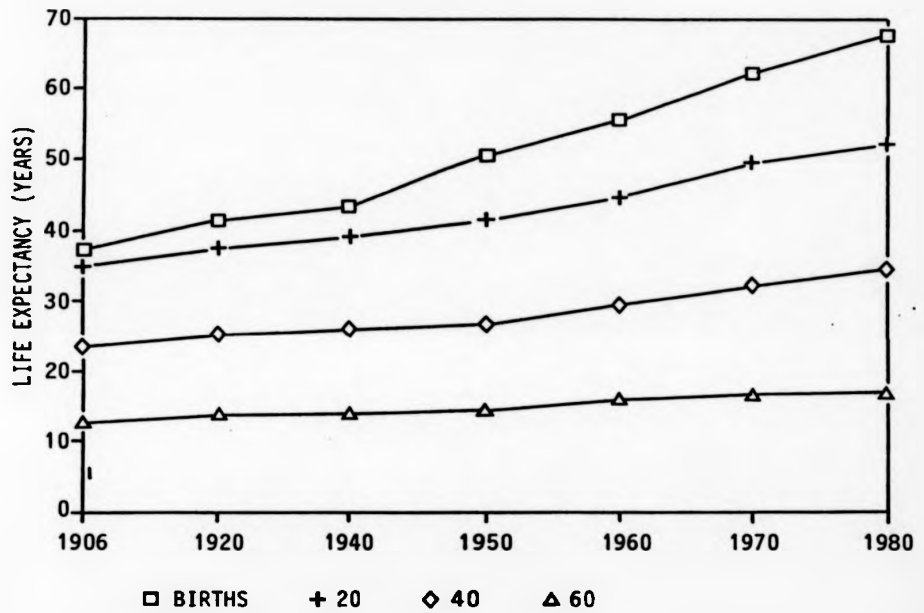
Life Expectancy by Age-Group

Increases in life expectancy tend to be a result of reductions in infant mortality rates more than anything else (Fries and Crapo, 1981). Figure 1.1.6 shows the life expectancy for different age-groups in a wealthy region of Brazil, the city of Rio-de-Janeiro, since the beginning of the century. Whereas life expectancy at birth shows a marked increase since 1950, as discussed above, the same does not happen with life expectancy at ages 20, 40 and 60. In fact, the older the age-group the smaller the increase in life expectancy (Ramos et al., 1987).

Differences in the expectation of life at birth between countries, while revealing a lot about socio-economic differences, discloses very little about the differences in expectation of life in older ages. Figure 1.1.7 shows that the expectation of life beyond the age of 60 tends to be the same for an elderly person in a Third World country like Brazil and an elderly person, male or female, in an European country, for instance (Siegel and Hoover, 1982; WHO, 1984). One can argue at this point that people living in Third World countries have been less exposed to some of the well known risk factors for some killing chronic diseases in middle life eg. lung cancer. Indeed, habits like the widespread cigarette consumption, for instance, have only recently hit the Third World, thus explaining recent increases in the incidence of lung cancer in these countries

Figure 1.1.6

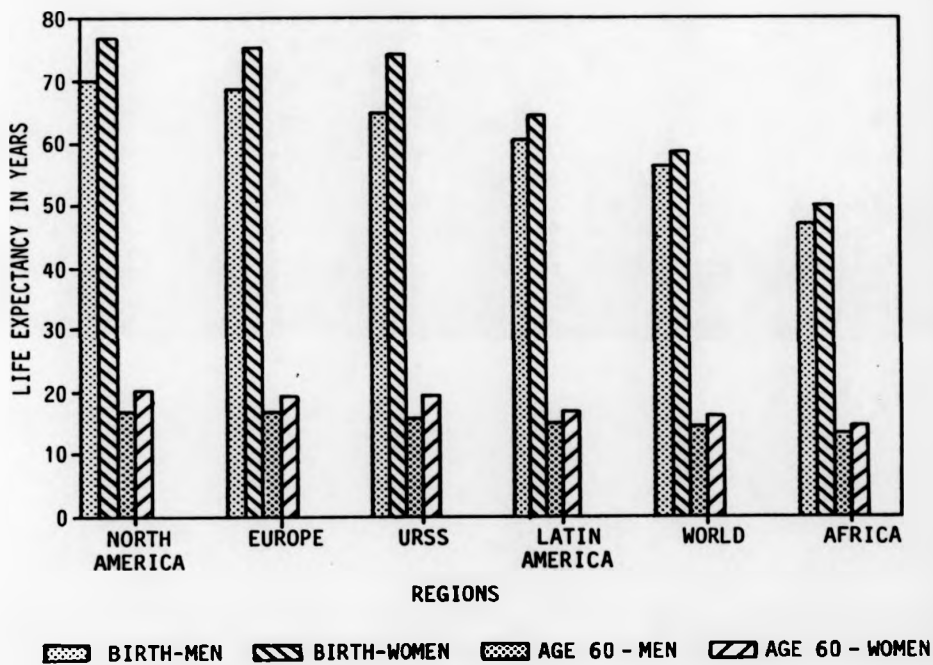
LIFE EXPECTANCY AT BIRTH, AND AGE, 20,40 & 60
Rio de Janeiro (Brazil), 1906-1980



SOURCE : Ramos et al. (1987)

Figure 1.17

LIFE EXPECTANCY AT BIRTH AND AGE 60 (1980)
Regions of the world - Males and Females



SOURCE : United Nations (1985)

(WHO, 1983). Although the major causes of death in old age tend not to vary with the socio-economic status of the population in the way that causes of death in early childhood do, other risk factors like diets high in saturated fat can still be seen as part of a life-style peculiar to the affluent world (Kalache et al., 1987).

Gender Differences in Life Expectancy

Women usually have a higher expectation of life than men, in every age group, particularly in affluent countries. In 1980, for instance, a woman in Europe had an expectation of life at birth 7.5 years higher than men (UN, 1985). At that time women in Brazil also had a higher expectation of life at birth - 6.4 years difference (57 years for men and 63.4 years for women). This was a lower difference than in Europe, for instance, but much higher than the average for the Third World which is 2.2 years (Anzola-Perez, 1985).

These differences can be partly explained by the biological differences responsible for the excess in male mortality in general terms (Jones, 1981). Moreover, women have had an unequal exposure to occupational hazards, and risk factors such as cigarettes and alcohol until the recent past. However, these latter differences tend to diminish as women are increasingly joining the labour force, thus exposing themselves more to occupational hazards and acquiring habits, which were, in the past, restricted to the male

population, such as smoking and drinking (Veras et al., 1987; Jacobson, 1986; Lewis, 1985) (4).

Changes in the Age Structure

In Brazil, the proportion of elderly people in the total population is still low (6% in the 1980s) compared with Northern European countries (17%), for instance. However, since 1960, the proportion aged 60 and over is growing proportionately much more than the infant population (0-14) which had characteristically been the fastest growing age-group in Brazil.

Figure 1.1.8, shows that, until 1960, population growth in all age-groups used to be similar to the general population (around 30% every ten years). But since then, the elderly have shown an exponential increase - projected at 107% between 1980 and 2000. Such trends will cause the proportion of infants in the population to decrease from 44% in 1960 to 25%, and the proportion of elderly to increase from 5% to 14% by 2025 (Ramos et al., 1987; UN, 1985).

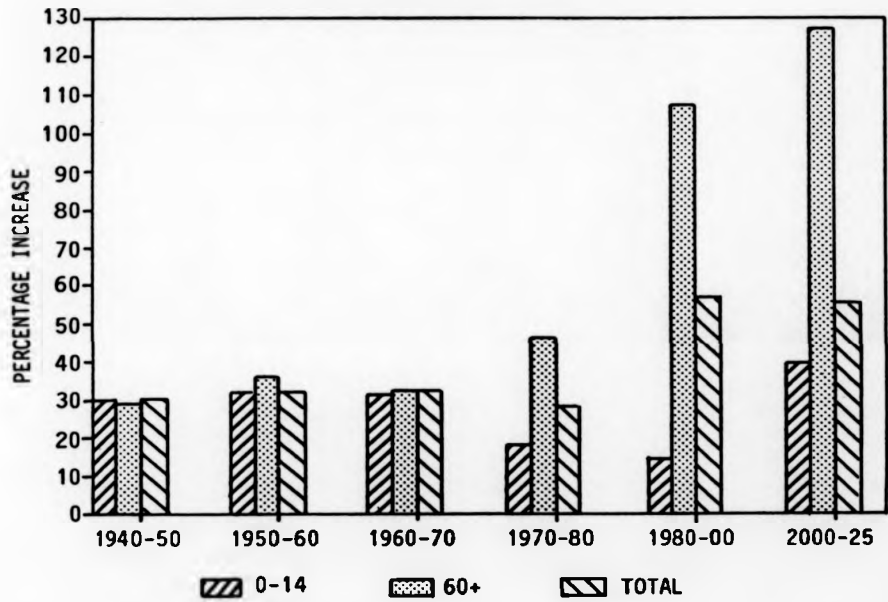
Footnote (4) - In some Asian countries, however, it is the men who lives longer. In Pakistan, for instance, in 1980, the expectation of life at birth for women (50) was two years less than for men (52), reflecting a male oriented society in which men have a differential access to food and health care (Kalache, 1987 - personal communication).

As stated before, the Demographic Transition happened much earlier in countries like Britain, but is being 'compressed' in countries like Brazil. Figure 1.1.9, shows that from 1900 to 1960, in Britain, the elderly population increased 5.5 times more than the total population, whereas from 1960 to the year 2025 the elderly population will increase 3.6 times more than the total population (the post-war "baby boom" in Europe, actually becoming an "elderly boom" in the first quarter of the next century). However, the tendency, has been for the rate of increase of the elderly population to approximate that of the total population. In Brazil, the trend is rather different. Although the proportion of the elderly in the population increased by almost 500%, between 1900 to 1960, the growth ratio in relation to the total population was small (1:1.6) compared with Britain (1:5.5). By 2025, however, the rate of increase of the elderly population is expected to reach almost 1000% giving a growth ratio of 1:3.7, which will equal the expected ratio for Britain. In other words, in the foreseeable future, the projected trend has an ever-decreasing growth ratio for the elderly population in Britain, and an ever-increasing ratio in Brazil. (Ramos et al., 1987).

The increase in the proportion of elderly people in a population affects, in the long run, the shape of the age pyramid for that population. Third World countries, for instance, have always been associated with population pyramids with a characteristically wide base and a narrow

Figure 1.1.8

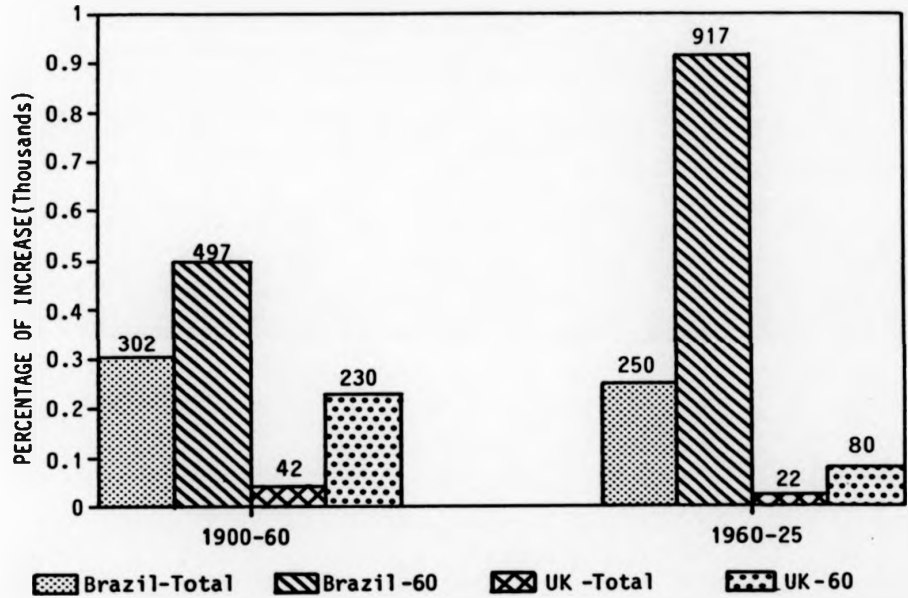
% INCREASE OF THE BRAZILIAN POPULATION
0-14; 60+; Total population (1940-2025)



SOURCE : Ramos et al. (1987)

Figure 1.1.9

% OF POPULATION INCREASE: TOTAL AND 60+
Brazil and United Kingdom (1900-2025)



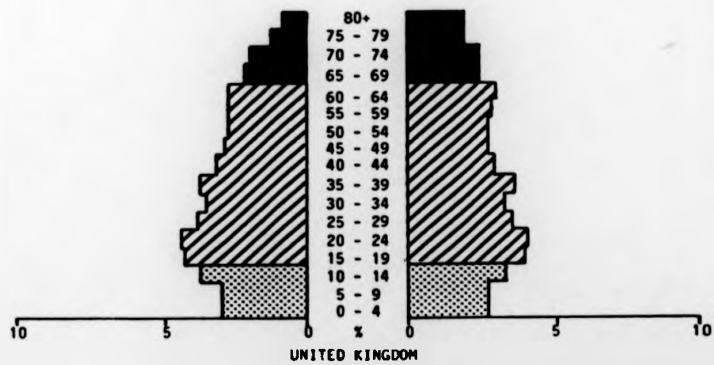
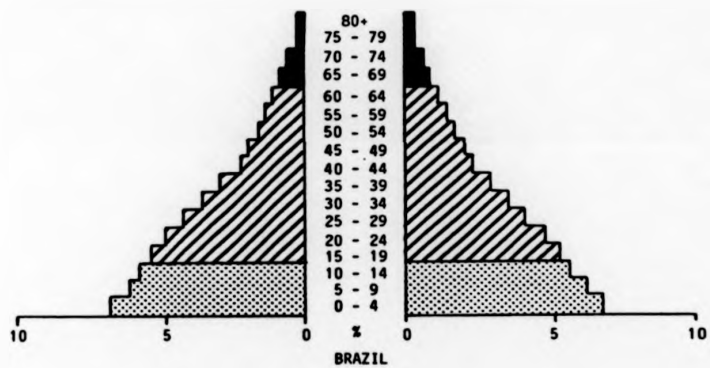
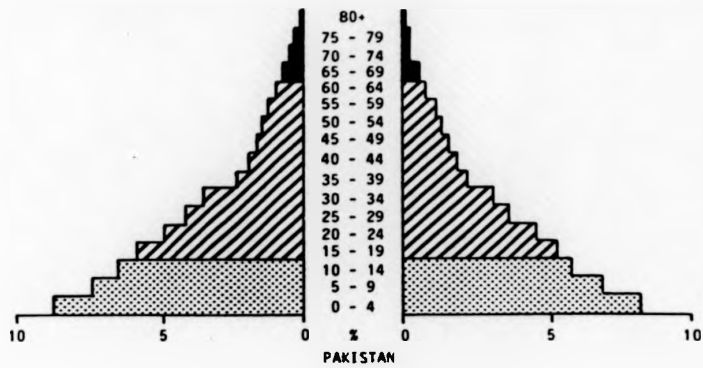
SOURCE : Ramos et al. (1987)

top, expressing a high fertility rate and high mortality rate (initial stage of the Demographic Transition). As mortality rates start to go down, the tendency is to have more people reaching the top of the pyramid, although the input of new-borns is still the same (second stage of the Demographic Transition). As fertility rates also decrease, the base of the pyramid tends to narrow and the top to enlarge, expressing the last stage of the demographic transition. Eventually, the base becomes so narrow and the top so wide that it is no longer a pyramid but a barrel - the shape that best expresses the age-structure of that population (Jones, 1981).

Figure 1.1.10 shows three countries in three different stages of the demographic transition, and its respective age-sex-pyramids. The pyramid for Pakistan clearly exemplifies the initial stage of the demographic transition: high mortality and high fertility. The pyramid for Brazil shows the intermediate stage in which mortality is going down (a wider top), and fertility is also falling (a narrow base), but has not fallen for long enough to change the shape of the pyramid. Finally the pyramid for Britain shows the later stage of the demographic transition in which low mortality and fertility rates have already changed the pyramid into a 'barrel' (Ramos et al., 1987).

Figure 1.110

POPULATION PYRAMIDS : PAKISTAN, BRAZIL & UNITED KINGDOM (1985)



INTL
LON
USP

1.1.3 Epidemiological Transition

As more people live longer, chronic diseases have emerged as major causes of death and disability. There are now many more persons suffering from conditions that are controlled or rehabilitated rather than cured. Such changes in morbidity and mortality patterns, have been referred to in the literature as the Epidemiological Transition (WHO, 1984).

Rice & Feldman (1983), studying the impact of the ageing process on the health services, in the USA, have pointed out that even the most optimistic predictions concerning changes in health status do not suggest an immediate sharp decline in the incidence of chronic diseases or marked improvements in recovery rates. It is, thus, nearly certain that we shall be facing an increasing demand for medical, rehabilitation and social services for several decades (Manton, 1986). In countries that still have a large infant population dying from infectious diseases - which is the general rule in most Third World countries-, the onset of the Epidemiological Transition will bring an inevitable competition for resources with potentially devastating effects.

In Brazil, for instance, although the proportion of elderly is still comparatively low, there has been a complete change in the mortality pattern, as far as the causes of

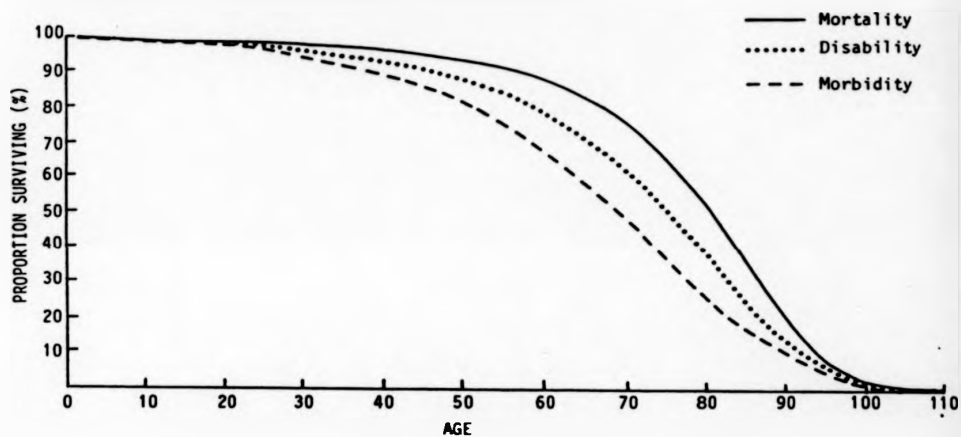
death are concerned. Since 1930, when almost half the deaths were caused by infectious diseases, there has been a steady decline in the prevalence of these diseases as causes of death and a steady increase in the prevalence of cardiovascular diseases. In 1980, only 15% of the total deaths in Brazil were caused by infectious diseases, whereas 29% were due to coronary heart disease, which is now the main cause of death (Ramos et al., 1987; Radis, 1984).

However, as the survival curve of an ageing population approaches rectangularisation - Figure 1.1.11 (curve A), some authors have supported the idea that the morbidity curve could also assume a rectangular shape (Fries, 1980) implying a compression of morbidity until later stages of the life circle, thus implying a longer disease-free period of life. Although Fries & Crapo (1981) make a strong point about the benefits of a healthy life style, there is no empirical evidence so far, that a disease free old age is possible (Myers and Manton, 1984). Data for the female population of the USA (Figure 1.1.11 - curves B & C), for instance, show that beyond the age of 70, 50% of the population can be expected to have at least one chronic disease, and by the age of 75 the same proportion will show some disability.

By the middle of next century, while having a similar age structure, gross inequalities between Brazil and the European countries, for instance, will probably persist,

Figure 1.1.11

The observed mortality and hypothetical morbidity and disability survival curves for females in the United States of America in 1980



SOURCE : Kalache et al. (1987)

making it much more difficult for the former to deal with both the socio-economic and health-related consequences of an ageing population (eg. an increasing prevalence of long-standing illnesses). Brazil, in fact, will may have to deal with the prospects of an ageing population without having solved some basic health problems concerning, for instance, the infant population.

1.1.4 -Summary

Unlike most affluent countries, where the ageing process coincided with socio-economic development associated with the Industrial Revolution, the population in Brazil is ageing under more adverse socio-economic conditions. Nevertheless, high fertility rates until the recent past, and a rapid decline in mortality and fertility rates observed so far, have resulted in those aged 60 and over becoming the fastest growing age-group in the Brazilian population. By 2025, Brazil will have the sixth largest elderly population in the world, in absolute terms, and by 2075, the age structure in Brazil will be very similar to any European country, for instance. Such 'compression', in time, of the process of Demographic Transition, is an important factor which should stimulate policy makers to respond promptly to the changing scene.

PART I - BACKGROUND

I.2 - Sao Paulo: 30 years of Demographic Transition

Sao Paulo is one of the 23 states of the Federal Republic of Brazil, situated in the South-East region of the country (around parallel 20), with a 450 Km Atlantic coast, and an area of 247.898 square kilometres (only 2.9% of Brazil's area).

The State of Sao Paulo has 573 municipalities and an estimated population, in 1985, of almost 30 million people (29.227.400 - SEADE, 1984), representing almost one quarter of the country's population (IBGE, 1985). Its largest city is the capital, also named Sao Paulo (1), a conurbation of 38 municipalities comprising the Greater Sao Paulo (SEADE, 1984). Sao Paulo alone had, in 1985, an estimated population of more than 10 million people (10.036.900 - SEADE, 1984), but more than 15 million people were actually living in the Greater Sao Paulo (15.143.100 - SEADE, 1984), representing more than one tenth of the country's population (IBGE, 1985).

The population of Sao Paulo has increased exponentially since the 1920s. A comparatively small city, at that time,

Footnote (1) - Throughout the text, Sao Paulo, will refer to the municipality of Sao Paulo unless otherwise stated (eg. State of Sao Paulo or Greater Sao Paulo).

with little more than five hundred thousand people, has become the largest city in the country and the fifth largest city in the world (IBGE, 1985).

Sao Paulo represents the most industrialised and urbanised, as well as the wealthiest region in Brazil. For all these reasons it is also the region where the ageing process has advanced most and is likely to present administrators with the earliest problems consequent on the increase in the elderly population (Kasschau, 1977). A profile of the city and its population is presented below. All the main indicators of the ageing process discussed in the previous chapter are constructed for Sao Paulo and whenever possible compared with other regions of the country.

1.2.1 Industrialisation and Urbanisation

The city of Sao Paulo is an ever-growing urban centre that blossomed with the growth of the coffee business, early in the century. In the 1940s, it became the main industrial centre in the country responsible for a sizeable proportion of the Gross National Product (GNP) (Camargo et al, 1976; Kovarick, 1979). Data from the 1980 census show that 11% of the Brazilian labour force is concentrated in the city of Sao Paulo and is responsible for 35% of the GNP of Brazil (IBGE, 1985).

Figure 1.2.1 shows the distribution, in 1975, of the Gross National Product (GNP) of Brazil (based on Census data - IBGE, 1985) and its main regions according to three main sectors of the economy: agriculture, industry and services (eg. commerce, transport, etc...). The South-Eastern region (where Sao Paulo is located) is clearly where the industrial sector accounts for the largest share of the GNP (37%), and the agricultural sector the smallest (6.3%) (IBGE, 1985).

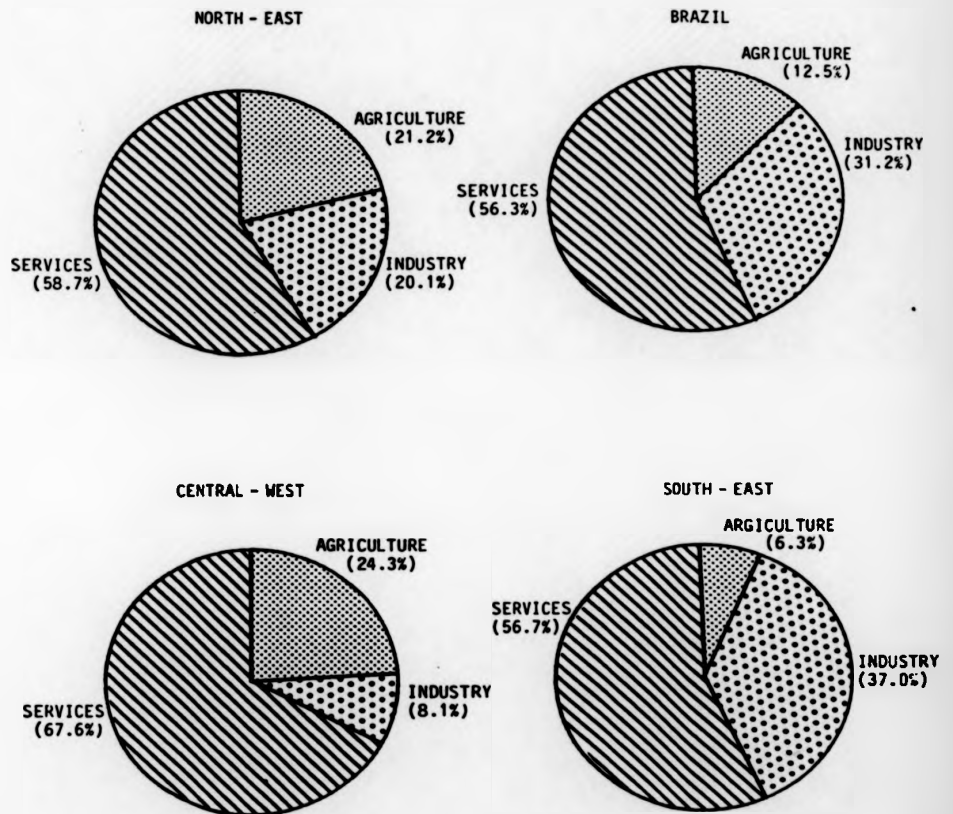
As in the rest of the world, industrialisation has promoted urbanisation in Brazil. In 1940, for instance, the economically active non-agricultural population was 42% of the active population in the agricultural sector. In 1950, this figure had risen to 65%. From the point of view of the growth of urban employment, from 1940 to 1950, the economically active non-agricultural population rose by 62% (Kovarick, 1979). The significance of this growing urban labour force was particularly intense in Sao Paulo. Since 1940, in fact, the proportion of the population, in the State of Sao Paulo, living in urban areas has increased dramatically - it rose from 44%, in 1940, to 89%, in 1980 (IBGE, 1985) (Figure 1.2.2).

1.2.2 - Internal Migration and International Immigration

Such concentration of wealth and manpower has made Sao Paulo one of the main 'receiving' areas in the country for

Figure 1.21

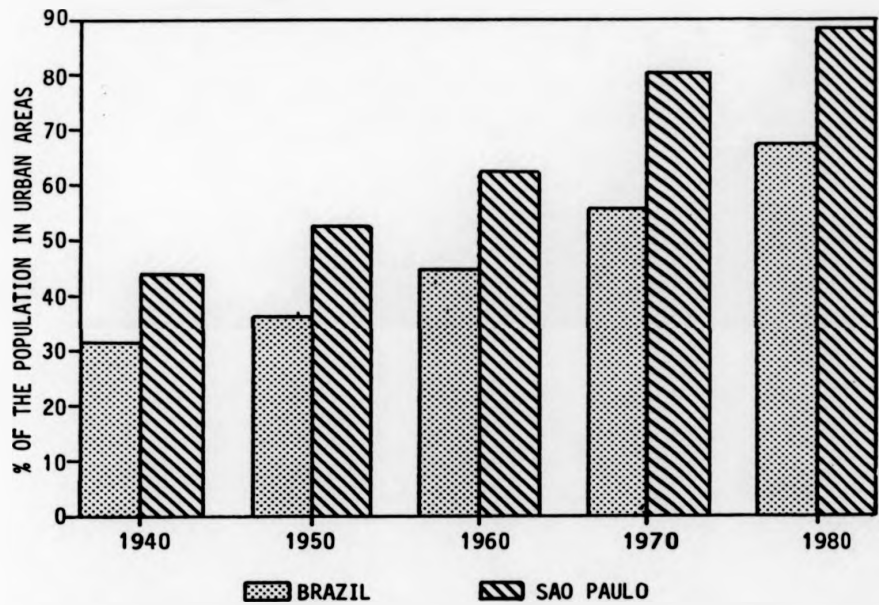
INTERNAL PRODUCT AND AREAS OF THE ECONOMY
Regions of Brazil (1975)



SOURCE: IBGE (1985)

Figure 1.2.2

URBANIZATION RATES - BRAZIL AND SAO PAULO
From 1940 to 1980



SOURCE : IBGE (1985)

the internal migration flows from the North and North-Eastern regions, bringing a mass of poor peasants seeking jobs in industry (Merrick, 1978). Between 1970 and 1980, for instance, 52% of the migrants in Brazil went to Sao Paulo, whereas only 36% left Sao Paulo, meaning a net migration growth of more than 3 million people over the decade. Most of these migrants seemed to have come from the North-Eastern part of the country that had, over the same period, a negative net migration of more than 5.5 million (IBGE, 1985). Such an influx of people has meant, a 7% annual increase of the population in the city of Sao Paulo attributable to migration, since 1950 (Carvalho, 1973). This high rate of population growth due to migration has mainly affected the poor and ill-developed peripheral areas (Camargo, 1976).

Historically, the industrial development of Sao Paulo has also been associated with international immigration at the beginning of the century (2). Apart from the comparatively negligible immigration of the last 20 years, Sao Paulo has always attracted the majority of the immigrants arriving in Brazil. In 100 years of immigration (from 1872 to 1972), for instance, 67% of the Italians (1.024.780 people), 66% of the Spaniards (462.885 people), 58% of the Germans

Footnote (2) - Since 1872, there have been important waves of international immigration of Portuguese, Italians, Spaniards, Germans and later on of Japanese, in Brazil. Most of the immigrants arrived in the period during the two World Wars - the Japanese, in particular, came mostly after the first and before the second World War.

(589.370 people), and 93% of the Japanese (229.544) emigrating to Brazil settled in Sao Paulo. The Portuguese were, in fact, the only immigrants more evenly distributed in the country - only 37% settled in Sao Paulo during the above period (Levy, 1974). Figure 1.2.3 shows that immigrants have never accounted for more than 6% of the total population in Brazil, whereas in Sao Paulo the proportion of immigrants reached 21% of the population between 1900 and 1921 and since the 1950s, more than 50% of all immigrants in Brazil live in Sao Paulo - 57% in 1970 (Levy, 1974).

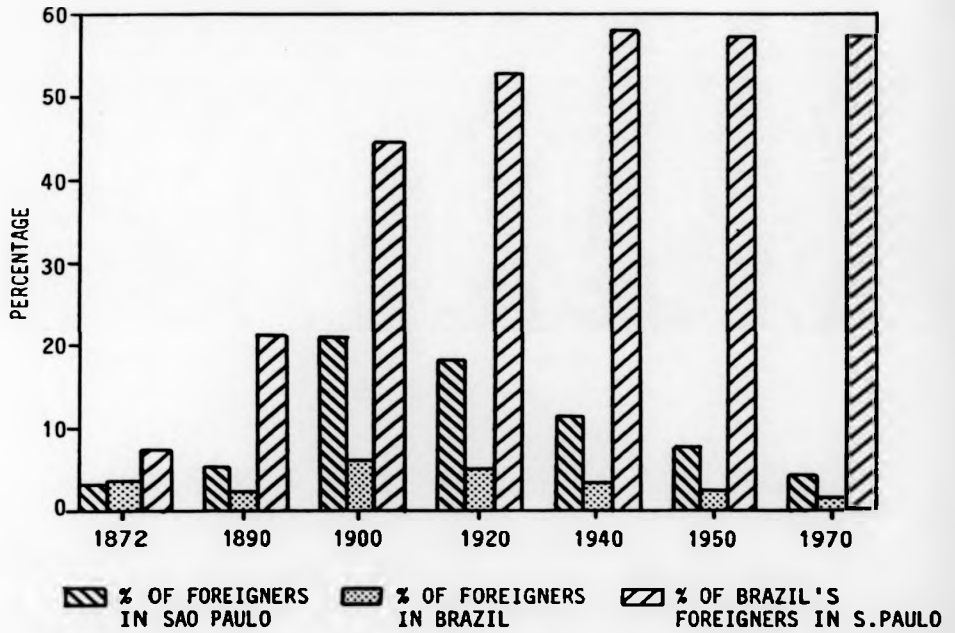
As a consequence the present population of Sao Paulo has a large number of people that were not born there, and have only recently settled there. In 1980, for instance, around 25% of the population of Greater Sao Paulo was not born there and was living there for less than 10 years (SEADE, 1984). As migrants are essentially groups that have left their past generations behind, it is worrying to think of the number of people that will probably age in a new environment without the social network developed at their place of birth by their parents.

1.2.3 - Living Longer in Sao Paulo

Figure 1.2.4 shows the evolution, from 1950 to 1980, of the expectation of life at different ages in Sao Paulo. Although there has been a general increase for all age-groups

Figure 1.2.3

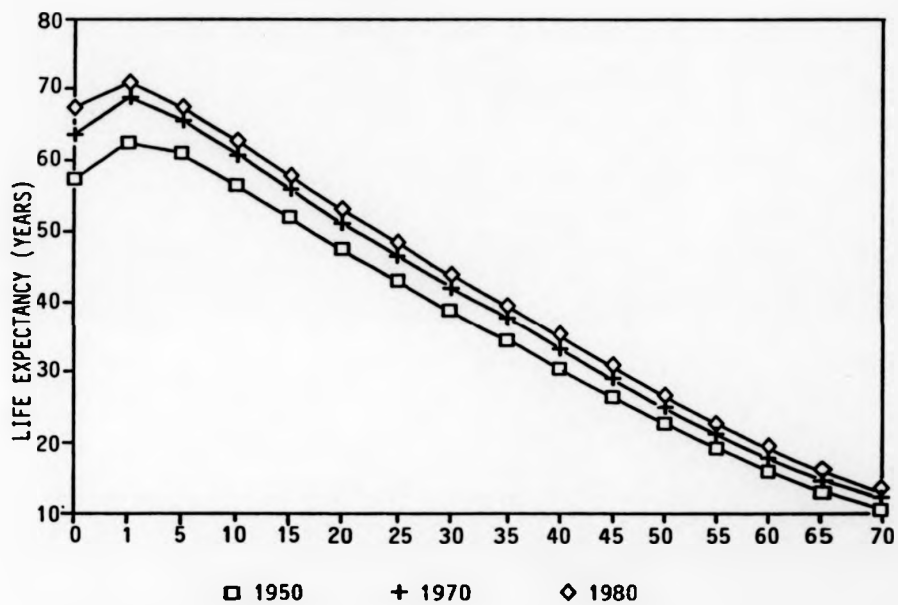
FOREIGNER POPULATION - SAO PAULO AND BRAZIL
% of total population 1872 to 1970



SOURCE : Levy (1974)

Figure 1.2.4

LIFE EXPECTANCY CURVES 1950 - 70 - 80
Sao Paulo both sexes



SOURCE : Ramos et al. (1987)

during this period, in 1980, the expectation of life at birth was still lower than after the first year of life. That suggests that Sao Paulo has a population with a high socio-economic profile and good health status, living on average more than 71 years, coexisting with a population with a low socio-economic profile and poor health status, living on average less than 67 years (Ramos et al., 1987).

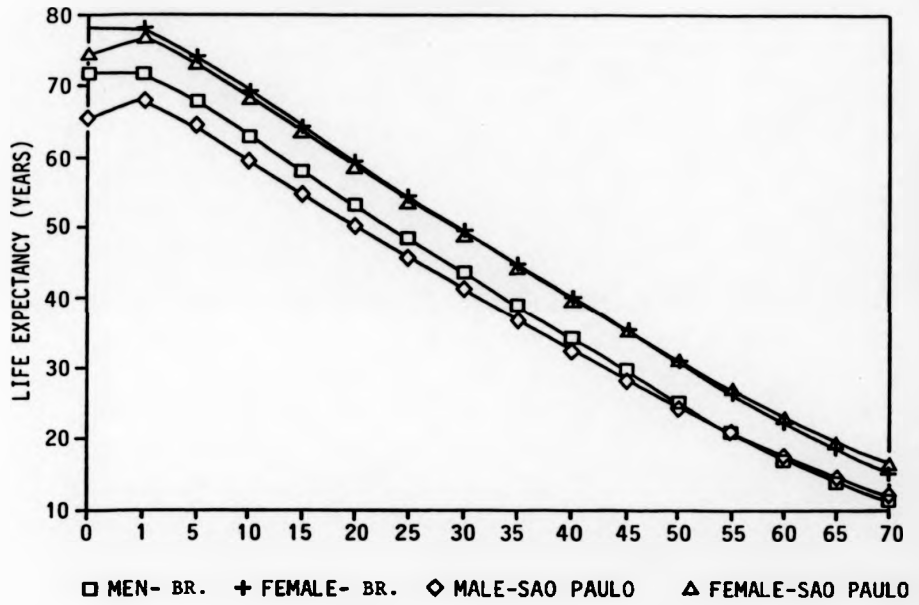
On the other hand, when comparing the curve for expectation of life, by sex, in Sao Paulo, in 1982, with a similar curve for an affluent country like Britain (Figure 1.2.5), it becomes clear that the differences related largely to differences in mortality in the first year of life. As has been pointed out before, the differences in expectation of life at birth between countries tend to diminish (if not disappear or reverse) with increasing age. Men in Sao Paulo who are over 60 and women over 50, can expect to live more than their counterparts in Britain and women in Sao Paulo have a higher expectation of life than the men in Britain regardless of age (Ramos et al., 1987).

Fertility Rates

Fertility rates in Sao Paulo have declined since the 1960s - the rates have dropped from 4.7 children per woman aged 15-44, to 3.4, in 1975, representing a 28% decrease in 15 years. Such a sharp decline was followed by a period (1975-1980) in which fertility rates stabilised (around 3.4), as

Figure 1.25

LIFE EXPECTANCY CURVES MALES & FEMALES
Sao Paulo and Britain (1982)



SOURCE : Ramos et al. (1987)

it did all over the country (CPD, 1983). Since 1980, however, fertility rates in Sao Paulo have shown another pronounced decline, reaching 2.6 in 1985 - a 20% decrease in only 5 years (Wong, 1985).

Age Structure

The consequences of an increased expectation of life - that is above the average for the country (CPD, 1983) - associated with the lowest fertility rates in the country (CPD, 1983; Wong, 1985) can be seen in the age pyramid of Sao Paulo (Figure 1.2.6). Much more evident than in the pyramid for the whole of Brazil (see Figure 1.1.10), there is a narrowing of the base of the pyramid for the population of the State of Sao Paulo, in 1980. Projections for the 1990s, already show a clearly "barrel" shaped pyramid.

Survival Rates: 1950 - 1982

Figure 1.2.7, shows the survival curves for the population of Sao Paulo from 1950 to 1980. There is a clear tendency towards rectangularisation of the curve in 1980 compared with 1950. Like expectation of life the survival rate also is heavily influenced by mortality at early ages. After the age of five the curve tends to remain parallel to the horizontal axis up to the age of 50 when it drops sharply as the cohort ends around the biological limit of human

Figure 12.6

POPULATION PYRAMIDS FOR THE STATE OF SAO PAULO (1970-1990)

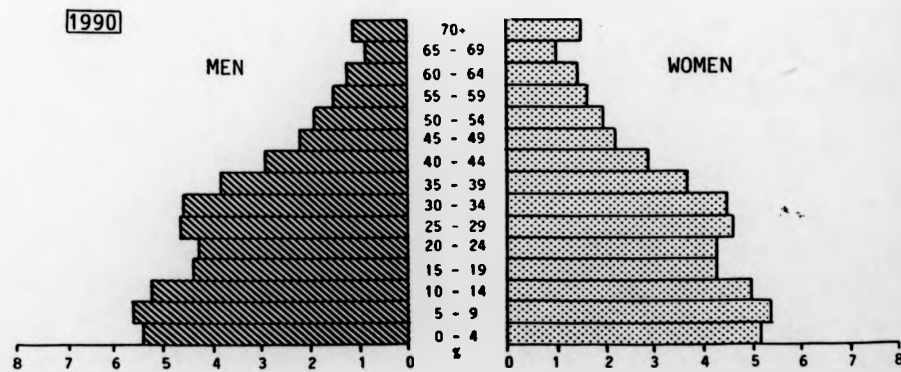
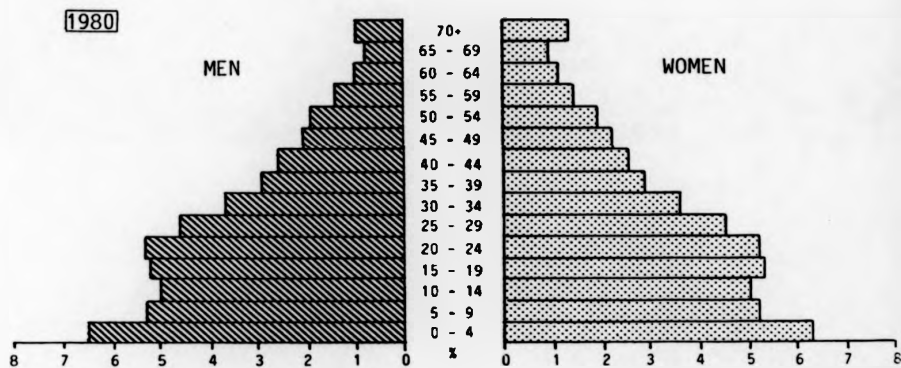
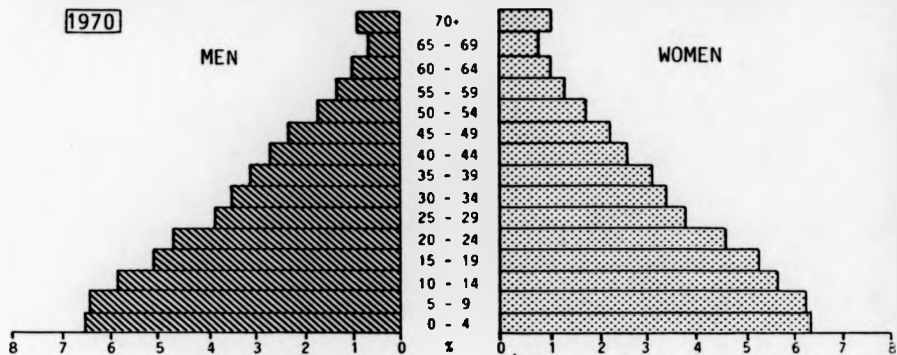
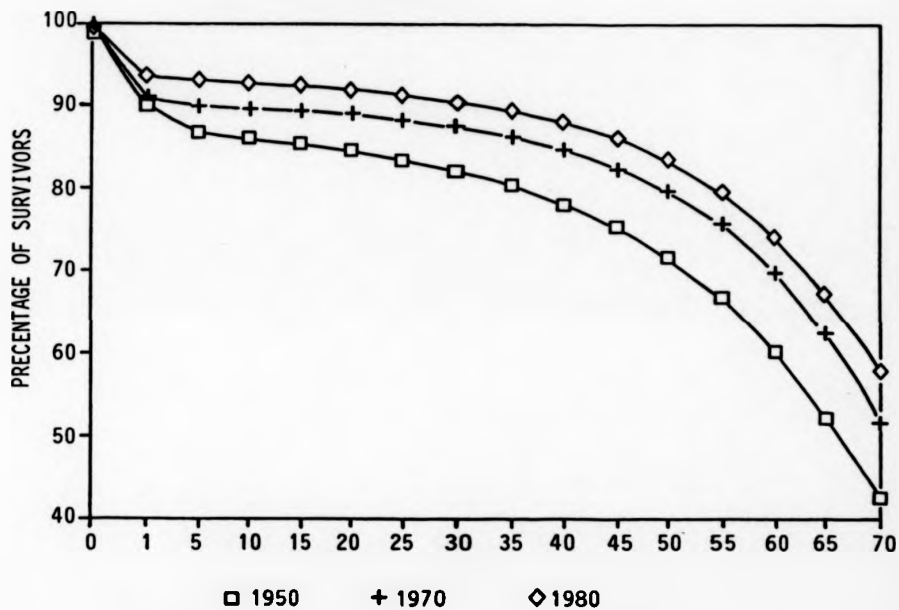


Figure 1.2.7

SURVIVAL CURVES 1950 - 70 - 80

Sao Paulo both sexes



SOURCE : Ramos et al. (1987)

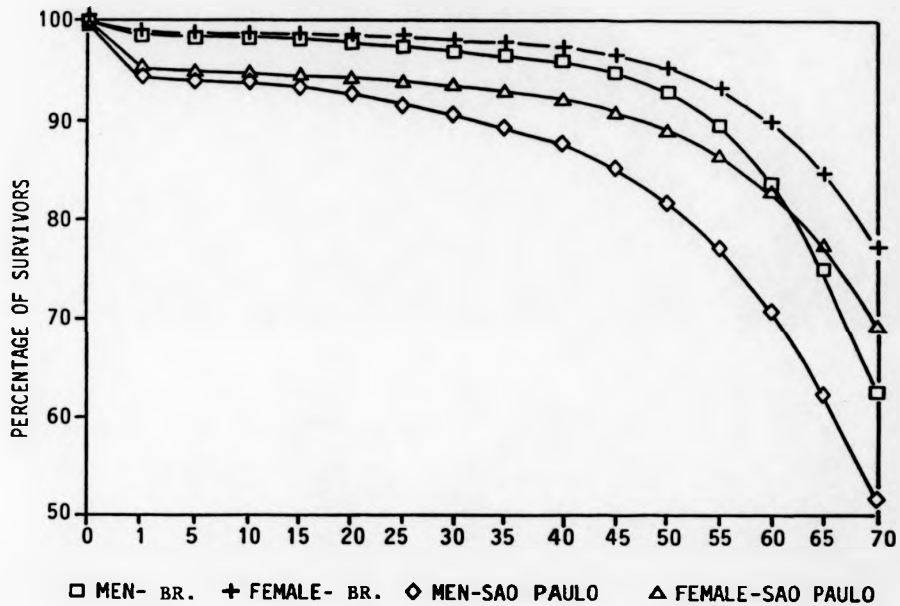
life. In 1950, for instance, only 80% of the cohort was still alive by the age of ten and only 50% could expect to complete their 60th anniversary. By 1980, however, 95% of the cohort reached the age of ten and more than 70% can expect to be alive at the age of 60.

Comparing again with Britain (Figure 1.2.8), there is a considerable difference in the survival rates after the first year of life. In fact, in Britain the survival curves for both men and women are almost parallel to the 'x' axis until the age of 50 when they drop sharply. Although men and women have almost the same chance of survival until the age of 15, after that, women clearly have a higher chance of surviving to older ages. Such gender differences are even more evident in Sao Paulo. For instance, in Britain while 85% of women reach the age of 60, only 75% of the men do so - a difference of 10% in favour of the women. In Sao Paulo the proportions are 77% and 62% respectively for women and men - a difference of 15%. Accordingly, women in Sao Paulo reach old age (60) with a higher chance of survival than the men in Britain (Ramos et al., 1987).

Compared with other regions in the country, Sao Paulo has a much higher proportion of deaths at older ages than the poorer regions of the north and north-eastern parts of the country. Defined by Swaroop & Uemura (1954), the proportion of deaths occurring over the age of 50, over the total

Figure 1.2.8

SURVIVAL CURVES MALES AND FEMALES
Sao Paulo and Britain (1982)



SOURCE : Ramos et al. (1987)

deaths, is still a good health and social indicator. In 1980, in the South-Eastern region (where Sao Paulo is located), 53% of the deaths (as opposed to 39% in the North-Eastern region), occurred beyond the age of 50. This compared with 49% for Brazil as a whole (Figure 1.2.9). Compared with other countries, however, even the South-Eastern region still has a low proportion of deaths at older ages - for instance in Britain, in the USA, and in Cuba the proportions of deaths over the age of 50, in 1980, were 92%, 85%, and 75% respectively (Barros, 1984).

Mortality Pattern

Imhof (1985) in an illustrative study, compares the population of Berlin with the population of Sao Paulo. The analysis of the morbidity patterns shows that Sao Paulo in the 1930s had the same morbidity pattern as Berlin in the beginning of the century, and by the 1980s had the same pattern as Berlin in the 1950s. As the study suggests, the epidemiological transition appears to be the same regardless of the stage of economic development of the country. What differs is the timing of the changes.

Figure 1.2.10 shows the proportion of deaths per cause for the total population of Sao Paulo. From 1930 to 1980, there is a transition from a situation in which the main causes of death were the infectious diseases, to the present situation in which the main causes of death are the

coronary heart diseases. In the period, the former have dropped from 39% to 8% of all deaths, whereas the latter have risen from 12% to 34% of all deaths. Although, such trends can be observed all over the country, the proportion of deaths, in Sao Paulo, due to infectious diseases is well below the average for the country (15%), and that due to coronary heart diseases is well above the average for the country (29%) (Ramos et al., 1987; Radis, 1984).

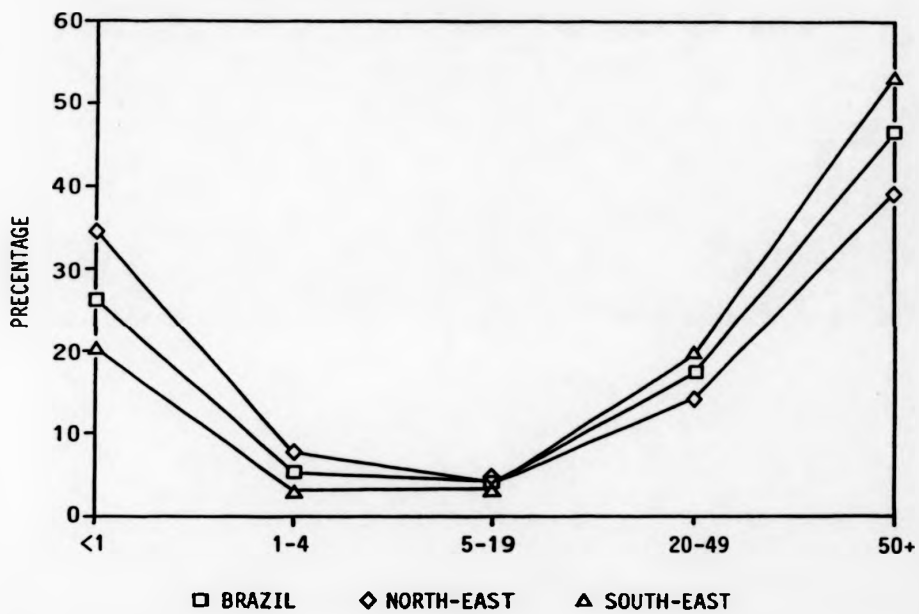
1.2.4 - Inequalities in Wealth and Health

The city of Sao Paulo faces a dual situation. On the one hand there is a population living in the centre, which enjoys comparatively good health and a fair standard of living - an expected outcome of the economic growth associated with industrial development. On the other hand, in the peripheral areas, the majority of the population is very poor, recently settled, experiencing life in rudimentary slums, without sanitation, and usually far from the nearest health or social facility. The latter situation seems to be the inevitable outcome of the present mode of production that has promoted industrial development at the cost of keeping the majority of the population below the poverty level (Camargo et al, 1976).

As in most of the world's leading metropolis, the residents of the old central areas of the city have tended to move to newly developed residential areas far from the central

Figure 1.2.9

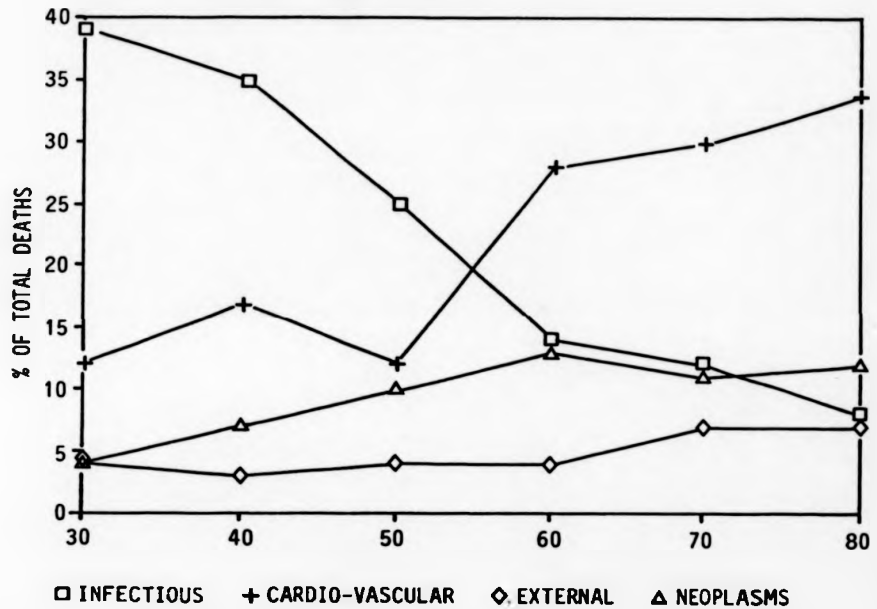
PROPORTIONAL MORTALITY PER AGE GROUPS
Regions of Brazil, 1980



SOURCE : IBGE (1985)

Figure 1.2.10

PERCENTAGES OF TOTAL DEATHS BY MAIN CAUSES OF DEATH
Sao Paulo, Brazil (1930-1980)



SOURCE: Radis (1984)

area. Facilities like transport and sanitation, that used to be a privilege of the old 'down town', became available on a much wider scale, and those who can afford it move to a more residential area in the outskirts of the old central area (Veras et al., 1987). In Sao Paulo, there has been a marked commercialisation of the central area, pushing the population to the more peripheral residential areas (Camargo^{etal} 1976). At the same time, the very peripheral areas are still receiving the migrants coming from the poorer areas of the country (see 1.2.2).

The elderly population has, either for economic reasons (high prices of properties), or for emotional reasons (attachment to the place where they have lived all their lives) tended to remain in the old central parts of the city (Hugo, 1985; Sherman et. al., 1985). That can mean a drastic lowering of the standards of living, as these central areas tend to turn into noisy, polluted, and violent areas, inhabited by the destitute (Veras et al., 1987). In general terms, the population escaping from the burdens of business in the central area, tend to be a wealthy population prepared to invest in the development of a more stylish residential area. Whereas, those arriving from other areas of the country in the poor periphery, tend to be very poor ex-peasants seeking better opportunities in the industrial centre, settling under very adverse living conditions (Veras et al., 1987).

This pattern of distribution of the elderly has been an early finding of the present study. Most central areas showed an above average proportion of elderly people, unless the area had become a commercial area, in which case the proportion of elderly tended to be below the average. In most peripheral areas the proportion of elderly people in the total population was substantially below the average for the city. An important finding, however, was the strong association between the proportion of elderly people in the population and some socio-economic indicators (eg. family income) previously used to stratify the city in homogeneous areas (3). The proportion of elderly people increased from the periphery to the centre, along with the mean family income and the availability of sewers, and inversely with infant mortality rates. Such correlations enabled a new stratification of the city to be developed for sampling purposes, using the proportion of elderly people as a stratification variable (see 2.3.1).

1.2.5 - Differential Ageing in Sao Paulo's Sub-districts

In order to understand the development and growth of the elderly population in Sao Paulo, a detailed analysis of the

Footnote 3 - Monteiro et al. (1980), have studied the distribution of the infant mortality rates and of income levels as well as the distribution of certain public health facilities (eg. water supply, maternity beds and availability of health care) in Sao Paulo. The findings confirmed the duality described above. Infant death rates and low income families increased from the centre to the periphery of the city, whereas public health facilities decreased from the centre to the periphery.

population changes in each of the 48 sub-districts (the equivalent of Boroughs in England, for instance) of Sao Paulo is undertaken in the period between the censuses of 1970 and 1980. Table 1.2.1, shows the variation of the total and elderly populations in each subdistrict of Sao Paulo, in the decade from 1970-1980. Compared with the Brazilian population the total population of Sao Paulo increased 15% more in the decade (28% and 43% respectively), probably due to migration, as discussed above. The increase in the elderly population in Sao Paulo, however, is just slightly higher than for the country as a whole (46% and 50% respectively). Among the sub-districts the differences are considerable, both for the total and for increases in the elderly population. Such differences do, in fact, help to explain the urban distribution of the population over that period of time and the influence of socio-economic factors on the geographic settlement of the elderly population.

As shown in Table 1.2.1, there are large disparities in the proportion of the elderly (60 and over) in the total population of the various sub-districts. This ranges from a maximum of 13.1% (see no. 25) to a minimum of 2.9% (see no. 52) - the average for the city being 6.4%. And as mentioned above, there seemed to be a pattern of variation in which the wealthier and more urbanised areas contained proportionately more elderly people, and the poorer, and less urbanised areas, fewer elderly people.

However, different sub-districts had different rates of growth both for the elderly and the total populations. For the purposes of understanding the pattern of growth of the city population of Sao Paulo and how this affects the elderly population, four sub-districts will be taken as examples and analysed in more detail.

1) Sub-district of Se (see Table 1.2.1 no. 5)

Situated in the old centre of Sao Paulo, which was a wealthy residential area until the 1940s, Se has become a cheap commercial area. In 1980, the average household income was low (US\$ 508 per month) (see Table 2.3.1), but the infrastructure of sanitation built in the past remained good - 89.5% of the households had sewers (see Table 2.3.2). It had a very low population growth in the decade from 1970 to 1980 - total population increased only 7.6%, without any substantial increase in the elderly population (6.9%) suggesting that elderly people probably migrated as the standards of living deteriorated. Nevertheless the proportion of elderly (10.4%) remained well above the average for the city (6.5%).

2) Sub-district of Aclimacao (see Table 1.2.1 no. 8)

This is situated in the broad central area which has always been a wealthy residential area. In 1980, both the average household income (US\$ 784 per month) and the availability

of sewers (92.5%) were high (see Tables 2.3.1 & 2.3.2). It showed a lower than the average increase in the elderly and total populations (30.1% and 12.8% respectively), although the former had a higher rate of increase, suggesting that the elderly have remained in this location. The proportion of elderly people in Aclimacao was, in fact, one of the highest among the sub-districts (11.9%).

3) Sub-district Ibirapuera (see Table 1.2.1 no. 34)

Situated in the immediate outskirts of the central area of the city, it has become a wealthy residential area. The average household income, in 1980, was US\$ 1060 per month (see Table 2.3.1). Yet, it is also a newly developed area, compared with the old central part of the city, and had a relatively low availability of sewers (83.7%) (see Table 2.3.2) It showed an average increase of the total population (43%), but a well above average increase in the elderly population (70%). This suggests that it was one of the receiving areas for the elderly migrating from the deteriorated areas of the centre. The proportion of elderly people (7.2%) was above the average (6.5%), in 1980 (Table 1.2.1).

4) Sub-district C. Socorro (see Table 1.2.1 no. 52)

Situated in the peripheral area of the city, This is a very poor area. The average household income was only US\$ 309 per

Table - 1.2.1

PERCENTUAL INCREASES OF THE TOTAL AND 60 AND OVER
POPULATIONS IN EACH SUB-DISTRICT OF SAO PAULO IN THE 1970-
1980 DECADE.

	Sub-district	Population			Variation between 1970-1980 (%)	
		total (1980)	60 + (1980)	60+/tot (%)	total pop.	60 + pop.
1	C. Cesar	65.447	7.722	11.79	50.0	62.7
2	Bom Retiro	25.068	2.964	11.82	- 2.1	- 2.2
3	J. Paulista	116.450	13.127	11.27	26.7	49.4
4	Sta Cecilia	84.956	10.229	12.04	31.8	39.4
5	Se	8.207	854	10.40	7.6	6.9
6	Indianapolis	82.658	8.156	9.86	16.9	46.8
7	V. Mariana	108.282	12.886	11.90	43.0	41.5
8	Aclimacao	55.364	6.573	11.87	12.8	30.1
9	Lapa	135.515	14.590	9.19	10.6	28.9
10	V. Guilherme	77.120	5.708	7.40	14.4	30.8
11	Pari	27.748	3.367	12.13	- 9.6	1.8
12	Cambuci	63.590	6.186	11.54	10.3	18.9
13	A. Mooca	136.433	14.124	10.35	- 0.4	29.2
14	Ipiranga	179.353	16.649	9.28	4.7	24.9
15	Sta Efigenia	42.551	4.177	9.81	14.5	3.1
16	Mooca	36.175	4.067	11.24	2.5	3.5
17	Pinheiros	47.129	5.297	11.23	13.9	31.6
18	Bras	48.588	4.809	9.89	-10.7	-16.7
19	J. America	55.291	6.113	11.05	17.1	35.9
20	B. Funda	30.685	3.615	11.78	3.1	7.9
21	V. Madalena	48.296	4.068	8.42	56.8	71.6
22	Perdizes	127.935	13.653	10.67	27.7	40.3

Table - 1.2.1 (Cont.)

PERCENTUAL INCREASES OF THE TOTAL AND 60 AND OVER POPULATIONS IN EACH SUB-DISTRICT OF SAO PAULO IN THE 1970-1980 DECADE.

	Sub-district	Population			Variation between 1970-1980 (%)	
		total (1980)	60 + (1980)	60+/tot (%)	total pop.	60 + pop.
23	Bela Vista	79.367	8.164	10.28	29.7	29.3
24	Liberdade	73.383	6.227	8.48	22.7	24.5
25	Belenzinho	49.273	6.446	13.08	- 5.7	7.1
26	Consolacao	72.372	9.294	12.84	16.3	33.7
27	Santana	274.101	19.293	7.03	53.9	50.4
28	Tucuruvi	463.262	28.462	6.14	45.6	57.4
29	Penha	142.656	12.290	8.61	45.6	57.4
30	Tataupe	279.757	22.685	8.11	22.0	37.7
31	Casa Verde	110.634	8.416	7.60	11.8	32.0
32	Saude	289.027	22.368	7.73	36.6	43.0
33	Limao	86.034	5.223	6.07	22.9	50.5
34	Ibirapuera	158.415	11.362	7.17	43.0	70.0
35	V. Jaguara	71.641	4.138	5.79	56.1	73.0
36	V. Maria	131.851	8.668	6.57	27.1	32.6
37	V. Prudente	435.537	27.957	5.63	57.0	56.1
38	V. Formosa	119.704	7.353	6.14	39.7	55.4
39	Cangaiba	75.244	4.244	5.64	25.7	58.6
40	V. Matilde	239.739	12.364	5.15	81.0	69.0
41	Senhora do O	173.856	9.788	5.62	23.2	52.6
42	Jabaquara	266.906	13.926	5.21	36.4	56.7
43	Butanta	318.421	15.293	4.80	81.1	93.9
44	Pirituba	117.773	6.521	5.53	55.1	55.2

Table - 1.2.1 (Cont.)

PERCENTUAL INCREASES OF THE TOTAL AND 60 AND OVER POPULATIONS IN EACH SUB-DISTRICT OF SAO PAULO IN THE 1970-1980 DECADE.

	Sub-district	Population			Variation between 1970-1980 (%)	
		total (1980)	60 + (1980)	60+/tot (%)	total pop.	60 + pop.
45	V N Cachoeira	37.411	2.044	5.46	38.2	52.3
46	Perus	48.403	2.101	4.34	74.3	77.3
47	Matarazzo	241.652	10.432	4.31	84.9	91.1
48	Brazilandia	176.268	6.090	3.45	76.6	108.1
49	Jaragua	51.075	1.813	3.54	193.7	162.3
50	Itaquera	414.888	14.405	3.47	159.3	134.5
51	Santo Amaro	765.743	28.523	3.72	136.8	94.4
52	C. Socorro	452.041	13.014	2.87	225.0	155.6
53	S M Paulista	320.132	11.534	3.60	36.0	63.2
54	Guaianazes	150.437	4.491	2.98	140.9	80.0
55	Parelheiros	27.310	1.302	4.76	120.6	113.1
SAO PAULO		8,493.226	538.817	6.34	43.4	49.5

SOURCE: IBGE (1970)
IBGE (1980)

month, in 1980 (see Table 2.3.1), and sanitary conditions were very poor - only 29% of the households had sewers in 1980 (see Table 2.3.2). In fact, this has been one of the main receiving areas for migrants arriving in Sao Paulo, displaying an 'explosive' growth rate in its total population (225% in 10 years). In this particularly poor area, the proportion of elderly in the total population was one of the lowest in the city at 2.9% (Table 1.2.1).

1.2.6 - Summary

Brazil is a heterogeneous country, and some regions have barely started the Demographic Transition while others, like Sao Paulo, are already presenting features comparable to countries like Britain. In Sao Paulo, the survival rate for women in old age is greater than in Britain and the pattern of mortality by cause shows a high proportion of the same chronic diseases affecting the affluent countries.

Thus, the same inequalities seen between affluent and Third World countries are reproduced within a country with continental dimensions like Brazil, and further reproduced inside a city like Sao Paulo. It is, therefore, reasonable to assume that as the demographic transition has been compressed in Brazil when compared to affluent countries, it will be compressed in the poor areas of the country, in relation to the wealthy areas. Taking the example of Sao Paulo, similar compression can be expected in the poor

peripheral areas compared with the wealthy central areas. This means that the poor, and the usually more numerous populations in the peripheral areas are the ones, in the near future, that can expect rapid and drastic changes in age structure, without having gone through the socio-economic changes supposed to trigger the decline in mortality and fertility rates. In the particular case of Sao Paulo, the high migration rates in these poor peripheral areas, makes the prospect of an ageing population even more challenging, as the peripheral areas of the city are likely to have a large number of migrants from rural areas ageing under rather unfamiliar conditions.

PART I - BACKGROUND

I.3 - The Changing Role of the Elderly

One of the major concerns in the socio-gerontological field has been the extent to which the social status of the elderly has been affected by the transition from 'traditional' agricultural societies to 'modern' industrial ones. The first cross-cultural comparison relevant for gerontology was the anthropological and ethnological investigation, by Simmons (1945), into the role of the elderly in seventy-one tribal societies. By then, notions of a general high status of the elderly in the past had already needed to be revised. Differences in status attained by sex, for instance, seemed to be a universal phenomenon, with women usually being associated with lower status. In societies where the majority of the population were illiterate, the elderly were considered to be repositories of information, and the living memories of society. Since survival and the passing on of cultural traditions to the young depended on this information, the elderly were likely to be held in high esteem (Maxwell & Silverman, 1970).

That is still the case among some Indian tribes in central Brazil where the Indians are increasingly respected as they grow old, and have in old age some privileges such as being allowed to break some social norms (eg. an elderly member of the tribe can visit, as he pleased, any house at any

time and talk to any woman or child) (1).

Although the evidence is weak, the high status of the elderly in preliterate societies seemed related to living in a society that had a food surplus, that was stable rather than nomadic, and that had cultural values which assigned religious, educational, social or political leadership roles to the elderly. In these societies, retirement did not exist. Instead, older people were given less demanding chores as they became mentally and physically weaker (Balkwell & Balswick, 1981; McPherson, 1983).

Simone de Beauvoir (1970), in her classic study of the condition of old people throughout history points out the widely different ways that early societies used to deal with the problems presented by their elderly people: in some cases the old were killed; in others they were left to die; sometimes they were given the bare minimum needed to support life; for some a comfortable old age was provided, and others were revered and cherished. As she provocatively stated, the so called civilised nations today apply the same methods but usually stop short of killing which is forbidden, unless it is disguised as an accidental death

Footnote (1) - Personal communication from Orlando Villas-Boas (1986) a leading anthropologist in Brazil, who lived most of his life in in the Xingu area, in Central Brazil, where he helped to built the most important Indian Reserve in the country, comprising more than two thousand Indians.

(eg. casualties due to hypothermia) (2).

1.3.1 - Marginalisation of the Elderly in Modern Society

Few modern societies have managed to maintain the average elderly person in a dignified role, actually expecting from them what they best have to offer, the experiences of a life time. Contemporary cultures seem to praise only those who reach old age wealthy and healthy (McPherson, 1983). It seems, therefore, not the age-related abilities of the elderly person that counts but the power and prestige eventually attained by some in old age with healthy mind and body that are revered. The oriental tradition of respect for the elderly is perhaps, one of the few examples of a culture that actually attaches positive values to old age regardless of the socio-economic status of the aged. As Palmore (1975) points out based on data he collected among the elderly living in the community in Japan, a system of interpersonal relationships based on a delicately graded hierarchy in which seniority is the primary basis, has kept the social status of the elderly high. In addition, there is still a strong belief that the dead remain in the world, leading to ancestor worship.

Footnote (2) - The rise in the number of deaths due to hypothermia during winter time have been discussed as a social problem affecting the elderly in Great Britain, for instance. A problem which requires political measures concerning the State support to the elderly rather than medical assistance.

Cumming & Henry (1961) have developed an influential theory that for some time was considered the best explanation for the low status of the elderly in most industrialised societies. It is known as the "Disengagement Theory" and sees the elderly person gradually becoming disengaged from society and thus holding a low social status. As they try to demonstrate, disengagement is caused by the difficulties of an individual to adjust to physical deterioration, which actually impairs mobility and working capacity.

Townsend (1968), questions this theory with empirical data from Britain, Denmark and the USA, that shows the integration of the elderly into society dependent on their functional capacity, employment status, social status, family structure, family contacts, social "aleness", income level, and access to health services. As he further elaborates in a theoretical essay (Townsend, 1981), the individualistic explanation provided by the disengagement theory fails to recognise the role of the social structure, and specially class structure, in determining well-being in old age. It is an approach that is a heritage of functionalism in sociology and attributes the causation of problems to individual adjustment, while acquiescing to socio-economic characteristics of the State.

More recently researchers have been arguing that were the combined processes of industrialisation and urbanisation

which have changed the status of the elderly in society (Cowgill & Holmes, 1972; Palmore and Manton, 1974; Bengtson et al., 1975; Balkwell & Balswick, 1981; Lee, 1984; Cowgill, 1986). Cowgill and Holmes (1972), in a classic anthropological study, created the "Modernisation Theory". They looked at the social status of the elderly in fifteen different cultures ranging from a preliterate society in Ethiopia to the highly modernised society of the United States. The conclusion was that the emergence of industrialised societies not only coincided with a massive increase in the elderly population, but also marked a subtle decline of the social and economic status of the elderly. The reasons presented for such a decline were twofold. First, Industrialisation has promoted large scale migration all over the world, irreversibly driving people from rural to urban areas which adversely affected family ties and the way of life. Second, all industrial societies have witnessed the development of highly sophisticated technology that has not only diminished the need for larger pool of unskilled or semiskilled workers, but also increased the demand for very specialised personnel in constant need of training. And this has, in their view, diminished the value attached to the experience of the elderly.

This theory has been strongly criticised by other researchers (eg. Walker, 1981; Townsend, 1981; Phillipson, 1982) sponsoring the view that the changes being imputed to the modernisation process should, in fact, be analysed in

terms of the socio-economic changes that has caused the capitalistic development of contemporary societies.

Since 1980, in fact, the status of the elderly person in society has been analysed from a different ideological perspective. Walker (1980), Townsend (1981), Walker (1981), Estes et al. (1982), and Phillipson (1982), have all contributed to the development of the "Structural Dependency Theory". Although lacking in empirical data to support their views, these authors have made an important contribution relating the social status of the elderly to the political economy of the countries where they live, and raising the point that being old and poor is markedly different from being old and rich. They argue that socio-gerontological theories have largely focused on individuals and their loss of role, economic dependence, adjustment, and isolation in old age, and have objectively blamed the elderly for their own condition. The theory of "Structural Dependency" blames the exploitation of human labour inherent in Capitalism for the low status and low standards of living of the majority of elderly people. Low pensions, lack of leisure and health facilities, and lack of statutory community support, they argue, are all part of the political economy of most developed countries that treat the elderly population as an unproductive minority. What follows from this theory is the need for what has been defined as a "Political Economy of Old Age" (Walker, 1981; Estes et al., 1982), in which society will commit itself to

planning for the well-being of future generations of the majority of the elderly, rather than the wealthy minority who are able to buy their well-being. Critics of this theory claim that cultural traditions, are fundamental for the understanding of the present status of the elderly in modern society, and that this can hardly be attributed to a specific mode of production (Smith, 1984).

De Beauvoir (1970), draws attention to a more philosophical but, nevertheless, important stand-point when she contrasts the indifference of society as whole towards the elderly with the fact that every single member of the community must know that his/her future is in question; and almost all of us have close personal relationships with some old people.

Capra (1983), in a historical analysis of the different civilisations and the role of Science in each of them, identifies the scientific revolution (starting in the XVI century) as markedly influencing societal evolution since then. As the paradigm of the analytical method was adopted as the only rational way of understanding the world, things had to be reduced to their ultimate components to be understood. As the material world was shown to comprise atoms, society thus became an aggregate of individuals. Gradually, the holistic conception of Nature has been replaced by reductionistic views of the world. In Capra's view, the loss of a more holistic philosophy has given

Science, in general, a very anti-ecological perspective. In this context, violation of minority groups' rights becomes the central metaphor of our culture, and the basis for all the racism, sexism and, perhaps by extension, the ageism prevalent nowadays. The marginalisation of older people, however, is not peculiar to our century. The burdens of technological development and social change have been historically, and consistently, forced upon specific groups in society, such as the poor members of the working class, with the elderly being particularly vulnerable (Phillipson, 1982). What seems to be peculiar to the present period is the extent of this marginalisation, and the large numbers of people involved.

1.3.2 - Retirement and the Status of the Elderly

In an ageing population financial support for non-working groups becomes more difficult and less readily accepted by society (Siegel, 1980; UN, 1958). In most industrial societies the establishment of retirement pensions as a social institution coincide with a sharp increase in the number of elderly people, thus leading to dilemmas over the distribution of resources (Clark & Spengler, 1980). Even in affluent countries like the United Kingdom pensions for the elderly are associated with a considerable lowering in the standard of living (Jefferys, 1977; Walker, 1980).

Retirement has, in fact, become a social phenomenon of vast importance in the last fifty years. Whereas in the 1930s between 40% to 70% of men 65 and over in most industrial societies were still economically active, by the mid-1960s such proportion has gone dramatically down to between 10% and 40%, an average of 20% (Townsend, 1981). These changes cannot be attributed to changes in the risk of ill-health or disability but to new methods of work organisation, with pensions and retirement schemes removing people from the economically active population earlier in life. However, this does not mean to say that the total dependency ratio (3) in an ageing population necessarily increases. Data from affluent countries shows that an increase in the number of elderly people can be accompanied by a decrease in the number of children, thus preventing great changes in the dependency ratio in quantitative terms (Kleiman, 1967). More recently, however, the dependency ratio in countries like Britain has started to rise, with the elderly being held responsible for this. Yet a careful analysis of the data concerning the economically active population allows different conclusions. The dependency ratio for women, for instance, has been declining in the last decade, mainly due to increases in the participation of women in the labour

Footnote (3) - Dependency Ratio is a measure of how many 'dependent' persons there are in an economy per non-dependent person ie. worker, and is calculated as the non-economically active population divided by the economically active population. At the most simplistic level, and indeed the most widely used level, the dependency ratio is calculated as those aged 0-15 and 65 plus divided by the population aged 16-64 (Kleiman, 1967).

force. On the other hand, the dependency ratio for men has, indeed, been increased, but not because more people have become too old to contribute, but because more people have been prevented from doing so, by unemployment. People reported as economically active in the census are not necessarily in employment. Those who are temporarily out of the labour force through sickness or unemployment are to a greater or lesser degree dependent on the State and should be included in the numerator rather than the denominator of the Dependency Ratio (4).

Strategies of economic growth and increasingly rapid replacement of skills have, in fact, been adopted and as a result, more workers at older ages have found themselves out of work. Since the late 1970s, the recession has been the major reason for the early retirement of workers in Europe. Townsend (1981), thus, sees retirement as a euphemism for unemployment which is convenient for government statistics. One outcome of this process has been the emergence of older people as a reserve of labour. Phillipson (1982), based on the British experience, shows

Footnote (4) - To incorporate unemployment in the Dependency Ratio equation one multiplies each age-group by its economic activity rate (proportion of the population economically active and actually employed). The sum gives the economically active population excluding those unemployed. For example the 0-15 age-group has an economic activity rate equals zero, whereas in the other age-groups this rate will depend on gender and unemployment (Paper presented by J. Falkingham at a meeting of the Social Science and Administration Department of the Goldsmiths' College, on March 16th 1987).

that in periods of slump, for example, they may be thrown out of the labour market more quickly than other groups; in periods of labour shortage, the justification for retiring and becoming a 'non-productive consumer' may be questioned as part of a campaign to retain people in the labour force. He captures this paradox by quoting in his book "Capitalism and the Construction of Old Age", two politicians in different economic moments. By the late 1930s, when retirement pensions were being discussed in Britain, a politician (Oswald Mosley) in favour of the plan, argued:

"A man of 60 who has worked all his life will not suffer much demoralisation through living in idleness, but a man of 20 may suffer irreparable harm. By keeping the young in idleness we destroy the human material upon which the future of reconstructed industry must be built...idleness may be a boon to the old, but it is a damnation to the young. By this measure we are obeying both the dictates of nature and of economics" (quoted in Phillipson, 1982, pp. 25).

While the pre-war period stressed the disadvantages in employing old people, the early post-war period stressed all the advantages. In place of the virtues of retirement in the high-unemployment 1930s period, the dangers of retirement became the main theme of the full-employment era of the 1950s in Britain, as expressed by Fred Lee, a former Secretary for the Ministry of Labour, in an appeal to older people thinking of retirement:

"I ask them to think again. Some of us may have become accustomed to the idea of retiring at a fixed age of 60-65, but a man of 65 can today look forward to a long period of useful life. I have no doubt that many people would have a happier and healthier old age if they continue in their work a little longer rather than give up their routine and sink into a premature old age." (quoted in Phillipson, 1982, pp 33)

Based on the above discussion, one can argue that retirement and economic dependency in old age are not determined by chronological age but by a social and economic construction of age through social institutions and political policies derived principally from the social organisation of production.

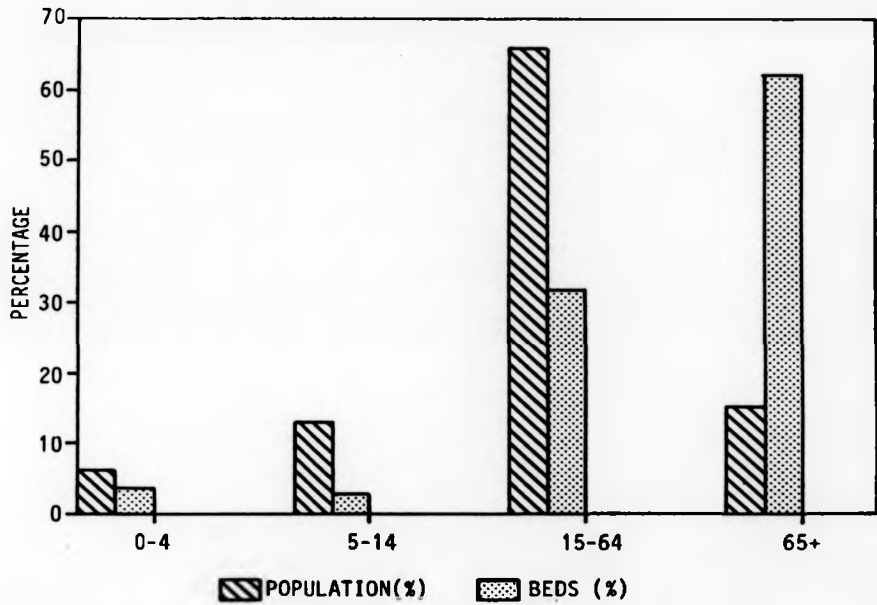
1.3.3 - Institutionalisation of Elderly People

The paradox facing social policy with regard to the care of the elderly people is that, although they are the major consumers of the public social services, the vast bulk of the care they receive does not come from the public sector. In the United Kingdom, for instance, only 5% of the 65 and over population is believed to be institutionalised (Jefferys, 1977, Clarke et al., 1984; C.S.O., 1987).

However, with 17% of the population aged 65 and over, more than 60% of the acute hospital beds are occupied by them (Figure 1.3.1). In fact, the average length of stay in hospital of an elderly person aged 80, for instance, is five times that of a middle aged person (Figure 1.3.2) (DHSS, 1986). However, one of the main reasons for such a disproportionate occupation of hospital beds is misplacement - as much as 15% of the elderly occupying hospital are likely to be misplaced (Dodd et al, 1980). And the tendency has been to increase the use, by the elderly, of the NHS's acute hospital beds (Murphy, 1977; Hall &

Figure 1.3.1

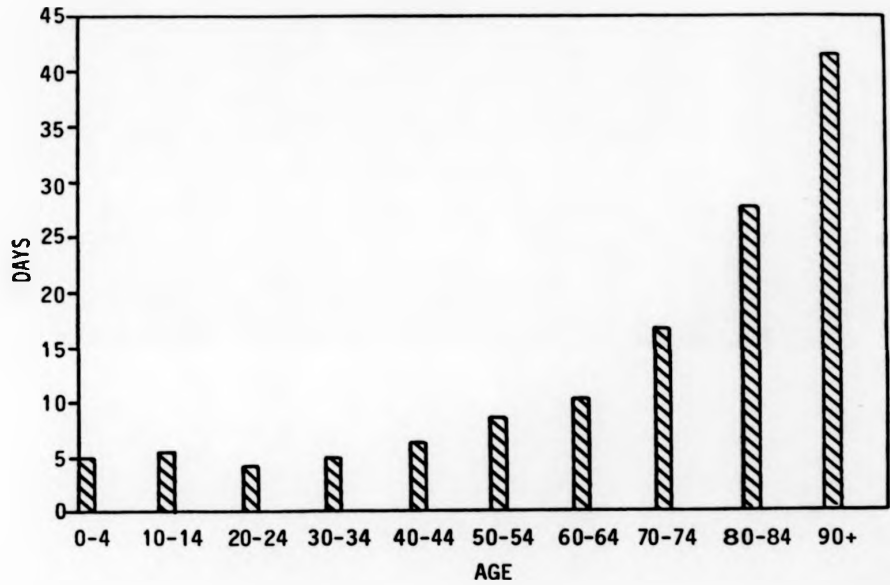
HOSPITAL BEDS USED DAILY (%)
Per age-group in England 1984



SOURCE: DHSS (1986) HIPE

Figure 1.3.2

AVERAGE DURATION OF STAY IN HOSPITAL
Per age-group in England, 1984



SOURCE: DHSS (1986) HIPE

Bytheway, 1982; Donaldson et al., 1983) (5).

As Phillipson & Walker (1986) suggest in a discussion of social policy in old age, a substantial proportion of elderly people seeking residential care, for instance, do not do so solely for reasons of growing incapacity. Accommodation problems, social isolation, low morale and breakdowns in relationships were also often present and consideration of the levels of care already being received led to the conclusion that a large proportion of the elderly people in need of substantial care could obtain it in the community, if intensive domiciliary care were provided.

Assertions are frequently made that community care (eg. home help) is cheaper than institutional care; just as often the opposite conclusion is offered. Yet others opine that community care is the cheapest option because it is a poor alternative. Over recent years the debate on relative costs of care seems to have moved on at least to the point where people recognise that the costs of community care vary with the amount of help a person gets, with the cost components which are included and with the way in which they are calculated (Wright et al., 1981).

Footnote (5) The terms 'blockage' or 'blocked beds' should be avoided and instead one should refer to the inappropriate use of hospital resources when patients occupying hospital beds either do not require hospital treatment, or stay in hospital beyond the point where their clinical requirements would justify such a form of care (Logan et al., 1972).

Although the benefits of maintaining the elderly independent in the community are difficult to measure, the rather marginal difference overall between the cost of residential care and the likely resource cost of intensive domiciliary care suggests that a greater return would be obtained by the relative diversion of resources in the future away from the expansion of residential facilities into a selective domiciliary care programme for those in substantial need of support (Wager, 1972).

For elderly people living with others the costs of domiciliary care seemed likely to be substantially below those of residential care. At present, elderly people cared for by others in the household can be a burden, either physically, psychologically or by preventing the principal carer from taking employment. It is possible that the greater provision of domiciliary services and social casework in such instances could alleviate the burden but any such "disbenefits" remaining would have to be offset against the benefits of domiciliary care (Wager, 1972; Nissel & Bonnerjea, 1982).

Wright et al. (1981), compared the costs and benefits of caring for people with similar requirements who were receiving care in either long-stay hospital accommodation, local authority residential care or in their own homes. It appeared that community care cost would rise as more help was received (higher degree of disability) until it overtook

firstly residential care costs, and eventually the costs of hospital care. In other words, beyond a certain degree of disability life in the community can be more costly than a hospital stay.

In Britain there has been little attempt to provide any sort of substitute family life for old people who could no longer be supported by their own relatives. Institutional provision has been accepted without question. The healthy elderly should live in their own home on their pension and with support from the family. The long-term sick should be in a hospital. The long-term frail should live with their families or enter a local authority residential home. This lack of imagination about services seems to have reflected the dominant belief that frail elderly people cannot manage in their own homes unless living with other members of their family; domiciliary services provided by the State and voluntary organisations cannot offer sufficient support for this group. Although the advent of residential care was greeted with enthusiasm by politicians and many local authorities early in the 1960s, Townsend (1957), in the "Last Refuge", was able to question the extent to which residential care was an effective alternative of care provision.

In fact, the main recommendation of the World Assembly on Aging (UN, 1982) was that the general objective of both health and welfare services, working in co-operation, should

be to maintain the elderly in the community, and to accept admission to hospital or residential care as the right course only where an old person himself/herself accepted the necessity for this and when he/she had reached a point where the community services are no longer sufficient. However, as Jefferys (1977) reminds us, the services which any of us receive from others reflect, to a great extent, our value in their eyes. Services to the elderly will not be materially improved unless people change the value attached to being old.

Public policies for the elderly in countries like the USA, for instance, have been seen largely as an 'ageing enterprise' that assures that the needs of the aged will be processed and treated as a commodity (Estes, 1986). The medical-industrial complex, which comprises the most significant part of this enterprise, is a primary beneficiary of the recent changes in values and expectations vis-a-vis the state and the private sector. The new business ideology in health is aimed not only at controlling costs but, more importantly, at establishing health care as a market good like any other.

On the other hand, in Latin America, so far, no country has developed a continuum service offering the elderly a wide number of alternative options. The overwhelming majority of Latin American countries have what Tapia-Videla and Parrish (1982) called residual services for the elderly (i.e. care

based on family and mutual aid, with no public funding of facilities for the aged, no home help or other domiciliary services, and only a few private homes for the elderly). Costa Rica seems the only country that could be placed in the early institutional stage, meaning that there are organised social services, some public funding of institutions for the elderly, professional training programmes with components in ageing, and experimental home help domiciliary services.

For all practical purposes, in Latin America, the family system is still envisioned as having the major responsibility for caring for the elderly. In most cases, the functionally limited older adult has few alternatives available. In fact, problems of the elderly are still perceived as being less critical than those faced by larger groups in societies affected by widespread poverty and malnutrition.

1.3.4 - Informal Care for the Elderly

Over ninety percent of elderly persons are non-institutionalised in affluent countries where different types of institutions are available and live their lives in the community with a varying degree of help given by their family and the immediate social network. Distinctive contributions are made by kin, friends and neighbours, meeting different kinds of need (Willmott, 1986). The

family has been historically seen as the basic unit from which to expect help in case of need of any of its members (McPherson, 1983). As Townsend (1957) concludes in his early study of family life in old age, the family is the biological and social unit which provides an environment for the addition of new members, for affection and social bonding throughout the life cycle, and for emotional, social, economic, and health support in old age.

There are a number of studies, however, suggesting that family support to elder members of the family has been eroded by the massive process of migration from rural to urban areas, triggered by the Industrial Revolution (Cowgill and Holmes, 1972; Palmore and Manton, 1974; Bengtson et al., 1975).

A cross-national study of the elderly in three affluent industrial societies - Britain, Denmark and the United States (Shanas et al., 1968; Shanas, 1974) - pointed out that, at least at the family level, the evidence suggested that the elderly were still knitted securely into the social structure. Brody et al. (1983) conducted an attitudinal survey among three different generations of women to assess whether the commitment to their older generations has changed over time. The findings suggest that the values about family care for the elderly have not been eroded. In fact, there is no evidence that the family has withdrawn its support or shed its responsibility for the

elderly (even in highly modernised countries), in spite of the growing tendency for parents and adult children to maintain separate homes and live in smaller households (Shanas et al., 1968; Shanas, 1973; Wehl, 1977; Shanas, 1979; Markides and Krause, 1985; Sussman, 1985). The size of the households has , in fact, declined in recent years (Timaeus, 1986; Dale et al., 1987). In Great Britain, for instance, one-person households have increased from 12% in 1961, to 21% in 1976, and 24% in 1985 (Central Statistical Office, 1987). One of the reasons for that might be the constraints to large households posed by urban industrial environments (Kennedy and Stokes, 1982; Beck and Beck, 1984). However, the size of the household does not say much about the family composition. The existing statistics showing the mean household size mainly reflect variations in the number of children, and thus, are strongly influenced by country differentials in fertility across regions and over periods of time (Myers and Nathanson, 1982; Timaeus, 1986). In other words, the large Victorian households in the past, far from being examples of multigeneration households, are, in fact, examples of large nuclear families (Laslett, 1977; Tinker, 1984) (6). The evidence is that three-generation

Footnote (6) - The immediate or nuclear family is the most basic unit within the kinship system consisting of a mother, a father, and children. After marriage, this unit becomes more salient to the young married couple than the family of orientation (their parents and siblings), although the ties to the family of orientation persist, and create the extended family. The multigeneration household stands for a household shared by an extended family.

households, in Europe, were unusual, even in the distant past, representing less than 6% of all households (Laslett, 1977; Dale et al., 1987) (7).

On the other hand, the positive role that the family plays for many old people does not necessarily require sharing the same household. Data for most affluent countries seem to indicate that family adjustment can be demonstrated through the establishment of extended family systems whose members see one another regularly and expect a certain amount of mutual help (Shanas, 1973, Wehl 1977, Shanas and Sussman, 1977, Dale et al., 1987). The general picture, at least in affluent countries like Britain, seems to be the elderly people living near relatives, and seeing them more frequently the greater their need for support and care. In terms of life satisfaction, the elderly who can afford it display a marked preference for what has been termed "intimacy at distance" (Shanas 1973; Anderson, 1977; Fengler et al., 1983). Modern technology and improved standards of living made propinquity no longer essential to the maintenance of kin ties or the provision of support. Such changes have originated with upper and middle-class people and at present are more common

Footnote (7) - Records of registration of birth and marriages dated back to the 1500s, for England, and to the 1700s in Europe, have shown that the ancestors of European people do not seem to have had much experience of having resident mothers-in-law. The only country in Europe that has shown evidence of having multigeneration households in the past is the Soviet Union (Laslett, P. (1987) - personal communication).

among them (Willmott, 1986; Timaeus, 1987). Tinker (1984), in Britain, supports the view that old people, particularly women, with relatives living nearby make considerably less demands upon state services than isolated old people. Smyer (1980), has looked at the same question from a different angle and arrived at a similar conclusion: elderly people who have been institutionalised have less support available within the community setting from their family members.

The increasing tendency to live with others late in life is often associated with the presence of disability. Indeed, those living with others are least likely to be able to manage on their own (Hunt, 1978). No support has been given to the view that families neglect their disabled elderly relatives nor that the community services displace the role of informal carers, but rather that carers support elderly dependents at great cost to themselves (Jones and Vetter, 1984). Unfortunately, there is considerable evidence that principal helpers tend to struggle on until life becomes unbearable, either because they do not know where to turn for help or because the appropriate services are not available. Thus there are considerable 'hidden' costs in the informal care system (Wright et al., 1981). The traditional picture is of a woman, usually an unmarried daughter, looking after an elderly parent or, more commonly now, the married daughter or daughter-in-law caring for a widowed parent. However, the growing participation of women

in the labour force has increased the questioning of whether women should be seen as the main source of informal care for the elderly. Moreover, current trends in divorce and re-marriage will increasingly complicate this neat pattern of kinship relationship. The findings presented by Phillipson & Walker (1986) reveal that a majority from all generations, nowadays, agree that it is better for a working woman to pay someone to care for her elderly parent than to leave her job to do so, and that children should help meet the expenses of care for the elderly parent, if necessary. Old women and those in the middle years felt strongly that the generations should not live together, confirming the view expressed by many older people that they want to live near to but not in the same household as their children. Whilst the loss to family income incurred by a wife giving up work to care for a dependent relative may currently be smaller than if the husband gave up a similar level of employment, this fact is used to sustain a vicious circle whereby women's low-paid, low-status employment reinforces the position in which a women's place is seen to be in the home.

In terms of social and emotional costs, those caring alone may also find themselves socially isolated, cut off from social activities and from contact with friends. Their health may suffer, and tension, mental stress, physical ill-health and acute tiredness are commonly reported symptoms amongst carers, especially those caring for the

mentally frail (Jones and Vetter, 1984).

The State must do everything possible to assist the family in the care of its aged dependents without at the same time relieving it of the opportunity to take an interest in the matter (Sundstrom, 1986). By not offering support, existing social policies might actually force many families to give up this function prematurely, given the evidence of the severe strain many families are experiencing. If this were to happen, the family and the state would not be sharing the responsibility through an independent relationship and it is conceivable that eventually the social welfare system would be pressured with demands to provide even greater amounts of care, to become the 'family' for more and more elderly persons (Jones and Vetter, 1984).

The adequacy of social support has been considered to be significantly associated with mortality in older adults. Blazer (1982) assessed the impact of social support in mortality rates in old age. People who lacked social and community ties were more likely to die in the follow-up period (30 months) than those with more extensive contacts. The relative risk of dying in this period was significantly increased among those with fewer social attachments as measured by marital status and number of living children, impaired frequency of social interaction as measured by number of visits and phone calls in the last week, and impaired perceived social support as measured by

feelings of loneliness, availability of a confidant, and of someone to help in case of emergency.

Family Support in the Third World

In Latin American countries, on the other hand, the elderly are believed to be in good hands, assuming the protective role of the extended family. As Neysmith and Edwardh (1984) stress, the family is seen as pivotal in both the integration and care of its ageing members, assuming strong intergenerational bonds. It is frequently argued by governments and aid-givers that care for the elderly is not a problem in the Third World as the extended family is still widespread. However, Goldstein et al. (1983) in a study in Nepal found that the elderly continue to live in extended families but socio-economic changes have transformed the nature of intergenerational relations within these families to the detriment of the elderly persons. Fengler et al. (1983) found that the contact between different generations in the same household might lead to a lower level of satisfaction of the elderly. The most important reason raised to explain this apparent paradox is the lower socio-economic status found to be associated with the multigeneration household (Shanas, 1968; Weihl, 1977; Anderson, 1977; Mutran, 1985). As Taylor and Ford (1983) point out, based on a community survey in Aberdeen, people from middle class backgrounds enter old age with more resources than their working-class peers - more financial

security and better health status. But the working-class elderly seemed to have more social support, if measured by the number of close relatives living locally. However, whether the multigeneration household effectively buffers the problems afflicting the elderly person, is something to be answered by the experience in the Third World.

Countries like Brazil have undergone, in the last 30 years, a massive process of internal migration from rural to urban areas. Whether the family, under these circumstances, is still living in multigeneration households, is something that has not been documented. Another important question is whether the changes in the structure of the family, and their attitudes towards the elderly, that are likely to be taking place will equally affect the rich and the poor.

Thus, as in most industrialised countries, the question will probably be how to support families in their task of meeting the needs of their members. When one combines a situation of bad working conditions, low wages, poor housing, chronic diseases, and family break-up due to internal migration, with a social policy which sees meeting the needs of the elderly as a private responsibility, one must ask what is the possibility for families to effectively care for their ageing members? To exert family responsibilities, while ignoring the relationship between the family, the state, and the economic system, turns a public issue into a private trouble.

In the short term, basic information about the aged and the existing social services is essential for any attempt to shape future developments in the Third World. The systematic analysis of needs of the elderly and of service deficits should rank high in any attempt to explore the problems of the aged in Brazil. Unless those who are concerned about the elderly address such central yet broad policy issues, many of which may not appear to deal directly with ageing, the future of the elderly might be in jeopardy.

1.3.5 - Summary

The low status of the elderly in modern industrial societies have been explained as a consequence of an inadequate adaptation to old age (disengagement theory), as a natural outcome of the industrialisation/urbanisation process (modernisation theory), or more recently, as an unavoidable development as far as the capitalist mode of production is concerned (structural dependency theory). The latter theory gives a broader view of the social status of the elderly when it compares the elderly with any other exploited social minority. Retirement, for instance, is seen as buffer to unemployment, therefore answering the problems of the economic system and not of the elderly.

Although only a small minority of the elderly are likely to be institutionalised (5%), there is a tendency for them to occupy a disproportionate share of the hospital beds (60%),

due to lengthy stays and misplacement. It is assumed that at least 10% of the institutionalised elderly are inappropriately placed. Latin American countries have not even started to think about these problems as institutional care for the elderly is virtually non-available.

However, the bulk of the care for the elderly is still guaranteed by the family. Even in affluent industrial societies the evidence is that the family has not withdrawn its support nor shed its responsibility for the elderly. What seems to prevail is the so-called intimacy at distance, meaning that the extended family would live close enough to the elderly person to provide help in case of need.

In the Third World there is the belief that the multigeneration household will care for the elderly actually compensating for the socio-economic, and health related problems. But in countries like Brazil, for instance, massive urbanisation is likely to change family patterns, and the little evidence available is that the multigeneration household might change for detriment of the elderly person. The association between multigeneration households and low socio-economic status, in fact, only adds to the concern about the elderly in the Third World.

PART I - BACKGROUND

I.4 - Assessing the Elderly: Conceptual and Methodological Background

Although the elderly population has markedly increased since the beginning of the century, it was not until the 1940s, in most affluent countries, that social scientists labelling themselves for the first time as gerontologists started to try to understand and explain the ageing process and the problems affecting the elderly population (Tinker, 1984; McPherson, 1983). Nowadays, to obtain a complete picture of what has been written about the elderly people one must search the literature in a number of different areas of human knowledge. Researchers in the medical profession, or in the fields of demography, sociology, anthropology, psychology, geography, social work, and others, have all looked at the aged from their own different viewpoints, using different methodological approaches. The elderly people have, for instance, been studied in different societies and cultures, as in-mates of long-term care institutions, as attendants of some particular clinic or health centre, as social minorities, as users of social welfare or simply as community residents.

Functional status has become a keyword in geriatric policy making as the most relevant indicator of the well-being of

the elderly population. And there seems to be no dispute, nowadays, that the assessment of functional status has to be multidisciplinary, as the problems experienced by the aged tend to be in many interrelated areas that do not necessarily overlap: physical health; mental health; independence on daily living; social integration and financial stability (Kane & Kane, 1981; McPherson, 1983; Fillenbaum, 1984; WHO, 1984; George and Fillenbaum, 1985).

1.4.1 - Assessing the Elderly Living in the Community

Very little is known about the life of the elderly living in the community before the end of the second World War. Tinker (1984) searching for early studies about the non-institutionalised elderly quotes as one of the first large-scale surveys the one undertaken in 1944-46 for the Rowntree Committee, in different regions of Great Britain. A sample of people of pensionable age was interviewed and a report ("Problems of Ageing and the Care of Old People") was published in 1947. Although this particular survey was concerned with the social as well as the medical problems of old age, a great deal of the research carried out in the 1940s and early 1950s was concerned mainly with the medical aspects of ageing. A detailed account of the surveys conducted in that period is available elsewhere (Townsend & Wedderburn, 1965).

One of the earliest and most important social surveys which has thrown light on the place of the elderly in the family, for instance, is Townsend's (1957) study of "The Family Life of Old People". This study, despite being based on a small sample of working class people in the area of Bethnal Green (n=200), surprised many people at the time by showing that the three-generation family, built around grandmother, daughter and grandchild, provided the normal environment for old people.

It was only in the 1960s that researchers in the area became interested in cross-cultural and longitudinal studies. Interestingly, one of the most important cross-national studies of the aged, to date, was carried out at that time. The study "Old People in Three Industrial Societies" conducted in Britain, Denmark and the USA by Shanas et al. (1968), is still one of the few cross-national research based on representative samples and with well co-ordinated and controlled primary data collection. Unlike other studies, identical sampling methods were employed (multistage random sampling) and strict validation processes were used to overcome language bias. The study was important not only for the information it gave on health and incapacity, but in clarifying and substantiating concepts related to the family and to isolation among the elderly. The vital question of integration of the elderly person in society was discussed in the light of their functional capacity, employment status, social status, family

structure, family contacts, relative income level, and access to health services. One of the main conclusions, to influence all the further research in the area, was that old people were still the stable polar element around which the kin network was organised and functions formerly performed by the family had not been taken over by the social services. They also pointed out that isolation does not necessarily mean loneliness. A person living alone with proper social support might avoid desolation and loneliness.

The 1970s and 1980s saw an explosion of empirical knowledge as a number of studies which had been undertaken in order to provide baseline data about the elderly population in different settings were published. Great Britain is one of the countries where the elderly have been extensively studied. Studies with samples taken from the community in a random basis and assessing the functional status of the elderly, have taken place in several regions of the country (Blakemore, 1982; Bond and Carstairs, 1982; Ford and Taylor, 1984; Clarke et al., 1984). National samples of elderly people have also been studied (Abrams, 1978) sometimes using the methodology of the General Household Survey for the sampling (Hunt, 1978; OPCS, 1982). Other community surveys assessing the elderly in the community and also using a sound methodology, have taken place, for instance, in the USA (Lawton and Brody, 1969; Comptroller General, 1979; US-DHHS, 1986), Canada (Roos and Shapiro, 1981), Japan

(Palmore, 1975), Italy (Figa-Talamanca, 1976) and Sweden (Rinder et al., 1975). Cross-national surveys, however, have not been very common, probably due to methodological problems and costs involved. After the successful study done by Shanas et al. (1968) surveying Britain, Denmark and the USA, the next important cross-national study took place more than a decade later, surveying one city in Great Britain (London) and one in the USA (New York) (Gurland et al., 1977). More recently the World Health Organisation (WHO) has been supporting cross-national surveys world-wide as the best way of advancing knowledge about the determinants of well-being for the elderly population living in the community. A study comprising 11 affluent countries (Kuwait and ten European countries) have compared the functional status of a stratified sample by age-groups (Heikkinen et al., 1983).

Although such baseline studies have all used the same kind of multidimensional approach, the methodologies were different enough to make comparisons of results very difficult. Indeed, a great problem concerning all those studies surveying the elderly in the community, is the problem of comparability. On the one hand, all of them have addressed a similar set of questions, in an attempt to identify general characteristics and needs of the aged in one or more of the several domains concerning the well-being of the elderly people. On the other hand, none of the above studies share the same instrument of assessment

or the same methodology of sampling. As Kane & Kane (1981) have also concluded in their comprehensive review of the literature on assessment of elderly people, no agreement has yet been achieved among researchers on the two crucial points of what to measure and how to measure. Therefore the data, no matter the soundness of the methodologies, can hardly be compared.

In Great Britain, quite exceptionally, some data relating to the elderly living in the community have been incorporated to a regular national survey - the General Household Survey - and although the last comprehensive assessment took place in 1980 (OPCS, 1982), there is always the possibility of a longitudinal comparison.

Other studies not designed for a comprehensive assessment of personal functioning of the elderly in the community, have focused on the assessment of health status and the utilisation of services, with the main dependent variable being the ability to live an independent life in the community (Katz et al., 1963; Rosow and Breslau, 1966; Jefferys et al., 1969; Lawton and Brody, 1969; Sainsbury, 1973; Williams et al., 1976; Bond, 1976; Isaacs and Neville, 1976). Again there is no agreement on a particular set of activities to be used as indicators of disability nor on the way of analysing them for scoring purposes.

Interest in the efficiency and effectiveness not only of health and welfare services but of the procedures for allocating scarce resources to these services has inspired special studies concerned with the cost and benefits of having the elderly person at home, or alternatively in a residential unit, for instance. Although no clear-cut information for decision making should be expected from this kind of study because of the difficulties to give money value to the outcomes of health interventions (Roberts, 1974), this has been a fertile area of research (Wager, 1972; Maddox, 1979; Smyer, 1980; Wright et al, 1981; Campos, 1981; Nissel and Bonnerjea, 1982; Tinker, 1984; Kennie, 1986; Baker et al.; 1987). Clearly such studies took place where some basic knowledge about the elderly population was already available as they represent a more sophisticated step in the assessment area.

Few countries, however, seem to have dedicated the necessary resources to obtain sound national information on the status of the elderly population. If it is true that at the early stages of social gerontology results were very selective due to samples taken from institutionalised populations, today there is a tendency to transpose to the national level or even to the international level the results of some poorly founded local community research (Fillenbaum, 1984; Dieck, 1985).

Very few studies, however, have addressed the different realities and problems of elderly people living in the Third World, particularly the poverty related problems. The paucity of comparable data between countries is aggravated by the fact that most countries have not yet collected any data at all about their elderly population. It is only in the last five years that some Third World countries have started to conduct national surveys on the elderly population stimulated by the World Health Organisation and its Regional Offices. Two large cross-national surveys have, in fact, taken place in the Third World, as a formal acknowledgement by WHO of the need to understand more about ageing and the aged in less affluent societies. The first one, already completed, took place in the Western Pacific Region and studied national random samples from four countries (Fiji, South Korea, Philippines, and Malaysia) (Andrews et al., 1986). In Latin America there is a study currently under-way designed to survey 13 countries in the region, with national samples of the urban population of elderly people (1).

In Brazil, up to 1984, the only survey that has collected some social and demographic information about the elderly population, apart from the census, was the "Pesquisa Nacional por Amostra de Domicilios (PNAD)" (IBGE, 1981)

Footnote (1) - Since 1983, six countries have started the data collection, from which only Chile, Mexico, and Venezuela have produced reports so far (Anzola-Peres, E. (1985). Regional Adviser, Health Care for the Elderly, PAHO - personal communication).

(the equivalent to the General Household Survey in Great Britain). It has brought complementary socio-economic and demographic information to the decennial census. Although the PNAD never specifically addressed the elderly population it provides information on educational level, religious beliefs, working and financial situation of the aged as compared with the other age-groups (IBGE, 1985) (2).

Validity and Reliability of the Assessment Instruments

If policy formulation with regard to the elderly is to rest on a secure and rational basis, sound information about them is essential. Fillenbaum (1984) looking at the various instruments for assessing the well-being of the elderly people in the community, stresses that the major concern should be with the multidimensional functional assessment of the elderly population using procedures which are valid and reliable, which permit assessment of all members of the older population, both within the community and in institutional settings, and which are suitable for assessment and reassessment.

The need to begin with characteristics that can be measured gives rise to a body of methodological research aimed primarily at ensuring the reliability and validity of the

Footnote (2) -Only in 1986, did the Ministry of Health in Brazil decide to join PAHO's cross-national survey with a national survey to be conducted in three state capitals of the country (Sao Paulo included) (Guimaraes, R. (1986) Ministry of Health of Brazil - personal communication).

measurements themselves. Research should also be directed at showing how characteristics are correlated with each other and how they vary according to demographic differences. Cross-sectional and longitudinal research, so important in the development of understanding of normal ageing and in making possible preliminary inferences about causality, are dependent on the initial adequacy of the measurements.

Some instruments were designed for a single assessment (eg. Palmore, 1975; Hunt, 1978), whereas others were designed to meet the information needs and guide the decisions of case-management in a longitudinal basis (eg. Comptroller General, 1977; Ford and Taylor, 1984). Nonetheless, as mentioned earlier, most instruments used in the assessment of the elderly living in the community, in a multidimensional basis, have a core of common content, but also display marked differences not only in the contents, but in the length of the interview, administration protocols, and scoring systems.

Fillenbaum (1984), in a review of the literature on assessment of the well-being of the elderly population, pointed out that the number of multidimensional assessment instruments which are specifically designed to assess functional status in the older populations and have shown acceptable standards of validity and reliability is, indeed, small. One serious and continuing effort to

develop multidimensional measurements of established validity and reliability is the Older Americans Resources and Services - OARS methodology (Duke University, 1978).

The OARS Methodology

The OARS Multidimensional Functional Assessment Questionnaire (OMFAQ) (Duke, 1978), was developed in response to a request by the Administration on Ageing, in the USA, to examine alternatives to institutionalisation. It has been used in over 100 research and clinical settings and decisions are being made based on OARS generated information (Fillenbaum and Smyer, 1981). Although approaches to functional assessment have been available for some time, the OMFAQ is the first publicised attempt to assess sensitively overall functioning, and service utilisation, in a manner suitable for both current assessment and predictive purposes (Fillenbaum and Smyer, 1981). The OARS's methodology provides a common conceptualisation of functional capacity, well-being, population profiles, and generic services which is comprehensible and acceptable to a variety of clinicians and planners (Maddox, 1979). The OMFAQ basically aims at the establishment of a body of valid and reliable information about the elderly population in five domains: financial status, physical health, independence on the activities of daily living (ADL), mental health and social support. Additionally, at the individual level, it enables

the monitoring of changes over time through repeated measurements of a particular variable. However, until normal ageing under a variety of circumstances is better described, it is difficult to know how often to measure or when the rate of change has reached alarming proportions (Kane & Kane, 1981).

The stability of responses to the OARS's questionnaire over a short interval, during which true change is unlikely, has been tested, with very favourable results. The test-retest reliability trial indicated that, during a five-week interval, 91% of the responses were identical (George and Fillenbaum, 1985; Fillenbaum and Smyer, 1981; Kane and Kane, 1981; Duke University, 1978).

Validity of the OMFAQ

The validation of the OARS instrument took a variety of forms. At the most basic level, the authors claim face validity on the basis that the instrument contains only those items on which experts agreed. For a more active attempt to establish validity, interviewer summary ratings were compared with external measurements using psychiatrists for mental health, physicians for physical health, and physical therapists for ADL. For economic resources, the external criterion was income adequacy as determined by federal budget standards. The resulting correlation coefficients were: economic resources, 0.62;

mental health, 0.60; physical health, 0.75; and ADL. 0.83. Social resources were not examined because the social workers contacted by the research team indicated that the questions in the questionnaire were identical to those they would ask to validate them (Duke University, 1978; Fillenbaum and Smyer, 1981; Kane and Kane, 1981; George and Fillenbaum, 1985).

The validity of the OARS instrument has also been argued on the basis of its ability to discriminate among different populations. Data had been collected on functional status of a random sample of community residents aged 65 and over, a list of clients aged 60 and over referred to a geriatric clinic, and a random sample of persons aged 65 and over living in institutions. The results showed the expected progressive direction, where the community residents would be the most functional and the institutional residents the least (Duke University, 1978; Fillenbaum and Smyer, 1981; Kane and Kane, 1981; George and Fillenbaum, 1985).

Despite the lack of a more detailed explanation about the criteria used by the experts to assess validity (and also some problems of comparability in the case of the discriminative validity), the OMFAQ appeared as the most evaluated instrument among the multidimensional instruments, with a consistent literature supporting the findings, and a history of being used on more than one occasion and in more than one setting.

1.4.2 - Health Status in Old Age

The development of a set of reliable and valid health indicators has been a major objective for researchers and administrators, since the late 1960s, particularly in the health sector, in order to assess the levels of health of a given population and its relation with the health care being provided (Balinsky and Berger, 1975; Kohn and White, 1976). Indeed, physical health is not a unidimensional concept. A global measure of physical health could be derived from many different combinations of items and depends on the values attached to the health status measurement (Culyer, 1978).

Different approaches, in various combinations, have been used to assess the physical health status of the elderly. These include: self-assessment of overall health, symptoms lists, inquiry into illnesses, conditions and medications, level of activity, and use of medical services (Fillenbaum, 1984). Advantages and disadvantages can be seen for each method. For instance, self-ratings of health are subject to distortion by psychological mechanisms such as denial or hypochondriasis and do not necessarily agree with medically determined status (Lawton et al., 1967; Maddox, 1972). On the other hand, there is evidence that the better the self-rated health, the better is the general health status, and the fewer the number of health problems, ambulatory and medical care visits and the number of days spent in

hospital in the previous year (Roos and Shapiro, 1981; Linn and Linn, 1980). Symptom-lists have been widely used, intended either as an assessment of need for medical service or as an indication of diagnosis. A symptoms list, however, does not provide any indication of the extent to which the symptom actually impairs performance (Fillenbaum, 1984; Grimley-Evans, 1984).

Another standard way of trying to assess physical health status is by inquiring about the presence of chronic conditions and diagnosed illnesses. As Fillenbaum (1984) stressed, such an inquiry assumes that there has been a previous contact with the health services, a potentially dangerous assumption which depends on the availability and accessibility of health services. It also poses difficulties for cross-national comparisons, regarding the comparability of diagnosis and the extent to which the diagnosis is imparted to the respondent. In fact, diagnosis alone might present an inadequate index of health because the range of severity within a diagnosis may be greater than that among diagnoses (Lawton et. al., 1967). Moreover, diagnosis does not provide information on functional state, although some questionnaires - OMFAQ (Duke University, 1978) - try to assess the extent to which specific diagnosed illnesses actually interfere with daily activities.

Additional information on health status is usually obtained through the investigation of the use of medical services.

The number of hospital admissions and the number of visits to the doctor in a specified period of time have been used as indicators of health status (Smyer, 1980; Roos and Shapiro, 1981; Ford and Taylor, 1985). However, differences in utilisation of health services are partly attributable to differences in the availability and accessibility of health services, as well as cultural differences (Shanas, 1968; Smyer, 1980; Barer et al., 1987).

Independence in Daily Living

From all the areas affecting the personal functioning of the elderly, that concerned with self-care capacity is probably the single most important. It is related not only to mental and physical health but it also determines, to a certain extent, the social well-being of the elderly. It thus has been of particular concern for researchers and administrators, to determine whether it is feasible for the aged to live independent lives in the community, and how to detect levels of dependency requiring immediate intervention.

Williams (1979), discussing the measurement of disability in old age, points out the need to distinguish between impairment, disability, and handicap. Impairment is a condition defined by one or more diagnoses that might lead to impaired functioning of an organ or limb, such as restricted movement of the joints due to arthritis or

limited air flow from the lungs in emphysema cases. Whenever a functional impairment affects the performance of ordinary activities of daily life, such as dressing, or cooking, etc., it becomes a disability. The disadvantage based on functional impairments or, more often, on disabilities, is what has been defined as a handicap. Dependency is thus the inability of an individual to carry unaided the activities necessary to sustain daily living (Wilkin, 1987). Dependency should not be seen as synonymous with lack of autonomy. The latter is related to the will of the person to do something, whereas dependency is basically related to the ability of doing. A good example of such differentiation is given by Grimley-Evans (1984) quoting the case of the old lady with severe arthritis living in the community. Her ability to visit her children was totally impaired by her disability and she had lost her independence and autonomy. However, a simple intervention such as providing a wheelchair could restore autonomy in her ability to visit her children without changing her dependency on others to push the wheelchair. Hence autonomy is much more related to cultural and political values whereas dependency is a consequence of functional impairment and disability.

The developments in this field of measuring dependency went on the lines of measuring functional capacity, in three main domains; mobility, personal care and house care capacities. And have favoured the development of numerous scales (Katz et al., 1963; Rosow and Breslau, 1966; Lawton

and Brody, 1969; Williams et al., 1976; Bond, 1976; Fillenbaum, 1984; Wenger, 1986).

There are now several instruments designed to measure disability. Katz et al.(1963), in a pioneer study, took items in use in the rehabilitation field, examined them more carefully than had hitherto been done, and applied them in the ageing area. A set of activities was selected as indicators of the person's ability to cope with personal care activities necessary for daily life in the community. Six activities were defined as the activities of daily living (ADL): bathing, dressing, going to the toilet, moving in and out of bed and chairs, feeding and continence. These items were hierarchically related and reflected the developmental patterns found in children and possibly in reverse order, the regression during the natural process of ageing (Katz and Akpom, 1976).

The above mentioned activities were measured dichotomously: able to perform without any need for help versus unable to perform the activity (the latter group usually included those who were able with some help to perform the activity). Using a cumulative Guttman scale items were hierarchically ordered so that the successful completion of a particular item further information on which other activities could probably be successfully completed (Guttman, 1950). In Katz's study (1963) the ability to have a bath without any help was the most difficult item and the

first to be lost, followed, in order, by the ability to dress without help and so on until the last stage of dependency in which the person was unable to feed himself. So, a person unable to bath unaided may not have problems with any other task, but someone who cannot feed himself, probably cannot do any of the other activities mentioned above.

A similar scale has been developed by Williams et al. (1976) in order to test the hypothesis that disability progresses in regular cumulative patterns. By using the Guttman Scale they avoided intuitive comparisons between different disabilities. Instead, when severe disability occurs, it will be in conjunction with the lighter disabilities, so that the order of disadvantage can be identified simply by counting the number of disabilities. In other words, four disabilities will always be worse than three, and so on.

The concept of instrumental activities (activities such as shopping, getting a public transport, preparing a meal, etc...) includes a range of activities more complex than those needed for personal self-care. The potential bias introduced by motivation and opportunity is greater for instrumental than for physical activities, and the items are more likely to be sensitive to variations in culture and emotional health (Kane and Kane, 1981).

A major concern has been to develop a reliable assessment of dependency using the minimum of subjective judgement as to the relative severity of one condition against another. A Guttman scale applied by Wright et al. (1981) to a population of elderly people living in the community, in residential care, and in hospitals showed that the level of disability regarding the activities of daily living actually discriminated between the three levels of care. In the community 24% showed a level of dependency suggestive of a housebound person. In residential care the proportion was 27% and in the hospital setting it was as high as 51%. The major overlap in the comparisons across the three forms of care occurred between people in residential care and in the community.

1.4.3 - Mental Health in Old Age

Primary-care providers who assess mental status usually must assess both cognitive and affective functioning. Both cognitive impairment and depression are prevalent in the elderly and have practical implications for self-care abilities (Kane & Kane, 1981). The most commonly sought information about mental functioning when assessing the elderly population concerns the identification of the presence of organic disease (Fillenbaum, 1984). However, the reliability of psychiatric diagnosis can be rather poor, unless a structured assessment is used. There is a growing number of instruments that although originally

developed for young subjects, have been adapted to measure mental status in older subjects. Some are specific for cognitive functioning like the Mental Status Questionnaire (MSQ) (Kahn et al., 1960), or the Short Portable MSQ (Duke, 1978), which have a similar construct (Fillenbaum, 1980). Others are designed to assess affective impairment like the screening of the mental health section of the OARS multidimensional instrument (Duke, 1978). The Comprehensive Assessment and Referral Evaluation (CARE) (Gurland et al., 1977) is a multidimensional instrument developed for the United States-United Kingdom cross-national project, that had a strong psychiatric concern. Is one of the few multidimensional instruments that have been properly validated (Fillenbaum, 1984; Kane & Kane 1981), but has to be administered by highly trained interviewers. The items were selected in such a way as to make psychiatric diagnosis feasible.

Physical and Mental Health Status

Physical and mental functioning are known to be interdependent states (Hobot and Libow, 1980). This truism takes on particular poignancy for the elderly. Physical impairments are often responsible for diminished performance on mental tests (Kane and Kane, 1981). The clues for unravelling the physical and mental components of the functional problem are often obscured. It is difficult to determine how often institutional placement is made on

grounds of mental incapacity because of the simultaneous presence of multiple diagnoses.

Although a negative relationship between socio-economic status and psychiatric disorders has been documented in community surveys (Almeida-Filho et al., 1984; Mari, 1986), the factors accounting for the higher rates of psychiatric distress among lower class people are still unclear. Adverse life events (eg. bereavements and separations), for instance, are known to promote the onset of depression in old age and are thought to be associated with social class (Murphy, 1982). Blazer (1982), has suggested (based on longitudinal data) that older adults with symptoms of a psychiatric disorder, such as depression, are more likely to be in a non-supportive social network at a given point in life.

Just as physical and mental functioning are difficult to distinguish operationally, so are the constructs of mental and social functioning. Screening tests designed to tap emotions in a psychopathology way may, in fact, be measuring the extent to which an individual is deprived of social relationships and meaningful activities. Loneliness may be based on reality; expressions of anxiety may represent prudent fears based on a high crime area. Suspicion could be an awareness that plans are being made to appropriate an elderly person's resources. Nevertheless, involvement in social relationships and social activities

is often used as a tangible indicator of mental well-being (Kane & Kane, 1981; Baro, 1985).

Subjective Evaluation of Health

The association between health status and subjective well-being has been extensively examined in the literature (Spreitzer and Snyder, 1974; Larson, 1978; Markides and Martin, 1979; Zautra and Hempel, 1984). Yet the source and extent of the relationship has not been clearly delineated given the numerous measurement problems and methodological inconsistencies among the studies. However, objective measures of health (eg. diagnosed illnesses, visits to the doctor, days in hospital) tended to have lower correlations with perceived well-being than self-reports (perceived health status), suggesting that various report biases may account for some of the relationship obtained.

As Mechanic (1972) points out, the measurement of physical health necessarily depends on illness behaviour such as seeking treatments and reporting ailments. Physical ratings are not invulnerable to such behaviours: frequency of visits, degree of pain felt, and request for intervention all could affect the diagnostic process. On the other hand a great deal of all visits to physicians is believed to be a result from psychological rather than medical complaints (Zautra & Hempel, 1984). Within this context, one must suspect personality differences might affect the association

between subjective well-being and health.

However, there is an increasing recognition that self-rated health perception is an important variable in explaining health status (Linn and Linn, 1980). Blazer & Houpt (1979) in a community survey of people aged 65 and over, pointed out that those identified as not impaired in physical health, accurately perceived their physical status to be unimpaired in 86% of the cases. In 14% of the cases they perceived it to be poor. The latter were more depressed, more hypochondriac, and more dissatisfied with life. The better the self-rated health, the fewer are the number of health problems, ambulatory and medical care visits and number of days hospitalised in the previous year (Maddox and Douglas, 1973; Hunt et al., 1980; Mossey and Shapiro, 1982). However, if the purpose of the information is to assess accurately the health status, then the findings may be suspect (Fillenbaum, 1984).

Mossey and Shapiro (1982), found in a longitudinal study of non-institutionalised people aged 65 and over in the USA, in 1971, that subjective ratings of health were good predictors of both early (1971-73) and late (1974-77) mortality. They have controlled for objective health status (derived from physician and self reported conditions and health services utilisation data), age, sex, life satisfaction, income, and urban/rural residence. The risk of dying for persons with a poor self-rated health status

was 2.9 and 2.7 times higher than for those whose self-ratings were excellent, in an early and late stages respectively. This research seemed to provide empirical support for the long held, but inadequately substantiated belief that the way a person views his health is importantly related to subsequent health outcomes.

1.4.4 Social Class Differences in Old Age

The individual experience of growing old can vary so much by social class that there is a need for unified analysis in which both age and classes are considered. Walker (1981), Townsend, (1981), and Estes et al. (1982) looking specifically to the social class implications in old age have all agreed that it is the class structure itself which to a large extent determines opportunities, life chances and lifelong social status from birth. Different cohorts of adults come to retirement with different access to resources and therefore with different opportunities and post-retirement life chances. Breilh (1980) take social class determinism a step further when he suggests that inequalities generated in the production system determine a particular epidemiological profile that he has called Epidemiological Class Profile. In other words, an unskilled worker will have different health problems and will probably die from different causes than a manual worker, for instance.

However, empirical evidence of social class differences in old age are not abundant. The tendency in the social gerontological field has been to treat the elderly as an homogeneous minority, as far as social class is concerned. Differences in age and gender are usually examined at length but few studies have taken social class as an important independent variable. Breilh and Gandra (1982) in their conceptualisation of what they called Social Epidemiology stressed that measurements and correlations of a given set of variables, inside a particular socio-economic system that fails to identify the different social classes in that society, tend to produce conclusions geared towards the optimisation of the present status without going for the underlying causes.

There are some problems, however, in relating class theories to old age as the elderly are no longer in the productive sector of the economy. As Marsh (1986) points out, as any individual tends to have many jobs during a lifetime, which job should be taken as an indicator of social class? Pensioners, for instance, occupy, in Wright's (1978) view, post-class locations as opposed to pre-class locations in the case of the students, for instance. As he points out, the major dimension of class relations for the aged, is the juridical category of property - of extreme importance to the post-retirement lives of the aged in terms of their capacity to consume. Therefore the ownership of property, or of other sources of income, continues to be a source of

class division among the aged. However, by Wright's (1978) argument, the ownership of wealth without the effective control over investments and over physical means of production leaves even the wealthy elderly on the periphery of class dynamics of the larger society (3). Estes et al. (1982), suggests that society typifies the elderly as a distinct social stratum whereas the elderly themselves do not display many features of collective organisation or self-consciousness.

One of the first good studies (from the few actually available) of class differences in old age concerning, for instance, the health status comes from the controversial report published in Britain - Black Report (Black et al., 1980) - using the traditional division by occupation. Although the study was not designed specifically for the elderly population, it gave sound evidence showing that those from middle-class occupational background enjoy a clear health advantage in later life. Townsend and Davidson (1982), further analysing this report pointed out that in old age the relationship between income and the capacity to protect personal health is stronger than at any other time in the life-cycle. Those coming from the upper occupational

Footnote (3) - Wright (1978), departs somewhat from a traditional Marxist view of class. He puts into the background as purely 'juridical' the categories of legal ownership of property, legal status of being employer of labour power, and sale of one's own labour power. The substantive processes comprising class relations in Wright's view are the control over investments and resources, control over the physical means of production, and control over the labour power of others.

classes were the ones likely to lead the healthiest, the most comfortable and the longest lives after retirement. A similar report has been produced recently, again in Britain, and again generating controversy as the results, which suggest that people live longer and in better shape if the distribution of wealth was improved, are likely to become a political issue (Whitehead, 1987). Seven years since the previous report, inequalities in health were still undiminished, and the health status of working class people still very much related to poor standards of living and poor diet.

Another well designed study that has specifically examined the impact of social class differences on the well-being of the elderly was conducted in Aberdeen among community residents aged 65 and over (Taylor & Ford, 1983), and used the occupational background as a basis for social class stratification. Considering personal resources as the reserves which individuals draw upon when coping with difficulties, the authors have identified four categories of resource - financial, social support, health and psychological functioning. The underlying hypothesis guiding the analysis was that personal resources diminish with age, were greater among men and greater among those (men and women) from middle class occupational backgrounds. The results confirmed almost entirely the initial hypothesis, the major exceptions concerning the various forms of social support: those in the older cohorts

reporting more friends than those in the younger cohorts, women reporting more friends than men, and those from working-class backgrounds reporting more local children and siblings than those from middle-class backgrounds.

If social class differences have not been fully explored in the literature concerning the elderly population, the existence of poverty and deprivation among a sizeable proportion of elderly people has already been documented by a number of studies (eg. Shanas et al., 1968, Townsend, 1979) and yet the question of income maintenance has been largely ignored by official research and policy statements. Walker (1981) sees that as a consequence of the policy of optimisation mentioned above in which low incomes have been accepted as an inevitable consequence of old age and therefore something to which the elderly must 'adjust'.

Old age is in fact a time of poverty, albeit poverty expressed in the form of relative deprivation, which among Britain's elderly people can mean material scarcity in very real terms, as deaths from hypothermia among the old in severe winters might suggest (Townsend & Davidson, 1982). Townsend (1979), in his study of poverty in the United Kingdom has suggested that propensity to poverty in old age is a function of low levels of resources, and restricted access to resources, relatively to younger people. His findings show that 64% of the elderly compared with 26% of

non- elderly population were living in poverty or on the margins of poverty in the UK. Although the elderly comprised one sixth of the total population, they comprised one third of those in poverty, and nearly one third on the margins of poverty by the state's standards. Similar findings have been reported in the USA - one in every five elderly people had incomes below the poverty line -, and in Japan - nine tenths of the elderly people have incomes in the lower half of the income distribution (Taylor & Ford, 1983).

However, the relationship between objective economic conditions and subjective financial satisfaction among the aged is not a simple and direct one. That is to say that although an older's person subjective evaluation of his/her financial situation is positively related to his/her income, it is not determined by income alone. Liang & Fairchild (1979) substantiate this assertion with data from a national survey conducted in the USA, in 1972, that introduced the concept of relative deprivation as an important mediator between the objective status and financial satisfaction. As the study convincingly suggests it is the perception of the relative deprivation between the subject and others that probably explains why people with low incomes are satisfied with their financial status and why those with higher incomes may as well be dissatisfied. Liang & Kahana & Doherty (1980) have further elaborated on the matter introducing the concept of

perceived justice as another intervening variable between the income and financial satisfaction.

Although such questions have not yet been addressed in Third World countries, they are likely to be much aggravated by the fact that the economies of these countries, and ultimately the human costs inherent in such economies, have been moulded by the development and expansion of the economies of the Western industrialised World (Evans, 1985). As Neysmith and Edwardh (1984) argue, economic dependency usually coexists with an ideology which blames underdevelopment on the characteristics of people, rather than on the economic relations that bind the Third World to the affluent West. The policy in Third World countries tend to enforce the view that individuals should provide for their own old age, attaching a stigma to dependence on the state.

The trends, so far, have shown a widening income gap between those who work in the management/technical areas of the industrialised sectors of the economy and those working in semiskilled jobs. Neysmith and Edwardh (1984) quotes statistics for the Third World showing estimates that 37% of the population is destitute; 67% can be considered seriously poor and 84% poor.

1.4.5 - The Well-being of the Elderly Population

Over the last 30 years, a great deal of research has been done trying to shed some light on the determinants of well-being in old age and the predictors of mortality and incapacity among elderly people. Although studies varied considerably in terms of measurement techniques and methodological approaches they were able to identify a consistent body of findings suggesting that life satisfaction in old age is a function of three basic factors in life: health, wealth and love.

Larson (1978) has undertaken a comprehensive review of the literature in the last thirty years of research in this area of life satisfaction in old age - including all major studies in the area in which the majority of the respondents were age 60 or older, and excluding studies which had insufficient sample sizes or inadequate sampling procedures. The weakness of this body of research is its almost exclusive reliance on self-assessments leading to what has been referred to as "subjective well-being". However, subjective ratings have been used in social gerontology more frequently than objective measurements because they are easy to use, cheap, and in many cases highly correlated with objective measures (Fillenbaum, 1984).

The measures of subjective well-being of older people which show evidence of the reliability and validity of the instruments (see Larson, 1978 for the review of the major studies) have usually defined well-being as a strictly internal construct, independent of the exterior conditions of a person's life. The simplest of all measures, for instance, was proposed by Spreitzer & Snyder (1974) and consisted of a single item: "taking things all together how would you say things are these days?". The current state of art, however, imposes one basic limitation on the interpretation of subjective well-being measurements. It regards the extent to which it can be assumed that instruments measure the same thing in different populations.

The studies reviewed by Larson (1978) showed reported well-being to be most strongly related to health, followed by socio-economic factors and degree of social interaction, for older Americans. Marital status and people's living situations (eg., housing, availability of transportation, etc...) were also conclusively related to well-being. A number of such interactions involve levels of social class. People of lower socio-economic status appear to be more vulnerable to the negative emotional effects of the life situation contingencies. The assumption is that the greater resources of people of higher status, particularly financial resources, allow them to overcome negative life events such as loss of relative or change of household to

which persons of lower socio-economic status are more directly vulnerable. Extensive longitudinal research would be required to determine the causal interrelation of these variables. For some variables such as health and social interaction the relationship may be one of reciprocal interdependence.

The convention, nowadays, has been to employ some form of multivariate analysis, to examine factors related to life satisfaction. Markides and Martin (1979) found that if the socio-economic status is held constant, generally observed relationships, such as between life satisfaction and age, marital status, and family size tend to disappear. Using path analysis and taking life satisfaction as the dependent variable, health and income were found to be critical factors influencing life satisfaction both directly and indirectly through social interaction which in turn influences positively one's level of life satisfaction.

1.4.6 - Summary

Functional status has become a keyword in geriatric policy making as the most relevant indicator of the well-being of the elderly population. Although most studies agree on the same kind of multidimensional approach, the methodologies used have been different enough to make comparisons of results very difficult. In fact, no agreement has yet been achieved among researchers on the two crucial points of what

to measure and how to measure. The number of multidimensional assessment instruments which are specifically designed to assess functional status in the older populations and have shown acceptable standards of validity and reliability is, indeed, small. One serious and continuing effort to develop multidimensional measurements of established validity and reliability is the Older Americans and Resources and Services (OARS) methodology (Duke University, 1978).

In the Third World, very few countries have addressed the different realities and poverty related problems of the elderly. Despite the tendency to treat the elderly as an homogeneous minority, the individual experience of growing old tend to vary considerably by social class. The evidence is that the class structure determines, to a large extent, the opportunities, and lifelong social status from birth. The problem in relating class theories to the elderly is that they are no longer in the productive sector of the economy.

There is a body of findings suggesting that life satisfaction in old age is a function of three basic factors in life: health, wealth and love. Taking life satisfaction as the dependent variable health and wealth appeared to be critical factors influencing life satisfaction both directly and indirectly through the love and care provided by the family and social network to the elderly.

PART II - METHOD

II.1 - Objectives and Hypothesis of the Study

The present study acknowledges the need for baseline information about the elderly in Brazil and focus on the elderly population in Sao Paulo - the leading industrial centre in the country. Based on the literature review, and considering that this was the first attempt to gather relevant information about elderly people in Brazil, it was decided to conduct a multidimensional functional assessment survey with non-institutionalised people aged 65 and over.

The main hypotheses guiding the study were:

- 1) That the Older Americans Resources and Services - Multidimensional Functional Assessment Questionnaire (OMFAQ) (Duke University, 1978) as a widely used and previously validated instrument could be translated into Portuguese and adapted to the Brazilian reality so to yield a valid multidimensional profile of the elderly in Sao Paulo.

- 2) That social class differences account for most of the variation in terms of physical and mental health status, social support, and perceived well-being in old age.

3) That the subjective perceptions of the elderly about their financial situation, health status, and social integration are highly correlated with the objective assessment of such dimensions of the elderly person's well-being.

4) That the family is still the main source of support and care for the elderly living in the community but, although the extended family living in the same household is still highly prevalent, it does not necessarily ensure the well-being of the elderly.

Therefore, the main objectives of the study were:

1) To develop a Brazilian version of the OMFAQ (BOMFAQ) to yield a multidimensional profile of the elderly population living in the community in Sao Paulo, concerning:

- a) Socio-Demographic Characteristics
- b) Socio-Economic Status
- c) Physical Health Status
- d) Mental Health Status
- e) Social Support

2) To analyse the findings in terms of the social class differences, based on a sound stratification of the population using the Sub-districts (geographically and administratively defined areas) as stratification units.

3) To analyse the relation between the subjective perceptions of the elderly and the objective assessments described above.

4) To analyse the relationship between the multigeneration household and the well-being of the elderly person.

5) To make recommendations to the Health Secretary in Sao Paulo concerning future research and health care planning.

II.2 - QUESTIONNAIRE DESIGN

Designing a questionnaire can prove to be a complex and expensive task. There is an unfortunate tendency for each new project to reinvent the wheel and develop a specific instrument; the resulting data is then not comparable with other data gathered elsewhere (Little, 1980). Valid and reliable questionnaires already in existence should, thus, be considered at least as a starting point (Fillenbaum, 1984). However, one has to bear in mind that the information provided by questionnaires constructed elsewhere might not be of relevance in a different setting with a distinct cultural background. Moreover, every language has its particular meanings regarding the phrasing of the questions, and an apparently identical question in a different language might lead to a completely different perception, by the interviewee, of what has been asked (Kane & Kane, 1981).

The OMFAQ (Duke University, 1978) was the original inspiration for the questionnaire used in the present survey. The revised questionnaire, contains 105 questions and was designed to be administered in approximately one hour. The questionnaire yields information about functional activity in five domains:

- a) Social Resources - quantity and quality of relationships with friends and family; availability of care in time of need.

- b) Economic Resources - adequacy of income and personal resources; perceived socio-economic status.

- c) Mental Health - extent of psychiatric well-being; presence of organicity.

- d) Physical Health - presence of physical disorders; disability days; perceived health status.

- e) Activities of Daily Living - capacity to perform various instrumental and physical tasks related to the independence in daily living.

Most items in the questionnaire are either standard items for this kind of instrument (eg. socio-demographic characteristics), or were developed specially for this

instrument (eg. self-assessments of health and financial situation). Some parts of the questionnaire, however, have been derived from other previously developed and tested instruments. That is the case, for instance, of the two mental health screenings. One of them, the Short Psychiatric Evaluation Schedule is a screening designed to assess emotional disorders, which has its roots in the Minnesota Multiphasic Screening Examination, and was incorporated to the OARS-MFAQ after being tested in a community sample of elderly people (Fillenbaum & Pfeifer, 1976). The other screening - the Short Portable Mental Status Questionnaire (Duke, 1978) is designed to assess cognitive functioning. It is based on the Mental Status Questionnaire (Kahn et al., 1960), and has proven to give similar results (Fillenbaum, 1980).

The assessment of the activities of daily living, picks up the six Katz's (1963) ADL items (bathing, dressing, feeding, transfer, continence and toileting) and adds walking and grooming. Moreover, it adds a section on instrumental activities (IADL), assessing the perceived ability of the elderly person to perform activities such as: making a phone call, shopping, using public transport, doing housework, preparing a meal, caring for personal finances, and taking medicines (Lawton & Brody, 1969). However, differently from Katz's original study, where information was based on the caregiver's observations of best performance, the OARS-MFAQ uses self-reports from the

subject, or a relative if the subject is incompetent. A complete description of the OMFAQ, with the sources of the different parts and the purpose of each of them, is provided elsewhere (Fillenbaum, 1978).

2.2.1 - The OMFAQ-Brazilian Version (BOMFAQ)

In order to ensure that the conversion to Portuguese language of the OMFAQ (originally written in English) would be a valid instrument given the characteristics of Brazilian people and the idiosyncrasies of Sao Paulo, a pilot study, using in-depth interviews, was conducted. A group of people aged 65 and over, who were living in the community were selected by quota sampling and stratified by age, sex and social class. The interviews were performed at home, by psychologists trained for this type of interview, recorded, and transcribed for the analysis.

The interviews have followed a protocol designed to provide information on the subject's:

- a) life history
- b) cultural background
- c) quality of life
- d) health status
- e) family structure
- f) socio-economic situation
- g) use of health services

h) life satisfaction

The most important finding emerging from these in-depth interviews concerned the huge differences in quality of life, life satisfaction and financial security in the different socio-economic backgrounds. Such differences supported the need for a clear cut stratification by social class of the main sample as the only way of ensuring a correct understanding of the status of the elderly person in the community.

The data provided by these interviews have contributed to the selection of questions to be included or excluded from the OMFAQ depending on their relevance to the Brazilian setting. The experience gained in the pilot study influenced the final wording of the questionnaire as well as the choice of alternatives in each question. Eventually, a modified version of the OMFAQ has been developed to assess, for the first time, in a multidimensional way, the functioning of a Brazilian population of elderly people - Brazilian's OMFAQ (BOMFAQ).

2.2.2 - Differences between the OMFAQ and the BOMFAQ

One of the major changes that had to be made in the OMFAQ related to the fact that the Brazilian Health and Social Care Systems do not provide any of the services being investigated in part B of the OMFAQ (eg. transportation,

sheltered employment, nursing care, meal preparation, and etc..) - designed for a country like the US (Duke, 1978).

The final Brazilian version of the OARS-MFAQ was further divided in ten sections (a copy of the full version of the BOMFAQ is presented in Appendix 2):

- a) Socio-Demographic Identification
- b) Household Composition
- c) Economic Resources
- d) Access and Use of Health Services
- e) Physical Health
- f) Activities of Daily Living (physical and instrumental)
- g) Availability of Care (house, personal and nursing care)
- h) Mental Health
- i) Social Resources

a) Socio-Demographic Identification

This section contained the basic socio-demographic data of the OMFAQ - age, sex, race, and marital status - plus a detailed enquiry on the person's previous family life as well as migration story. Based on the in-depth interviews it became apparent that stories of more than one marriage, and of having children from different parents, including adopted children, were likely to influence well-being. Also important was the picture of the past migration as a way of understanding old people's behavior in an urban context like

Sao Paulo. Clearly, people from a rural background had different perceptions of life in old age than people with a urban background, particularly concerning the role of children in old age (1). Similarly, those considered to be new-comers, were likely to have different problems when compared with those who have been living in the same place for a long time - for, instance regarding the social network of support.

Therefore a series of new questions were added to the original questionnaire, concerning, for instance: previous marriages (how many and for how long), the number of children nurtured in the past, the number of children actually alive at the time of the interview, the place of birth (urban or rural), and the length of residence in the place of the interview and in Sao Paulo. These question were meant to assess basically the effect of different fertility patterns and different migration stories on the health, wealth and social well-being of the elderly person. The questions about re-marriage were left out of the present analysis for it deserves a separate sociological analysis.

Footnote (1) - As an example of a particular attitude concerning the role of children in their parents old age, I would like to quote a man retired from the chemical industry in Sao Paulo, but born in a rural area in the North of the country: "children who are not prepared to support their parents in old age do not deserve being born..."

b) Household Composition

This section is a standard section in household surveys done in Brazil (Barros and Carneiro, 1984), and aims to clarify living arrangements, often complicated by co-habitation and the fact that large households are still common even in an urban setting like Sao Paulo. Therefore, a list of everybody living with the elderly person was included in the questionnaire, identifying age, sex, relation to the elderly being interviewed, level of education, employment status, and monthly earnings. The original OMFAQ instrument would only identify how many and who were living in the household (in terms of relation to the elderly). But the in-depth interviews have shown that it would be very difficult to assess the elderly person's socio-economic status, just by having their personal income, because they were usually contributing to the total expenses of the household, sometimes together with a son, daughter, or in-law.

c) Economic Resources

This section was very important to the understanding of the impact of social class and wealth in the well-being of the elderly. The basic structure of the OMFAQ was kept, this involved a detailed enquiry about the elderly person's earnings, ownership of the house, as well as his or her occupational status (eg. retired). Based on the in-depth

interviews, however, the question about occupational status had to be kept open to multiple answers as it became clear that people were often retired but doing other things that might be regarded as their occupation eg. housekeeping. One important inclusion in the section about occupational status dictated by the in-depth interviews was the alternative "pensao vitalicea" (equivalent to a pension for life if one is aged 60 or more and is not receiving any retirement pension). Is the only kind of benefit directed specifically to the elderly, and although it is meagre (less than US\$ 40 per month in 1980) it appeared to be the only source of income for some elderly. Moreover, as mentioned in the previous section, the income of the elderly had to be considered together with the income of other people in the household, thus requiring the construction of a per capita income as the best indicator of the socio-economic status of the elderly person.

The major inclusion in this section of the Brazilian version was an enquiry about personal assets - television, radio, vacuum cleaner, washing machine, and car. Based on the ownership of the above assets, the level of education, the availability of sewers, and the existence of a maid in the house, a scoring system was developed to construct an income free indicator of social class (see appendix 1). This was ment^s to cross-check with the stratification by income and by place of residence, in an attempt to throw some light on the question of how to place elderly people in the social

class structure, discussed by Wright (1978) (see 1.4.4). Subjective questions about present earnings considering fixed expenses, as well as the perception of the elderly about his or her financial situation in the future, was merely translated into Portuguese.

d) Access and Use of Health Services

This was the only section of the questionnaire enquiring about use of services, as the health services are still the only ones available to the elderly. The in-depth interviews were particularly useful in defining the set of services likely to be mentioned by the elderly - mostly hospital and out-patient clinics of the health system ("Instituto Nacional de Assistencia e Previdencia Social INAMPS")-and also made it clear that in some cases the access to the service was only granted through some relative actually paying either the social security tax or a private insurance scheme.

e) Physical Health

This section has been adapted without major changes. The only basic change concerned the recalling period for any health problem causing disruption in daily activities or work - instead of six months, the person was asked to recall any health problem in the previous two weeks (considered as a more reliable recalling period (Kohn & White, 1976)).

Questions about hospitalisation (last six months), physiotherapy (last six months), hearing and eyesight were just translated. A check-list of 22 chronic illnesses was also translated, with attention being paid to the way the diseases were explained to the elderly. The in-depth interviews have given clues about the lay words that people usually associated with the diseases, therefore enabling some of the bias due to understanding to be minimized. Also a check-list of 22 medicines (referred to as drugs for heart problem, or drugs for diabetes, for example) was presented to the elderly. Based on the findings of the in-depth interviews, an option of homeopathic or herbal drugs was available for each type of medicine, apart from the ³allopathic ^bdrugs, as they seemed reasonably popular among elderly people. Again this particular data were not included in the initial analysis of this study.

f) Activities of Daily Living

The structure of this section remained unchanged after being translated. All the seven Instrumental ADL and the eighth Physical ADL were considered relevant to the elderly in Sao Paulo, bearing in mind the daily activities reported in the in-depth interviews. The set of Instrumental activities was concerned with the following: the ability to make a phone call; to use public transport; to do the shopping; to prepare a meal; to do the housework; to take medicines properly; to care for the finances. The set of Physical

activities included: to feed oneself; to dress; to groom oneself; to walk a short distance; to get in and out of bed; to have a bath; to use the toilet, and to remain continent. Almost all the ADL questions were applied in the original fashion: "Are you able to perform the activity without any help, or do you need partial help, or do you need total help?". However, the in-depth interviews had shown that when asked about the ability to cook a meal or to do the housework, elderly men had difficulties answering as they reportedly had never done such things, and as far as they were concerned never would. In this regard, an extra alternative was added to these two questions: never done it. The rationale was to prevent some men artificially inflating the disability rates.

g) Availability of Care

The availability of three types of informal care were assessed: help with the housework, personal help (eg. feed, bath, etc...), and nursing help (eg. take medicines). The elderly person was asked whether any of the above types of care had been available, if it was still available, and given by whom. The help with the housework, however, was not part of the OMFAQ, and it was included because the in-depth interviews had suggested that this was a particularly popular type of help, given the existence of domestic maids doing the housework not only for elderly people but for anyone who can afford to pay. In fact, when asked in the in-

depth interview if personal help was available, the immediate reaction of the elderly person was to say yes, thinking of the help with the housework. It was therefore decided to include help with the housework as a specific question to differentiate it from personal help.

h) Mental Health

The assessment of the mental health status in the OMFAQ is made by two separate set of questions, as mentioned before. The first set - Short Portable Mental Status Questionnaire (Pfeifer et al., 1975) - consists of ten questions assessing organic brain damage. The questions rated in a right or wrong fashion concerned the subject answers relating to the date of his or her birthday, the actual address ^h were the interview was being performed, the name of the president of the country, etc..The second set - Short Psychiatric Evaluation Schedule was made up of fifteen questions assessing affective disorders (Fillenbaum & Pfeifer, 1976). It asked for yes or no answer to questions like: "Does it seem that no one understands you?; Are you happy most of the time?; Even when you are with people, do you feel lonely much of the time?".

As both set of questions could be seen as independent screenings and as such liable to be used separately, they were just translated and, in the case of the 15-item screening, properly validated (see 2.2.3). The section on

mental health also included four questions about the use of psychiatric counselling and psychiatric hospital in the previous six months.

1) Social Resources

This section included questions about the sociability of the elderly person. Questions of the OARS-MFAQ were basically translated as they addressed aspects that have all come up in the in-depth interviews: the number of people one could visit at any point in time, number of visits/ phone calls in the previous week, existence of someone to confide in, feeling of loneliness, and existence of someone that could help in an emergency.

2.2.3 - Validation of the Mental Health Screening

A validity study of the psychiatric screening questionnaire was carried out with a community sub-sample of the present survey. The Brazilian version of the OARS mental health screening (Duke, 1978) was tested against the criterion of a semi-structured psychiatric interview, the Clinical Interview Schedule (Goldberg et al. 1970). The CIS has been found to be acceptably reliable in a variety of settings including Sao Paulo and proved to be a feasible research instrument for application in primary medical care and community settings in Brazil (Mari, 1986).

In the present study a psychiatrist was provided with a randomly selected sub-sample from which he had no previous information. He then visited those elderly at home and applied the CIS for further comparison with the results of the mental health screening (see 3.1.4).

II.3 - SURVEY DESIGN

The study of the functional status of an urban elderly population requires a broader understanding of the dynamics of segregation of the urban space. As Breilh & Gandra (1982) point out, the different socio-economic groups are likely to live in different places, have different life styles and health hazards. In this regard, there is a need for a systematisation of the urban space to enable the correct interpretation of people's living conditions. It should be possible to distinguish in an urban area, homogeneous areas inhabited predominantly by people of the same social class.

The design of the present survey accounted for the existing inequalities between people from different classes and from different areas living in Sao Paulo. Bearing in mind the financial constraints, it became obvious that the survey could not aim to draw a sample from Sao Paulo as a whole. On the other hand, it was important to have a representative sample of a geographically defined area, so the results could lead to a concrete exercise of planning

and be further analysed in the future on a longitudinal basis. It was, therefore, decided to study the elderly in three sub-districts of Sao Paulo - enabling a representative sample to be drawn from each of them.

2.3.1 - Socio-Economic Stratification of Sao Paulo

In 1974, a survey designed to assess the population's transport habits, produced the first geographical stratification of Sao Paulo by socio-economic status, using the sub-districts as geographic units, and a set of social and health indicators as discriminative variables (eg. infant mortality rates, availability of sanitation and etc.). A multivariate analysis - that has grouped the sub-districts in 'homogeneous areas' - revealed an inner central area with high family income, low infant mortality, and good availability of health facilities, an inner peripheral area with average figures, and a peripheral area with low family income, high infant mortality, and poor availability of health and social facilities (Governo do Estado de Sao Paulo, 1976).

Although helpful, the previous division of the city was based on some indicators which have not shown good discriminatory power between the different socio-economic areas (eg. drinking water, or health services). Moreover, the city has changed quite a lot since 1974, when the data were collected. It was, therefore, necessary to update the

indicators using only those that have shown good discriminatory power, such as family income and availability of sewers. For methodological reasons concerning the availability of data only the 48 sub-districts of the district of Sao Paulo were included in the study area (Figure 2.3.1) (a list of the 48 sub-district to match the numbers in the figures present throughout this chapter is provided in Appendix 3).

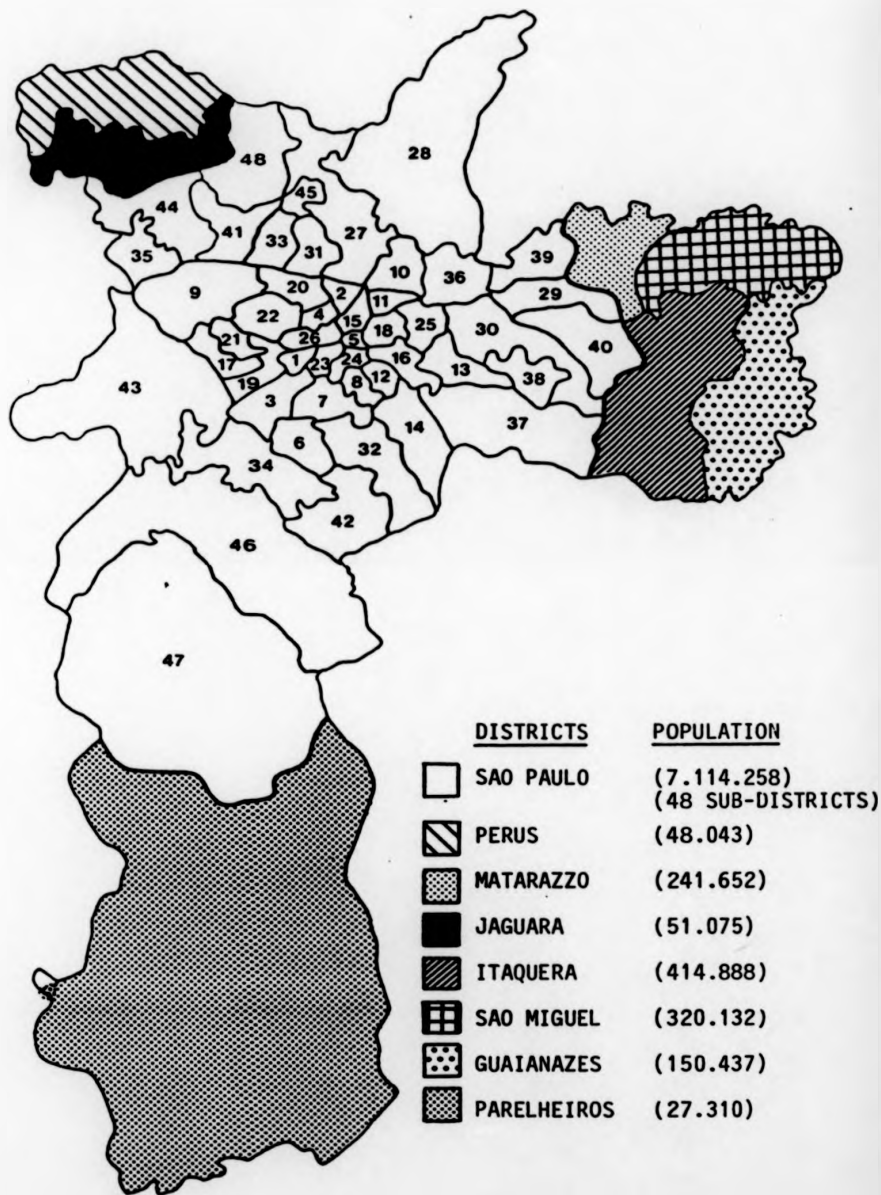
Household Income and Availability of Sewers

The 1980' Census provides the average household income and the percentage of households with sewers in each of the sub-districts of the district of Sao Paulo. But because the highest income group defined in the census was an open ended group (20 or more ^{times} Minimum Salaries (2)), it was difficult to calculate the standard deviation of the mean in order to aggregate the sub-districts. The sub-districts were, thus, ranked by household income and availability of sewers, and the median was used to divide the 48 sub-districts into 3 areas, using percentiles. Both the average household income and the percentage of houses with sewers, vary greatly from one sub-district to another. For instance, in the richest sub-district the average household income was 18.5 times the minimum salary (US\$

Footnote (2) - In Brazil, due to inflation, income data are usually presented in units of the Minimum Salary which is regulated by law as the bottom of the salary scale and supposed to keep pace with the inflation. One Minimum Salary in 1980 was equivalent to approximately US\$ 75 per month.

Figure 2.3.1

MUNICIPALITY OF SAO PAULO AND ITS 8 DISTRICTS
AND 48 SUB-DISTRICTS



1.410), whereas in the poorest it was less than 4 times the minimum salary (US\$ 295) (Table 2.3.1). In terms of the availability of sewers the situation is even more unequal, with the affluent sub-districts showing more than 97% of the houses with sewers, whereas in the poorest end of the spectrum, there were areas in which less than 20% of the households were provided with sewers (Table 2.3.2).

The geographical division of the District in 3 areas based on the division of the sub-districts using three percentiles following the median values for household income and availability of sewers - Figures 2.3.2 and 2.3.3 respectively - show a very similar picture to the one obtained in the previous study mentioned above (Governo do Estado de Sao Paulo, 1976), when three homogeneous areas were defined using the sub-districts as stratification units.

Proportion of Elderly People per Sub-district

As mentioned before (see 1.2.4), not only was the district of Sao Paulo heterogeneous in terms of the socio-economic status of the population in the different sub-districts, but also in terms of the age structure of the population in the sub-districts. In fact, the proportion of elderly people in the total population of the sub-districts varied widely from 8.9% to 1.7% of people over the age of 65. Interestingly enough, this variation seemed to follow the

Table- 2.3.1

MEDIAN FAMILY INCOME (US\$) IN THE
48 SUB-DISTRICTS OF SAO PAULO, 1980

(FIRST TERCILE - 16 SUB-DISTRICTS)			(SECOND TERCILE - 16 SUB-DISTRICTS)			(THIRD TERCILE - 16 SUB-DISTRICT)		
Rank	Sub-district	US\$	Rank	Sub-district	US\$	Rank	Sub-district	US\$
1	J. America	1,405	17	Bom Retiro	565	33	Penha	426
2	J. Paulista	1,358	18	Pari	545	34	Bras	409
3	Cerqueira Cesar	1,236	19	Barra Funda	543	35	Tucuruvi	387
4	Indianopolis	1,192	20	Moooca	533	36	Límao	386
5	Vila Mariana	1,081	21	Belenzinho	524	37	Jabaquara	383
6	Ibirapuera	1,060	22	Liberdade	521	38	Vila Maria	379
7	Pinheiros	1,053	23	Alto da Moooca	518	39	Pirituba	377
8	Perdizes	1,009	24	Ipiranga	517	40	Vila Prudente	372
9	Vila Madalena	939	25	Se	508	41	Vila Formosa	369
10	Aclimaçao	784	26	Vila Guilherme	485	42	N. Sra de O	366
11	Consolacao	784	27	Santana	477	43	Cangaiba	356
12	Santa Cecilia	747	28	Tatuape	470	44	Vila Matilde	352
13	Lapa	686	29	Santa Efigenia	468	45	Santo Amaro	344
14	Bela Vista	678	30	Butanta	455	46	V.N. Cachoeirinha	337
15	Cambuci	622	31	Jaguara	442	47	Capela do Socorro	309
16	Saude	565	32	Casa Verde	429	48	Brasilandia	295

169

Source: IBGE (1983)

Table - 2.3.2

AVAILABILITY OF SEWERS (% OF HOUSEHOLDS)
IN THE 48 SUB-DISTRICTS OF SAO PAULO, 1980

(FIRST TERCILE - 16 SUB-DISTRICTS)			(SECOND TERCILE - 16 SUB-DISTRICTS)			(THIRD TERCILE - 16 SUB-DISTRICTS)			
Rank	Sub-district	% Households with sewers	Rank	Sub-district	% Households with sewers	Rank	Sub-district	% Households with sewers	
170	1	Indianopolis	97.2	17	Se	89.5	33	Tatuape	62.3
	2	Consolacao	97.2	18	Belexinho	88.3	34	N. Sra. do O	62.3
	3	Cerqueira Cesar	97.1	19	Bom Retiro	87.8	35	Butanta	60.3
	4	Jardim Paulista	96.3	20	Liberdate	87.0	36	Vila Guilherme	56.4
	5	Pinheiros	96.2	21	Barra Funda	86.4	37	V.N. Cachoeirinha	55.5
	6	Perdizes	94.5	22	Moooca	86.2	38	Tucuruvi	44.0
	7	Santa Cecilia	94.1	23	Casa Verde	84.9	39	Penha	41.0
	8	Bela Vista	93.6	24	Ibirapuera	83.7	40	Vila Prudente	41.0
	9	Vila Mariana	93.1	25	Alta de Moca	80.1	41	Vila Maria	39.9
	10	Aclimacao	92.5	26	Bras	79.9	42	Vila Matilde	39.5
	11	Vila Madalena	92.1	27	Limao	78.0	43	Brasilandia	37.6
	12	Jardim America	91.5	28	Ipiranga	76.5	44	Santo Amaro	31.4
	13	Santa Efigencia	91.5	29	Santana	73.1	45	Capela do Socorro	28.6
	14	Pari	91.4	30	Saude	73.0	46	Pirituba	24.3
	15	Lapa	91.0	31	Jaguara	68.2	47	Cangaiba	20.3
	16	Cambuci	90.3	32	Jabaquara	66.2	48	Vila Formosa	19.7

Source: IBGE (1983)

Figure 2.3.2

DIVISION OF THE DISTRICT OF SAO PAULO (48 SUB-DISTRICTS)
IN 3 AREAS (16 SUB-DISTRICTS EACH) FOLLOWING THE AVERAGE FAMILY
INCOME (US \$) OF EACH SUB-DISTRICT
Based on Census data, 1980)

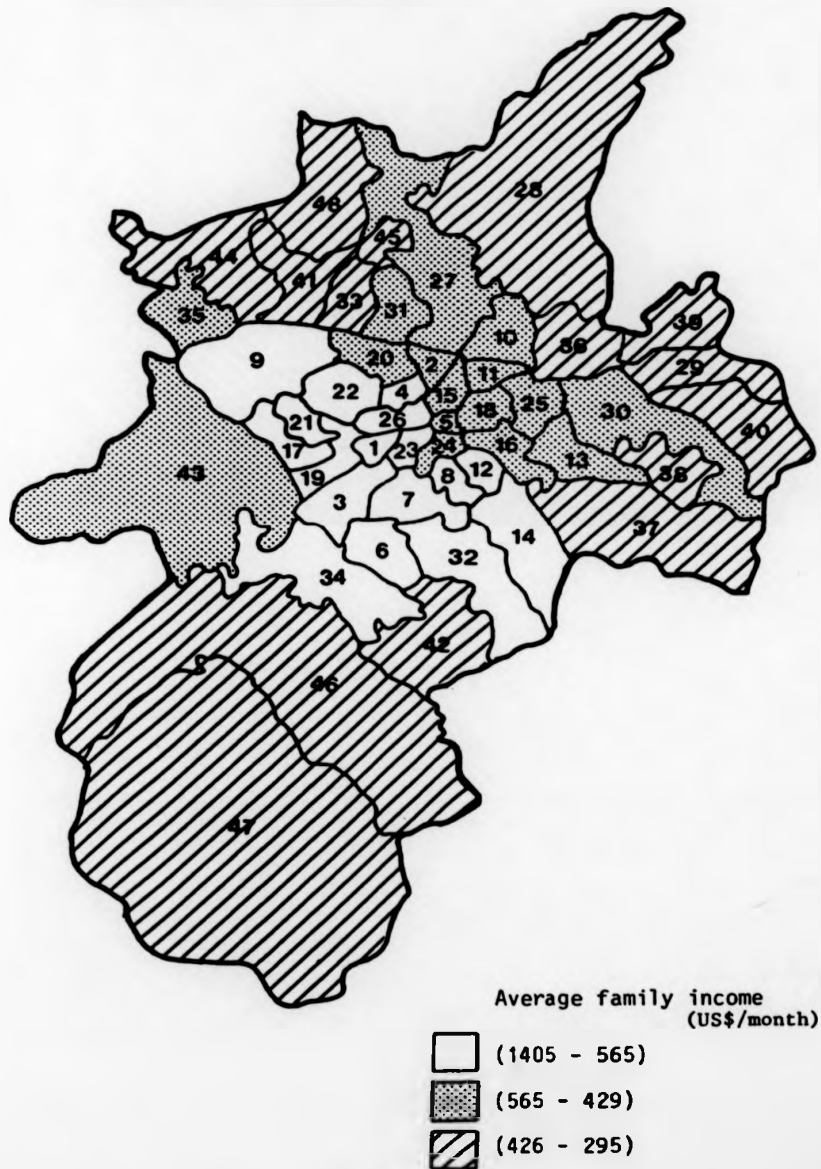
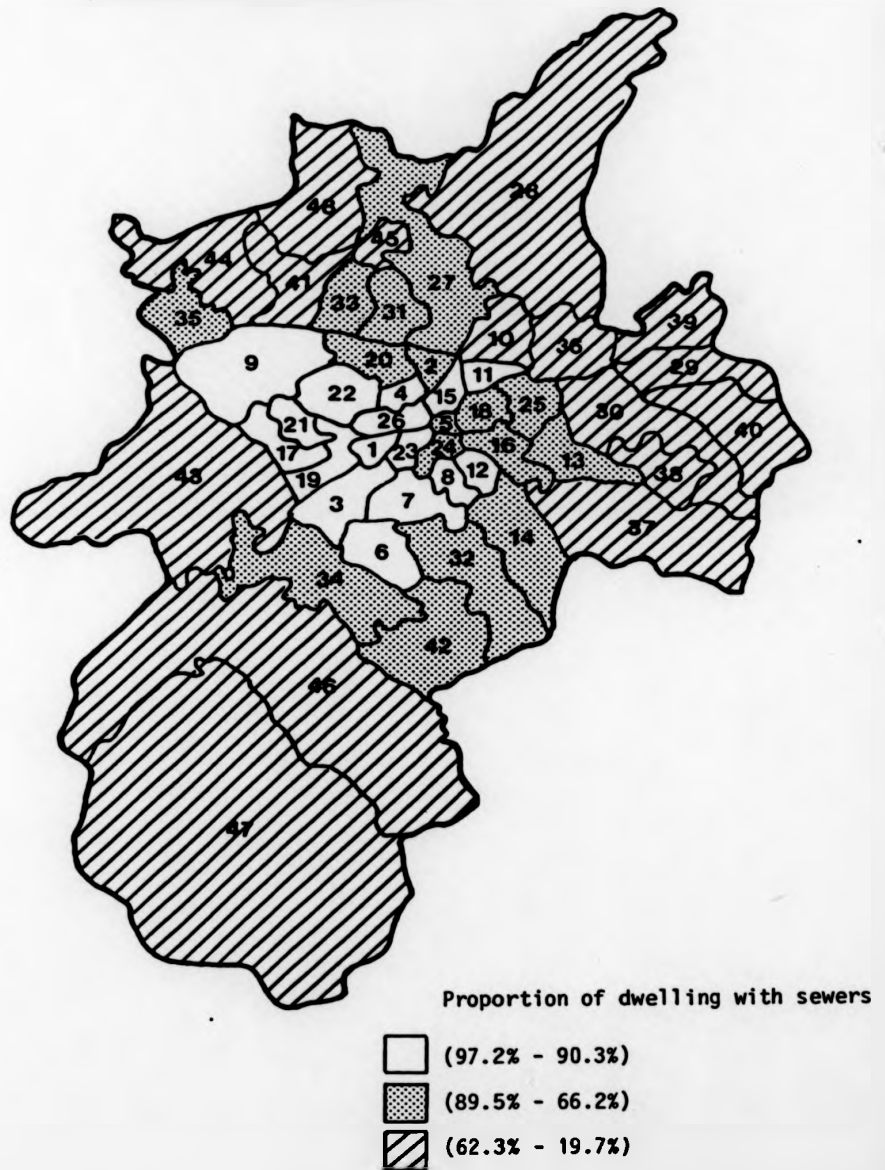


Figure 2.3.3

DIVISION OF THE DISTRICT OF SAO PAULO (48 SUB-DISTRICTS)
IN 3 AREAS(16 SUB-DISTRICTS EACH) FOLLOWING THE PROPORTION OF
DWELLINGS WITH SEWERS IN EACH SUB-DISTRICT
(Based on Census data, 1980)



same pattern of the variables income and availability of sewers described above. Indeed, the rich central and well served areas were likely to have a much higher proportion of elderly, in the total population, than the poor, peripheral and ill served areas.

Table 2.3.3 shows the same technique of ranking and then dividing the sub-districts into three groups following the median proportion of elderly people. The result was a division of the district of Sao Paulo that very much resembled the previous ones using income and sewers as indicators (Figure 2.3.4). Even some very central areas, that have changed in recent years from residential to commercial areas have shown a lower proportion of elderly than one would have expected. In this regard the elderly themselves seemed to be a reasonably good indicator of the socio-economic situation of a particular population. It also appeared to be a more dynamic indicator than sewers, because the elderly seem to migrate when the socio-economic situation worsen, whereas the availability of sewers once they are introduced need only maintenance and therefore their distribution remains the same. The variable proportion of elderly in the total population has, in fact, shown a direct and highly significant statistical correlation with the variables household income and the availability of sewers (elderly/income $r_s = 0.83$ and elderly/sewers $r_s = 0.81$).

Table - 2.3.3
 PROPORTION OF ELDERLY (65 YEARS OR MORE)
 IN THE TOTAL POPULATION IN 48 SUB-DISTRICTS OF SAO PAULO, 1980

Rank	Sub-district	Total Population	Population 65 Years and over	% 65 Years and over
1	Consolacao	72,372	6,450	8.91
2	Belenzinho	49,273	4,365	8.86
3	Bom Retiro	25,068	2,136	8.52
4	Sta Cecilia	84,956	7,001	8.24
5	V. Mariana	108,282	8,899	8.22
6	Pari	27,748	2,282	8.22
7	C. Cesar	65,447	5,338	8.16
8	Aclimacao	55,364	4,493	8.12
9	B. Funda	30,685	2,474	9.06
10	Cambuci	53,590	4,238	7.91
11	J. Paulista	116,450	8,956	7.70
12	Pinheiros	47,129	3,582	7.60
13	Moooca	36,175	2,730	7.55
14	J. America	55,291	4,143	7.50
15	Lapa	135,515	9,878	7.29
16	Perdizes	127,935	9,257	7.24

(cont.)
Table - 2.3.3
PROPORTION OF ELDERLY (65 YEARS OR OVER)
IN THE TOTAL POPULATION IN 48 SUB-DISTRICTS OF SAO PAULO, 1980

Rank	Sub-district	Total Population	Population 65 Years and over	% 65 Years and over
17	Bela Vista	79,367	5,670	7.14
18	A Mooça	136,433	9,340	6.85
19	Indianópolis	82,658	5,468	6.62
20	Se	8,207	537	6.54
21	Sta Efigenia	42,551	2,776	6.52
22	Bras	48,588	3,145	6.47
23	Ipiranga	179,353	10,950	6.11
24	V. Madalena	48,296	2,784	5.76
25	Penha	142,656	7,882	5.53
26	Liberdade	73,383	4,050	5.52
27	Tatuapé	279,357	14,601	5.22
28	Saude	289,027	14,609	5.05
29	C. Verde	110,634	5,441	4.92
30	V. Guilherme	77,120	3,645	4.73
31	Ibirapuera	158,415	7,386	4.66
32	Santana	274,101	12,442	4.54

(cont.)

Table - 2.3.3

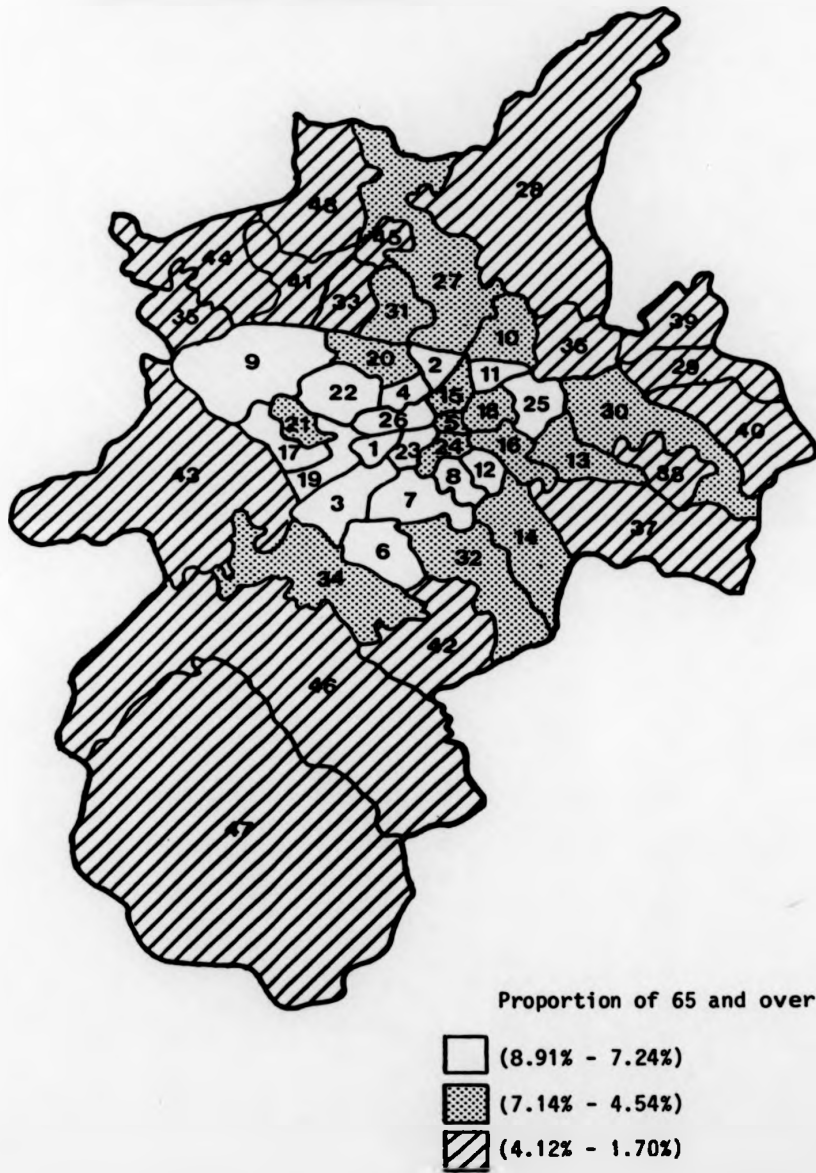
PROPORTION OF ELDERLY (65 YEARS OR OVER)
IN THE TOTAL POPULATION IN 48 SUB-DISTRICTS OF SAO PAULO, 1980

Rank	Sub-district	Total Population	Population 65 Years and over	% 65 Years and over
33	V. Maria	131,851	5,437	4.12
34	Tucuruvi	463,262	17,915	3.87
35	V. Formosa	119,704	4,544	3.80
36	Limaó	86,034	3,230	3.75
37	V. Prudente	496,537	17,667	3.56
38	V. Jaguará	71,641	2,522	3.52
39	Cangaíba	75,244	2,604	3.46
40	Pirituba	117,773	4,064	3.45
41	N Sra do O	173,856	5,964	3.43
42	Jabaquara	266,906	8,610	3.23
43	V.N.Cachoeira	37,411	1,195	3.19
44	V. Matilde	239,739	7,637	3.17
45	Butanta	318,421	9,576	3.01
46	Stá Amaro	765,743	17,554	2.29
47	Brasilândia	176,269	3,455	1.96
48	C. Socorro	452,041	7,707	1.70

Source: IBGE (1983)

Figure 2.3.4

DIVISION OF THE DISTRICT OF SAO PAULO (48 SUB-DISTRICTS) IN 3 AREAS (16 SUB-DISTRICTS EACH) FOLLOWING THE PROPORTION OF 65 AND OVER IN THE TOTAL POPULATION OF EACH SUB-DISTRICT (Based on Census data, 1980)



Bearing this in mind it was decided to include, the proportion of elderly in the total population, in the stratification process, therefore differentiating those sub-districts in which the elderly are already a sizeable proportion of the population from those in which they are still a small minority.

Homogeneous Areas

In order to stratify the sub-districts taking family income, the availability of sewers, and the proportion of elderly in the population in each sub-district, into account, a new ranking was necessary. Each sub-district was assigned a value equivalent to the sum of its ranks in the three previous ranks and again they were divided into three groups, following the median of the values and three percentiles (Table 2.3.4).

The final division of the District of Sao Paulo in three homogeneous areas (16 sub-districts each) is shown in Figure 2.3.5:

- 1) Central area A with high income (US\$1409 - US\$526), good availability of sewers (97.2% - 87.8%), and high proportion of people aged 65 and over ((8.91% - 6.62%);

2) Intermediate area B with median income (US\$1063 - US\$410), regular availability of sewers (92.1% - 62.3%), and median proportion of people aged 65 and over (8.06% - 4.54%);

3) Peripheral area C with low income (US\$457 - US\$296), poor availability of sewers (78.0% - 19.7%), and low proportion of people aged 65 and over (4.12% - 1.7%).

The central area, in particular, appeared to have some exceptions, that is to say, some middle class areas, with median proportion of elderly, classified as homogeneous area B (supposedly in the immediate peripheral area to the centre of the city - see Figure 2.3.4) and still in the very centre of the city. A situation suggesting a decline in the standards of living in the area, with elderly population migrating to other areas (see 1.2.5).

Table 2.3.5 shows that the three strata (homogeneous areas) had rather different population sizes - area A with 17%, area B with 27% and area C with 56% of the total population of the District of Sao Paulo. Therefore by electing one sub-district from each area it was likely that some areas would be either over represented or under represented, as far as the whole District was concerned. On the other hand, the differences were not so pronounced for the population aged 65 and over - area A with 29%, area B with 33%, and area C with 38% of the over 65's in

Table - 2.3.4

SUM OF THE RANKS OF EACH SUB-DISTRICT
IN THE RANKINGS FOR INCOME, SEWERS AND PROPORTION OF ELDERLY

Rank	Sub-district	Rank by Median Family Income	Rank by % of Households with Sewers	Rank by % of Elderly in Total Populat.	Sum of Ranks
1	C. Cesar	3	3	7	13
2	Consolacao	11	2	1	14
3	J. Paulista	2	4	11	17
4	V. Mariana	5	9	5	19
5	Sta Cecilia	12	7	4	23
6	Indianapolis	4	1	19	24
7	Pinheiros	7	5	12	24
8	J. America	1	12	14	27
9	Aclimacao	10	10	8	28
10	Perdizes	8	6	16	30
11	Pari	18	14	17	38
12	B. Vista	14	8	17	39
13	B. Retiro	17	19	3	39
14	Cambuci	15	16	10	41
15	Belenzinho	21	18	2	41
16	Lapa	13	15	15	43

Table - 2.3.4 (Cont.)

SUM OF THE RANKS OF EACH SUB-DISTRICT
IN THE RANKINGS FOR INCOME, SEWERS AND PROPORTION OF ELDERLY

Rank	Sub-district	Rank by Median Family Income	Rank by % of Households with Sewers	Rank by % of Elderly in Total Populat.	Sum of Ranks
17	V. Madalena	9	11	24	44
18	B. Funda	19	21	9	49
19	Mooça	20	22	13	55
20	Ibirapuera	6	24	31	61
21	Se	25	17	20	62
22	Sta Efigenia	29	13	21	63
23	A Mooça	23	25	18	66
24	Liberdade	22	20	26	68
25	Ipiranga	24	23	23	70
26	Saude	16	30	28	74
27	V. Guilherme	26	26	30	82
28	Bras	34	26	22	82
29	C. Verde	32	23	29	84
30	Santana	27	27	32	86
31	Tatuape	28	33	27	88
32	Penha	33	39	25	97

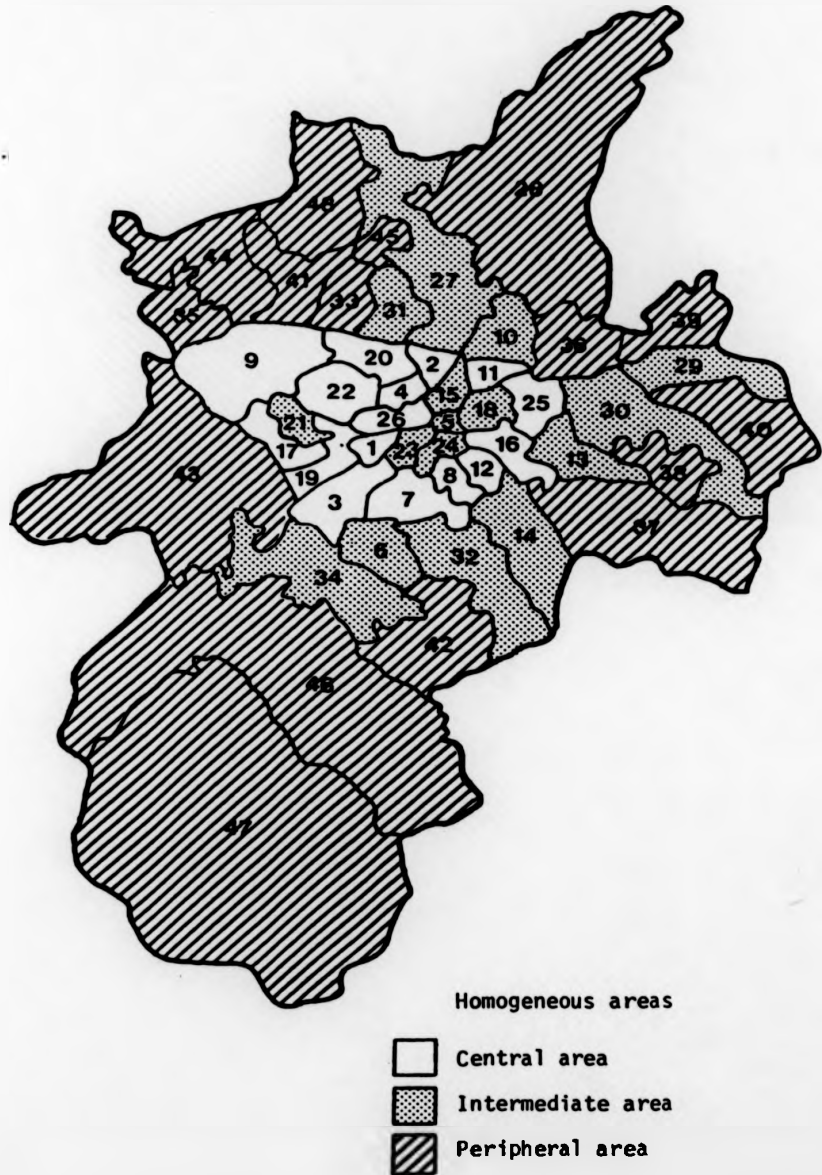
Table - 2.3.4 (Cont.)

SUM OF THE RANKS OF EACH SUB-DISTRICT
IN THE RANKINGS FOR INCOME, SEWERS AND PROPORTION OF ELDERLY

Rank	Sub-district	Rank by Median Family Income	Rank by % of Households with Sewers	Rank by % of Elderly in Total Populat.	Sum of Ranks
33	Límao	36	27	36	99
34	V. Jaguará	31	31	38	100
35	Tucuruvi	35	38	34	107
36	Butanta	30	35	45	110
37	Jabaquara	37	32	42	111
38	V. Maria	38	41	33	112
39	V. Prudenta	40	40	37	117
40	N. S. do O	42	34	41	117
41	V. Formosa	41	48	35	124
42	Pirituba	39	46	40	125
43	V.N.Cachoeira	46	37	43	126
44	Cangaíba	43	39	47	129
45	V. Matilde	44	42	44	130
46	Stá Amaráo	45	44	46	135
47	Brasilândia	48	43	47	138
48	C. Socorro	47	45	48	140

Figure 2.3.5

DIVISION OF THE DISTRICT OF SAO PAULO(48 SUB-DISTRICTS) IN 3 HOMOGENEOUS AREAS(16 SUB-DISTRICTS EACH) FOLLOWING THE AVERAGE FAMILY INCOME (US \$) , AVAILABILITY OF SEWERS (%),AND THE PROPORTION OF 65 AND OVER IN THE TOTAL POPULATION OF EACH SUB-DISTRICT (Based on Census data, 1980)



the District. Hence, the inclusion of the proportion of elderly people in the stratification process produced a small stratum of high income households with almost the same number of elderly as the large stratum of low income.

The methodology for selecting the sub-districts that represented the three socio-economic strata in the final sample is described below.

2.3.2 - Selection of the Sampling Areas: Sub-districts

The 48 sub-districts of the District Sao Paulo were stratified in three groups of 16 sub-districts representing a high, median and low income population. Each group of sub-districts represented a stratum of Sao Paulo, considered to be fairly homogeneous regarding the family income, the availability of sewers and the proportion of elderly people in the total population of each of the 16 sub-districts. However, inside each of the 'homogeneous' areas, there were great variations in population size, residential characteristics, and internal homogeneity of the sub-districts. Considering that the study was a descriptive one, aiming to throw some light at the role of the socio-economic status on the well-being of the elderly population living in the community, and - most important - having to comply with a very limited budget, some pre-conditions for a sub-district to be included in the sample had to be defined.

Table 2.3.5 - Total population and population aged 65 and over in three homogeneous areas according to family income, availability of and proportion of elderly people in the total population.

Homogeneous Areas	Population		Percentages		
	Total (a)	65 + (b)	b/a (%)	a/* (%)	b/** (%)
Central Area	1.186.445	92.156	7.8	16.7	29.1
Intermediate Area	1.934.981	104.792	5.4	27.2	33.1
Peripheral Area	3.992.432	119.681	3.0	56.1	37.8
Sao Paulo	7113.858	316.629	4.45	100.00	100.00

* divided by the total population of the District of Sao Paulo.

** divided by the total population of elderly of the District of Sao Paulo.

The most important thing in the sampling process was to select as sampling areas the sub-districts that best represented the three homogeneous areas defined in the stratification process. That is to say, the more homogeneously wealthy sub-district in area A, as opposed, for instance, to the more homogeneously poor sub-district in area C. Thus the main criteria for selection of the sub-districts were: to be the wealthiest, among the wealthy and the poorest among the poor, for example. Such criteria have selected ten sub-districts in each of the socio-economic strata, as the best representatives, totalling 30 sub-districts that remained in the selection process.

Sub-districts that have become very commercial or industrialised, were seen as less interesting for study purposes than those with a more residential characteristic, as the former tend to represent very specific situations depending on the type of commerce or industry involved. In areas like Santa Efigenia and Se, for instance, less than 40% of the premises were residential. Such non-residential areas were likely to make the selection of the sample very difficult and to bias the results as the style of life in such areas tend to be different from that in a more residential area. In this regard, a minimum of 70% of residential area in the sub-district was set as a selecting criterion. From the 30 sub-districts already selected, based on the previous criteria, only 23 remained.

Due to economic constraints, not all of the selected sub-districts were suitable for the survey, some had large populations of elderly and would inevitably demand a large sample if it was to be representative of the sub-district. Bearing this in mind, another exclusion criteria was introduced: the size of the elderly population. If the sub-district had more than 6000 elderly people, it was excluded because the sampling fraction (see sampling) would be unattainable with the available resources. From the 23 sub-districts still in the selection process, only 11 met this criterion.

Finally, it was decided that in all those sub-districts selected so far there was to be a visual inspection to determine which of those showed less socio-economic contrasts, eg. slums in the middle of a wealthy area, or a state of wealthy households in a poor area. Although these paradoxical clusters of households might not influence the average income of the sub-district, it could bias the analysis if randomly selected in the final sample of households. Such a criteria was applied by two independent observers who met afterwards to decide which was the sub-district in each area to be included in the sample, from those already selected by the previous criteria.

Therefore, instead of making a random selection of one sub-district in each area, the selection was made based on a set of criteria as follows:

Inclusion criteria

- a) To be one of the top 10 sub-districts in group A of the ranking, or
- b) To be one of the 5 sub-districts either above or below the median in group B, or
- c) To be one of the bottom 10 sub-districts in group C of the ranking (Table 2.3.4)

Exclusion criteria

- a) If less than 70% of the households in the sub-district were residential units or,
- b) If more than 6000 people were aged 65 and over, thus exceeding the available resources if a representative sample were to be drawn, or
- c) If the sub-district had obvious socio-economic contrasts at the visual inspection.

As the above inclusion criteria were applied to the 48 sub-districts of Sao Paulo, 30 were included (10 in each stratum). The two first exclusion criteria (proportion of residential areas, and size of the elderly population) selected 4 sub-districts in area A (high income), just one

sub-district in area B (middle income), and 6 sub-districts in area C (low income). Therefore, in areas A and C the third criterion of visual inspection had to be applied. In the high income area (A) three of the four possible sub-districts displayed considerable socio-economic contrast and were thus excluded. Similarly, in the low income area (C), one of the six possible sub-districts was considered to be the most homogeneously poor sub-district bearing in mind the type of houses and commerce, and the preservation of the streets. Although the two observers have not fully agreed in the ranking of the four sub-districts in area A and the six in area C regarding homogeneity, they did agree on which ones were supposedly the top of the list - Brasilandia was the most homogeneously poor in area C, and Aclimacao the most homogeneously rich in area A.

Eventually, Aclimacao was the subdistrict selected as a representative of the wealthy population, living in the central area, with a high proportion of people aged 65 and over. Vila Guilherme was the one selected in the intermediate group and Brasilandia became the representative of the very poor and peripheral population (sited in the north part of the city), with a low proportion of elderly people.

2.3.3 - Sampling Design

Considering that in Brazil, in general, and in Sao Paulo, in particular, there are still no comprehensive list of addresses for any geographical area (like the electoral list in Britain, for instance), there has always been a problem in drawing samples from the community, ensuring randomisation in the selection of the subjects. Moreover, as the survey was collecting baseline data on a number of variables, with no previous records of estimated prevalences among the elderly population living in the community, it was also difficult to decide the sample size on a purely statistical basis.

Although the sample was not going to represent the whole city, one of the basic aims was to design a simple and sound methodology of sampling that will enable future expansion of the survey without losing comparability. It seemed more appropriate to use the methodology of the one household survey in the country, regularly undertaken on a national basis (the equivalent to the GHS in Great Britain) - the "Pesquisa Nacional por Amostra de Domicilios, PNAD (IBGE, 1981) - as a starting point. Since 1976 the PNAD (introduced in 1967) has achieved national coverage and developed a fixed questionnaire format. The National Institute of Geography and Statistics (IBGE), responsible for the censuses in Brazil (as well as the PNAD), have adopted a methodology that was developed in the 50's in the

USA for continuous household surveys (US, 1958). Such a methodology was, in the 60's, adapted to the reality of the Latin-American countries, by a joint effort of the United States Agency for International Development (USAID) and the Inter-American Statistical Institute (IASI) in an attempt to produce comparable data amongst these countries (IBGE,1981).

Brazil has participated in the early experiments of this methodology which became known as the Atlantida Plan (US, 1966). The name is related to a hypothetical country having the same basic characteristics of any Latin-American country, in which a national household survey is planned, all the calculations concerning the sampling are performed, results are produced and the analysis is done.

Like the American Census, the Atlantida's methodology uses a stratified multi-stage random sample using the census' tracks as the ultimate cluster from which to draw the households to be surveyed. The big advantage of this method is that it does not require a previous enumeration of the households in the whole of the study area, but only in the small clusters selected (US, 1966; IBGE, 1981).

Multistage Random Sample

Although the present study demanded only a regional survey the Atlantida methodology was still useful as a background. Each sub-district was considered a Primary Sampling Unit (US, 1966) from which to draw a fixed proportion of clusters (10%) - such clusters were the same used by the census, with a fairly standard size of about 300 households. Such clusters were selected by a proportionate random sample - based on the number of households - from a list of clusters in each sub-district. Having selected the clusters, the sample of elderly people was randomly selected from a constructed list of elderly people living in each selected cluster. Every household in the selected clusters was enumerated by age and sex (3). From a list of people aged 65 and over, stratified by sex, and with a known address, a random sample was taken again using a fixed proportion (30%). The overall sampling fraction for every sub-district was 3/100 (Chart 2.3.1). As the survey aimed at^a descriptive profile of the elderly living in different socio-economic environments, the choice of a sampling fraction was very much based on the availability of resources, to the extent that a reasonable Standard Error could be achieved.

Footnote (3) - The enumeration was done by a team of University students, trained and supervised in the field, who knocked at the door of every household in each of the selected clusters, asking whether or not there was an elderly person living in the place - someone aged 65 or more. If so, what was the name and sex of the person. The enumeration was instructed by a map of the clusters, bringing the limits of the clusters and the topography.

**Chart 2.3.1 - Multistage Cluster Sampling
Stratified by Social Class and sex**

DISTRICT OF SAO PAULO
(48 Sub-Districts)

TOTAL POP.=7.113.858 (100%)
65+ POP.=316.629 (4.45%)

STRATIFICATION
BY SOCIAL CLASS using

HOUSEHOLD INCOME
AVAILABILITY OF SEWERS
PROPORTION OF 65+

3 HOMOGENEOUS AREAS
(3 Percentiles - Median)

AREA 1 (16 Sub Districts)	AREA 2 (16 Sub Districts)	AREA 3 (16 Sub-Districts)
CENTRAL/RICH	INTERMED/MEDIAN	PERIPHER/POOR
17% of total pop. 29% of elderly	27% of total pop. 33% of the elderly	56% of total pop. 38% of the elderly

SELECTION
CRITERIA

SUB-DISTRICT

RESIDENTIAL
SMALL POPULATION
HOMOGENEOUS

3 SUB-DISTRICTS
(PRIMARY SAMPLING UNITS)

ACLIMACAO	V.GUILHERME	BRASILANDIA
Total=55.364	Total=77.120	Total=176.269
65+=4.493 (8.1%)	65+=3.645 (4.7%)	65+=3.455 (2.0%)
(62 clusters)	(62 clusters)	(142 clusters)

PROPORTIONATE RANDOM SAMPLE (size of the cluster)
(Sampling Fraction=1/10 Clusters)

STRATIFICATION
BY SEX

ENUMERATION OF HOUSEHOLDS
BY AGE AND SEX

SIMPLE RANDOM SAMPLE
(Sampling Fraction=3/10 men or women)

ACLIMACAO	V.GUILHERME	BRASILANDIA
Enumerated	Enumerated	Enumerated
total 368 (8.2%)	total 334 (9.1%)	total 408 (11.8%)
males 135 (37%)	males 144 (43%)	males 177 (43%)
femal 233 (63%)	femal 190 (57%)	femal 231 (57%)
Sampled (30%)	Sampled (30%)	Sampled (30%)
total 108 (2.4%)	total 100 (2.7%)	total 123 (3.6%)
males 40 (37%)	males 42 (42%)	males 52 (42%)
femal 68 (63%)	femal 58 (58%)	femal 71 (58%)

Appendix 4 presents the Standard Error for the total sample and for each sub-district for a fixed set of proportions.

2.3.4 - The Household Survey: Field Work

The selection of the interviewers was a major source of concern, as the quality of the data was entirely dependent on their ability to gain the interest and confidence of the elderly during a lengthy interview - the interviews lasted, on average, 50 minutes-, with several very personal questions being asked. At the end a team of five interviewers was selected, from a group of six that participated on the piloting of the questionnaire. They were women, aged between 25 and 35 years with an University degree. The background of three of them was Psychology, and of the two others was Social Sciences. The common factor between all the interviewers was the fact that they all have had previous experience with household interviews and had the basic skills to improve the response to the survey and ensure a good quality interview.

In the training of the interviewers the need was stressed to make it clear to the elderly person what was meant by the activities of daily living eg, if necessary recalling the skills involved in performing the task so the interviewed could easily see himself performing, or not, that particular activity. For instance, when asking about the ability to dress themselves without help, the elderly

person was reminded that this could mean being able to pull a zipper on the back of a skirt or do the shoe laces. In order to avoid bias of the interviewer inducing the elderly to feel either dependent or independent, it was necessary to decide a standardised way in which comments were to be used in these cases by the team. Each interviewer received a list of no more than ten addresses per week, so the interviewer was not stimulated to perform an excessive number of interviews for economic reasons, and at the same time they had to produce a minimum of 5 interviews per week to avoid significant delays in the survey. The interviews of the week were all discussed in detail at a fixed appointment with the field supervisor, to check inconsistencies and non responses. The instruction regarding non-response and missing persons was to consider non-response only after three unsuccessful visits in different hours and different days of the week. The refusals, were exchanged between the interviewers just in case there was any personal problem with the subject. Replacements were only allowed when the elderly person had moved or died between the enumeration and the interview.

The check of the verity of the interviews - whether it was performed at all and if so whether it was performed with the selected person - was performed by associated researchers. A psychiatrist responsible for the validation of the Mental Health Screening (see 2.2.3) had instructions to check the performance of the lay interviewer. Also an independent

team of nutritionists, who conducted a 24 hours recall Nutritional Survey with the elderly visiting 30% of the sample at random, checked if the original interview had taken place.

2.3.5 - Statistical Method

Data were analysed, basically, through cross-tabulations, computing a chi-square test of independence for each sub-table. Following the initial univariate analysis, a hierarchical loglinear analysis was performed including the variables representing the dimensions being assessed: sub-district of residence (socio-economic status), activities of daily living score (independence in daily living), mental health screening score (mental health status), and household type (family support). As pointed by Nie et al. (1975), log-linear models are useful for uncovering the potentially complex relationships among the variables in a multiway cross-tabulation. Given the main objective of providing a profile of the elderly this kind of analysis was not carried on for all the variables, but only as a way of summarising the relationship between the different dimensions of the overall functioning of the elderly person and the perceived satisfaction with life in general.

2.3.6 - Summary

The present study aimed at providing a profile of the elderly population living in the community in Sao Paulo. The method used was a household survey with a multistage random sample of people aged 65 or more stratified by social class, using geographically and administratively defined areas (sub-districts) as socio-economic strata. The instrument used was based on the multidimensional functional assessment questionnaire developed in the Duke University (1978), which was properly adapted to the Brazilian reality through in-depth interviews conducted with elderly people living in Sao Paulo.

PART III - ANALYSIS OF RESULTS

From June 1984 to February 1985, a randomly selected sample of 333 elderly people (65 and over) living in the three selected sub-districts of Sao Paulo (Aclimacao, Vila Guilherme and Brasilandia) (see 2.3.3) were interviewed using the BOMFAQ (see 2.3.2). Each interview lasted, on average, fifty minutes. The results will be presented in five sections:

- 1) A general profile of the elderly population, showing the frequency distribution of the main socio-demographic and socio-economic variables for the sample as a whole, and for each sub-district.
- 2) A physical health profile analysing the perceived independence on daily living, and the perceived morbidity regarding chronic illnesses.
- 3) A mental health profile analysing the positive cases in the mental health screening. The results of the validation study are presented, enabling the true prevalence of psychiatric disorders to be calculated. The relation between physical and mental health is explored, and related to the use of health services.
- 4) The family structure and household type of the elderly are related to the main socio-economic and socio-demographic

variables and the availability of help. A profile of the carers is given. The elderly person's subjective perceptions about social integration are related to the household type.

5) Finally the well-being of the elderly is analysed using their subjective perception of health, financial stability, loneliness, and overall satisfaction with life in general. An analytical model is constructed using hierarchical log-linear analysis controlling for the variables representing the main dimensions of the elderly person's functioning (socio-economic status, degree of disability, mental health status and household type).

3.1.1 - Profile of the Elderly Population Living in the Community in Sao Paulo: Differences between the Sub-Districts

From the 333 interviews, a total of 303 interviews were completed. The non-response rate for the total sample was low (9%), being higher in Aclimacao (20%) and almost negligible in both Brasilandia and Vila Guilherme (3%). At the end, 87 out of 108 interviews were performed in Aclimacao (29% of the final sample), 97 out of 101 were performed in Vila Guilherme (32%), and 119 out of 123 were performed in Brasilandia (39%). The completion of the questionnaires enabled most of the interviews to be analysed in full. Only 4% of the interviews were incomplete - this was caused by missing responses to the mental health

screening (cases in which the elderly had to have some help from a relative to answer the rest of the questionnaire).

The mean age of the sample was 73 years (ranging from 65 to 94 years). Only 33% were more than 75 years at the time of the interview. The majority of the subjects were women (59%) - the gender ratio (men/women) for the whole sample was 0.69. The colour of the skin, of the majority of the sample (82%) was identified as white, with the rest being either black, creole, or yellow (for analytical purposes they were all grouped under the label 'non-white'). The level of education showed a 42% illiteracy rate, with only 9% of the sample having had more than 8 years of study. Half of the sample (50%) were of rural origin, but the length of residence in the place of interview for the majority of the sample (72%) was more than 10 years. The housing of the elderly was, in general very poor, with 9% living in slums or collective residences ("corticos"), and 25% living in "precarious" houses (see 2.2.2). There were no sewers in 16% of the households.

In terms of occupational status, the largest proportion in the sample was retired at the time of the interview (41%). When asked about sources of income other than the retirement pension, 19% of the retirees were working on a formal basis, despite receiving the retirement pension. But for the greater majority (79%), the pension was the basic source of income. Apart from those retired, there was a

sizeable minority (24%) receiving the "pensao vitalicea" provided for those who had never been formally employed before (see 2.2.2). Housekeeping was, in 25% of the cases, the only occupational status in old age, without any sort of pension scheme (5% of those receiving retirement pensions, and 35% of those receiving "pensao vitalicea" were also housekeepers). About 12% of the sample were still working, but only 4% were working as the only source of income.

The average per capita income in the sample was US\$ 100 per month - 78% receiving less than US\$ 100 per month. In terms of social class status (see 2.2.2), 60% of the sample belonged to social classes C & D. Although 'income free' the variable social class appeared to be significantly associated with the level of income. The average per capita income varied significantly between the four social classes - from US\$ 33 in class D to US\$330 in class A.

Differences between the Elderly Population in Brasilia, V. Guilherme, and Aclimacao

Table 3.1.1(a), shows the percentage distribution of the main socio-economic and socio-demographic variables per sub-district. Despite the tendency to have more 'young elderly' (under 75) in Brasilia (73%) than in Aclimacao (60%), there was no significant difference in age structure between the three areas. The mean age for each area was, in

Table 3.1.1.a - Association between the sub-district of residence of the elderly person and the main socio-demographic variables (age, sex, race, level of education, place of birth, length of residence, type of dwelling, and availability of sewers) - percentage distribution.

Sub-District of Residence					
Variables	Brasil.	V.Guilh.	Aclim.	Total	QUI-SQ. (DF)

Age					4.11108 (2)
< 75	73	66	60	67	
75 +	27	34	40	33	
total	100	100	100	100	
Sex					2.34280 (2)
Male	45	43	35	41	
Female	55	57	65	59	
total	100	100	100	100	
Race					31.25634 (*) (2)
White	67	87	97	82	
Others	33	13	3	18	
total	100	100	100	100	
Education					110.39080 (*) (6)
Illit.	66	39	10	42	
Prim/high	34	59	62	50	
Coll/univ.	0	2	28	8	
total	100	100	100	100	

BASE (N=)	119	95	86	303	

* significance: $p < 0.00001$

(Cont.)
Table 3.1.1.a - Association between the sub-district of residence of the elderly person and the main socio-demographic variables (age, sex, race, level of education, place of birth, length of residence, type of dwelling, and availability of sewers) - percentage distribution.

Sub-District of Residence					
Variables	Brasil.	V.Guilh.	Aclim.	Total	QUI-SQ. (DF)

Origin					73.84711 (*) (2)
Rural	77	46	16	50	
Urban	23	54	84	50	
total	100	100	100	100	
Length Resid.					12.72689 (*) (2)
< 10 Years	34	23	26	28	
10 +	66	77	74	72	
total	100	100	100	100	
Type Dwell.					94.32526 (*) (4)
Slum/prec.	66	20	7	34	
Good cond.	34	80	93	66	
total	100	100	100	100	
Sewers					45.08189 (*) (2)
Yes	67	94	98	84	
No	33	6	2	16	
total	100	100	100	100	

BASE (N=)	119	95	86	303	

* significance: $p < 0.00001$

fact, very similar, with Vila Guilherme having the same mean age as the total sample (73 years), Brasilandia being slightly below (72) and Aclimacao just above (74).

Similarly, no significant differences were found in the gender distribution between the sub-districts although there was a tendency to have proportionately more women in Aclimacao (65%) than in Brasilandia (55%), with Vila Guilherme staying in the middle (57%). The gender ratio in the sample varied accordingly, being the lowest in Aclimacao and the highest in Brasilandia - 0.59 and 0.78 respectively.

There was a significant difference in the proportion of whites and 'non-whites' between the sub-districts. In Aclimacao, for instance, whites accounted for almost all the subjects (97%), whereas in Brasilandia only 67% were in this category - 71% of all the 'non-whites' (minority groups) were in Brasilandia ($p < 0.00001$).

Also significant were the differences between the sub-districts in the level of education. Illiteracy rates were almost seven times higher in Brasilandia than in Aclimacao - 66% and 10%, respectively. In terms of levels of higher education the differences are even more striking. None in a Brasilandia sample had had education beyond high-school, compared with 28% in Aclimacao ($p < 0.00001$).

In terms of the place of birth, the greater majority in Brasilia (77%), had had a rural background, almost five times the proportion found among those living in Aclimacao (16%) ($p < 0.00001$). In terms of the length of residence, there was a significant tendency to have more 'recently moved' (living for less than 10 years in the place of the interview) in Brasilia (34%) than in Aclimacao (26%) ($p < 0.00001$).

Housing conditions in the three sub-districts have fully confirmed the socio-economic differences found in the stratification process (see 2.3.1). In Brasilia, 66% of the elderly people were living in either a slum or a 'precarious' house, almost ten times more than in Aclimacao (7%) ($p < 0.00001$). In terms of the availability of sewers, the differences were also very significant between the sub-districts. In Brasilia, one third of the dwellings (33%) had no proper sewers, compared with only 2% in Aclimacao ($p < 0.00001$).

As seen in Table 3.1.1(b) the three sub-districts showed significantly different profiles in terms of occupational status. In Aclimacao and Vila Guilherme, most of the elderly were retired (44% in both areas), and a sizeable proportion were housekeepers (30% and 27% respectively) - meaning basically women living on their spouse's retirement pensions. In Brasilia, on the other hand, the highest proportion were pensioners receiving the 'pensao vitalicea'

Table 3.1.1.b - Association between the sub-district of residence of the elderly person and the occupational status - percentage distribution.

Variable	Sub-District of Residence			Total
	Brasil.	V.Guilh.	Aclim.	
Occupat. Status				
Retired	35	44	44	41
Pensioner	38	13	16	24
Housekeeper	19	27	30	25
Working	3	2	6	4
Others	4	14	4	7
Total	100	100	100	100
BASE (N=)	119	95	86	300

Chi-Square = 31.67621

Degrees of Freedom = 8

Significance: $p < 0.0001$

Missing Cases: 3

(38%). There was a tendency for more elderly to be working in Aclimacao (6%) than in Vila Guilherme and Brasilia (2% and 3% respectively) ($p < 0.0001$).

The Sub-districts as Socio-economic Strata

The geographical stratification of the sample by sub-districts appeared to have selected significantly different populations as far as the variables per capita income and social class status were concerned. Table 3.1.1(c) shows that the average per capita was as low as US\$ 32 per month in Brasilia - almost eight times lower than in Aclimacao (US\$ 233). In Brasilia, for instance, none of the households had an average per capita income of more than US\$ 100 per month, compared with 25% of households in Vila Guilherme, and 52% Aclimacao ($p < 0.00001$). The differences were equally significant regarding the compound of personal assets, educational level and housing facilities - social class status. As seen in Table 3.1.1(d), in Brasilia the greater majority (88%) were in social classes C & D, compared with only a small minority (18%) in Aclimacao ($p < 0.00001$).

The matching of the geographical stratification by sub-districts with both, the per capita income and the social class status can be evaluated in Table 3.1.2. If one selects, for instance, all those with a per capita income of less than US\$ 100 per month and at the same time classified

Table 3.1.1.c - Association between the sub-district of residence of the elderly person and the per capita income in the household (US\$ per month) - percentage distribution.

Variable	Sub-District of Residence			Total
	Brasil.	V.Guilh.	Aclim.	
Per Capita Income (US\$)				
< 50	82	45	22	54
50 - 99	18	30	26	24
100 - 250	0	22	26	14
> 250	0	3	26	8
Total	100	100	100	100
BASE (N=)	119	97	81	297

Chi-Square = 109.6172

Degrees of Freedom = 6

Significance: $p < 0.00001$

Missing cases: 6

Table 3.1.1.d - Association between the sub-district of residence of the elderly person and the social class status - percentage distribution.

Sub-District of Residence				
Variable	Brasil.	V.Guilh.	Aclim.	Total

Social Class Status				
Class A	2	8	39	15
Class B	10	28	43	25
Class C	18	28	10	19
Class D	70	36	8	41
Total	100	100	100	100

BASE (N=)	118	97	87	302

Chi-Square = 124.8175

Degrees of Freedom = 6

Significance: p < 0.00001

Missing Case: 1

Table 3.1.2 - Subdistricts by social class status by per capita income (US\$ per month).

	Brasilia (n=118)	V. Guilherme (n=97)	Aclimacao (n=81)
CLASS A-B & Income > US\$ 100	0	19%	47%
CLASS C-D & Income < US\$ 100	87%	58%	15%

as social class C or D, this will include as many as 87% of the population in Brasilandia and as few as 15% in Aclimacao. Conversely, if one selects those with a per capita income of more than US\$100 per month and at the same time classified as social class A or B, this will include 47% of the elderly in Aclimacao and none in Brasilandia.

3.1.2 - Perceived Independence on Daily Living

In general, total or partial inability to perform the Activities of Daily Living (ADL) varied according to the type of activity (1). The inability to perform Physical Activities unaided (ie. walking, dressing, bathing, eating, grooming, use of the toilet, getting in and out of bed, and remaining continent), for instance, ranged from a minimum of 4% requiring help to get into and out of bed, to a maximum of 10% unable to remain continent without help. However, for Instrumental Activities (ie. making a phone call, shopping, using transport, doing the housework, handling finances, taking medicines and preparing a meal), requiring a wide range of skills, the average proportion requiring some help was much higher - a minimum of 21% required help to take their medicines properly, and a maximum of 49% could not go shopping without some help. However, for some

Footnote (1) - To analyse the degree of disability among the elderly in the sample the answers to the physical and instrumental activities of daily living items were collapsed into two categories: complete independence versus any dependency. The latter include both those requiring some help and those requiring total help.

activities the need for help appeared to be strongly influenced by factors other than the actual difficulty in performing them. This was the case for activities like doing the housework and preparing a meal. For both activities there was a sizeable minority (11% and 7% respectively) which answered that they did not know whether they could perform those activities unaided as they have never done either of the activities and were unlikely to do so in the future. The great majority in these cases were men, living either in Aclimacao or Vila Guilherme. Therefore these answers were considered missing cases, and that might have affected gender and socio-economic differences regarding the performance of these two activities.

Age and ADL

As shown in Table 3.1.3(a), there is a significant association between the ability to perform ADL independently and the age of the elderly person. For all the activities except phoning, getting in and out of bed, and continence, there was a significant increase in dependency in the older age groups. This was the case, for most of the physical activities. The level of dependency in the over 80s age group was sometimes more than twice the average for the sample. For instance, those requiring some help to feed themselves represented 8% of the total sample, but more than 18% of the over 80s ($p < 0.002$). Similar differences were found in relation to dependency on

Table - 3.1.3.a

PERCENTAGE DISTRIBUTION OF ELDERLY PEOPLE REQUIRING PARTIAL OR TOTAL HELP TO PERFORM THE ACTIVITIES OF DAILY LIVING (PHYSICAL AND INSTRUMENTAL) BY AGE

ACTIVITY OF DAILY LIVING	TOTAL	AGE GROUP (YEARS)				CHI-SQ.	D.F.	SIGNIFICANCE
		65-69	70-74	75-79	80+			
<u>Instrumental</u>								
Telephoning	47	41	44	53	57	4.55748	3	N.S.
Transport	42	23	43	50	74	35.87484	3	0.00001
Shopping	49	31	54	53	76	28.15538	3	0.00001
Prep. meal	22	11	18	29	46	22.64487	3	0.00001
Housework	44	27	44	46	76	29.95546	3	0.00001
Medication	21	13	18	26	36	11.91097	3	0.008
Finances	33	23	36	39	45	8.75423	3	0.03
<u>Physical</u>								
Eating	8	2	6	12	18	14.51995	3	0.002
Dressing	8	2	6	14	20	17.75859	3	0.0005
Grooming	6	2	4	12	14	12.31426	3	0.006
Walking	9	4	8	10	20	11.46397	3	0.01
In/out bed	4	2	3	8	4	3.60005	3	N.S.
Bathing	8	4	4	14	20	16.68573	3	0.0008
Toilet	6	2	4	12	10	8.93424	3	0.03
Incontinence	10	5	12	10	1E	4.52481	3	N.S.

dressing (8% and 20% respectively - $p < 0.0005$), grooming (6% and 14% respectively - $p < 0.006$), walking (9% and 20% respectively - $p < 0.01$), and bathing (8% and 20% respectively - $p < 0.0008$).

Gender and ADL

It was apparent that some activities were sex-linked, or in other words, affected one sex more than the other. For instance, there was a significantly higher proportion of men, when compared with women, reporting difficulties with physical activities like eating (13% and 4% respectively - $p < 0.008$), dressing (15% and 3% respectively - $p < 0.0005$), grooming (11% and 3% respectively - $p < 0.007$), and bathing (13% and 5% respectively - $p < 0.03$). On the other hand, the instrumental activities seemed to present women with more difficulties than men. Women showed a much higher proportion of dependent persons than men in three activities: using transportation (54% and 25% respectively - $p < 0.0001$), shopping (61% and 32% respectively - $p < 0.0001$) and controlling the finances (39% and 25% respectively - $p < 0.01$) (Table 3.1.3(b)).

ADL and Socio-Economic Status

Table 3.1.3(c) shows for each ADL the frequency of perceived disability and its variations between the sub-districts. A larger percentage of those in Brasilia, compared with

Table - 3.1.3.b

PERCENTAGE DISTRIBUTION OF ELDERLY PEOPLE REQUIRING PARTIAL OR TOTAL HELP TO PERFORM THE ACTIVITIES OF DAILY LIVING (PHYSICAL AND INSTRUMENTAL) BY SEX

ACTIVITY OF DAILY LIVING	TOTAL	SEX DIFFERENCES		CHI-SQ.	D.F.	SIGNIFICANCE
		MALES	FEMALES			
<u>Instrumental</u>						
Telephoning	47	40	51	3.00537	1	N.S.
Transport	42	25	54	24.79675	1	0.00001
Shopping	49	32	61	23.65155	1	0.00001
Prep.meal	22	33	16	9.47917	1	0.002
Housework	44	41	46	0.30762	1	N.S.
Medication	21	23	19	0.64772	1	N.S.
Finances	33	25	39	6.115	1	0.01
<u>Physical</u>						
Eating	8	13	4	7.01593	1	0.008
Dressing	8	15	3	12.05608	1	0.0005
Grooming	6	11	3	7.35365	1	0.007
Walking	9	11	7	0.93553	1	N.S.
In/out bed	4	6	2	3.41512	1	N.S.
Toilet	6	8	4	1.63546	1	N.S.
Incontinence	10	10	9	0.00002	1	N.S.
Bathing	8	13	5	4.77225	1	0.03

Table - 3.1.3.c

PERCENTAGE OF ELDERLY PEOPLE REQUIRING PARTIAL OR TOTAL HELP TO PERFORM THE ACTIVITIES OF DAILY LIVING (PHYSICAL AND INSTRUMENTAL) BY SUB-DISTRICT

ACTIVITY OF DAILY LIVING	TOTAL	SUB-DISTRICT OF RESIDENCE			CHI-SQ.	D.F.	SIGNIFICANCE
		BRASILANDIA	V.GUILHERME	ALIMACAO			
<u>Instrumental</u>							
Telephoning	47	70	44	17	57.04335	2	0.00001
Transport	42	49	47	27	11.33856	2	0.004
Shopping	49	48	53	47	0.87602	2	N.S.
Prep. meal	22	17	27	23	3.00439	2	N.S.
Housework	44	37	48	50	4.41822	2	N.S.
Medication	21	27	21	11	7.55532	2	0.02
Finances	33	33	35	35	0.10505	2	N.S.
<u>Physical</u>							
Eating	8	8	9	5	1.61694	2	N.S.
Dressing	8	10	11	2	5.82264	2	0.05
Grooming	6	8	7	4	1.61331	2	N.S.
Walking	9	8	11	7	1.17794	2	N.S.
In/out bed	4	4	4	2	0.61938	2	N.S.
Bathing	8	8	12	4	4.74112	2	N.S.
Toilet	6	7	7	2	2.57048	2	N.S.
Incontinence	10	7	15	8	4.02938	2	N.S.

those in Aclimacao, needed help to make a phone call (70% and 17% respectively $p < 0.0001$), use public transportation (49% and 27% respectively $p < 0.004$), or take their medicines properly (27% and 11% respectively $p < 0.02$). The difference between the ability to make a phone call unaided in Brasilia and Aclimacao was such that the possibility that it represented a socio-economic bias - those living in Brasilia having no experience of having a telephone available - has to be considered. As seen in Tables 3.1.3(a) and 3.1.3(b) the ability to make a phone call fail to show any significant differences in terms of age and gender.

Unlike instrumental activities, there were no significant differences between the areas regarding physical activities. However, there was a consistent tendency towards greater inability to perform physical activities in Brasilia and Vila Guilherme than in Aclimacao.

Scalability of the Activities of Daily Living

The reliability of this set of ADL as a measure of disability in daily life was tested by fitting the data into a Guttman Scale. They were ranked from "most" to "least likely" to be impaired. From the fifteen activities, three seemed to be strongly influenced by factors other than the actual difficulty in performing them. This was the case for making a phone call (socio-economic bias), doing the housework and preparing a meal (gender bias). These three

activities were excluded and a 12-items scale was constructed. A coefficient of reproducibility of 0.94 suggested the existence of a valid cumulative and unidimensional Guttman scale. A coefficient of scalability of 0.65 had further confirmed the validity of the scale (2). Although based on cross-sectional data, table 3.1.4 shows what the average transition from a state of complete independence in daily living activities to a state of complete dependency, is likely to be for an elderly person. First, the elderly person will lose his or her ability to go out and do his or her own shopping, followed by inability to use public transportation, care for personal finances, take medicines properly, remain continent, walk a small distance around the house, get dressed, have a bath, eat independently, care for personal appearance, use the toilet, and, finally, get into and out of bed.

Analysis of gender differences, suggested that men and women follow different paths from total independence to total dependency in daily living activities. While the ranking of instrumental activities (shopping, transportation, finances, medication) was the same for both sexes, the disability pattern found for physical ADL tasks was quite different.

Footnote (2) - The coefficient of reproducibility gives the proportion of all item disabilities correctly predicted from a knowledge of the number of each respondent's disabilities. An overall reproducibility of 0.9 indicates a valid Guttman scale. The coefficient of scalability tells what proportion of the remaining responses could be correctly predicted using the scale hypothesis. Values of 0.6 or higher indicate a valid Guttman scale (Guttman, 1950; Williams et al., 1976).

Table 3.1.4 - Guttman scales for a selected set of 12 ADL in order of difficulty (from most to least difficult) for the sample, males and females.

----- Guttman Scale -----					
Total Sample		Males		Females	
ADL Order	Rep.	ADL Order	Rep.	ADL Order	Rep.

SHOPPING	0.88	SHOPPING	0.91	SHOPPING	0.86
TRANSPORT	0.93	TRANSPORT	0.95	TRANSPORT	0.92
FINANCES	0.89	FINANCES	0.93	FINANCES	0.86
MEDICINES	0.91	MEDICINES	0.92	MEDICINES	0.91
CONTINENCE	0.88	DRESS	0.99	CONTINENCE	0.88
WALK	0.96	EAT	0.96	WALK	0.97
DRESS	0.98	BATH	0.98	BATH	0.99
BATH	0.98	GROOM	0.98	TOILET	0.99
EAT	0.96	WALK	0.97	EAT	0.98
GROOM	0.98	CONTINENCE	0.89	DRESS	0.99
TOILET	0.98	TOILET	0.98	IN/OUT BED	0.99
IN/OUT BED	0.97	IN/OUT BED	0.96	GROOM	0.99

274 CASES		112 CASES		162 CASES	
Coefficient of Reproducib.=0.94		Coefficient of Reproducib.=0.95		Coefficient of Reproducib.=0.94	
Coefficient of Scalability=0.65		Coefficient of Scalability=0.70		Coefficient of Scalability=0.61	

Women were more likely to report incontinence, inability to walk and the need for help with the toilet following losing their ability to perform the instrumental activities. Whereas men first lost their ability to dress, eat, bath and groom, before becoming unable to walk, remain continent, and go to the toilet. Interestingly enough, the final disability for men was the same as for the sample as a whole - getting into and out of bed - whereas for women it was grooming.

Socio-Demographic and Socio-Economic Characteristics of the Disabled

For analytical purposes only 12 activities that conformed to the Guttman scale will be considered in the index of disability (ie., shopping, transport, finances, medicines, incontinence, walking, dressing, bathing, eating, grooming, toilet, and getting into and out of bed).

Almost two fifths of the sample (39%) had no disability whatsoever, in being able to perform all 12 activities unaided. Conversely, 61% required help with at least one activity. Among those with some degree of disability 30% had difficulties with one or two activities only, and a further 21% reported difficulties with three or four activities. Bearing in mind the Guttman scale constructed earlier, it seems fair to assume that 51% of the sample had difficulties with Instrumental Activities - shopping, using

public transportation, caring for personal finances and taking medicines properly. Only 10% of the sample appeared to have difficulties with more than four activities, thus requiring help to perform Physical Activities. No significant differences were found between the sub-districts.

Table 3.1.5(a) shows that disability levels increased with age, similarly to the pattern described for each activity on its own. In the 65-69 age group, for instance, more than half (54%) had no disability at all and only 4% reported difficulties with more than four activities. In the over 80 age group only 15% had no disabilities, and over a quarter (28%) had difficulties with at least five activities.

In terms of gender, a significantly higher proportion of women (75%) had difficulties with at least one ADL when compared with men - 60% of men had no disability at all. On the other hand, in the highly disabled group (5 or more activities impaired) men were over-represented, with 14% of the men compared with 7% of women falling into this group. Thus, while a larger overall proportion of women were disabled, men were more likely to be severely disabled. Indeed, 67% of women had at least one, and no more than four, activities of daily life impaired (only 26% of men fall in this disability group) (Table 3.1.5(b)).

Table 3.1.5.a - Degree of Disability (ADL Score) by Age Group - percentage distribution.

ADL Score	Age Groups				Total
	65-69	70-74	75-79	80 +	
ZERO	54	35	40	15	39
1 - 2	31	28	29	30	30
3 - 4	11	29	18	28	21
5 +	4	8	13	28	10
Total	100	100	100	100	100
BASE (N=)	97	92	45	40	274

Chi-Square = 36.356

Degrees of Freedom = 9

Significance: $p < 0.0001$

Missing Observations: 29

Table 3.1.5.b - Degree of disability (ADL Score) by sex - Percentage distribution.

ADL Score	Sex		
	Males	Females	Total
Zero	60	25	39
1 - 2	16	39	30
3 - 4	10	28	21
5 +	14	7	10
Total	100	100	100
BASE (N=)	112	162	274

Chi-Square = 45.72027

Degrees of Freedom = 3

Significance: p < 0.00001

Missing Observations: 29

3.1.3 - Prevalence of Chronic Diseases

The estimated prevalence for the 22 chronic diseases documented showed hypertension to be the commonest problem, with a prevalence of 36%. Next commonest was arthritis with a prevalence of 32% followed by varicose veins (28%), heart disease (23%), diabetes (10%), liver disease (9%), kidney disease (7%), bladder disease (7%), bronchitis (6%), glaucoma (6%), gallbladder disease (5%), muscular disease (5%), stroke (4%), ulcers (4%), skin disease (3%), prostate disease (2%), uterus disease (2% women only), breast disease (2% women only), epilepsy (1%), asthma (1%), and tuberculosis (1%).

Table 3.1.6, shows the proportion of the sample free of chronic disease, and the differences between the three sub-districts. In general, quite a large proportion of elderly (78%) had at least one chronic disease. Brasilandia, however, had a significantly higher proportion (87%) and Aclimacao a significantly lower proportion (64%). Unlike the disability score, the proportion of the elderly reporting at least one chronic disease varied neither with sex nor with age.

3.1.4 - Mental Health Status

The mental health screening component, was the only part of the questionnaire that was validated by independent

Table - 3.1.6

NUMBER OF CHRONIC ILLNESSES REPORTED BY THE SUB-DISTRICT OF
RESIDENCE (PERCENTAGE DISTRIBUTION)

CHRONIC ILLNESS	SUB-DISTRICT			TOTAL
	BRASILANDIA	V.GUILHERME	ACLIMACAO	
None	13	21	36	22
1 - 2	50	41	53	48
3 - 4	26	25	10	21
5 or more	12	13	1	9
TOTAL	100	100	100	100
Base (N=)	119	97	87	303

Chi-Sq. 29.29864

D.F. 6

p Value 0.0001

Missing cases 0

enquiry. A brief description is given of the results of the psychiatric survey used to validate the screening. Based on these results the sensitivity and specificity of the screening is presented and the true prevalence of psychiatric disorders calculated. Finally a profile of the "positive" cases identified in the mental health screening is given.

Validation survey

Of the 303 subjects, 292 answered the 15-item mental health screen within the questionnaire. A sub-sample of 91 subjects were interviewed by a psychiatrist within one week of the administration of the screening questionnaire, although a few interviews (n=2; 2%) had to be conducted after a longer interval. The sub-sample showed a similar socio-demographic profile to the main sample. Of 91 individuals interviewed 27 subjects (29.6%) were designated psychiatric "cases" and 64 subjects (70.4%) were regarded as "non-cases" according to the criteria suggested by Cooper & Schwarz (1982) (Blay & Ramos & Mari, 1987). The psychiatric "cases" among the elderly community residents were primarily diagnosed as depressive states, anxiety disorders, and organic brain syndromes. None was diagnosed as psychotic. Among the 27 psychiatric "cases" there was at least some confidence in the diagnostic decision in 93% and the need for a psychiatric intervention was considered important.

Sensitivity and Specificity of the Mental Health Screening

The best cut-off point, i.e., the best trade-off between sensitivity and specificity, was found to be 6/7 positive answers in the 15-item screening and 68 subjects (23%) of the total screened sample (n=292) scored higher than 6 (3). With that "cut-off" point, the validity coefficients (validation sample data precede total sample data) were as follows: sensitivity 70% and 61%; specificity 84% and 89%; positive predictive value 87% and 87%; and overall misclassification rate 19% and 18% (3).

None of the false positives received a psychiatric diagnosis and consistently presented a low severity rating in the psychiatric interview. The false-negatives represented a sample of elderly persons with a symptom profile with minimum intensity or severity which might not cause any significant distress to the subject, and so, not be reported in the questionnaire. There was no association between sex and misclassification by the screening questionnaire (Blay & Ramos & Mari, 1987).

Footnote (3) - Adjusting the threshold score for the mental screening to 5/6, an increase in sensitivity is obtained (to 78%) by subtracting 2 of the false-negatives, at a costly increase of the overall misclassification rate of the test up to 25%. Thus, little gain would be obtained in reducing the false-negatives by decreasing even more the screening cut-off point, since 4 out of 8 false-negatives had a score of 4 or less in the questionnaire.

True Prevalence of Psychiatric Disorders

The estimated prevalence of psychiatric disorders among the elderly screened in the total sample was 23% (n=68).

However, based on the results obtained in the validation study of the screening instrument, the true prevalence was calculated applying the following equation, used previously in a psychiatric community survey in Sao Paulo (Mari, 1985):

$$tp(e) = p1*p3 + p2*q3 \quad \text{where,}$$

tp(e) = the estimate of the true prevalence

p1 = the positive predictive value in the interviewed sub-sample.

p2 = the proportion of screened negatives which are cases in the interviewed sub-sample.

p3 = the probable prevalence estimated in the screened sample.

$$q3 = 1 - p3$$

$$tp(e) = 0.66*0.23 + 0.13*0.77$$

$$tp(e) = 0.2519$$

Thus, the true prevalence of psychiatric disorder among the elderly in the sample was 25%, slightly higher than the estimated prevalence (23%). For analytical purposes, however, only the estimated prevalence of mental 'cases' will be considered.

Socio-Economic and Socio-Demographic Characteristics of the
Mental 'Cases'

Table 3.1.7 shows the relationship between being psychiatrically disturbed, as assessed by the mental health screening, and the main socio-economic and socio-demographic variables. Age and gender have not shown a significant association with the mental state of the elderly. A rural origin, however, was associated with psychiatric disorder - the prevalence among those coming from a rural area (31%) was almost twice that among elderly people born in an urban area (16%) ($p < 0.005$). As a rural origin is associated with being a relatively new-comer, the prevalence of psychiatric disorder is also associated with the duration of residence. Those living less than 5 years at the place of the interview showed a significantly higher prevalence of psychiatric disorder (31%) compared with those living at the place of interview for more than 5 years (20%) ($p < 0.04$).

A similar association existed between the occupational status of the elderly person and the prevalence of psychiatric disorder. Among those receiving "pensao vitalicea" (pensioners) the prevalence was four times higher (36%) than among those still working at the time of the interview (9%), and almost three times higher than among those retired (13%) ($p < 0.004$). In fact, those in the lowest per capita income group (earning less than US\$ 50 per

Table 3.1.7. - Association between estimated prevalence of psychiatric disorder among the elderly and the main socio-demographic and socio-economic variables (age, sex, place of birth, length of residence, occupational status, per capita income, social class status, and sub-district of residence) - percentage distribution.

Variables	Psychiatric Disorder (%)	Base (N=)	Chi-Sq. (DF)	Signif.
Age-group			2.27996 (3)	N.S
65-69	27	104		
70-74	23	95		
75-79	23	48		
80 +	16	45		
Sex			1.26069 (1)	N.S
Males	20	118		
Females	26	174		
Origin			7.97908 (1)	p<0.005
Urban	16	149		
Rural	31	143		
Length of Residence			6.29526 (2)	p<0.04
< 5 years	31	49		
5 - 9	36	33		
> 10	20	210		
Total	23	292		

(Cont.)

Table 3.1.7. - Association between estimated prevalence of psychiatric disorder among the elderly and the main socio-demographic and socio-economic variables (age, sex, place of birth, length of residence, occupational status, per capita income, social class status, and sub-district of residence) - percentage distribution.

Variables	Psychiatric Disorder (%)	Base (N=)	Chi-Sq. (DF)	Signif.
Occupational Status			15.58011	p<0.004
Working	9	116		
Retired	13	70		
Housekeeper	28	74		
Pension	36	18		
Income (U\$/month)			11.99152	p<0.007
< 50	31	154		
50 - 99	17	69		
100 - 250	13	40		
> 250	9	23		
Social Class Status			13.80287	p<0.003
Class A	14	44		
Class B	11	72		
Class C	26	53		
Class D	32	122		
Sub-district			18.00217	p<0.0001
Brasilandia	36	116		
V.Guilherme	15	92		
Aclimacao	14	84		
Total	23	292		

month), had a prevalence of psychiatric disorder more than three times higher than in the highest income group (US\$ 250 or more per month) - 31% and 9% respectively ($p < 0.007$). Regarding social class, those in social class D had a prevalence (32%) more than twice that in social class A (14%) ($p < 0.003$). Accordingly the prevalence varied quite significantly between the three sub-districts. In Brasilia the prevalence of psychiatric disorder was more than twice that of Aclimacao - 36% and 14% respectively ($p < 0.0001$).

Mental Health and Physical Health

As shown in Table 3.1.8 the prevalence of psychiatric disorder was strongly associated with physical health status. Among those reporting more than five chronic illness, the prevalence of mental disorder (48%) was actually more than fifteen times higher than among the disease-free group (3%) ($p < 0.00001$). A significant difference was also found between the highly disabled (help needed for at least five ADL) and the disability-free group. The former had a prevalence of mental disorder (48%) four times higher than the latter (13%) ($p < 0.0003$).

Use of Health Services

Taking hospitalisation rates in the previous six months as an indicator of demand for specialised health services only

TABLE 3.1.8 - Association between psychiatric disorder and number of chronic illnesses reported and degree of disability - percentage distribution.

Variables	Psychiatric Disorder (%)	Base (N=)	Chi-Sq. (D.F)	Signif.
Reported Morbidity			25.77035 (3)	p<0.00001
None	3	63		
1 - 2	24	141		
3 - 4	31	61		
5 +	48	27		
Total	23	292		
ADL Score			18.77881 (3)	p<0.0003
Zero	13	108		
1 - 2	24	79		
3 - 4	35	54		
5 +	48	25		
Total	24	266		

the level of disability, and mental status showed significant associations with demand for health care. Generally speaking 16% of the total sample demanded hospital care in the previous 6 months (at least one day in hospital). However, among those with a disability score of five or more, 39% had been in hospital in the last six months - four times more than among those with disability score equal zero ($p < 0.003$). Among those considered to be psychiatrically disturbed 35% needed hospital care in the recent past - three times more than the hospitalisation rate of those considered to be 'normal' in the mental health screening ($p < 0.00001$).

Table 3.1.9 shows that the majority of the elderly population (54%) rely on the "Instituto Nacional de Previdencia Social (INAMPS) " (4) (the equivalent of the National Health Service in the UK, for instance) for health care. The rest of the population go either to a privately contracted doctor or service (24%) or to a series of public services outside the INAMPS (22%). Between the sub-districts, however, there were significant differences concerning the choice of services in case of need. The great majority of elderly people in Brasilia (77%), for instance, used INAMPS as their first option,

Footnote (4) - Apart from the INAMPS' network of secondary and tertiary services, each State, Sao Paulo in particular, has a State-owned network, usually providing primary health care. Moreover, in the case of Sao Paulo, there are several hospitals only for the civil servants, or for military personnel, for example, that account for the latter demand (see 2.2.1).

Table 3.1.9 - Sub-district of residence by type of health service (first option in case of a health problem) - percentage distribution

Subdistrict	Type of Health Service			Total (%)	Base (N=)
	INAMPS (NHS-like)	Private Doctor/ Insurance	Others		
	(%)	(%)	(%)		
Brasilandia	77	8	14	100	119
V.Guilherme	55	23	23	100	97
Aclimacao	21	46	33	100	87
Total	54	24	22	100	303

Chi-square = 6802775

Degrees of Freedom = 4

Significance: $p < 0.00001$

Missing observations: 0

while in Aclimacao only a minority (21%) had chosen this as their first option. Conversely, in Aclimacao, almost half the elderly people (46%) would use a private service as a first option, something that only a tiny minority would do in Brasilia (8%) ($p < 0.00001$). Accordingly, among those reporting at least one chronic disease, there was a significantly higher proportion of people who had the INAMPS as their first option (58%) when compared with those free of chronic diseases (38%) ($p < 0.02$) (Table 3.1.10). The same applied to the psychiatrically disturbed who in 74% of the cases had the INAMPS as the first option compared with 48% of those with a negative mental health screening ($p < 0.001$).

3.1.5 - Family Support for the Elderly in the Community

Analysis of marital status showed half the sample (50%) to be married at the time of the interview, 43% widowed, and 7% single or separated. Although there seemed to be more married people in Aclimacao and Vila Guilherme than in Brasilia, the differences were not significant. There was, however, a highly significant association between being male and married (78%) and being female and widowed (58%) ($p < 0.0001$) (Table 3.1.11).

Being childless was an uncommon event (8%), clearly associated with the socio-economic status. In Brasilia, for example, only 5% of the elderly were childless, with more than 73% having more than 5 children. Whereas, in

Table 3.1.10 - Number of chronic illnesses reported by the type of health service (first option in case of a health problem) - percentage distribution

Chronic Illnesses	Type of Health Service				Base (N=)
	Inamps (NHS-like) (%)	Private Doctor/ Insurance (%)	Others (%)	Total (%)	
No	38	32	30	100	66
Yes	58	22	20	100	237
Total	54	24	22	100	303

Chi-square = 8.60141

Degrees of Freedom = 2

Significance: p < 0.02

Missing observations: 0

TABLE 3.1.11. - Association between marital status of the elderly and gender - percentage distribution.

Variables	Marital Status (%)			Total	Base
	Married	Widowed	Others		
Sex					
Males	78	20	2	100	125
Females	31	58	11	100	178
Total	50	43	7	100	303

Chi-Square = 64.31873

Degrees of Freedom = 2

Significance: $p < 0.0001$

Aclimacao, nearly 13% were childless, and only 16% had more than 5 children ($p < 0.0001$). The size of the family was, in fact, rather large in the total sample with an average of 5.4 children reared in the past (children brought up but not necessarily biological offspring of the elderly person), and a maximum of 25 children in one single family. The number of children alive at the time of the interview was also high with an average of 3.8 children per family, ranging from zero to 14 children. Table 3.1.12 shows that in Brasilia, for instance, the average number of children nurtured was 7.9 (ranging from zero to 25), and the number of children alive at the time of the interview was 5.2 (ranging from zero to 14). In Aclimacao, on the other hand, the average family reared three children (ranging from zero to 13), and had an average of 2.5 children alive at the time of the interview (ranging from zero to 9), suggesting that in Aclimacao people have less children but have a higher chance of having them alive in old age when compared with Brasilia.

Household Type

Only 12% of the elderly were living alone. A substantial majority were living with at least one other person (88%) - 34% with just one other person, 19% with two others, and 35% had at least 3 other persons in the household. Of the married people, 49% were living with their spouse only, 30% lived with their spouse and children, 10% with children and

Table 3.1.12 - Mean number of children reared in the past and alive at the time of the interview by sub-district of residence and household type of the elderly person.

Variables	Children					
	Reared (mean)	Stand. Deviat.	Range	Alive (mean)	Stand. Deviat.	Range
Sub-district						
Brasilandia	7.9	(5.2)	0-25	5.2	(3.3)	0-14
V.Guilherme	4.6	(3.7)	0-22	3.5	(2.6)	0-13
Aclimacao	3.0	(2.6)	0-13	2.5	(2.0)	0-9
Household Type						
One-generation	3.7	(3.7)	0-21	2.8	(2.4)	0-10
Two-generation	6.8	(4.8)	1-23	4.9	(3.1)	1-14
Three-generation	6.9	(4.9)	1-25	4.8	(3.0)	1-14
Alone	4.6	(4.1)	0-14	2.8	(2.3)	0-8
Total	5.4	(4.6)	0-25	3.8	(3.0)	0-14

grandchildren, and 5% with children, grandchildren and in-law. The remaining 6% of married people were living with at least one non-family person plus different combinations of family members. From the other half of the sample (widowed, single and separated elderly) 24% were living alone. Among those not married and not living alone, 82% were living with their children (33% were living with children only and 49% with children and grandchildren).

Those living with their children (with or without the spouse) were considered to be in two-generation households, and those living with children and grandchildren (with or without the spouse) were considered to be in three-generation households. Of the total sample, 32% were living in a one-generation household, 28% in a two-generation household, 28% in a three-generation household, and 12% lived alone.

Three-generation households were strongly associated with a high fertility rate as opposed to one-generation households and households of people alone. The average number of surviving children among the elderly living in three-generation households (4.8) was almost twice the average for those in one-generation households (2.8) or those living alone (2.8) (see Table 3.1.12).

Table 3.1.13 shows the relation of household type with the main socio-demographic and socio-economic variables. Age did

not show a significant association with the household type. In terms of gender, women seemed more likely to be living either alone (18%) or in a three-generation household (34%), whereas men were mostly living in one (43%) and two-generation households (34%) ($p < 0.00001$). However, the significance of this association is likely to disappear if controlling for marital status. Most married elderly (likely to be men) were living in one-generation households (55%) compared with only 3% of the widowed. Conversely, the greater majority of widowed elderly (likely to be women) were living in three-generation households (46%) compared with only 15% of the married. Single or separated elderly were mostly living alone (46%) ($p < 0.00001$).

Variables associated with the socio-economic status also showed significant associations with the household type. Those with a rural background were living mainly in two-generation households (37%) compared with those with an urban background that were living mainly in one-generation households (43%) ($p < 0.0002$). For the recent comers (less than five years of residence), the tendency was also to live in multigeneration households - 40% lived in three-generation households compared with 25% of those with more than 10 years of residence ($p < 0.01$). Accordingly there was a significant association between living in Brasilandia and in a three-generation household (34%), and living in Vila Guilherme and Aclimacao and in one-generation households (37% and 43% respectively) ($p < 0.01$).

Table - 3.1.13

ASSOCIATION BETWEEN THE HOUSEHOLD TYPE AND THE MAIN SOCIO-DEMOGRAPHIC VARIABLES (AGE; SEX; MARITAL STATUS; PLACE OF BIRTH; LENGTH OF RESIDENCE; AND SUB-DISTRICT OF RESIDENCE (PERCENTAGE VARIABLES))

VARIABLES	HOUSEHOLD TYPE				BASE (N=)	CHI-SQ.	D.F.	p VALUE	
	ALONE	1 GEN	2 GEN	3 GEN					
AGE (YEARS)	65-69	11	28	37	24	103	9.15212	9	N.S.
	70-74	12	38	25	25				
	75-79	14	31	26	29				
	80+	15	28	20	37				
SEX	Males	5	43	34	18	125	26.10932	3	<0.00001
	Females	18	24	24	34				
MARITAL STATUS	Married	0	55	30	15	152	131.6595	6	<0.00001
	Widowed	22	3	29	46				
	Single/separ.	46	27	9	18				
ORIGIN	Urban	12	43	19	27	147	19.8997	3	<0.0002
	Rural	13	21	37	29				
LENGTH OF RESIDENCE (YEARS)	5	22	16	22	40	50	16.39172	6	<0.01
	5 - 9	3	34	37	26				
	10+	12	35	28	25				
SUB-DISTRICT	Brasilandia	16	20	30	34	118	16.51775	6	<0.01
	V.Guilherme	7	37	32	23				
	Aclimacao	12	43	22	23				
TOTAL		12	32	28	28	294			

Informal Care

In general terms, the greater majority of the elderly living in the community in Sao Paulo had help with domestic duties (89%), just over one tenth had help with personal care (14%) and about one-fifth had nursing help (22%).

Groups with a higher than average prevalence of domestic help were: men (98% had someone to help with domestic duties) ($p < 0.0002$), those married (95%) ($p < 0.004$), and those living in Aclimacao (95%) ($p < 0.05$). In terms of the household type, the significant feature was the low availability of domestic help for those living alone (63%) ($p < 0.00001$). Neither the age, nor the disability score, nor the mental health status seemed to influence the availability of this kind of help (Table 3.1.14.a).

Groups with a higher than average prevalence of personal help were: men (18% had personal help) ($p < 0.05$), the very old (27% of the over 80s) ($p < 0.01$), those living in Brasilandia and Vila Guilherme (15% and 19% respectively) ($p < 0.03$), and those living in three-generation households (25%). It is important to notice that none of those living alone were receiving this type of help ($p < 0.0003$). The strongest association, however, was with the disability score. Among those needing help with more than five ADL, 86% received personal help ($p < 0.00001$) (Table 3.1.14.b).

Table - 3.1.14.a

AVAILABILITY OF HELP WITH DOMESTIC DUTIES FOR THE ELDERLY AT HOME BY SEX, AGE, MARITAL STATUS, SUB-DISTRICT OF RESIDENCE, HOUSEHOLD TYPE, DEGREE OF DISABILITY, AND MENTAL HEALTH STATUS OF THE ELDERLY PERSON

VARIABLES	DOMESTIC HELP (%)	BASE (N=)	CHI-SQ.	D.F.	SIGNIFICANCE (p <)
SEX	Male	98	14.35338	1	0.0002
	Female	83			
AGE (YEARS)	65-69	85	6.71575	3	N.S.
	70-74	91			
	75-79	86			
	80+	98			
MARITAL STATUS	Married	95	10.96485	2	0.004
	Widow	85			
	Other	77			
SUB-DISTRICT OF RESIDENCE	Brasilandia	85	5.76985	2	0.05
	V.Guilherme	89			
	Aclimacao	95			
HOUSEHOLD TYPE	One Gen.	94	27.56956	3	0.00001
	Two Gen.	90			
	Three Gen.	94			
	Alone	63			
DEGREE OF DISABILITY	None	87	4.18801	3	N.S.
	1 - 2	89			
	3 - 4	90			
	5+	100			
MENTAL HEALTH STATUS	Case	84	1.82508	1	N.S.
	Non-case	91			
TOTAL		89	303		

Table 3.1.14.b

AVAILABILITY OF HELP WITH PERSONAL CARE FOR THE ELDERLY AT HOME BY SEX, AGE, MARITAL STATUS, SUB-DISTRICT OF RESIDENCE, HOUSEHOLD TYPE, DEGREE OF DISABILITY, AND MENTAL HEALTH STATUS OF THE ELDERLY PERSON

VARIABLES	PERSONAL CARE (%)	BASE (N=)	CHI-SQ.	D.F.	SIGNIFICANCE (p <)
SEX	Male	18	3.63149	1	0.05
	Female	10			
AGE (YEARS)	65-69	9	10.95004	3	0.01
	70-74	10			
	75-79	18			
	80+	27			
MARITAL STATUS	Married	13	1.96535	2	N.S.
	Widow	16			
	Other	5			
SUB-DISTRICT OF RESIDENCE	Brasilandia	15	6.85787	2	0.03
	V.Guilherme	19			
	Aclimacao	6			
HOUSEHOLD TYPE	One Gen.	17	18.70872	3	0.0003
	Two Gen.	6			
	Three Gen.	25			
	Alone	0			
DEGREE OF DISABILITY	None	3	139.5617	3	0.00001
	1 - 2	10			
	3 - 4	7			
	5+	86			
MENTAL HEALTH STATUS	Case	10	4.64285	1	0.03
	Non-case	21			
T O T A L		14	303		

Groups with a higher than average prevalence of nursing help were: those aged 75-79 (35%) ($p < 0.07$), those living in Brasilia (29%) ($p < 0.01$) and those living in three-generation households (33%) ($p < 0.05$). Like personal help, the main determinant of nursing help seemed to be the disability score - 86% of those needing help to perform at least five ADL were receiving nursing help ($p < 0.00001$) (Table 3.1.14.c).

The Informal Carers

The great majority of the people supporting the elderly living in the community were family members - spouses in particular. Table 3.1.15 shows, for each of the three types of care (housework, personal care, nursing) the relative proportion provided by the spouse, family members, hired services and the various combinations of these. Help with the housework, for instance, was associated with the greatest proportion of hired people involved (26% of those having domestic help had a maid at home - maid only, spouse and maid, or family member and maid), whereas personal and nursing care were mostly given by family members. Personal care, in particular, seemed to be very much a family responsibility, with 93% of the elderly receiving care from family members only (spouse included). None of the elderly interviewed used only privately hired services to secure personal help.

Table - 3.1.14.c

AVAILABILITY OF HELP WITH NURSING CARE FOR THE ELDERLY AT HOME BY SEX, AGE, MARITAL STATUS, SUB-DISTRICT OF RESIDENCE, HOUSEHOLD TYPE; DEGREE OF DISABILITY; AND MENTAL HEALTH STATUS OF THE ELDERLY PERSON

VARIABLES	NURSING HELP (%)	BASE (N=)	CHI-SQ.	D.F.	SIGNIFICANCE (p <)
SEX	Male	23	1.60444	1	N.S.
	Female	21			
AGE (YEARS)	65-69	15	12.6066	3	0.07
	70-74	18			
	75-79	35			
	80+	31			
MARITAL STATUS	Married	20	1.89378	2	N.S.
	Widow	25			
	Other	23			
SUB-DISTRICT OF RESIDENCE	Brasilandia	29	8.49450	2	0.01
	V.Guilherme	24			
	Aclimacao	12			
HOUSEHOLD TYPE	One Gen.	20	7.5746	3	0.05
	Two Gen.	20			
	Three Gen.	33			
	Alone	14			
DEGREE OF DISABILITY	None	6	87.05461	3	0.00001
	1 - 2	22			
	3 - 4	28			
	5+	86			
MENTAL HEALTH STATUS	Case	27	1.03838	1	N.S.
	Non-case	20			
T O T A L		22	303		

Table 3.1.15

TYPES OF INFORMAL CARE AND THE RELATIONSHIP OF THE CARERS WITH THE ELDERLY

INFORMAL CARE	SPOUSE (%)	FAMILY (%)	MAID (%)	SPOUSE & FAMILY (%)	SPOUSE & MAID (%)	FAMILY MAID (%)	T O T A L		TOTAL (%)
							OTHER (%)	HELP (%)	
HOUSEWORK	75 (28)	95 (35)	31 (11)	24 (9)	18 (7)	22 (8)	5 (2)	270 (89)	303 (100)
PERSONAL	13 (32)	23 (56)	0 (0)	2 (5)	1 (2)	1 (2)	2 (2)	41 (14)	303 (100)
NURSING	16 (24)	41 (61)	3 (4)	2 (3)	2 (3)	0 (0)	3 (4)	67 (22)	303 (100)

Perceived Sociability

The sociability of the elderly was analysed in terms of the number of persons that the elderly reported they could visit or be visited by at any time; the number of visits during the week prior to the interview and the existence of a confidant.

Tables 3.1.16(a) and 3.1.16(b), show the percentage distribution of the above mentioned variables, for each sub-district and for each household type respectively. The total sample showed a high level of sociability, with three quarters of the elderly having five or more people they could visit, and 80% reporting at least one visit during the week prior to the interview. In terms of close relationships, 60% had someone to confide in. Between the three sub-districts there were significant differences regarding the sociability of the elderly - greater sociability in Aclimacao when compared with Brasilandia. In Aclimacao 88% of the elderly had at least five people to visit at any time whereas in Brasilandia only 60% were in that position ($p < 0.00001$). Those who had at least one visit in the week prior to the interview represented 85% of the sample in Aclimacao and 74% in Brasilandia ($p < 0.0001$). In terms of having someone to confide in, the differences were more pronounced - 80% in Aclimacao compared with 51% in Brasilandia ($p < 0.0002$).

Table 3.1.16.a

SOCIABILITY OF THE ELDERLY PERSON AND THE SUB-DISTRICT OF RESIDENCE (PERCENTAGE DISTRIBUTION)

VARIABLES		TOTAL (N=)	BRASILANDIA (N=)	V.GUILHERME (N=)	ACLIMACAO (N=)	CHI-SQ. (D.F.)	P VALUE
PEOPLE TO VISIT BASE (N=)	5 or +	75 (300)	60 (116)	80 (97)	88 (87)	27.82529 (4)	0.00001
VISITS LAST WEEK BASE (N=)	1 or +	80 (302)	74 (119)	83 (96)	85 (87)	27.32987 (6)	0.0001
PEOPLE TO CONFIDE BASE (N=)	Yes	60 (286)	51 (116)	55 (92)	80 (78)	17.19456 (2)	0.0002

In terms of sociability, the household type showed a rather paradoxical effect. There was a tendency to have fewer friends to visit, and fewer people to confide in amongst those living in a three-generation households when compared with the average for the total sample. Table 3.1.16(b) shows that the proportion reporting at least one visit in the last week is significantly higher among those living alone (97%) and the lower among those living in three-generation households (74%) ($p < 0.007$). In terms of having someone to confide in, the three-generation household played a paradoxical role. In general, 60% of the elderly had someone to confide in, with a tendency for this percentage to increase amongst those living alone (67%) and in one-generation households (69%), and to decrease substantially among those living in three-generation households (45%) ($p < 0.02$).

3.1.6 - The Subjective Well-Being of the Elderly

Four subjective measures of well-being were considered:

- 1) Perceived Financial Situation
- 2) Perceived Health Status
- 3) Perceived Loneliness
- 4) Perceived Life Satisfaction

Perceived Financial Situation

When asked: "Do you earn enough for a living" ?, the

Table 3.1.16.b

SOCIABILITY OF THE ELDERLY PERSON AND THE HOUSEHOLD TYPE (PERCENTAGE DISTRIBUTION)

VARIABLES		TOTAL (N=)	HOUSEHOLD TYPE (GENERATIONS)			THREE (N=)	CHI-SQ. (D.F.)	p VALUE
			ALONE (N=)	ONE (N=)	TWO (N=)			
PEOPLE TO VISIT	5 or +	75 (291)	75 (36)	78 (94)	81 (82)	65 (79)	7.43365 (6)	N.S
VISITS LAST WEEK	1 or +	80 (293)	97 (36)	80 (94)	81 (83)	74 (80)	22.64396 (9)	0.007
PEOPLE TO CONFIDE	Yes	60 (299)	67 (36)	69 (86)	61 (80)	45 (75)	10.08743 (3)	0.02

majority of the sample stated "no" (62%). Table 3.1.17 shows that among those earning less than US\$ 250 per month on a percapita basis this proportion was as high as 75% ($p < 0.00001$), the same as among those belonging to class D ($p < 0.00001$), and among those living in Brasilandia ($p < 0.0002$). There was also a significant tendency for the respondents from three-generation households to assert that they did not earn enough for a living (78%) while the opposite was true for those living in a one-generation household (54%) or alone (44%) ($p < 0.0009$). The answer to this subjective question, in fact, seemed a simple and reliable method of assessing people's socio-economic status.

Perceived Health Status

When asked "how is your health at the moment?", the elderly seemed to have a reliable perception of their own physical and mental status. There was a highly significant association between self-rating of "bad" and objectively being a positive case in the mental screening, or having a high disability score in the ADL section, or having at least one chronic disease in the referred morbidity section. As shown in Table 3.1.18 the prevalence of psychiatric disorder among those rating their health as "bad" was 62% - almost nine times more than among those rating their health as "good" (7%) ($p < 0.00001$). Similarly, among those rating their health as "bad" the proportion showing five or more disabilities in the ADL score (50%) was ten times higher

Table 3.1.17 - Perceived financial situation by per capita income (US\$/month), social class status, sub-district of residence, and household type - percentage distribution.

Variables	Do you earn enough for a living? "no" &	Base (N=)	Chi-Sq. (DF)	Significance
Per Capita (US\$/month)			36.58574 (3)	p<0.00001
> 250	17	24		
< 250	75	157		
Social Class Status			35.85515 (3)	p<0.00001
A	29	45		
D	75	122		
Sub-district of Residence			17.31556 (2)	p<0.0002
Aclimacao	47	87		
Brasilandia	75	117		
Household Type			16.75433 (3)	p<0.0008
Alone	44	36		
1 Generation	54	93		
3 Generation	78	81		
Total	62	300		

Table - 3.1.18

ASSOCIATION BETWEEN PERCEIVED HEALTH STATUS AND THE ESTIMATED PREVALENCE OF PSYCHIATRIC DISORDER; DEGREE OF DISABILITY AND NUMBER OF CHRONIC ILLNESSES REPORTED (PERCENTAGE DISTRIBUTION)

VARIABLES		HOW DO YOU RATE YOUR HEALTH AT THE MOMENT?			CHI-SQ.	D.F.	SIGNIFICANCE
		GOOD %	REGULAR %	BAD %			
MENTAL SCREEN	Non-Cases	93	70	38	43.5053	2	0.00001
	Cases	7	30	62			
	TOTAL	100	100	100			
	BASE (N=)	125	141	26			
ADL SCORE	Zero	57	29	15	78.61454	6	0.00001
	1 - 2	29	34	8			
	3 - 4	9	30	30			
	5+	5	7	50			
	TOTAL	100	100	100			
BASE (N=)	128	145	29				
REPORTED MORBIDITY	None	36	13	3	49.58264	6	0.00001
	1 - 2	48	43	45			
	3 - 4	13	28	21			
	5+	3	10	31			
	TOTAL	100	100	100			
BASE (N=)	128	145	29				

than among those rating their health as "good" (5%) ($p < 0.00001$). Again, the same sort of difference appeared when considering the number of reported illnesses. Among those rating their health as "bad" the proportion reporting five or more chronic illnesses (31%) was ten times higher than among those rating their health as "good" (3%) ($p < 0.00001$).

Perceived Loneliness

Almost half the sample expressed feeling of loneliness (48%) - 26% feeling lonely sometimes and 22% feeling lonely frequently. The variables that have shown a significant association with the feeling of loneliness were the socio-economic status, the living arrangements, and the mental status of the elderly person. Table 3.1.19 shows that the obvious association between the number of visits in the previous week and the feeling of loneliness was not a significant one. There was a significant tendency for the elderly to feel more frequently lonely in Brasilia (28%) than in Aclimacao (19%) ($p < 0.005$). Analysis of the experience of loneliness, showed the household type to play a rather inconclusive role. Again it did not confirm what seemed to be the obvious association - that people living in small, one-generation households felt more lonely than those living in large, three-generation households. There was, in fact, a non-significant tendency for those living alone to feel more frequently lonely (31%) than in any other

Table 3.1.19 - Perceived loneliness by the number of visits in the previous week, the sub-district of residence, household type and mental health status - percentage distribution

Variables	How often do you fell lonely ? 'Frequently' %	Base (N=)	Chi-Sq. Signific.
Visits last week			4.46913 NS (6)
None	33	45	
7 +	22	27	
Sub-district of Residence			15.08459 p<0.005 (4)
Brasilandia	28	113	
Aclimacao	19	58	
Household Type			10.92012 NS (6)
Alone	31	36	
1 Generation	19	68	
3 Generation	24	67	
Mental Health			32.06879 p<0.00001 (2)
Cases	38	64	
Non-cases	17	181	
Total	22	250	

group. The strongest association, however, was between the mental health status and the perceived loneliness. Among the positive cases in the mental health screening, the proportion feeling frequently lonely was 38%, more than twice the proportion among those with a negative mental health screening (17%) ($p < 0.00001$).

Perceived Satisfaction

Taking everything into consideration how would you describe your satisfaction with life in general? The majority of the elderly (56%) answered that they were having a lot of satisfaction with life in general, 32% were having a fair satisfaction, and 12% were having little satisfaction. The proportion having little satisfaction with life increased significantly among those living in Brasilia (18%) when compared with those living in Aclimacao (7%) ($p < 0.0002$); among those living alone (26%) and in two-generation households (18%) when compared with those living in one-generation households (6%) ($p < 0.02$); and among those classified as psychiatrically disturbed. Among the positive cases in the mental screening the proportion having little satisfaction with life was 32%, more than five times more than among the negative cases (6%) ($p < 0.00001$). As shown in Table 3.1.20 also the subjective evaluation of health was strongly associated with satisfaction with life. The proportion of elderly perceiving little satisfaction with life among those rating their health as bad (24%) was three

Table 3.1.20 - Perceived satisfaction with life in general and the sub-district of residence, household type, mental health status, perceived health status, and perceived loneliness - percentage distribution.

Variables	How would you say is your present satisfaction with life in general ? "Little" %	Base (N=)	Chi-Sq. (DF)	Signif.
Sub-district			22.31279 (4)	p<0.0002
Aclimacao	7	81		
V. Guilherme	9	91		
Brasilandia	18	115		
Household Type			14.97600 (6)	p<0.02
Alone	26	35		
1 Generat.	6	89		
2 Generat.	18	80		
3 Generat.	9	75		
Mental Health			64.96994 (2)	p<0.00001
Cases	32	66		
Non-cases	6	221		
Perceived Health			24.34012 (4)	p<0.0001
Good	8	123		
Bad	24	25		
Perceived Loneliness			34.87169 (4)	p<0.00001
Never	9	126		
Frequently	28	54		
Total	12	287		

times higher than among those rating their health as good (8%) ($p < 0.0001$). Similarly, the proportion perceiving little satisfaction with life among those feeling frequently lonely (28%) was three times higher than among those who never feel lonely (9%) ($p < 0.00001$).

The association between perceived satisfaction and these variables has been analysed above taking these variables in pairs. However, to assess the association between two of them controlling for the others it was necessary to use a hierarchical log-linear model (Nie et al., 1975). Table 3.1.21 presents an analytical model for the variables subdistrict of residence, household type, mental health status, degree of disability, and satisfaction with life controlling for the effect of everyone of them upon each other. The socio-economic status was significantly associated with the mental health status ($p < 0.0002$) and the household type ($p < 0.004$), and not with the independence on daily living. In fact, independence on daily living was significantly associated only with the mental health status ($p < 0.00001$). The variable life satisfaction seems to have a direct association with the mental health status ($p < 0.00001$) when controlling for the socio-economic, and the living arrangement.

Table 3.1.21 - Hierarchical log-linear model relating the variables sub-district of residence, household type, mental health status, degree of disability, and satisfaction with life in general.

Variables:

	Level
Sub-district (SUB)	3
Household Type (HOUSE)	3
Mental Health Status (MHS)	2
Degree of Disability (ADL)	2
Satisfaction with Life (SATISF)	2

The final model:

	Likelihood ratio Chi-square	DF	Significance
SUB x HOUSE	15.349	4	p<0.004
SUB x MHS	17.110	2	p<0.0002
MHS x ADL	17.457	1	p<0.00001
MHS x SATISF	25.515	1	p<0.00001

Goodness-of-fit test statistics

Likelihood ratio chi-square = 51.84829
 DF = 56
 p = 0.633

3.1.7 - Summary

Based on the data presented above the stereotype of the average elderly living in the community in Sao Paulo is:

A woman (59%), aged less than 75 years (67%), white (82%), with basic educational level (50%), born in an urban area (50%), living in a well preserved dwelling (66%), for more than 10 years (72%), retired (41%), earning less than US\$ 100 per month (78%), and belonging to social class C or D (60%). Significant differences, however, were found between the sub-districts. The tendency was for the elderly in Brasilia, when compared to the elderly in Aclimacao, to be: black, illiterate, born in a rural area, living in a slum or badly preserved dwelling, for less than 10 years, receiving "pensao vitalicea", earning less than US\$ 50 per month, and social class D.

The proportion of the elderly requiring help to perform the activities of daily living was higher for the Instrumental activities than for the Physical activities. Men showed a significant tendency to require help for Physical activities whereas women would require help for Instrumental activities. There was a significant tendency for the very old (80 +) to need more help than the young elderly (65-69). The Guttman scale constructed showed a significant coefficient of reproducibility (0.94). The disability score (based on the cumulative scale) showed that 10% needed help

with at least five activities (at least one Physical activity). The estimated prevalence of psychiatric disorder (23%) was significantly associated with: the sub-district, the place of birth, the reported morbidity, and the ADL score. The mental health screening showed a sensitivity of 61% and a specificity of 89%. The true prevalence of psychiatric disorder was 25%. The use of health services - proportion reporting being in hospital in the last six months (16%) - was significantly associated with: the ADL score, and the prevalence of psychiatric disorder.

Being married was significantly associated with being a man and being widowed was significantly associated with being a woman. The family size showed an average of 5.4 children raised in the past and 3.8 children alive at the time of the interview, with a significant tendency to have more children in Brasilia when compared with Aclimacao. Only 12% of the elderly were living alone. Multigeneration households accounted for more than half the sample (56%). There was a significant association between living in a three-generation household and: being widowed, living in Brasilia, and living in the place of interview for less than five years. The great majority of the elderly had help with domestic duties (89%), but only 14% had help with personal activities, and 22% had nursing care. The first type of help was mainly associated with the household type. Both personal and nursing help were basically associated with the degree of disability.

In terms of sociability the great majority of the elderly had at least five people they could visit (75%), had received at least one visit in the week prior to the interview (80%), and had someone with whom to confide (60%). There was a significant tendency for the elderly in Aclimacao to show a higher sociability when compared with Brasilia.

In terms of the perceived health status it showed a strong association with the objective assessment (ADL score and mental health screening). The perceived well-being of the elderly showed the elderly in three-generation households to be less financially secure, less sociable, and having less satisfaction with life than those living alone or in one-generation households. The log-linear model that best fitted the dimension variables has shown the mental health status and the household type to be significantly associated to the sub-district of residence, while the degree of disability only holds a significant association with mental health status. When controlling for all these variables at the same time the perceived satisfaction with life seemed to be associated mainly with the mental health status.

PART IV - DISCUSSION AND CONCLUSIONS

The well-being of an elderly person appeared to be a complex function of several interacting and interdependent dimensions: socio-economic status; independence in daily living activities; physical and mental health status; and family support. As stressed in the literature, only a multidimensional functional assessment could accurately portray the elderly in a meaningful way as far as the planning for health and social services is concerned (Maddox, 1972; Duke University, 1978; Maddox, 1979; Kane and Kane, 1981; Fillenbaum, 1984).

The present survey developed a sound and feasible methodology for multidimensional functional assessment of the elderly living in the community in urban centres in Brazil. The sampling method based on the Atlantida Plan (US Bureau of Census, 1966) proved feasible in the urban context of Sao Paulo. The main socio-demographic characteristics of the sample were comparable with what one would expect based on census data for Sao Paulo. For instance, the proportion aged 75 or more in the sample (33%) was just slightly over the estimate from the census for Sao Paulo, in 1985 (30%) (SEADE, 1984). The ratio between men and women (males/females) in the sample (0.7) was almost the same as for the over 65 population of Sao Paulo (0.69).

Apart from Aclimacao, non-response rates for the sample as a whole and for each sub-district stayed below what has been generally agreed to be an acceptable non-response rate (10%) for a community survey (Baker and Rose, 1974). Even in Aclimacao where the non-response rate was the highest (20%) it was less than the accepted non-response rate for the General Household Survey (GHS) in Great Britain, for instance. If only the complete interviews are considered, the accepted non-response rate for the GHS can be as high as 32% (OPCS, 1984). The relatively high non-response in Aclimacao, however, can be interpreted as a natural outcome of the widespread fear of robbery and assaults that prompted the development of heavily protected condominiums which prevent a casual interviewer from having direct access to the inhabitants of the apartments. Hence a potentially important bias such as non-response can be socially induced, making households surveys each day more difficult, especially if the wealthy population is to be included in the survey.

The responses to the ADL set of questions showed a good reliability, measured by the coefficient of reproducibility on the Guttman Scale (see 3.2.1). Similar to other studies done elsewhere (Wright et al., 1981; Williams, 1979; Williams et al., 1976; Lawton and Brody, 1969; Rosow and Breslau, 1966), the pattern of disability found among the elderly in Sao Paulo followed the progression of the development of these basic functions in children, as pointed

out by Katz and Akpom (1976). For instance, an elderly person in the sample that could not eat without help also could not dress without help, a pattern similar to that of a young child too young to eat unaided, and thus not able to dress without help.

As expected since the pilot study two of the activities presented response bias and had to be excluded from the Guttman scale: preparing a meal and doing the housework (see 2.2.2 and 3.1.2). Both had a great deal of 'never done it' as an answer, mainly from males in the sample living either in Aclimacao or Vila Guilherme. The assumption is that elderly men in Vila Guilherme and Aclimacao are more likely to come from backgrounds where these activities were either done by the mother, wife, or a hired maid than those in Brasilia. Curiously, the cross-national survey conducted by Andrews et al. (1986) in four countries in the Western Pacific had similar problems with one of these activities: preparing a meal. In their view, the cultural factors more than the degree of difficulty in performing the activity were most important in influencing the responses.

The responses to the 15-item mental health screening showed a poor sensitivity (61%) (high rate of false positives) and a good specificity (89%), thus having a good negative predictive value (87%), which is essential for a community screening. In the present study no relationship was found between socio-demographic factors and misclassification by

the screening questionnaire. However, there is evidence from other validation studies, that screening questionnaires do not work as well in the community as they do in general practice (the identification of true normals, tends to be higher in "non-consulting" settings (Mari, 1986). The appreciably lower sensitivity (61%) accompanied by a good specificity (89%) might therefore be primarily related to the fact that the validation of the screening was based on a community sample. The same screening had been validated before in the USA (Fillenbaum and Smyer, 1981; Duke University, 1978) and showed poorer results than the other dimensions. The present results, however, call for further investigation on the internal consistency of the items, before the screening could be recommended as a separate instrument for community assessment of mental health among the elderly (Blay, Ramos and Mari, 1987).

Concerning the physical health assessment, the reported morbidity has not been validated due to inherent problems affecting this type of assessment. As mentioned before, cultural aspects, previous contacts with the health system, as well as the mental health of the respondent, are all confounding variables affecting responses (Balinsky and Berger, 1975; Culyer, 1978). An attempt, made in this survey to validate the physical health section by comparing the reported illnesses with independent observations of two doctors examining the elderly in the community, failed

because there was no agreement on how to deal with the question of prognosis. For instance, an asymptomatic elderly person reporting no diseases, can have an abdominal tumour, only brought to light by the medical screening but not necessarily denying the general status of good health informed by the elderly person. Whether or not to place the prognosis as a major factor in the medical evaluation is something likely to divide medical opinion. And that can make all the difference in terms of the number of false negatives given by the screening questionnaire. The validation of the OMFAQ (Duke University, 1978) does not specify how this problem was tackled. The results concerning reported morbidity were thus treated with caution.

Another important finding was the high correlation between the objective assessments and the subjective perception of the elderly person about his or her health status, financial situation, social integration and life satisfaction. Confirming what has been described in the literature, the perceived health status, in particular, appeared to be an extremely useful clinical guide as to their overall health status (Linn and Linn, 1980). That suggests that it might be possible to construct a short version of the BOMFAQ, based mainly on the subjective perceptions of the elderly, to be used routinely for continuous assessment. The threshold between life in the community and institutionalisation which is a fundamental piece in the jigsaw concerning the well-being of the elderly, can only be determined through

continuous assessment.

The most important finding, however, concerns the significant differences between the poor and the wealthy sub-districts (Brasilandia and Aclimacao). The stratification process using the sub-districts as social class strata (see 2.3.1) have successfully selected totally different populations concerning social class, and social class dependent variables. The variable representing the socio-economic status of the elderly - the sub-district of residence - correlated well with the other socio-economic variables. The implications of this may be far-reaching in terms of socio-economic analysis. A geographic stratification by social class turns the concept of social class operational and encompasses the roles of income, personal assets, educational level, occupational status, migration history, and housing conditions on the person's life. In the particular case of the elderly, such stratification overcomes the problems of classifying the elderly by social class using their occupation, which has been shown to be problematic when dealing with people that are no longer economically productive (Wright, 1978). The elderly, in particular, seemed a good indicator of the socio-economic status of the area, as the proportion of elderly in the total population showed a good correlation with income and sanitation of the area. Such a strong association suggests that stratification by social class can be further simplified by using the elderly themselves

as an indicator. Areas with a high proportion of elderly people are likely to be areas where the majority of the population, at least the elderly population, have high income, good housing conditions, good education and basic amenities. Whether this stratification holds true for other cities and indeed other countries is a matter that deserves further investigation.

4.1.1 - Class Profile of the Elderly Population in Sao Paulo

If the length of residence at the place of the interview is taken as an indicator of integration (Shanas, 1968), the elderly in Brasilandia were less integrated than those in Aclimacao and Vila Guilherme. One apparent reason for this is the significantly higher proportion of people born in rural areas, who had settled in Brasilandia. Like most peripheral urban areas, Brasilandia is a receiving area for internal migrations and this is likely to add to the socio-economic constraints associated with life in Brasilandia ie. the burden of family separation, as a consequence of the migration process. As mentioned before, a quarter of the population in Sao Paulo, in 1980, had been born elsewhere, and had been living there for less than 10 years (see 1.2.1). This lack of roots in such an urban centre may prove to be a key issue influencing the well-being of the elderly living in poor peripheral areas (Veras et al., 1987). Moreover, the fertility rates among these migrants arriving in Brasilandia tend to decrease after

settling in an urban centre like Sao Paulo (Arriaga, 1970; Iutaka, 1971; Merrick, 1974). The tendency is for the migrants to have less children than they would probably have had in their place of origin, thus, tending to aggravate even further the lack of familial support in the future.

In terms of occupational status, those who were retired were materially better off. Although retirement is generally associated with a reduction in the socio-economic status in affluent countries (Jefferys, 1977; Phillipson, 1982), in countries where the majority of the population lives below the poverty line, retirement is a privilege. This is reflected in the higher proportion of retirees in Aclimacao, and the fact that 71% of those in the highest income group were actually retired people. Those who were still working also seemed to enjoy good financial status, and again, Aclimacao had the highest proportion of elderly at work. Being a housekeeper, usually meant being either a wife or the widow of a retired husband, which again led to a reasonably good socio-economic situation, and was most common in Aclimacao. The worst off were undoubtedly the old-age pensioners who, in 89% of the cases, were in the lowest income group, and lived mostly in Brasilandia (86%). These are the underprivileged elderly on all criteria. Living in an area lacking basic urban facilities (eg. sewers), they are relatively new comers to the city (coming from rural areas) and are therefore likely to reach old age without a retirement pension, and having to live on an old

people's pension (US\$ 38 per month).

Apart from the very low socio-economic status afflicting most of the elderly, there were the health problems to be considered. The majority of the elderly required some help to perform at least one ADL (61%). A rather high proportion if compared with the survey in four countries in the Western Pacific using the same instrument. There the proportion having difficulties with at least one ADL ranged from 9% in the Philippines to 29% in Korea (Andrews et al., 1986). As stressed before, the answers to these questions depend upon the way the question is posed, and in the present survey the elderly people were reminded of the difficulties involved in every ADL. In Sao Paulo, the proportion with a high disability score (difficulties in performing at least five ADL) was, in fact, much lower (10%) than the proportion requiring help with at least one ADL. Such level of disability, however, implied needing help for at least one of the personal physical activities like eating or bathing, for instance, and was incompatible with living alone in the community.

The level of dependency was much lower for performing physical activities such as going to the toilet than instrumental activities like shopping. As the former are simpler, and at the same time extremely personal, it is understandable that only a minority would require or accept help in performing them. It is difficult to say whether this

finding is comparable to what has been found in other countries. This is primarily because of the lack of comparability between different sets of activities, and different ways of computing the results, not to mention cultural factors influencing responses to the tests (see 1.4.2). In general terms, other studies using similar instruments showed similar results (Andrews et al., 1986; Wenger, 1986; Comptroller General, 1979; OPCS, 1982).

The differences found between the young and the old elderly in the ability to cope with the ADL - the older always being more dependent than the young - affected all the ADL and were in accordance with the findings of most surveys on disability performed elsewhere (eg. Andrews et al., 1986; Wenger, 1986; OPCS, 1982; Tinker, 1984; Bond and Carstairs, 1982; Hunt, 1978; Shanas, 1968).

Gender differences in the ability to cope with the ADL seemed to confirm the stereotype of the man who is more likely to leave home, travel, and handle money, and who is less willingly to give up these activities than the woman. On the other hand, self-care activities are more likely to be performed independently by women than by men. One can speculate at this point, that not only are these self care activities (eg. dressing and grooming) seen to be more important to women, but they also form a usual part of the women's long-standing routine inside the house. The increased prevalence of disabilities among women is in

agreement with studies done elsewhere (eg. Bond and Carstairs, 1982; Hunt, 1978; Shanas, 1968). Whether this is influenced by a greater readiness by women to report disability (men tended to report disabilities when incapacitated in several activities), is yet to be demonstrated.

One interesting finding was the lack of any significant differences between the elderly in Brasilandia and Aclimacao in the ability to perform physical activities. One possible explanation might be the tendency for those who cannot cope with the most basic physical activities to be withdrawn from the community. The decisive factor in such cases is likely to be the amount of help and personal care available. As those with less social support tend to be institutionalised (Smyer, 1980; Campos, 1981; Wright et al., 1981; Donaldson et al., 1983), a community survey is likely to portray a more independent population than is actually the case.

Associated with the level of disability there was a heavy load of chronic diseases, with almost 80% of the elderly people reporting at least one. The two most prevalent illnesses reported were hypertension and arthritis with a prevalence of 36% and 32% respectively. Although such data have shown limited reliability due to problems already discussed (see 1.4.2), these two illnesses have been found to be the most prevalent among the elderly in other studies

(eg. Comptroller General, 1979). Arthritis, in particular as a crippling disease, might be one of the main factors affecting the degree of disability.

In addition, one-quarter of the elderly seemed to have some sort of psychiatric disorder (25%). Among the elderly, mental health impairment was usually accompanied by functional impairment in other areas (social and economic resources, physical health, and activities of daily living). These findings agree with surveys conducted elsewhere on the importance of the mental health status for the well-being of the elderly (Blazer, 1982), and reinforce the need to assess the elderly person's functioning in a multidimensional way (Kane and Kane, 1981; Fillenbaum, 1984).

One important finding emerging from the present study, that should influence the rational planning of mental health services was that mental health problems appeared to be associated with the sub-districts. There are studies in the literature showing that mental health is related to social class (Almeida-Filho et al., 1984; Mari, 1986) but in this case the association with the sub-district encompassed the association with income and social class as defined in the survey. This means that the mental health of an elderly person is influenced by his or her social class, and physical health status, but, it also has to do with the environment in which a person lives. As suggested by Grimley

Evans (1984), poor sanitation and housing conditions, for instance, can aggravate the age-associated impairments.

Data from the present survey confirm the experience world-wide showing that this population of disabled, mentally ill, and physically ill people are those with a high risk of demanding institutional care (eg hospital care) (Barer et al, 1987; Wright et al, 1981; Campos, 1981; Smyer, 1980). Moreover, those presenting health problems are more likely to use the INAMPS as their first option in case of need whereas those free of physical or health problems seemed to make more use of private services. A clear indication that it is the public services in the health sector that have to be prepared for the increasing demand for long-term care.

The household type provided perhaps the most important data about the elderly in Sao Paulo. Despite the urban constraints to large families (Kennedy and Strokes, 1982; Beck and Beck, 1984), the elderly are still living mostly in multigeneration households (56%). This seemed to confirm the belief that the elderly in the Third World are still physically close to their families, living in the same household. However, the commonly held assumption that in the Third World the family provide the support and care that the elderly require is challenged by the results of this study. Although shelter and personal care are often supplied to the elderly poor in the context of multigeneration households, a fulfilled and happy old age is not ensured in

this circumstance.

Life in a multigeneration household was the norm for the elderly in Brasilandia (64%) and meant more personal and nursing care when compared to the elderly in one-generation households in Aclimacao. As suggested by other studies (eg. Taylor and Ford, 1983) the poor elderly seemed to have more social resources in old age. However, this apparent advantage of having the family closer and providing more help in daily life did not mean better health status or perceived well-being. On the contrary, it was the elderly in Aclimacao, living either alone or with the spouse who showed better health status and more satisfaction with life. The subjective well-being of the elderly in the present study, as suggested by Larson (1978), was strongly associated with: the sub-district of residence (wealth), the mental health status (health) and the household type (family support). Markides and Martin (1978) found health and income to be critical factors influencing life satisfaction both directly and indirectly through social interaction. Life in a multigeneration household was, in fact, associated with a lower level of satisfaction with life in general. The possible explanation for this apparent paradox is the lower socio-economic status found to be associated with the multigeneration household (Shanas et al., 1968; Wehl, 1977; Anderson, 1977; Mutran, 1985). Another factor that might influence life satisfaction in a multigeneration household is the attitude of the elderly. Apparently those who can

afford it prefer to live near but not in the same household as their children - intimacy at distance (Shanas, 1968; Anderson, 1977; Weihl, 1977; Fengler^{et al}, 1983; Sussman, 1985; Sundstrom, 1986; Timaeus, 1986; Dale et al., 1987). That seemed to be the case in Aclimacao where the greater proportion of the elderly were living with the spouse only and nevertheless having a more active and rewarding social life, with more friends, more social contacts, and more people to confide in. Hence elderly people experiencing old age in a poor environment like Brasilia, cannot count on the multigeneration household to buffer the disadvantages of life in poverty. It is therefore a dangerous policy to rely entirely on the inter-generation bonds still prevalent in Sao Paulo, for instance, in order to provide the care for the elderly. As Neysmith and Edwardh (1984) argue in relation to Third World countries, Sao Paulo must find the resources to meet the needs of more people over 60 than their counterparts in affluent countries; that because of the conditions of their earlier lives these people will probably be in poorer health than their peers in affluent countries; that most of these people will be migrants from rural areas thus never deeply rooted in the urban centre and always marginal to the work force. The last resort is the multigeneration household where the elderly becomes dependent on children who at best are earning marginal wages.

What has not been assessed in this survey is the burdensome situation of the carers in these multigeneration households. The problems of the emotional and physical stress likely to affect carers (Jones and Vetter, 1984) are probably aggravated by the poor quality of life associated with the sub-district of Brasilandia, in general, and the three-generation households in particular. Moreover, it is not possible with the present data to compare the amount of help given by the three-generation household with the help provided by the family network to those living alone or in one-generation households. People in Aclimacao seemed to have the care they need from the family without sharing the same household in a similar arrangement to what has been described in the more affluent countries (Shanas, 1973; Weihl, 1977; Dale^{etal}, 1987).

Although the sample contained a wealthy as well as a poor stratum (see 2.3.1), the average per capita income in households with elderly people was very low by any standards (US\$ 100 per month). Such level of income becomes even more worrying if one considers that Sao Paulo is the leading industrial centre in the country, attracting masses of people from the poorer parts of the country seeking jobs and better standards of living (see 1.2.2). However, based on the results it was possible to draw some contrasting stereotypes of the elderly living in the different sub-districts in the community in Sao Paulo.

In Brasilia the typical elderly person was a migrant from a rural area, illiterate and living in the place of the interview for less than ten years. This elderly person belonged to social class C or D, received only the old people's pension, and lived on an average per capita income of US\$ 32 per month. He or she was black, widowed, with a large family, living in very poor housing conditions with no sewers, and at least three other people in the household including children and grand-children.

In contrast, the typical elderly person in Aclimacao had an urban background, had at least a high-school degree and had lived in the place of the interview for more than ten years. This elderly person belonged to social class A or B, was retired and living on an average per capita income of US\$ 230 per month. He or she was white, married, with a relatively small family, living in good housing conditions with sewers, and lived with no more than one other person, usually the spouse.

In terms of health status the elderly in Brasilia reported more chronic diseases and had a higher chance of having a psychiatric disorder. Such differences in the general profile of the elderly living in Brasilia and Aclimacao give empirical support to the theory of Structural Dependency (eg. Walker, 1980; Townsend, 1981; Estes et al., 1982) of the elderly by which it is the socio-economic system the primary factor determining the quality of life

and well-being of the elderly. In other words the inequalities generated in the production system and expressed by social class, income and occupational differences determine the morbidity pattern and health related characteristics of the population. A profile of the elderly in each sub-district is, in fact, a class profile. As suggested by Breilh & Gandra (1982) it is a profile that holds social class as the main independent variable when analysing health status and, ultimately, the well-being of a population - epidemiological class profile. Public health policies can be directed towards target areas, which will demand specific policies bearing in mind the idiosyncrasies of each area. From the epidemiological standpoint the results of this survey indicate that any relevant analysis of the well-being of the elderly people has to consider as the main independent variable their socio-economic status.

4.1.2 - Future Research Priorities

The present study, as well as answering, has raised important questions for future research about the elderly in an urban industrial context like Sao Paulo.

The level of disability is clearly one of the limiting factors to life in the community. A high level of disability is incompatible with life alone and definitely requires personal help. What is the threshold between life in the community and institutionalisation is something that only a

carefully designed comparison between the two populations of elderly regarding the level of disability, can answer. The mental health status is a major intervening variable to be considered in association with the socio-economic status and the availability of help. Another area needing urgent research is the assessment of the physical health status through reported morbidity. Only a longitudinal study can throw some light on the reliability of reported morbidity in old age and its predictive value in terms of use of services, institutionalisation and death.

One important question concerns the historical trend of the family structure of the elderly population in an urban centre like Sao Paulo. Whether the proportion of multigeneration households is actually decreasing or increasing, in relation to the past, seemed a vital question as far as social policy for the elderly is concerned. Another question that could not be properly explored in the present study, but need further clarification, is the role of loneliness as a risk factor in old age. Comparisons between elderly people living alone or having little social contact, with elderly people having an active social life and attending leisure activities appeared to be vital for the understanding of the importance of social interaction in the preservation of mental health and independence in daily living of the elderly.

There is a need for more co-ordinated and regular assessments of the elderly population in different environments and stages of care. The PNAD is certainly the natural choice for a regular nation-wide survey among the elderly. Valid, reliable and simple screenings for disability, mental health, and family support have been developed and could be incorporated to the PNAD's survey. Based on such data, further studies about the adequate placement of the elderly (eg. home or residential or hospital care) are the natural development. How many hospital beds are being occupied by the elderly? For how long? For what reasons? and for which kind of treatment?, are just some of the questions that have to be answered if a sound policy for the care of the aged is to be implemented. Estimates of the costs of care for the elderly at the present are vital if any cost-benefit approach is to be applied to aid future policy decisions.

4.1.3 - Policy Implications

In a country of continental dimensions and great inter-regional inequalities, such as Brazil, the duality of an ever-growing elderly population, and a still large population of children and young adults is likely to be expressed in regional terms. The poorer regions having to maintain the control of infant mortality rates as their first priority, whereas the richer regions will probably have to place the care of the elderly as one of the most

important challenges in the remaining years of this century.

In Sao Paulo, despite the evidence showing the ageing of the population, the health system is still geared towards meeting the demand for maternal and infant care. This might lead to chaos as the demand for long term care inevitably increases. Still, there is not routinely aggregated data on consultations at the health centres, occupation of hospital beds, or per capita expenditure concerning the elderly population. The experience world-wide has shown that even with careful monitoring, the elderly are likely to weigh heavily on the health and social care budgets. Even assuming that under the present political and economic situation it is unrealistic to aim at major investments in the area of long term care or community services for the elderly, there is certainly room for better use of resources. The increase in the elderly population in Brazil has not been monitored in any sense, and there are plenty of reasons to believe that if this does not start to happen as a routine the chances of implementing any sound policy in the future will be very limited.

On the other hand, only a small minority of the elderly population actually need to be institutionalised, whilst the great majority are able to live their lives in the community with a variable amount of support from the family. The availability of family help, in fact, has been a matter of concern in most affluent countries were the family seemed

to have opted to live apart from the elderly, although not necessarily neglecting their care (Shanas, 1973; Wehl, 1977; Dale, 1987). The prejudice of seeing the care for an elderly parent as a 'burden' is often invoked as the reason why so many affluent countries have developed institutional and community care for the elderly. A kind of development that has not yet been foreseen in Third World countries, where family care for the elderly is believed to be a cultural choice socially reinforced (Tapia-Videla^y and Parrish, 1982).

However, contrary to some prevailing beliefs, it is the poor elderly person living in a multigeneration household that is most likely to put pressure on the health and social care systems. The factors influencing the threshold between life in a community and in an institution seemed to be the mental health status, the independence in daily living activities and the amount of help available at the community level (Wright et al., 1981; Wager, 1982). Although the multigeneration household has the potential for more personal and nursing care, the low socio-economic status associated with this household type tends to limit the resources needed to meet the demands of a disabled or mentally ill elderly person. If institutional shelter is not available in the form of residential care or shelter accommodation, the hospitals are likely to be seen as the main alternative of care. This holds particularly true for those living alone in Brasilia, for instance. The high proportion of migrants from rural areas creates the

potential for having a large number of elderly people without a supportive network of relatives. So far, in Sao Paulo, life in the community depends entirely on the ability of carers to cope with the care for their older relatives. There is thus plenty of room for extending life in the community, at the expenses of basic domiciliary services in a primary health care setting. As Nissel and Bonnerjea (1982) point out, a greater provision of domiciliary services can alleviate the burden for the carers and make life in the community a more attractive option in cost-benefit terms. Any such solution will have to bear in mind "disbenefits" such as preventing women, as the main carers, taking employment. In Sao Paulo the example of a grass roots movement for more day nurseries for children, led mainly by working class women, is an indication of the type of pressure that the carers of frail elderly are likely to make in the future specially in the deprived areas. A combination of a high prevalence of multigeneration households and community services can, indeed, point to a Brazilian alternative of care in which people will be stimulated to live with their older relatives in the same household (an option that Europeans apparently never had) but without placing an unbearable responsibility on the shoulders of the carers. What remains to be seen is what will happen if the standards of living were by any chance improved amongst those living in Brasilia in a multigeneration household. Only then could one realise to what extent is such living arrangement a cultural option,

or just an alternative for survival.

Poverty, in fact, appeared to be the main risk factor in old age and a multigeneration household, far from compensating for the low socio-economic status seems to be a symptom of it. Moreover, the multigeneration household, as suggested by Mutran (1985), might be changing to the detriment of the elderly. Life in the streets has been the 'tropical' option for a good many youngsters in Brazil, who after being abandoned by their parents collect their dole by means of petty crimes, drug dealing and all sort of abuses. However, it is difficult to foresee elderly people with severe restrictions in their daily functioning choosing the same path to survive, if eventually their care is relinquished by the family.

At the present it is not possible to obtain accurate estimates of what will be the extra-costs of building a comprehensive system of care for the elderly. Models taken from Europe will certainly exceed even the most generous allocations of resources under the present economic situation. But something on those lines have to be started as soon as possible. The resources have to be found not only from the pool of new investments but also from possible savings coming from the optimisation of the present system. In this regard, more knowledge of the present use of health services by the elderly is an absolute priority. The Health Secretary of the State of Sao Paulo, while having no

specific programme for the care of the elderly has the infrastructure to provide regionalised health care and also to organise community services for the elderly and can benefit from initiatives of some non-governmental agencies (Salgado, 1980).

The environmental conditions, however, have to be improved in areas like Brasilia if any social care programme is to be successfully implemented. A situation in which 37% of the elderly live in poor housing conditions (almost 40% without sewers at home), make any social care policy sound like wishful thinking.

4.1.4 - Summary of Conclusions

Perhaps the main lesson to be learned from the present study is that a country like Brazil will have to provide for very different kinds of demands from elderly people regarding their socio-economic status. The inequalities in health and social well-being found in Sao Paulo actually give empirical support for De Beauvoir's (1970) rather philosophical perceptions of old age when she states: "All known civilisations are marked by the contrast between an exploiting class and the classes of the exploited. The words old age cover two profoundly different kinds of reality according to whether they are applied to one or the other."

Indeed, the main finding of the present study is the significant social class determination of the well-being of the elderly. Either from the point of view of the health status, or social support (not to mention the financial security), the socio-economic background of the elderly seemed the most important single variable in determining life satisfaction in old age. From the epidemiological point of view the present survey supports the need for a social class stratification as the only way of obtaining a meaningful picture of a given elderly population living in the community. The profile of the elderly living in Brasilia, for instance, is a profile of a population of low socio-economic status and is significantly different from the profile of middle and upper class population like the ones living in Vila Guilherme and Aclimacao. Moreover, the study suggests that perhaps the most consistent if not the easiest way of stratifying the elderly is by geographical areas which incorporates the environmental factor to the concept of social class. Another important finding in this respect was the fact that the socio-economic differences between the different areas of the city were highly correlated with the proportion of elderly people in the total population of the area. That is to say that the standards of living found in Brasilia and the poverty related problems associated with it, for instance, are likely to be found in areas where the elderly population is still a minority in proportional terms. Nonetheless, as the majority of the population, even in a developed urban

centre like Sao Paulo, are still living on the margins of poverty, the tendency is for more elderly people, in absolute terms, to experience life in a poor area like Brasilia rather than a rich area like Aclimacao.

Such social class determinism showed particular importance in terms of the amount of help available to the elderly. As expected, the proportion of elderly living in multigeneration households was much higher than in any affluent country at any time in history, and that was associated with cultural factors: the greater availability of domestic and personal help. A finding that, in a way, supports the common belief that the family in the Third World plays a different role and is in much closer physical contact with the elderly. On the other hand, the impressive finding was the very low level of satisfaction, the high prevalence of mental and physical health problems, and above all, the paradoxical isolation experienced by those living in multigeneration households as opposed to those living in one-generation households or even alone. The important conclusion is that despite the greater availability of care, life in a multigeneration household does not compensate for the burdens of life in poverty in a hostile environment.

Brazil, thus, faces a unique situation. There, the demographic transition is happening at the same time as problems concerning the care for the elderly have taken high priority on the agenda of Ministries of Health all over the

world. It is, therefore, possible to avoid mistakes made by affluent countries (eg. investing too much in the building of institutions) (UN, 1982; Sundstrom, 1986), and at the same time develop a Brazilian alternative, based, for instance on cultural characteristics of the people, such as greater reliance on the family.

Finally, one has to bear in mind the structural dependency of the elderly on a mode of production that necessarily maintains the majority of the population living below the poverty line. Unless some profound social changes take place, the elderly population living in peripheral areas like Brasilia cannot possibly expect a healthy or fulfilling old age. No matter what action is eventually taken by the health and social care systems, some gross socio-economic inequalities have to be dealt with, before we reach a point where the well-being of elderly becomes an attainable goal for the majority of the population.

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APPENDIX 1 - CONSTRUCTION OF THE VARIABLE SOCIAL CLASS STATUS

Personal Assets	SCORE A (*)					
	Quantity					
	None	1	2	3	4	5
TELEVISION (1)	0	2	4	6	8	10
RADIO (2)	0	1	2	3	4	5
V. CLEANER (3)	0	5	5	5	5	5
W. MACHINE (4)	0	2	2	2	2	2
AUTOMOBILE (5)	0	4	8	12	16	16
SERVANT (6)	0	6	12	18	24	24
IN-DOORS WC (7)	0	2	4	6	8	10

SCORE A = SCORE (1+2+3+4+5+6+7)

LEVEL OF EDUCATION	SCORE B (*)
ILLITERAT.	0
PRIMARY	1
HIGH SCH.	3
COLLEGE	5
UNIVERS.	10

SOCIAL CLASS STATUS = SCORE A + SCORE B

CLASSIFICATION	TOTAL SCORE (*)
CLASS A	35 +
CLASS B	21 - 34
CLASS C	10 - 20
CLASS D	0 - 9

(*) This scoring system was developed by the Brazilian Association of Institutes of Market Research (ABA-ABIPEME) (1983) and has been used all over the country to stratify populations by social class for market research purposes.

APPENDIX 2 - ORIGINAL VERSION OF THE BOMFAQ - BRAZILIAN
VERSION OF THE OLDER AMERICANS RESOURCES AND
SERVICES MULTIDIMENSIONAL FUNCTIONAL ASSESSMENT
QUESTIONNAIRE (OMFAQ)

PESQUISA: CONDIÇÕES DE VIDA E SAÚDE DE IDOSOS
RESIDENTES NO MUNICÍPIO DE SÃO PAULO

Coordenador: Prof. Luiz Roberto Ramos
- Departamento de Medicina Preventiva da Escola Paulista de Medicina
- Instituto de Saúde da Secretaria Estadual de Saúde de São Paulo

Nome do Entrevistado(a): _____

Endereço: _____
Rua, Ave, Al. _____ nº _____ apto/casa _____
Bairro: _____ CEP _____ FONE _____

Ponto de Referência: _____

Sub-Distrito: _____

Questionário nº: _____ Data da Entrevista: _____

Entrevistador: _____

Horário da Entrevista: Início: _____ Término: _____

Relação do Informante com o Entrevistado (em casos em que o entrevistado esteja impossibilitado de responder)

Observações (Entrevistador após a entrevista):

A. DADOS PESSOAIS DO ENTREVISTADO

1. Sexo 1.M() 2.F()

2. Raça 1. Branca() 2.Negra() 3.Intermediária() 4.Amarela()

3. Idade _____(anos completos)

4. Data de Nascimento _____/_____/_____

5. Instrução _____(Curso) COMP INCOMP

6. Religião _____

7. Estado Civil 1.Solteiro() 2. Casado() 3. Viúvo() 4.Separado()

(Se 2,3 ou 4) 7a. Há quanto tempo? _____

(Se 3, ou 4) 7b. Quanto tempo esteve casado? _____

(Se 2,3 ou 4) 7c. Já foi casado mais de uma vez? _____ Quantas Vezes? _____

8. Número de filhos tidos _____ Número de filhos vivos _____

9. Idade do filho (a) mais velho(a) _____

10. Naturalidade _____ (URB - RUR)

11. Nacionalidade _____

12. Há quanto tempo vive nesta casa/apto?
Nº de anos _____(até 11 meses= 1 ano)

13. Há quanto tempo vive no Município de São Paulo?
Nº de anos _____(até 11 meses= 1 ano)

14. Em que bairro/cidade morou por mais tempo nos últimos anos?

a) Quanto Tempo? _____

b) De quando a quando? _____

C. RECURSOS ECONOMICOS

Agora eu gostaria de fazer algumas perguntas relacionadas a trabalho, saber um pouco de sua situação financeira e de dinheiro, atualmente:

- 1. Com que idade o(a) sr(a) começou a trabalhar? _____
- 2. Que tipo de trabalho o(a) sr(a) fez a maior parte de sua vida?
_____ Por quanto tempo? _____
- 3. O(a) sr(a) está no momento: (assinalar todas que se aplicam no caso)
 - a. () Empregado com vínculo tempo parcial
 - b. () Empregado com vínculo tempo integral
 - c. () Aposentado por tempo de serviço
 - d. () Aposentado por incapacidade
 - e. () Aposentado por idade
 - f. () Aposentado compulsoriamente
 - g. () Empregado autônomo/sem vínculo tempo parcial
 - h. () Empregado autônomo/sem vínculo tempo integral
 - i. () Desempregado procurando emprego
 - j. () Desempregado sem procurar emprego
 - k. () Afastado do emprego por problemas de saúde
 - l. () Prendas domésticas
 - m. () Nunca trabalhou

4. Há quanto tempo está nesta (s) situação(s)?

5. Atualmente de onde vêm os seus rendimentos?	SIM	NAO	BRUTO MES ANTERIOR
a. Salários	_____	_____	_____
b. Honorários	_____	_____	_____
c. Aluguéis	_____	_____	_____
d. Poupança (retirada)	_____	_____	_____
e. Aposentadoria	_____	_____	_____
f. Ajuda familiar	_____	_____	_____
g. Caridade	_____	_____	_____
h. Seguro Saúde	_____	_____	_____
i. Outros (especificar) _____	_____	_____	_____

5a. O(a) sr(a) enviou dinheiro para algum parente ou amigo no mês que passou?
 a. () Sim Quanto? R\$ _____
 b. () Não

12. O que o(a) sr(a) ganha em relação às suas despesas fixas:
- a. () É o suficiente para fazer todos os pagamentos necessários
b. () Não dá para fazer todos os pagamentos necessários
13. O(a) sr(a) recebe ajuda financeira de alguém para equilibrar nas despesas da casa?
- a. () Ninguém
b. () Conjuge
c. () Filhos
d. () Netos
e. () Amigos
f. () Outros (especificar) _____
g. () N.R.
14. É o(a) sr(a) quem paga por toda a sua comida ou recebe ajuda na forma de refeições de alguém?
- a. () Não recebe ajuda de ninguém
b. () Conjuge
c. () Ajuda dos filhos
d. () Ajuda dos netos
e. () Ajuda de amigos
f. () Outros (especificar) _____
g. () N.R.
15. Na sua opinião o(a) sr(a) e sua família estão melhor ou pior que quando o(a) sr(a) tinha 50 anos (economicamente)
- a. () Melhor
b. () Igual
c. () Pior
d. () Não sabe
e. () N.R.
16. O(a) sr(a) acha que sua renda dará para suas necessidades futuras, digamos, daqui à 5 anos?
- a. () Sim
b. () Não
c. () Não sabe
d. () N.R.

D. RECURSOS DE SAÚDE

1. Em caso de precisar de um médico ou de um tratamento de saúde qual o serviço que o(a) sr(a) procura em primeiro lugar? E em segundo lugar?
- a. () Serviço do INAMPS (TIT / DEP)
b. () Convênios Empresas (TIT / DEP)
c. () Seguro Particular (Golden Cross, Itaú, etc.) (TIT / DEP)
d. () Sindicato (TIT / DEP)
e. () Hospital do Servidor Estadual (TIT / DEP)
f. () Hospital do Servidor Municipal (TIT / DEP)
g. () Hospital Militar
h. () Serviços Públicos Estaduais e Municipais
i. () Médico Particular
j. () Outros (especificar) _____

1.A. Sendo dependente, quem é o titular ou sócio principal?

- a. () Filho (a)
b. () Conjuge
c. () Outro especificar ³¹⁴ _____

E. SAUDE FÍSICA

Falaremos agora sobre sua saúde

1. Nas 2 últimas semanas (mostrar o calendário) o(a) sr(a) teve algum problema de saúde?
- a. () Sim
b. () NÃO
c. () N.R.
- Passe p/3**

Qual o (s) problema(s)? _____

2. O(a) sr(a) procurou alguém ou algum serviço por este(s) problema(s) (Pode haver mais de uma situação).

Qtas. vezes nas 2 últimas semanas?

- a. () Medicou-se sozinho _____
b. () Foi ao Pronto Socorro _____
c. () Foi ao Ambulatório _____
d. () Foi ao Centro de Saúde _____
e. () Foi ao Médico Particular _____
f. () Foi à Farmácia _____
g. () Outros (especificar) _____

3. Qual o motivo de sua última consulta médica?

- a. () Doença (especificar) _____
b. () Acidente (especificar) _____
c. () Outro (especificar) _____
d. () N.S.
e. () N.R.

4. Nas 2 últimas semanas (mostrar o calendário) o(a) sr(a) esteve doente de cama ou impossibilitado de exercer suas atividades normais? (trabalho, cuidados de casa, etc.)

- a. () Sim Quantos dias? _____
b. () NÃO
c. () N.R.
- Passe p/questão 6**

5. Qual o motivo que o levou a ficar de cama ou impossibilitado de exercer suas atividades normais?

- a. () Doença (especificar) _____
b. () Acidente (especificar) _____
c. () Outros (especificar) _____
d. () N.S.
e. () N.R.

6. Nos últimos 6 meses (mostrar o calendário) o(a) sr(s) esteve internado por problemas de saúde? (Excluir internação psiquiátrica) (Incluir casos de internação domiciliar)

- a. () Sim Quantos dias? _____
b. () NÃO
c. () N.R.
- Passe p/questão 8**

7. Qual o motivo de sua última internação?

- a. () Doença (especificar) _____
b. () Acidente (especificar) _____
c. () Outro (especificar) _____
d. () N.S.
e. () N.R.

8. Nos últimos 6 meses (mostrar o calendário) o(a) sr(a) esteve em algum centro de reabilitação ou fisioterapia?

- a. () Sim 315 Por quanto tempo? _____
b. () NÃO
c. () N.R.
- Passe p/questão 10**

9. Qual o motivo que o levou a necessitar de reabilitação ou fisioterapia?
- a.() Doença (especificar) _____
 - b.() Acidente(especificar) _____
 - c.() Outro
 - d.() N.R.
10. O(a) sr(a) tem algum tipo de deficiência física do tipo paralisia ou de feito ósseo?
- a.() Não
 - b.() Paralisia total
 - c.() Paralisia parcial
 - d.() Ausência de membros
 - e.() Fraturas ósseas
 - f.() N.R.
11. Como está sua visão (com o uso de óculos e lentes quando for o caso)
- a.() Ótima
 - b.() Boa
 - c.() Regular
 - d.() Ruim
 - e.() Péssima (cegueira)
 - f.() N.R.
12. Como está sua audição?
- a.() Ótima
 - b.() Boa
 - c.() Regular
 - d.() Ruim
 - e.() Péssima (surdez)
 - f.() N.R.
13. Nos últimos 6 meses (mostrar o calendário) o(a) sr(a) teve algum acidente do tipo queda, colisão, atropelamento que tenha provocado contusão, fratura ou alguma limitação física?
- a.() Sim (especificar) _____
 - b.() Não
 - c.() N.R.
14. O(a) sr(a) participa regularmente de algum esporte do tipo corrida (ou andar) tenis, nataçao, ciclismo, etc.?
- a.() Sim
 - b.() Não
 - c.() N.R.
15. Como o(a) sr(a) diria que está a sua saúde geral no momento?
- a.() Excelente
 - b.() Boa
 - c.() Regular
 - d.() Ruim
 - e.() N.R.
16. A sua saúde hoje é melhor igual ou pior do que há 5 anos atrás?
- a.() Melhor
 - b.() Igual
 - c.() Pior
 - d.() N.R.
17. O(a) sr(a) acha que a sua saúde hoje dificulta muito, pouco ou nada as suas atividades diárias?
- a.() Nada
 - b.() Pouco
 - c.() Muito
 - d.() N.R.

18. Temos aqui uma lista de remédios que as pessoas costumam tomar por problemas de saúde. O(a) sr(a) poderia, por gentileza dizer se tomou no mês que passou um ou mais remédios para alguns destes problemas de saúde que eu vou citar:

	ALOPATIA	HOMEOPATIA	CHÁS/ERVAS
a. Remédio para reumatismo	a. _____	a. _____	a. _____
b. " " dor de cabeça	b. _____	b. _____	b. _____
c. " " pressão alta	c. _____	c. _____	c. _____
d. " " coração	d. _____	d. _____	d. _____
e. " " dor no peito	e. _____	e. _____	e. _____
f. " " circulação	f. _____	f. _____	f. _____
g. " " diabetes	g. _____	g. _____	g. _____
h. " " tosse	h. _____	h. _____	h. _____
i. " " lesão de pele	i. _____	i. _____	i. _____
j. " " Úlcera	j. _____	j. _____	j. _____
k. " " prisão de ventre	k. _____	k. _____	k. _____
l. " " convulsão (ataque)	l. _____	l. _____	l. _____
m. " " tiróide	m. _____	m. _____	m. _____
n. " " insônia	n. _____	n. _____	n. _____
o. " " nervosismo(calmante)	o. _____	o. _____	o. _____
p. " " bronquite	p. _____	p. _____	p. _____
q. " " asma	q. _____	q. _____	q. _____
r. Antibióticos	r. _____	r. _____	r. _____
s. Hormônios	s. _____	s. _____	s. _____
t. Vitaminas	t. _____	t. _____	t. _____
u. Analgésicos	u. _____	u. _____	u. _____
v. Outros (especificar)	v. _____	_____	_____
x. Tomou remédios não sabe para o que (transcrever a receita se houver)	x. _____	_____	_____

19. O(a) sr(a) no momento tem alguma destas doenças? (Em caso afirmativo perguntar: O quanto esta doença interfere em suas atividades diárias?)

	NAO	MUITO	POUCO	NADA
a. Reumatismo	a. _____	_____	_____	_____
b. Glaucoma (dor no olho)	b. _____	_____	_____	_____
c. Asma	c. _____	_____	_____	_____
d. Bronquite Crônica	d. _____	_____	_____	_____
e. Tuberculose	e. _____	_____	_____	_____
f. Pressão Alta	f. _____	_____	_____	_____
g. Problema do Coração	g. _____	_____	_____	_____
h. Problema de Próstata	h. _____	_____	_____	_____
i. Problema de Rim	i. _____	_____	_____	_____
j. Problema de Bexiga	j. _____	_____	_____	_____
k. Problema de Vesícula	k. _____	_____	_____	_____
l. Problema de Útero	l. _____	_____	_____	_____
m. Problema de Mama	m. _____	_____	_____	_____
n. Má Circulação (varizes)	n. _____	_____	_____	_____
o. Diabetes	o. _____	_____	_____	_____
p. Úlcera	p. _____	_____	_____	_____
q. Doença do Fígado	q. _____	_____	_____	_____
r. Câncer ou Leucemia	r. _____	_____	_____	_____
s. Lesão de Derrame	s. _____	_____	_____	_____
t. Epilepsia	t. _____	_____	_____	_____
u. Lesões de Pele	u. _____	_____	_____	_____
v. Problema Muscular	v. _____	_____	_____	_____

20. O(a) sr(a) tem algum outro problema que, no momento afete seriamente sua saúde?

- a. Sim (especificar) _____
 b. () Não
 c. () N.R.

F. ATIVIDADES DO DIA A DIA

Agora eu gostaria de perguntar sobre algumas atividades e tarefas do seu dia a dia, coisas que nós todos necessitamos fazer como parte da rotina diária. Estamos interessados em saber se o(a) sr(a) consegue fazer estas atividades sem nenhuma necessidade de auxílio ou se precisa de alguma ajuda, ou ainda se já não consegue fazer tais atividades de forma nenhuma.

F.1. ATIVIDADES INSTRUMENTAIS

- 1.0(a) sr(a) telefona quando precisa sozinho?
 a.() Sem nenhuma ajuda inclusive para localizar o número desejado
 b.() Com alguma ajuda - consegue atender ou telefonar numa emergência
 c.() Completamente incapaz de fazer uso do telefone
 d.() N.R.
- 2.0(a) sr(a) vai sozinho a lugares que exigem condução?
 (tipo ônibus, taxi, dirigir carro próprio)
 a.() Sem nenhuma ajuda
 b.() Com alguma ajuda
 c.() Incapaz de viajar a menos que arranjos de emergência sejam feitos para arrumar algo como uma ambulância
 d.() N.R.
- 3.0(a) sr(a) faz suas compras de alimentos ou roupas?
 a.() Sem nenhuma ajuda (toma conta das compras)
 b.() Com alguma ajuda (alguem que acompanha nas compras)
 c.() Incapaz de fazer compras sozinho
 d.() N.R.
- 4.0(a) sr(a) prepara suas próprias refeições?
 a.() Sem nenhuma ajuda (planeja e cozinha)
 b.() Com alguma ajuda (cozinha alguma coisa mas não prepara uma refeição completa)
 c.() Incapaz de cozinhar o que quer que seja
 d.() Nunca cozinhou (homens)
 e.() N.R.
- 5.0(a) sr(a) faz o trabalho de casa?
 a.() Sem nenhuma ajuda (inclusive para varrer o chão)
 b.() Com alguma ajuda (somente é capaz de fazer o serviço leve)
 c.() Incapaz de cuidar da casa
 d.() Nunca fez trabalho de casa
 e.() N.R.
- 6.0(a) sr(a) toma sozinho seus remédios ou precisa de ajuda?
 a.() Sem nenhuma ajuda
 b.() Com alguma ajuda (alguem que prepare o remédio ou lembre a hora certa de tomá-lo)
 c.() Incapaz de tomar seus próprios remédios
 d.() N.R.
- 7.0(a) sr(a) controla sozinho as suas finanças?
 a.() Sem nenhuma ajuda
 b.() Com alguma ajuda (controla as compras diárias mas precisa de alguem para controlar o talão de cheques ou o pagamento de contas)
 c.() Incapaz de controlar as próprias finanças
 d.() N.R.

F.2. ATIVIDADES FÍSICAS

1. **COMER:** O(a) sr(a) come sozinho(a)?
 a. () Sim, sem necessidade de ajuda
 b. () Consegue comer desde que a comida tenha sido previamente cortada
 c. () Não consegue comer adequadamente se não for ajudado
 d. () N.R.
2. **VESTIR-SE:** O(a) sr(a) se veste sozinho(a)?
 a. () Veste-se sem ajuda
 b. () Consegue vestir-se com alguma supervisão ou auxílio
 c. () Necessita sempre de outra pessoa para vestir-se
 d. () N.R.
3. **CUIDAR DA APARENCIA:** O(a) sr(a) cuida sozinho da própria aparência (ex: pentear os cabelos, fazer a barba, etc.)?
 a. () Penteia-se, barbeia-se sem ajuda
 b. () Consegue pentear-se/barbear-se com alguma ajuda
 c. () Completamente incapaz de cuidar da própria aparência sozinho(a)
 d. () N.R.
4. **ANDAR NO PLANO:** O(a) sr(a) anda no plano (pequenas distâncias)
 a. () Sem dificuldade (inclui uso de bengala)
 b. () Com ajuda de outra pessoa ou auxílio mecânico
 c. () Incapaz de se locomover
 d. () N.R.
5. **DORMIR:** O(a) sr(a) levanta ou deita na cama sozinho?
 a. () Sem ajuda de pessoas ou auxílio mecânico
 b. () Com alguma ajuda de pessoas ou auxílio mecânico
 c. () Completamente incapazes de sentar-se ou deitar-se e levantar-se sem ajuda de outra pessoa
 d. () N.R.
6. **BANHAR-SE:** O(a) sr(a) toma banho sozinho?
 a. () Sem ajuda
 b. () Necessita de supervisão e auxílio eventual
 c. () Só consegue banhar-se com a ajuda de outra(s) pessoas
 d. () N.R.
7. **USO DO WC:** O(a) sr(a) faz uso do WC sozinho?
 a. () Serve-se sem qualquer auxílio
 b. () Necessita de supervisão (alguém que lembre e auxilie no uso)
 c. () Não consegue utilizar o WC
 d. () N.R.
- a) É frequente o(a) sr(a) ficar molhado ou assado por liberação de urina?
 a. () Nunca
 b. () 1 a 2 vezes por semana
 c. () 3 vezes ou mais
 d. () N.R.
8. O(a) sr(a) manteve relações sexuais no último mês?
 a. () Sim
 b. () Não
 c. () N.R.

G. CUIDADOS PESSOAIS E DE ENFERMAGEM

1. Nos últimos 6 meses (mostrar o calendário) o(a) sr(a) teve ou tem tido algum para ajudá-lo em:

1a. TAREFAS CASEIRAS (limpeza, cozinha, compras, etc...)

SIM() Quem? (colocar o grau de parentesco quando houver)

_____ Continua? sim() não ()

_____ Continua? sim() não ()

NAO() Sente que necessitaria ? sim() não ()

1b. CUIDADOS PESSOAIS (vestir-se, lavar-se, comer etc...)

SIM() Quem? (colocar o grau de parentesco quando houver)

_____ Continua? sim() não ()

_____ Continua? sim() não ()

NAO() Sente que necessitaria? sim() não ()

1c. CUIDADOS ENFERMAGEM (dar remédio, injeção, tirar a pressão, etc...)

SIM() Quem? (colocar o grau de parentesco quando houver)

_____ Continua? sim() não ()

_____ Continua? sim() não ()

NAO() Sente que necessitaria? sim() não ()

H. PROTESE E APARELHOS

1. O(a) sr(a) usa algum dos seguintes aparelhos senão todo o tempo pelo menos parte do tempo?

	SIM	NAO
a. Bengala	a. _____	_____
b. Andador	b. _____	_____
c. Cadeira de Rodas	c. _____	_____
d. Membro Artificial	d. _____	_____
e. Aparelho de Audição (surdez)	e. _____	_____
f. Colostomia (Saquinho p/evacuação)	f. _____	_____
g. Diálise (Limpeza do sangue-rins)	g. _____	_____
h. Dentadura	h. _____	_____
i. Outros (especificar) _____		

2. O(a) sr(a) sente que precisaria algum destes aparelhos embora no momento não tenha ou faça uso?

a. () Sim Quais? _____

b. () Não

c. () N.R.

Agora faremos algumas perguntas para saber como vai a sua memória. Sabemos que com o tempo as pessoas vão tendo mais dificuldades para lembrar as coisas. Não se preocupe com o resultado das perguntas suas respostas são confidenciais. Inicialmente gostaríamos de saber a impressão do(a) sr(a) sobre sua memória. O(a) sr(a) acha que ela está:

- a. () Boa
- b. () Regular
- c. () Não sabe
- d. () N.R.

E agora algumas perguntas gerais:

1. Que lugar é esse em que estamos agora?
2. Qual é o endereço em que estamos?
3. Qual é o mês em que estamos?
4. Qual o ano em que estamos?
5. Qual o dia do mês em que estamos? (± 1 dia)
6. Qual a sua idade (anos)?
7. Em que mês o(a) sr(a) nasceu?
8. Em que ano o(a) sr(a) nasceu?
9. Quem é o presidente do Brasil?
10. Quem era o presidente antes dele?

J. SERVIÇOS DE SAÚDE MENTAL

1. Nos últimos 6 meses (mostrar o calendário) o(a) sr(a) procurou algum tratamento psicológico ou psiquiátrico ou tratamento para doença nervosa?

- a. () Sim
- b. () Não
- c. () N.R.

(Passe p/C)

- 1a. Neste período o(a) sr(a) foi hospitalizado por problemas de doença dos nervos?

- a. () Sim
- b. () Não
- c. () N.R.

- 1b. O(a) sr(a) continua recebendo este tipo de ajuda?

- a. () Sim
- b. () Não
- c. () N.R.

- 1c. O(a) sr(a) sente que necessitaria de tratamento ou aconselhamento a respeito de problemas nervosos ou emocionais?

- a. () Sim
- b. () Não
- c. () N.R.

K. RECURSOS SOCIAIS

Agora nós gostaríamos de falar um pouco de sua família e amigos e o modo do(a) sr(a) se relacionar com eles.

1. Quantas pessoas o(a) sr(a) conhece o suficiente para de vez em quando fazer uma visita?
 - a. Nenhuma
 - b. 1 ou 2
 - c. 3 ou 4
 - d. Mais que 5
 - e. N.S.
 - f. N.R.

2. Quantas vezes, na semana que passou, o(a) sr(a) falou com um parente ou amigo por telefone? (Mesmo que não tenha telefone em casa)
 - a. Nenhuma vez
 - b. 1 vez
 - c. 2-6 vezes
 - d. 1 vez por dia ou mais
 - e. N.S.
 - f. N.R.

3. Quantas vezes na semana que passou o(a) sr(a) se encontrou com alguém que não vive com o(a) sr(a)? Isto é o(a) sr(a) visitou alguém, foi visitado por alguém ou saiu junto com alguém?
 - a. Nenhuma vez
 - b. 1 vez
 - c. 2-6 vezes
 - d. 1 vez por dia ou mais
 - e. N.S.
 - f. N.R.

4. O(a) sr(a) tem alguém com quem trocar conversas e segredos? Alguém em que o (a) sr(a) realmente confie? (Excluir sacerdote)
 - a. Sim
 - b. Não
 - c. N.R.

5. O(a) sr(a) costuma se sentir sozinho?
 - a. Frequentemente
 - b. Algumas vezes
 - c. Quase nunca
 - d. N.R.

6. O(a) sr(a) acha que vê seus parentes e amigos o tanto que o(a) sr(a) gostaria de ver, ou acha que os vê muito pouco?
 - a. Tanto quanto gostaria
 - b. Muito pouco
 - c. Mais do que gostaria
 - d. N.R.

7. Existe alguém que lhe daria qualquer ajuda caso o(a) sr(a) estivesse doente ou com alguma limitação física, por exemplo um parente ou amigo?
 - a. SimQuem? (Grau de parentesco quando houver)

-
- b. NAO
 - c. N.R.

Passa para questão 9

8.0(a) sr(a) acha que poderia contar com esta pessoa

- a. () Sempre
 b. () De vez em quando
 c. () Raramente
 d. () Não sabe

9.0(a) sr(a) no último ano viveu alguma situação difícil do tipo morte na família, perda de emprego, mudança de casa etc?

- a. () Sim (especificar) _____
 b. () Não
 c. () N.R.

10.0(a) sr(a) tem alguma atividade ou passatempo do tipo:

A) <u>ATIVIDADES CASEIRAS</u>	S	N	Qtas.horas/ dia semana mes
a. Cuidado c/crianças	___	___	_____
b. Marcenaria	___	___	_____
c. Eletricidade	___	___	_____
d. Encanamento	___	___	_____
e. Tricô, Crochet	___	___	_____
f. Jardinagem	___	___	_____
g. Artesanato	___	___	_____
h. Outros (especificar)	___	___	_____

B) REUNIOES

i. Sindicatos	___	___	_____
j. Igrejas	___	___	_____
k. Clubes	___	___	_____
l. Associações Beneficientes	___	___	_____
m. Outros (especificar)	___	___	_____

C) PASSATEMPOS

n. Televisão	___	___	_____
o. Radio	___	___	_____
p. Jornal	___	___	_____
q. Palavras Cruzadas	___	___	_____
r. Baralho	___	___	_____
s. Passear de Carro	___	___	_____
t. Fazer Compras	___	___	_____
u. Fazer Visitas	___	___	_____
v. Falar ao Telefone	___	___	_____
x. Viajar	___	___	_____
z. Outros (especificar)	___	___	_____

APPENDIX 3 - LIST IF THE 48 SUB-DISTRICTS OF THE DISTRICT OF
SAO PAULO ACOORDING TO THE NUMBERING IN FIGURES
2.3.1; 2.3.2; 2.3.3; 2.3.4; AND 2.3.5

1 - C. Cesar	25 - Belenzinho
2 - B. Retiro	26 - Consolacao
3 - J. Paulista	27 - Santana
4 - S. Cecilia	28 - Tucuruvi
5 - Se	29 - Penha
6 - Indianopolis	30 - Tatuape
7 - V. Mariana	31 - C. Verde
8 - Aclimacao	32 - Saude
9 - Lapa	33 - Limao
10 - V. Guilherme	34 - Ibirapuera
11 - Pari	35 - V. Jaguará
12 - Cambuci	36 - V. Maria
13 - A. da Mooca	37 - V. Prudente
14 - Ipiranga	38 - V. Formosa
15 - S. Efigenia	39 - Cangaiba
16 - Mooca	40 - V. Matilde
17 - Pinheiros	41 - N. Senhora do O
18 - Bras	42 - Jabaquara
19 - J. America	43 - Butanta
20 - B. Funda	44 - Pirituba
21 - V. Madalena	45 - V.N. Cachoeirinha
22 - Perdizes	46 - S. Amaro
23 - B. Vista	47 - C. Socorro
24 - Liberdade	48 - Brasilândia

APPENDIX 4 -- STANDARD ERROR OF ESTIMATES FOR THE MAIN SUB-GROUPS ALLOWING FOR SAMPLE DESIGN (the 95 per cent confidence limits of an estimate are the estimate plus or minus the percentage in the table)

SAMPLE GROUP	BASE	PERCENTAGES				
		5 95	10 90	15 85	20 80	25 75
TOTAL	303	3.7	5.2	6.1	6.9	7.5
BRASILANDIA	119	6.0	8.2	9.8	11.0	11.9
V.GUILHERME	97	6.6	9.1	10.9	12.1	13.2
ACLIMACAO	87	7.0	9.6	11.5	12.9	13.9

SAMPLE GROUP	BASE	PERCENTAGES				
		30 70	35 65	40 60	45 55	50 50
TOTAL	303	7.9	8.2	8.4	8.6	8.6
BRASILANDIA	119	12.6	13.1	13.5	13.7	13.7
V.GUILHERME	97	13.9	14.5	14.9	15.1	15.2
ACLIMACAO	87	14.7	15.3	15.7	16.0	16.1

The sample used in this survey was a stratified multistage random sample, where the sampling fraction for the elderly living in the community was 3 per cent of the elderly population. In accordance with common practice (Hunt, 1978), the standard errors could be assumed to be one and a half times those calculated from the formula:

$$p \cdot q / n$$

where p = percentage possessing a given characteristic
q = 100-p
n = number of interviews