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ALTERNATIVE TYPES OF CARE AND THEIR IMPACTS ON THE QUALITY OF LIFE OF THE THAI ELDERLY IN THE BANGKOK METROPOLITAN AREA

by

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ABSTRACT

ALTERNATIVE TYPES OF CARE AND THEIR IMPACTS ON THE QUALITY OF LIFE OF THE THAI ELDERLY IN THE BANGKOK METROPOLITAN AREA

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In order to deal with an aging population increasing rapidly in numbers and proportion, a study into present care provisions, existing needs, and the quality of life of the Thai elderly is needed.

Two research methods are employed: documentary research and survey research. Documentary research into the demographic profile of the Thai elderly is presented by obtaining data from the National Statistical Office which focuses on the transition of population structure and socioeconomic characteristics of the aging population. A decline in the proportion of extended families and an increase in the number of nuclear families issues warnings of a weakening capacity to care for the elderly. Alternative care support (by government and non-government organizations) is also documented.

The survey was conducted by interviewing 447 elderly people, both those in private households and nursing homes, within the Bangkok Metropolis and its peripherals in 1992. One hundred and eighty samples (40.3% of the total) are living with their families. There are equal gender and age group numbers and three socio-economic statuses (high-middle-low) covering three zones of Bangkok (inner bound, outerbound, and peripheral). The household sampling lists were randomly selected from data from the Central Office of the Registrar. For those samples living in nursing homes, equal age and gender groups were preferred; however, the type of nursing home itself classified the socio-economic status of its residents. There

are 192 samples (43% of the total) living in free-of-charge nursing homes, and 75 samples (16.8%) living in one profit-making hospital-based nursing home.

In determining the factors that affect the elderly person's decision to either remain with the family or enter an institution, discriminant analysis is used. It is found that characteristics of family structure are good indicators for differentiating these two groups of elderly. Those without a solid family core or permanent residence or fewer living children are more likely to be institutionalized. Thus, building up strong family ties is important as family problems are causes for entering institutions. Especially when family size is reduced, or for those who are childless, support from siblings, neices or nephews can be reliable resources of support in later life. Encouraging the low-income population to own their own living units before retirement can also prevent institutionalization in the future.

When comparing assessments for care received by groups of respondents under different types of care, the issues raised are of a different nature. Those in institutions are less negative because their previous problems have been relieved; however, they have a lower sense of security than those in families, and have less care support available to them.

When assessing the needs of the elderly, many are found to be physiological and preventable. Financial problems are reported by a high percentage of those in private free-of-charge nursing homes. The institutionalized experience more loneliness and isolation than those in families. The use of a checklist increases the reported needs expressed by the elderly. Factor analysis helps to clarify the types of underlying needs based on a 24 item checklists, and also provides factor scores for need factor analysis.

Multivariate analysis of variance is used to examine the main effect of being in different types of care versus six assessment scales of quality of life. Quality of life is defined as a multi-dimensional measurement of life satisfaction, self-esteem, general health, functional ability, and living environment. The institutionalized elderly report lower self-esteem. This is explained by the fact that the majority have little outer social lives, have lost family contact, or have no children. On the contrary, the elderly living with the family report a poorer living environment. The environmental surroundings of most nursing homes are clean and quiet compared to the environment of the Metro-Bangkok area as a whole.

To distinguish factors that affect the elderly's quality of life, an analysis of six direct discriminant functions is performed. Each function uses 29 variables as predictors of membership in two groups of respondents. The three most reliable indicators in distinguishing an elderly person's quality of life assessment are: 1. remaining socially active 2. self-reported financially secure, and 3. health. Based on this evidence, organizing elderly clubs in communities, giving elderly people prominent roles in the family and the society, and providing information on remaining healthy could be key strategies for promoting their quality of life.

It is noted that chronological age should not be used solely in assessing eligibility for benifit programes. It is not a factor that determines people's needs nor does it reflect the quality of life in a broader sense. Age itself only affects the ability to function independently in daily life. As found in this study, financial security and health are important factors in enhancing an elderly person's quality of life. The Thai government's medical care and monthly subsistence allowance for the destitute are viewed as heading in the right direction.

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CHAPTER I

INTRODUCTION

Statement of the Problem

The aging of the population is one common demographic change phenomena that takes place soon after a country has experienced a decline in fertility and mortality rates. That is, an increase in absolute numbers and in the proportion of the elderly population which has been clearly observed in several developed countries and is now a significant trend in the age structure of the population in many developing countries. Although most countries experience the aging of their population as a gradual process, there are great differences in the growth rates of the aged-populations and in formulating policies for the elderly population (United Nations, 1988: 37). They all, however, share the same problems, especially those countries that have provided social security for the long-term care of their elderly, such as the United States, Australia, and Japan. Their national expenditures on institutional care or nursing homes, medical care, or even pension schemes, have been found to have a higher growth rate than that of their respective gross domestic product (Hugo, 1986). This has caused the governments of these countries to develop new measures to curtail social welfare or diminish rendered privileges. These cut-backs in social security have resulted in several political conflicts, though. One possible way to reduce the public burden of caring for the increasing number of elderly in institutions or in hospitals is to reemphasize the substantial role of the family in taking care of, supporting, and protecting the elderly from institutionalization (El-Badry, 1988; Chen and Jones, 1989). The problems of the aging population which have emerged in developed countries, as mentioned above, have caused

Thailand to be aware and to recognize that these same problems will undoubtedly become an important issue here in the future.

Thailand was involved in the World Assembly on Aging in 1982, and adopted the Vienna International Plan of Action which emphasized high priority to research related to the developmental and humanitarian aspects of aging to provide information for the social policies and actions in favor of the elderly. As a result of this recommendation, there have been several research studies that provide important basic information about the social and economic situations, health problems and life-styles of the Thai elderly (Kamnuansilpa, 1980; Xuto, 1982; Siripanich, 1983; Department of Informal Education, 1985). There has also been an implementation of a long-term plan for Thailand's aging population since 1981 (Department of Medical Services, n.d.). In addition, a national committee has been appointed to lay down policy initiatives, planning and activities regarding the welfare of the elderly in this country.

In practice, however, before 1991, it was always well understood that social welfare for the Thai elderly, including matters such as budgets, staff, shelters and other facilities, was limited when compared with the increasing needs of the population (Department of Teacher Training, 1982). It was apparent that welfare and health services were not equally distributed; services for the elderly were mainly available only in urban areas (Tanskul, 1982). It was also thought that fewer elderly were as poor as younger persons (Hongladarom, et al. 1987: 21). Even recently, the Deputy Minister of the Ministry of Labor and Social Welfare, Khun Sermsak Karun stated that there were over 200,000 poor and destitute elderly in the country, but government nursing homes could only afford shelters for 3,000 residents (Daily News, 1994a). Even after the establishment of the Social Security Acts in 1990, retirement

benefits were still deficient because they were not to be implemented until six years after 1990 (Fungladda, 1993: 33). Moreover, the accrued benefits will not mature until the person has been insured at least fifteen years, and then the person can receive a lump sum payment upon retirement. Therefore, there will not be any persons receiving the retirement benefit before the year 2010. By then, the elderly population is projected to have increased to 6.6 million, or 9.3 percent of the total Thai population, and there will not be any retirement benefits available from this fund for these 6.6 million elderly. In comparison, in Singapore nearly one out of four of the population who were 55 years and older were members of the Central Provident Fund in 1986 (Martin, 1988: s106), when the constituent population of 65 years and older was only 5.1 percent of the total population. These facts and statistics demonstrate that Thailand has not prepared adequately for the problem of the aging population.

The very first attempt to tackle this problem was in mid-1990 when a national budget of 40 million baht (1.6 million U.S. dollars) was allocated for the free-of-charge basic medical care of any elderly person who seeks such health services at local hospitals under the Ministry of Public Health. Again, it was a service that was not generally known by the general public at large during its first trial run (Siamrath, 1991). Another welfare program was launched for the elderly in recent years when the cabinet approved a project entitled 'A Fund for the Promotion of Welfare for the Elderly and the Family in the Community' on March 3, 1992. As a result, a 200 baht monthly subsistence allowance was granted to each poor, needy and destitute elderly person. The allowance was to be granted in July 1993 up to the total value of 12 million baht (0.48 million U.S. dollars), enough for 20,000 recipients throughout the country (Daily News, 1994b). This program was carried out for only the last three months of the 1993 fiscal year. This allowance was

budgeted for again in 1994 with 48 million baht (1.92 million U.S. dollars) made available. By November 1994, there were 11,000 recipients, or 55 percent of the original target.

As has been mentioned, until the end of 1995, there have been only two programs implemented for the welfare of the Thai elderly. They are the free-of-charge basic medical care program by the Ministry of Public Health and the monthly subsistence allowance provided by the Ministry of Labor and Social Welfare.

The tradition and culture of Thailand considers that commitments to the respectful and faithful care of elders and ancestors is virtuous and praiseworthy. Thus, the family is and has always been the only source of care for protecting and supporting parents or grandparents (United Nations, 1992: 77). This social value is shared throughout Asia (Chen and Gavin, 1989: 49; Naisbitt, 1995: x1). The esteem of this social heritage is also accompanied by a belief that if and when the aging population increases and becomes an issue in the future, even then, the duties of the family will still be well defined. The elderly will not be abandoned by their immediate family as those in the West have experienced (Martin, 1988: S99).

There are, however, suggestions that the Thai elderly in the near future will be suffering a loss of their traditional high status (Sukon, 1983). It is not clear whether elderly Asians are always treated with respect (Martin, 1988: S99; Chen and Gavin, 1989: 52); and Thailand will not be an exception. Thailand has shown several indications of rapid socioeconomic changes that undenyingly have affected the role of the extended family in caring for their elderly. These changes include urbanization, with an urban population growth rate currently standing at 6.6 percent annually (Khawthian, 1990). This labor migration increasingly draws the younger work force into the cities and leaves the elderly behind

unattended. The changing role of women, their increased rate of entry into the labor force, coupled with the increasing trend of divorce in recent years (Klingham, 1982; Thairat, 1991) has also had a definite effect. The proportion of extended families has decreased from 46.2 percent (NSO, 1980: 169) to 26.3 percent (NSO, 1990a: 192) over a period of ten years. These are all diminishing factors contributing to the lack of dedicated care from offspring or family members of the extended family to the elderly (United Nations, 1988: 214). The interweaving of these factors and the decrease in child-bearing due to effective family planning are warnings about the limitations in the assumed role of the Thai family in caring for their elderly as compared with the past.

Therefore, there must be both direct and indirect corresponding help from the government and the community so that elderly people may have several alternatives to choose from in order to suit their needs. These are interesting issues entitled to answers before Thai society progresses any further. What help and care for the elderly are presently provided and what direction should it take in the future? How do the elderly perceive needs or problems in their life? Lastly, are there any differences in the quality of life of elderly people who are in different care settings? Answers to these questions will help to decide what criteria government policy should take into account when help and care services are to be rendered to our elderly in the present prevailing social and economic conditions.

Objectives of the Study

This study of predictors of alternative types of care used and their impacts on the quality of life of the Thai elderly has the following objectives:

1. To determine the important characteristics of individual elderly and their family structure that distinguish those who remain in the family from those who become institutionalized. These distinctions are the desired end-products of this analysis, as they are the best predictors for identifying whether or not an elderly person will likely be institutionalized or not.

2. To study the elements of care considered to be essential for the provision of care amongst the three alternative types: non-institutional, government nursing homes and private nursing homes. These elements are concerned with the continuity of their existing care arrangement and the availability of alternative support. Assessment of care is based on interviews with elderly people who are care recipients.

3. To study the needs of the elderly, the priority of their unmet needs and to compare the various levels of severity of these needs expressed by the elderly in the different types of care. The analysis includes the discrepancies in the expressed needs when different means of inquiry were used.

4. To examine the dimensions of the quality of life of the Thai elderly which are affected by being in different types of care. These dimensions are: life satisfaction, self-esteem, general health and functional status, and living environment. It also seeks to identify the characteristics and circumstances of the elderly that serve to distinguish an elderly person with a low level quality of life from one with a high level.

Scope of the Study

This study aims to identify the present situation of elderly care and services in Thailand provided by the government and private organizations. The study categorizes these types of care and services into three alternatives: care provided by families, by free-of-charge institutions and by profit-making institutions. There is a particular focus on the last category, which has never been studied before, and is currently found only in Bangkok. Therefore, this study targeted the elderly population living in the Metro-Bangkok area, as they and their families were the most likely population group to have access to all these services. They are a relatively small group of elderly in comparison to the total aged population throughout the country. According to the 1990 population and housing census, only 8.7 percent of Thai elderly are Bangkok Metropolis residents, and only 16 percent live in municipal areas. Such a study focusing on elderly people in the Greater Bangkok Metropolis may be deemed to be neglecting the majority, 84 percent, of the aged population who live in non-municipal areas; however, one observation is that rural areas are changing, and will, sooner or later, become city-like communities. Life-styles of the rural people are also changing to tend to imitate those of the city. As this trend continues, the phenomenon that elderly people in Bangkok are inclined to seek care and services from private profit-making institutions is an interesting one.

It was found in this study that care services provided by the private sector were of two different natures: one group ran the institutions as free-of-charge or aid-providers, whereas the other made profit out of the operation. The latter case was included in the study despite the fact that the data collected was sparse due to the juvenility of this type of business. In addition, the elderly were frail and could not provide much information; moreover, many

of them could not communicate in Thai. The small number of private profit-making institutions and the condition of the elderly themselves, therefore, limited the availability of data on this group of the elderly in this study.

Organization of the Thesis

The remaining chapters of the thesis cover the review of literature, research methodology, a demographic profile of the aging population and the provision of care services for the elderly in Thailand, analyses of data from the field survey and the conclusion.

The review of literature (Chapter II) includes four sections. It begins with the kinds of formal support of social care services for the elderly and the experiences of several other countries. The concepts of quality of life of the elderly which consists of four dimensions: life satisfaction, self-esteem, general health and functional status, and living environment follows. The third section explores the factors that have determining effects on elderly people's decision to enter alternative types of care. Lastly, the conceptual framework for the study, based on the above literature review, is formulated to meet the objectives of the study.

In the third chapter, the method of research used in this study, research design, data employed, target population and sampling scheme, instruments for data collection and methods of data analysis are discussed. Before presenting the results of the empirical study, Chapter IV is devoted to the profile of the Thai elderly and the country's provision of elderly care services. Information about the former is drawn mainly from the population and housing census whilst information about the latter is gained from documentary research and observations from the field survey.

The results of the data analysis are arranged in four chapters (Chapter V, VI, VII and VIII). Overall characteristics of the samples are first presented in the fifth chapter. These include the individual characteristics of the elderly, their family structures, and personal life-style. Chapter XI investigates factors that have determining effects on elderly people's decisions to enter alternative types of care, which is the first objective of this study. To fulfill the second and third objectives of this study, the results of the assessment of care and the analysis of needs of the elderly are presented in the seventh chapter. Findings for the last objective, the analyses of the quality of life of the elderly are presented in the eighth chapter. In the last chapter (Chapter IX), the major findings of the analyses are summarized and discussed, and recommendations are made for policy implications and further study.

CHAPTER II

LITERATURE REVIEW

In this chapter, the first section will present the two common patterns of care used by elderly people in order to provide a framework for defining the different types of care examined in this thesis. The second section contains the review of literature in respect to factors related to institutionalization. In the third section, the concept of the quality of life is defined and factors related to quality of life of the elderly found in the empirical studies in this country and others are reviewed. Based on this literature, a conceptual framework for this study is developed and presented in the last section.

Care Used by the Elderly

When families failed to provide the filial care for their elderly, formal care services are needed. Care services for the elderly in most Western countries are considered part of social care services which are the government's responsibility for meeting the needs of its citizens.

Martin Knapp (1984: 3) classifies 'formally' provided social care services in Western societies into four main types: 1) residential accommodation, often taking responsibility for all the needs of the residents; 2) day care in centers and clubs; 3) domiciliary care in the client's own home, home visiting, and/or social work which eases the burden of an elderly person's child or children; and lastly, 4) fieldwork which could take place in any setting and also could focus on an individual, a group or a whole community.

Two of the above, residential care and domiciliary care, have developed to become the two most important patterns of welfare provision for the elderly in Western industrialized countries to cope with the perceived 'needs' of the elderly. These two patterns of care have also been widely adopted in most industrializing countries (Chan, 1992: 136).

Residential care is equivalent to care in an institution which takes care of those old people who are no longer able to live independently in the community, so they are placed in homes for the aged or nursing homes. This form of care can be further extended to long-term stay hospital beds for those with medical needs. The idea of institutional care has been practiced as early as the third or fourth century by Christian groups in Britain who developed institutions called 'gerontochia' to care for the elderly (Victor, 1994: 216). Hospitals run by monasteries in the medieval period also contributed to the care of the elderly. Centuries later, the supply of this social service is integrated into the welfare system and is the policy in various countries with varying degree of provisions. Today, with the increasing demand for institutional care, the private sector, especially profit-making concerns, have become major providers of nursing and residential homes in Western countries and are emerging in Asia.

The second pattern is domiciliary care or domestic services which bring supplementary services to elderly people remaining in their homes, either living alone or with other family members. Such services include home nursing, health visits, meals on wheels, transportation, and laundry facilities. Domiciliary care was initially available only under voluntary or public auspices; however, recent studies in Britain and United States found that there has been an increasing development of private-making agencies in this sector of the health market (Kart, 1994: 441). They provide

multidisciplinary services including skilled nursing and therapeutic services as well as social networking, mental health, legal, financial, and personal care services, and household management assistance.

The vast expansion of domiciliary service could be due to its being perceived as a vital component in delaying or preventing the elderly from having to be cared for in an institution. Maintenance of the elderly in their own homes or with the family is a more desirable alternative in policy planners' points of view and also for most of the elderly themselves. The rationale for this is based on two assumptions. Firstly, long-term care in institutions is now expensive and a financial burden for most welfare states (Victor, 1994: 218). Secondly, there is a consensus of opinion that living with their own family or in the community is better for the elderly than being institutionalized. The latter idea might have been first stimulated by the pioneering study of Townsend (1964 quoted in Victor, 1994: 217) which investigated the quality of life experienced by the elderly living in institutions in post-war Britain. Victor (1994: 217), reported that Townsend (1964):

> ...drew attention to the use of inappropriate buildings, inadequate facilities and a quality of life for the residents which was regimented and with little personalization. He wrote: 'communal homes of this kind ..... do not adequately meet the physical, psychological and social needs of the elderly living in them... alternative services and living arrangements should quickly take their place' (Townsend, 1964, p. 222). His alternative policy response argued strongly that the community [or the family] was the right and proper place to care for the elderly.

Victor (1994: 217) also concluded that since the Townsend study (1964), there have been at least three obvious changes in Great Britain. 1. The policy for the care of the elderly has almost concentrated on family care or care in the community. 2. There has been more improvement in public institutional care (e.g. the building of more independent living units and more personalized

services). 3. The growth of private profit-making residential homes which has become a major provider of institutional care in Great Britain today.

A brief review of the type of care used by the elderly in various countries, mainly those industrialized Western countries and countries in East and Southeast Asia, is essential. This is to gain insight into the balance between institutional care and family care in the current social situation where resources are limited and familial support is weakening.

In Western countries where the proportion of elderly people aged 65 years and above ranged between 12-18 percent of the total population in 1990, the proportion of those living in institutions varied between 5-10 percent of the total elderly population. The proportion of those aged 60 and over living alone in private households is also very high, about 35 percent on average (Victor, 1994: 97).

The above figures are certainly different from countries in the Southeast Asia where the proportion of their aging population are all less than 8 percent. Those cared for by government institutions are as little as 0.5 percent, with Singapore the exception at 1.6 percent (Chen and Jones, 1989: 42). The proportion of elderly people living alone is no more than 10 percent; and those living with children and/or other members of family is as high as 75 percent.

Aware of the high cost of institutional care, policy initiatives in Western countries (and also Hong Kong) are focusing more on elderly care outside of institutions. In other words, they are encouraging the supportive role of elderly care in the community or implying that care by the family is preferable. This can be achieved by ensuring there is an effective supply of domiciliary

service to enable elderly people to live independently or help their families to more easily cope with their daily care. Australia and Sweden are examples of countries that are replacing institutional care with less costly care alternatives and, perhaps, a better quality of life for the elderly. From 1983-1985, the government of Australia diverted 38 percent of the budget that was previously spent entirely on institutional care for the elderly to those in the family or who were looking after themselves (Hugo, 1986). In 1988-1989, Swedish legislation made provisions to improve housing or replace housing for their elderly. They also legislated to increase domiciliary services as well as support for the family care-givers by granting paid leave to take care of the family elderly and it was hoped these measures would postpone the use of institutional care for frail elderly (Hokenstad and Johansson, 1990: 266-267). In fact, a decrease of 15 percent in the use of long-term care beds in institutional care in a ten years period was observed in 1985 in one study (Sundstorm and Berg, 1988 quoted in Hokenstad and Johansson, 1990: 258).

For most Southeast Asian countries, with a cultural tradition of family support for elderly relatives and the aging population still in the early stage of its projected increase (Hong Kong being an exception in the latter case), most governments are taking cautious actions in the expansion of institutional care provision. The trend, however, towards modernization, urbanization as well as demographic changes have meant that the ability and the willingness of the family to care for elderly relatives have decreased in these countries (Phillips, 1992: 14-15). There have been attempts in Hong Kong, China, Singapore and elsewhere to stimulate the traditional respect for elderly members in particular by encouraging their economic and support roles within families. The Hong Kong and Singaporian governments have particularly emphasized a 'care in the community' policy although it is not yet

practiced efficiently or sufficiently. Phillips (1992, x) has pointed out that the authorities in countries where care of and respect for elderly family members is expected as a filial duty, or sometimes a religious one, may take advantage of this belief and use it as an excuse for delaying or minimizing official actions and assistance for elderly people. His point may be over stating the case, but the situations occurring in China and Japan should be taken as examples of the point he made. In China, while the government is slow to acknowledge the need for institutional care looked for by a substantial non-institutionalized population, the private sector is quick to respond. There are a number of unlicensed nursing homes run as businesses which have been set up to meet this need (Ikels, 1992: 282). In Japan, with the poorly developed system of institutional and domiciliary care, hospital care becomes an alternative for family to put their elderly family members into hospital so as to ease the care burden on their daily life (Phillips, 1992: 5 and Makihara, 1994: 41). This high cost of medical care and the source of funding are now major practical and political issues there.

In conclusion, the above discussion of residential care and domiciliary care and a summary of care provisions for elderly people in various countries is aimed at introducing the two basic options of care for elderly people. They are institutional care and family care which will be framed as the alternative types of care in this thesis.

Factors Related to Institutionalization

There is a saying that one cannot choose one's family (United Nations, 1994), but it is also true that institutionalization is the result of voluntary as well as involuntary causes. Kart (1994: 436) addresses that to choice of long-term care services for the elderly is determined by a complex set of interacting

personal and environmental factors. Personal factors include demographic, psychological, economic and health related characteristics. Environmental issues are related to the availability of informal support and of community and institutional services. The rooted-tradition of family value is also a factor that might make the elderly reluctant to move into nursing homes (Chan, 1992: 137). In an early study of reasons for admission to an institution, Townsend (1965, quoted in Bond and Coleman, 1990: 179) reports that family composition, structure and organization strongly influence admission to a nursing home. Functional capacities, homelessness, and lack of economic reasons are found to be less influential.

Admission procedures or criteria set by the institution are other factors that determined whether or not the elderly persons are eligible for admittance. This is the case for most free-of charge nursing homes in this country, especially for those run by the government. Applicants have to be physically able, free from contagious diseases and be evaluated by a social worker to prove that they are indeed in need of this service. Elderly males have to be at least 65 years of age, and females at least 60 (Department of Public Welfare, 1995).

Most research papers on institutionalization in free-of-charge nursing homes in Thailand examine the reasons and causes for admission into nursing homes. These reasons are as follows: 1. residents are homeless, 2. there is no-one to take care of them, 3. they do not want to be a burden to their families, 4. they are not happy living at home or are bored with living there, 5. they are depressed, 6. they cannot tolerate the confusion that comes with living at home, 7. they are not on good terms with someone in their family or have other problems within the family, and lastly, 8. they decide themselves to reside in a nursing home because they

think it will be quiet and peaceful and feel that they will be taken care of. Besides this, some of the elderly report that their children or relatives decided to send them to a nursing home. The proportion of these stated reasons also varies from one study to another, depending on how many categories are defined as possible reasons leading to a change of residence.

There is one study which attempts to examine the relationship of family structure of elderly samples who are living within family and those that are considering living in an institution. This is made by posing the question whether or not they were thinking of going to reside in a nursing home. The authors notice that elderly persons in less than two-generation households think residing in a nursing home more frequently than those of in family with more than two; however, test-statistics do not give a clear enough summary of this study (N. Suwaporn, et al. 1975: 31).

It is regrettable that most research in Thailand has not put enough focus on family factors as causes of institutionalization in their study frameworks. In other words, not enough variables of family structure before the decision to reside in a nursing home are incorporated into the analysis. Instead, only the stated reasons for admission and some brief characteristics such as the marital status and the number of living children are reported.

One reason for this is that many elderly change their place of residence more than once before going to reside in their present nursing home. Also, poor memory can be an obstacle in remembering certain facts about their family status. As a result, there has been little research on this subject in the past.

Several characteristics of the individual elderly person and of the family structure that are associated with living arrangements

or the use of care services found in studies of other countries can be summarized as follows.

Individual Characteristics

Survey studies have consistently reported that both widowed elderly and those living alone are more likely to enter an institution (Kart, 1994: 447). This is because when these people grow old and sick, they would be less able to cope with the situation if living alone. Also, the majority of residents of institutional care, either public or private, are women (Victor, 1994: 235; Kart 1994). The ratio of women residents is seven in every ten residents in the United States.

Regarding education, Coulton and Frost (1982: 331) reported that elderly persons' knowledge of health and social service agencies is largely dependent on their education and past utilization. A study in Korea observes that differences in educational levels between the elderly parents and their adult children may result in differences in value orientation between the generations and appears to have a strong effect on the alienation of the Korean elderly. To avoid this feeling of alienation and conflict, these two generations prefer to live apart from each other (Choi, 1992: 153). Another study in Taiwan (Chan, 1992: 136) also shows that level of education of the Taiwanese aged between 50-64 is found to be associated with preference of living arrangements. Persons with university or college education prefer to live with their spouse only or live alone when old twice as much as those who are illiterate. Those with primary school education prefer more to live with children than those with higher education. The study, however, does not show if such relationship is consistent for gender differences.

Characteristics of Family Structure

Characteristics of family structure such as the number of living children, living arrangements, care-giver of the elderly persons, will be reviewed in relation with tendency to receive alternative cares.

It is quite natural for those elderly people who have no children to turn to public assistance, especially in a society where there is no retirement pension scheme (Chow, 1992: 71). It is also assumed that more living children make for a larger family size with more adult labor resources. This can be expected to provide more care-giving in terms of more care-givers to assist and more emotional support or caring activities (Kashner and Magaziner and Pruitt, 1990: 184) which help to maintain elderly people living at home even when they become very frail.

Co-residence of aged parents and adult children is often interpreted as guarantee of filial support and a smaller chance of institutionalization (Ikels, 1992: 275). In the same way, not having a care-giver for an extended period is one of the criteria for the choice of long-term care arrangements in an institution. In Hong Kong, the major reason of admission into a private home is due to having no care-giver at home (Kwan, 1988 quoted in Chow, 1992: 70). Having no-one to care for them is also an acceptable reason given for applying for public home for the aged in Hong Kong and China.

Owning a home is one characteristic among others for those younger residents to be discharged (alive) from nursing homes (Green and Ondrich 1990 quoted in Kart, 1994: 447).

In conclusion, individual characteristics such as gender, widowhood and education have associations with the elderly's living arrangement and use of care services. Besides, there is a body of

research which suggests that the presence of family is an important factor in delaying, if not preventing, the institutionalization of a chronically ill elderly person (Kart 1994: 455; Bond 1990: 179). Based on this literature, a conceptual framework for determining factors that attribute to the use of alternative types of care can be developed.

Conceptual Framework of Predictors of Alternative Types of Care

In this study, the conceptual framework for determining the important characteristics for predicting whether an elderly person will be cared for in an institution or in the family is built on two sets of variables: the individual characteristics of the elderly person, and the characteristics of the family structure. These two sets of variables are taken to be predisposing factors that bring about the tendency to enter institutions or to remain in families.

The individual characteristics are gender, marital status or previous marital status, previous occupation and reading ability (a proxy for educational level). The characteristics of family structure include the following variables: number of living children, persons the elderly is living (or used to live) with, the care-giver, and the head of the household. Events regarding the change to their present residence such as reason for the change and the decision-maker are incorporated to reflect the family situation and authoritativeness of the elderly person in the family.

Conceptualized as deterministic variables affecting the choice of either type of care, factors concerning the living arrangements are operationalized before the elderly choose to reside in institutions. The study framework for determining the use of alternative types of care is laid out in Figure 2.1.

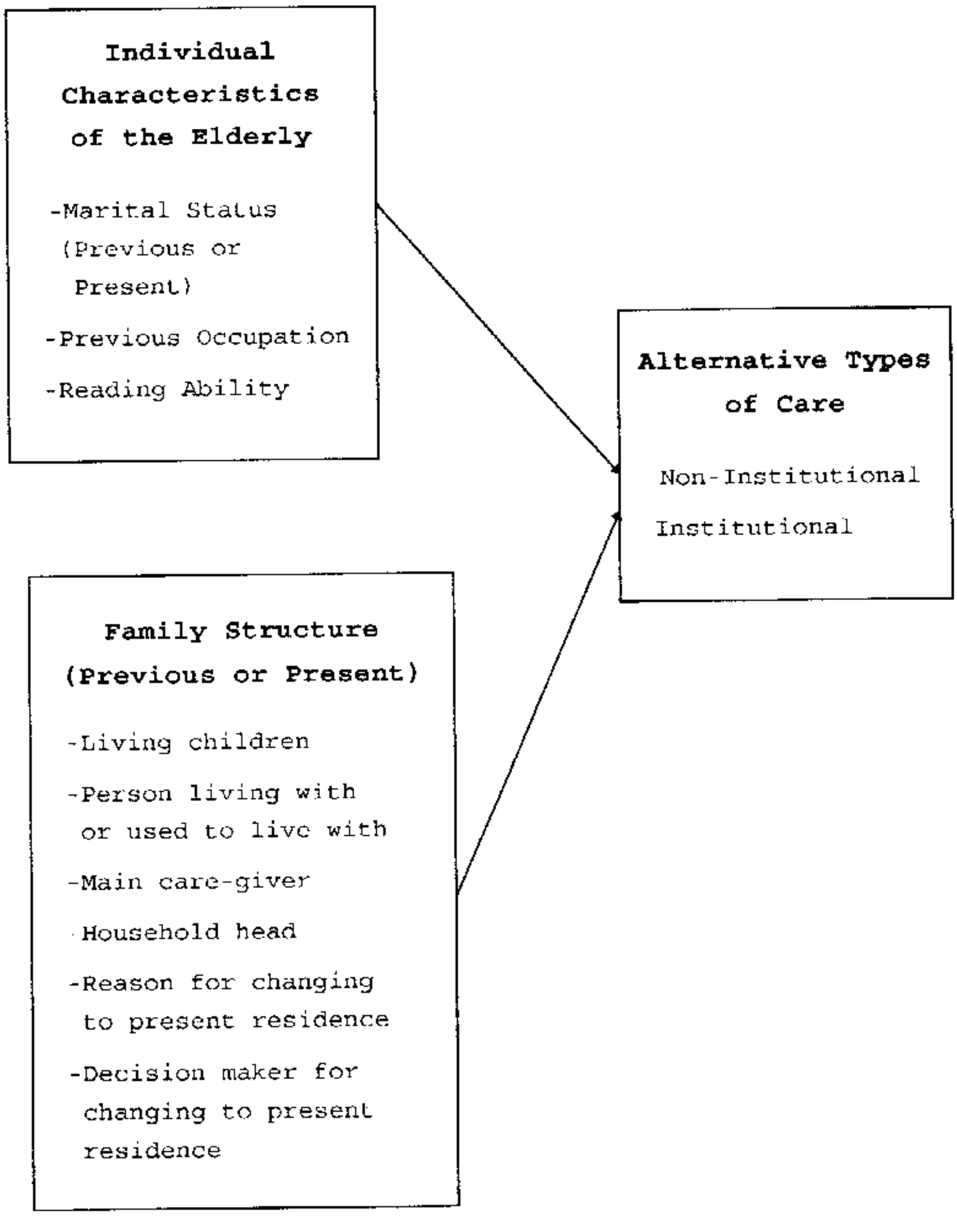


Figure 2.1 Analysis Framework for Predictors of Alternative Types of Care

Note that in this framework, the elderly person's socioeconomic status is not included as an independent variable, though there are ample reasons to view socioeconomic status as a factor influencing the choice of alternative types of care. In this particular sampling design, however, socioeconomic status is one of the stratifying criteria amongst gender and age for the non-institutionalized sample group. This group comprises of equal samples of high, middle, and low socioeconomic status. As a result, it is not logical to develop an analysis model with socioeconomic status as an influencing factor for institutionalization. Besides, for the sample group of institutionalized, being free-of-charge institutions, most of their residents are found to be of low socioeconomic class. For this reason, socioeconomic status is not conceptualized to be a predisposing factor for determining whether an elderly person will be institutionalized or not.

The Concepts of Quality of Life

The Definitions

Notion of quality of life has been a popular issue mostly associates with the thinking about goals of social and economic development, especially when attention is on the search for 'indicators' that could measure the standard of living, welfare, well-being, and life satisfaction of individuals or the improvement of life quality (UNESCO, 1983; Dube, 1988: 57; Hughes, 1990: 47). Also, there is consensus on many the ways in which quality of life can be defined (Gerson, 1976; Campbell and Converse, 1976: 471). It has even been stated that the definitions of quality of life are merely a matter of personal or group reference (George and Bearon, 1980 quoted in Izutsu and Rose: 41).

Despite all of the above arguments, a number of statements explaining the term 'Quality of life' (QOL) are summarized.

UNESCO experts (1978) perceive quality of life to consist of material and non-material aspects of individuals. This means the coverage of both the material satisfaction of a person's needs as well as aspects of life such as personal development, self-realization and a balanced eco-system. Dube (1988: 57) also emphasizes both the objective conditions of quality of life and the subjective feelings on formulating indicators to measure and evaluate it, with cultural contexts taken into account as well. Campbell and Converse (1970: 5 quoted in Nontasak, 1978: 13) have given a holistic meaning of quality of life as "...a composite measure of physical, mental, and social well-being as perceived by each individual and by each group, and of happiness, satisfaction and gratification". As George and Bearon (1980 quoted in Izutsu and Rose, 1986: 41), their definition of quality of life encompasses not only adequate material well-being but also perceptions of well-being, a basic level of satisfaction or contentment, and a general sense of self-worth.

The Measurements

Many have worked on the measurements of quality of life. In assessing quality of life, experts at UNESCO (1983: 20) suggest a start "...from the hypothesis that satisfaction, happiness and other attitudinal scales employed by QOL investigators are reliable measures of perceived quality of life."

George and Bearon, based on their previously cited definition, assess quality of life as incorporating the following dimensions 1) life satisfaction 2) self-esteem 3) general health and functional status, and 4) socioeconomic status (1980, quoted in Izutsu and Rose, 1986: 41 and in Hughes, 1990: 49).

The above are quite simple compared with the thirteen separate domains of life activities identified by Day for the

measurement of satisfaction (1987 quoted in Leelakulthanit, 1989: 25). These thirteen domains are: family life, work life, social life, leisure/recreation, personal health, health care, purchase and consumption of goods and services, material possessions, self, spiritual life, life in the US, and federal, state and local governments.

There are others whose work attempts to measure the quality of life of older people. Fillenbaum (1986:152) defines seven dimensions of well-being in the elderly which could be summarized into four areas: 'personal functioning', 'social and economic resources', 'environmental matters' and 'strain on the providers'. The last two areas are factors that might influence the continued capacity to live in the community or within a particular environment which is not covered by the framework of George and Bearon (1980 quoted in Izutsu and Rose: 41).

In a recent study by Hughes (1990: 54-55), a model of quality of life for older people as a framework for the developments of measurement is outlined. The constituent elements that define quality of life are: individual characteristics of old people, physical environment factors, social environment factors, socio-economic factors, personal autonomy factors, subjective satisfaction and personality factors. It is proposed that each of these are related directly or indirectly and also are a sub-system of related factors. It is acknowledged that "...factors pertaining to a person's whole-life experience are crucial in determining quality of life in old age" (Hughes, 1990: 54). The author also remarks:

> The task facing social gerontologists is to define and operationalise that concept in ways which make it a simpler task to assess an individual's quality of life and make comparisons with the lives of others in similar or different settings. There can be no single way of defining and measuring quality of life which is applicable to all types of research (Hughes, 1993: 229-230).

In Thailand, the improvement of its citizen's quality of life, chosen to be carried out in the years 1985-1987, is emphasized in the Basic Minimum Needs (BMN) which must be attained by developing or advancing societies from the grass roots level in the country villages. The 'Basic Minimum Needs' for quality of life are divided into eight categories with 32 standards of measurement. Note that these standards of measurement are usually more relevant for the targeted population- children and women. Only a few categories are relevant to the lives of the aging population. Besides this, the standards of measurement are chosen to measure the meeting of basic needs of the people in the rural communities. Important components of quality of life of older people in the urban settings, unmeasured in the list of 'Basic Minimum Needs', are found in the subjective measurement of life satisfaction, pride of accomplishment or self-esteem and functional health as proposed by George and Bearon (1980 quoted in Izutsu and Rose: 41).

In conclusion, this thesis concerns the quality of life of the elderly persons in and around the Bangkok Metropolis. It aims to compare their quality of life as a consequence of being in two different care arrangements, in the family and in an institution. To cover the material and non-material aspects of quality of life, this thesis borrows the framework of George and Bearon (1980 quoted in Izutsu and Rose: 41). The material aspect of quality of life, the objective conditions, measures on the health and functional health of the elderly. The non-material aspect of quality of life, the subjective evaluations, refers to a range of life experience, and includes perceptions of satisfaction or contentment, as well as a general sense of self-worth. For the present study, particularly, whose samples are in two different settings, it incorporates the additional dimension of living environment which is one of four factors to measure the elderly's well-being proposed by Fillenbaum (1986: 152). By this, their day-to-day experiences with respect to

residential arrangement, institutional or family environment, shall be evaluated.

Hence, four dimensions of 1. life satisfaction, 2. self-esteem, 3. general health and functional status, and 4. living environment are drawn to measure the quality of life of the elderly in this study.

Factors Related to the Quality of Life of the Elderly

The preceded discussion on assessments of quality of life pertinent to the present study are framed within the dimensions of life satisfaction, self-esteem, general health and functional ability and living environment. Factors related to these dimensions of quality of life that have been proven by empirical studies, both abroad and domestically, are summarized as follows.

Factors Related to Life Satisfaction

Lohmann (1980: 35) reported that five major variables - marital status, retirement, health, social activities, and housing and physical environment - have been the subject of 40 years of research on association with life satisfaction; however, this has "...not resulted in any clear-cut answers with regard to the causes or correlates of life satisfaction" (Coleman, 1990: 109).

Two earlier theories of aging, the activity theory and disengagement theory, which address changes in the individual's relationship to society, highlight social activities and social interaction as central concepts in relation to a satisfying style of life of older people (Thomas, 1992: 35-36; Hughes, 1990: 46).

The research of Maeda (1986) measures the satisfaction of the elderly for cross-cultural studies with the Philadelphia Geriatric Center Morale Scale developed by Lawton. Activities of Daily Living (ADL), health status and length of living in the

community are found to be the most important factors in assessing life satisfaction among the Japanese elderly.

Besides this, the question is at what level does an elderly person feel happiness. For just this question, it is found that factors of health, economic problems in daily life and concealed dissatisfaction are all related to the degree of happiness. This same study notes that if elderly people have passed through very difficult circumstances when they were young, they would naturally feel the present condition holds more happiness.

Moody (1994: 32) concludes that self-rated health is a strong predictor of subjective well-being whereas chronological age is a weak one. Larson's (1978 quoted in Coleman, 1990: 109) review of the gerontological literature concludes that only self-rated health consistently correlates with measures of subjective well-being.

Health related variables are found to be highly correlated with life satisfaction in one study in Thailand. An elderly person who has better health tends to be able to build relationships within the family and society (Siripanich, et al. 1989: 63). This naturally has influences on the feeling of satisfaction with life and personal pride.

Research by the Department of Informal Education (1985: 84) concludes that elderly Thais perceived happiness and satisfaction in the family by living with children and grandchildren (26 percent) as a predominant factor; being financially secure (17 percent) is reported as frequent as receiving respect, obedience and attention from children and grandchildren, and seeing them experience success in education (approximately 17 percent). While elderly females' happiness is determined by living with children and grandchildren as family life, elderly males have happiness when they receive respect

and honor from their children and grandchildren and are financially secure (Department of Informal Education, 1985: 90).

Factors Related to Self-esteem

Studies on older people suggest that effective social support helps to upsurge self-esteem (Krause, 1987 cited in Coleman, 1990: 114). Income and source of income could have an effect on the feeling of personal pride and dignity of the elderly (WHO, 1984).

Kahana, Kahana and Young (1985:410) analyze a longitudinal study of elderly adaptation to institutionalization after three month's entry. Despite the usual negative image of institutions as isolated and passive, they found comparatively increasing scores on self-esteem after entry into the institution. This is explained by the lessening of social isolation as a result of some positive effects on the living situation in institutions compared with the prior to the move. The majority of these residents have other persons to whom they speak regularly and they also report of having someone to be close to.

Research by the Department of Informal Education (1985: 79) reports that the first factor influencing the feeling of pride in the Thai elderly comes from financial security (44 percent). The second factor responsible for pride is having contributions to their society (20 percent), and have maintained and kept strong religious ties (19 percent).

Kamnuansilpa et al. (1980: 171) conclude that elderly people's importance can be divided into importance to their children/ grandchildren and value to society. The elderly are important to their children/grandchildren in being a moral support, teaching and training them, working around the house, and in looking after grandchildren. The elderly are important to society in

helping others, in giving advice and advising on the arrangement of various ceremonies, or during times of illness or crisis. He also concludes that at present young people give less respect to the aged.

Concerning realizing one's own worth or value, the same study (Kamnuansilpa, et al. 1980: 123) reports that 33 percent assert they have 'great worth', while 49 percent feel they have 'some worth' and another 18 percent report as 'no worth at all'. Factors associate with realizing one's own worth include receive respect, obedience, attention, and frequent visits from children/ grandchildren, and capable of giving advice. Number of children, education and income are also proved to be positively related to self worth; the changing role in financial status, however, does not show, statistically, significant association.

Factors Related to General Health and Functional Status

Married life might be a factor which inclines the elderly toward healthy behaviors in diet and life-style and influences the promotion of health, but it is difficult to study the empirical evidence (WHO, 1984). A study of Siripanich, et al. (1989) shows that having a spouse is associated with the health of an elderly person. The same study also notes a significant relationship between literacy and good health among the elderly Thai who are 70-74 years of age.

Concerning the relationship between health status and age, there is controversy. It cannot be denied that advancing age affects health functions and conditions; however, noted by Logue (1989: 4), "... some chronological younger persons may function poorly while some individuals of very advanced years may function exceedingly well."

Factors Related to the Assessment of Living Environment

Cowgill (1972) makes a proposal about a cultural phenomenon concerning residency. The proposal is that stability of residence causes the elderly to have high morale, but an instability of residence or moving to another location causes low morale. Feeling of ownership or having a part in the residence and the length of time in the dwelling is likely to be an important factor in any feeling of satisfaction. Subjective satisfaction is a more relevant assessment than observation of the physical environment in the residence.

Conceptual Framework for Assessing Quality of Life

In examining the consequences on quality of life of the elderly, two models are taken into account.

In the first model, quality of life of the studied samples is considered to be an outcome of the particular experience of life which is being in the two alternative types of care, defined as non-institutionalized and institutionalized (Figure 2.2).

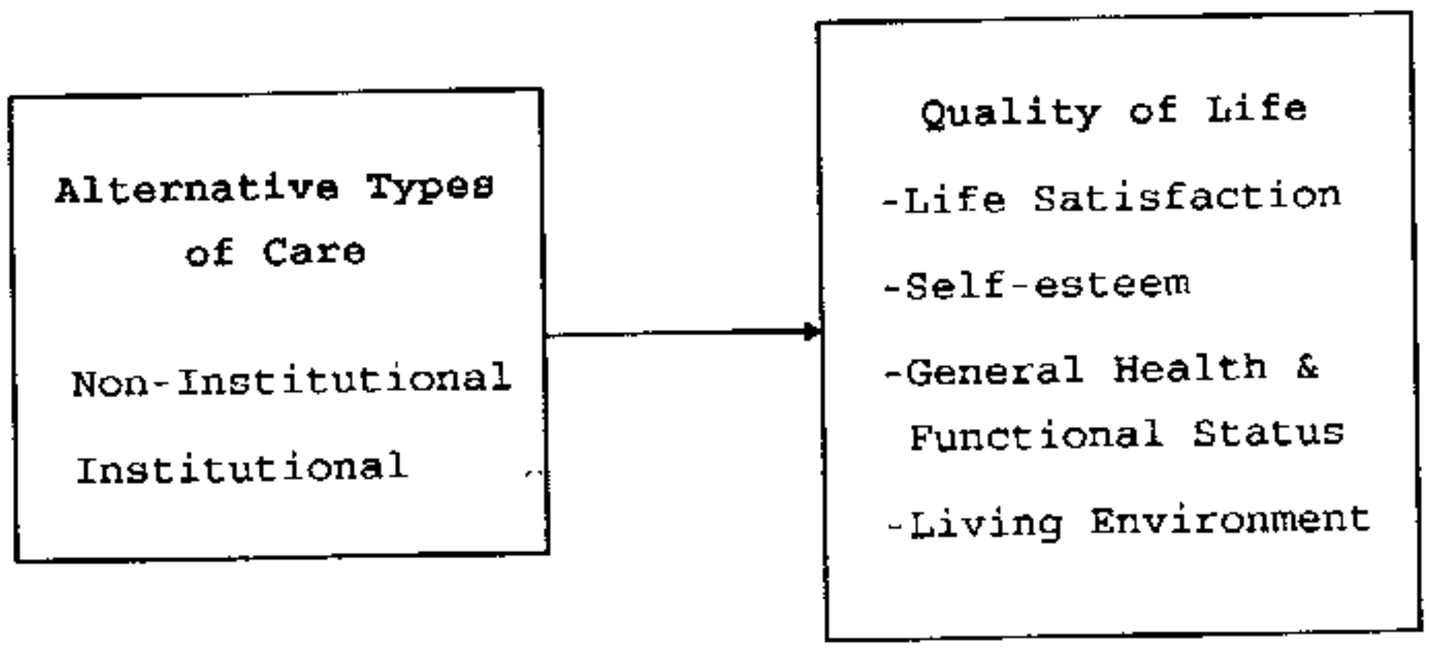


Figure 2.2 Conceptual Framework for the Analysis of Consequences on Quality of Life (Model I)

The multi-assessment of quality of life is modified and framed under the study of George and Bearon (1980 quoted in Izutsu and Rose: 41) and that of Fillenbaum (1986: 151). From these combinations, quality of life is expressed through four dimensions: 1) life satisfaction, 2) self-esteem, 3) general health and functional status, and 4) the living environment.

Note that different types of care arrangement, as characteristics of certain experiences in life, are hypothesized to affect the quality of life of these elderly. By this assumption, their socioeconomic status is not included in the objective dimension for measuring quality of life as of the original framework of George and Bearon (1980 quoted in Izutsu and Rose: 41). This is because conceptualizing quality of life as an effect of being in these alternative types of care would mislead the interpretation. In actuality, socioeconomic status of an elderly person does not change directly by entering the institution or remaining in the family. Life in an institution tends not to alter a person's status in this aspect. Residents of institutions, in general, are expected to be retired from work. Although there are work activities that some residents might engage in to earn pocket money, they are provided mainly for recreational purposes; besides, only small proportion of the elderly are involved. Thus, in this particular situation, socioeconomic status does not apply to be a meaningful dimension of quality of life as consequences of care arrangements.

As for the second model, besides the effect of types of care, quality of life is considered to be influenced by other elements of life as subjected by being under different types of care. That is, other experiences of life are taken into account for the differences in reporting quality of life (see Figure 2.3).

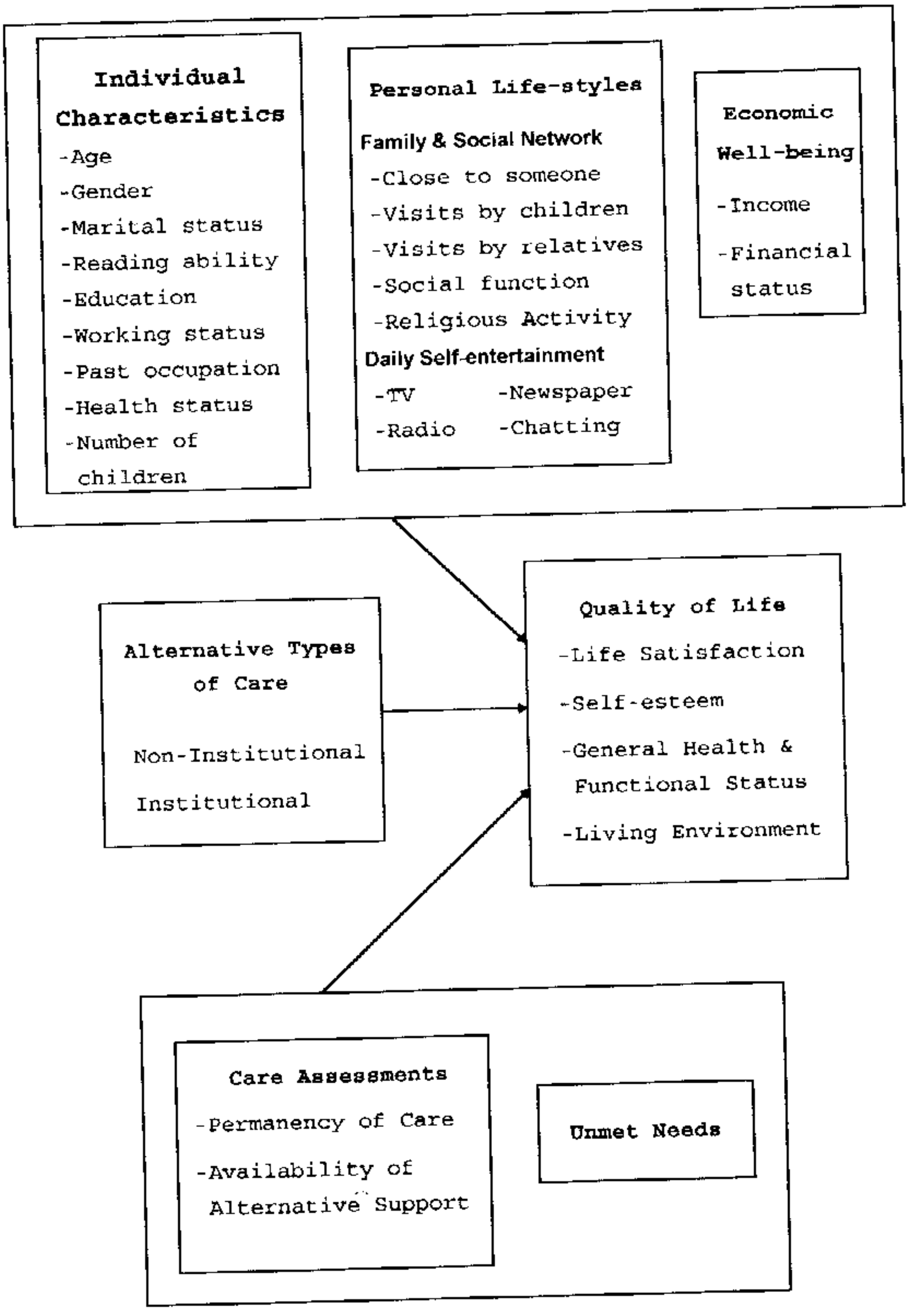


Figure 2.3 Conceptual Framework for the Analysis of Consequences on Quality of Life (Model II)

Other elements of life as mentioned to constitute combining effects to describe the quality of elderly's life refer to: the individual characteristics of the elderly themselves and their personal life-style which include family and social networks, and daily self-entertainment. Personal characteristics of the individual are emphasized in the study of quality of American life by Campbell et al. (1976: 15) to be significant factors on every step of their model. The study uses the characteristics of class, age, education, income and the like to explain variance in satisfaction. It elaborates:

> ...since people of different personalities and social backgrounds select themselves into different types of jobs, housing and other features of the objective environment [or care arrangements], while participation in any given objective environment [or care arrangements] creates characteristics life experiences... (Campbell, et al. 1976: 15)

Social interaction, or social involvement has been a central concept of the two well-known activity and disengagement theories in depicting the satisfying styles of the old. Therefore, the present framework would want to recognize variables such as family and social networks, and daily self-entertainment in the analysis model.

In this framework, the assessments of care received would also affect the quality of life of these elderly. It is assumed, following Kurt Lewin (n.d. quoted in Campbell, et al. 1976: 13), "...that experience (and behavior) derives from the interaction of person and his environment". To live in the family or in an institution is an 'objectively defined environment', but the elderly perceived their care arrangement in 'subjectively defined environment'.

Since elderly persons involved in this study are in two different care arrangements -- in the family and an institution, current characteristics of family structure of one sample group are far too different from that of another to describe their experience

of life in the present or future. The subjective experience of care assessments, derived from the condition of living arrangements, however, would describe the quality of life in this situation where the objective conditions are incomparable. Care assessments are conceptualized regarding the permanency of the care arrangements and the availability of alternative support.

In the same manner, their assessed needs or unmet needs, as the existing constraints in life due to the respective care that the elderly persons are provided, are viewed to be factors that inevitably affect some dimensions of quality of life.

CHAPTER III

RESEARCH METHODOLOGY

This study employs two research methods: documentary research and survey research. The documentary research, using data and information from secondary sources, provides readers with a profile of the Thai elderly and the provisions of elderly care services in Thailand.

The documentary research is presented in Chapter IV. The second research method, the survey research, which is conducted by interviewing elderly respondents within the Bangkok Metropolitan area, is the principal study of this thesis.

In this chapter, the survey research method is the main topic of discussion. It begins with the description of the research design, target population, sampling schemes and the sampling results. Then comes the preparation of instruments for data collection and procedures of field work. Limitations or problems encountered during the field survey are also noted. A test of construct validity and reliability of the constructed scales for assessing the quality of life is also performed (Appendix A). Lastly, the methods of data analysis are laid out.

Research Design

This research classifies its target population, the elderly, into four different categories according to the types of care they currently receive. The categories are: 1) the government free-of-charge nursing home 2) the private free-of-charge nursing home 3) the profit-making nursing home and 4) the family setting.

Why four different categories of elderly people? This is due to the different nature of care arranged by the care-providers. Nursing homes available in Bangkok and its peripherals have long been known as being 'charity' or 'free-of-charge' to render help for the needy aged. The first free-of-charge nursing home was founded by the government. A few are run by non-profit private organizations. It is observed that the residents of government and private nursing homes show some different characteristics, at least by ethnicity and religion (the latter are predominantly Thai-Chinese). Thus, the elderly in free-of-charge nursing homes provided by the government or private organizations are classified as two different categories of the population, i.e., government and private nursing homes. The third group of elderly are those who seek services from the profit-making private nursing home. Such private homes are a newly-emerging service in Bangkok and are expected to be much appreciated by service-users of higher socioeconomic status. The last group of elderly people are the non-institutionalized. They live in private households, alone or with family. The traditional care is expected to be provided by their respective kin. These four groups of elderly people are laid out in Figure 3.1.

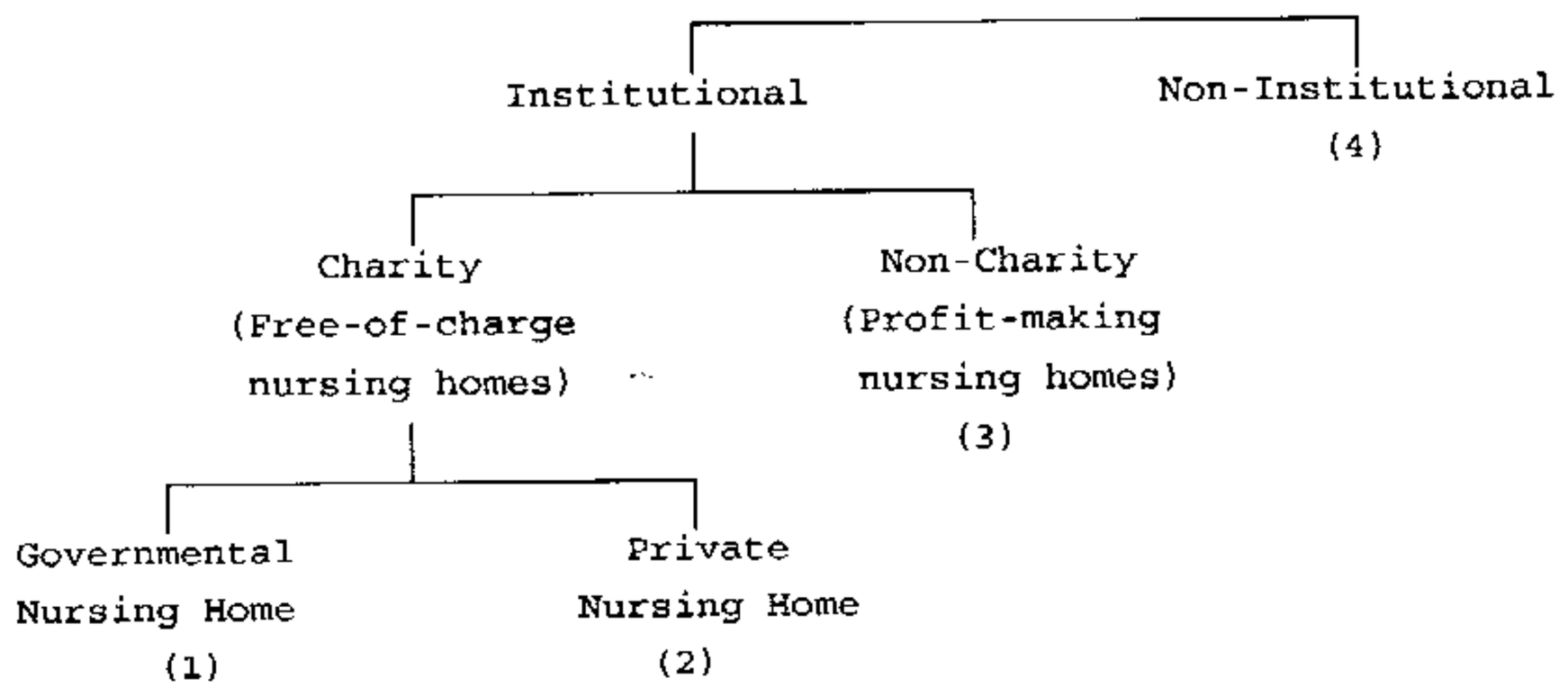


Figure 3.1 Four Categories of Target Population

The research is also designed to ensure that there are enough equal samples from each group and that each group is equal in terms of gender and age groupings (60-79 years old to be the younger group and 80 years and above to be the older group) as well as an equal distribution of socioeconomic classes.

In the classification of high, middle and low socioeconomic status, besides having a criterion which is a combination of the elderly person's standard of living, possessions, occupation, income and education; the person's residential area within Bangkok Metropolis and its periphery is also used as an indication to simplify the sampling process. This is because there are some areas where it is to be expected that the affluent will reside and some areas where the poor will reside, i.e. the squatter areas.

As it is a big city, its total area is stratified into three zones: Bangkok innerbound, Bangkok outerbound and the periphery, so as to yield samples distributed in a wide area of Greater Bangkok.

Note that classification of socioeconomic status is not quite applicable for the group of institutionalized samples. The institutions themselves more or less reflect the socioeconomic status of their residents.

Information on the elderly, family characteristics and quality of their life is sought through interviewing the elderly as direct respondents. Other relevant information is obtained from their care providers: staff of the nursing homes, physicians and nurse aids in the hospitals, or the main care givers of the elderly person (in the case of those who live within the family). Other than interviewing, more information is obtained by observing the life of the elderly in the nursing homes, and some respondents also underwent in-depth interviews.

Target Population and Sampling Scheme

The elderly population as defined in this study are those who have reached sixty years of age at the time of the field survey. This conforms with the standard retirement age for most formal sectors in this country. This research targets the elderly who live within the Bangkok Metropolitan area and its peripherals. It is observed that the newly emerged private enterprise nursing homes are mostly situated in this city. The same situation is observed about the first government nursing homes and other day-care services for the elderly. It is expected that those who live in this city or nearby have higher access to such services. The targeted population are as follows:

1) The group of non-institutionalized. This is the group of elderly who live within their own homes. The sampling scheme is planned to give equal samples for gender, age group and socioeconomic classes. This scheme is repeated in the three zones of The Greater Bangkok area which are: Bangkok innerbound, Bangkok outerbound, and its periphery. A total sample of 180 elderly people is required so as to retain a minimum of five elderly people for each of these 36 combinations of gender, age group, socioeconomic class and zone of residence. (see Figure 3.2)

The residential areas of Sukhumvit, Bangkhen and Nontaburi province are the selected areas for sampling the elderly of high socioeconomic status. The areas of Yanawa, Talingchan and Patumthanee province are the representative residential areas for the elderly likely to be considered middle-class. Finally, the elderly of low socioeconomic status are recruited from squatter communities scattered in the innerbound and outerbound areas of Bangkok and in the province of Samutprakarn. These communities are namely: Chumchon Jarurat, Chumchon Klongteoy, Chumchon Utairat and Chumchon Bannua.

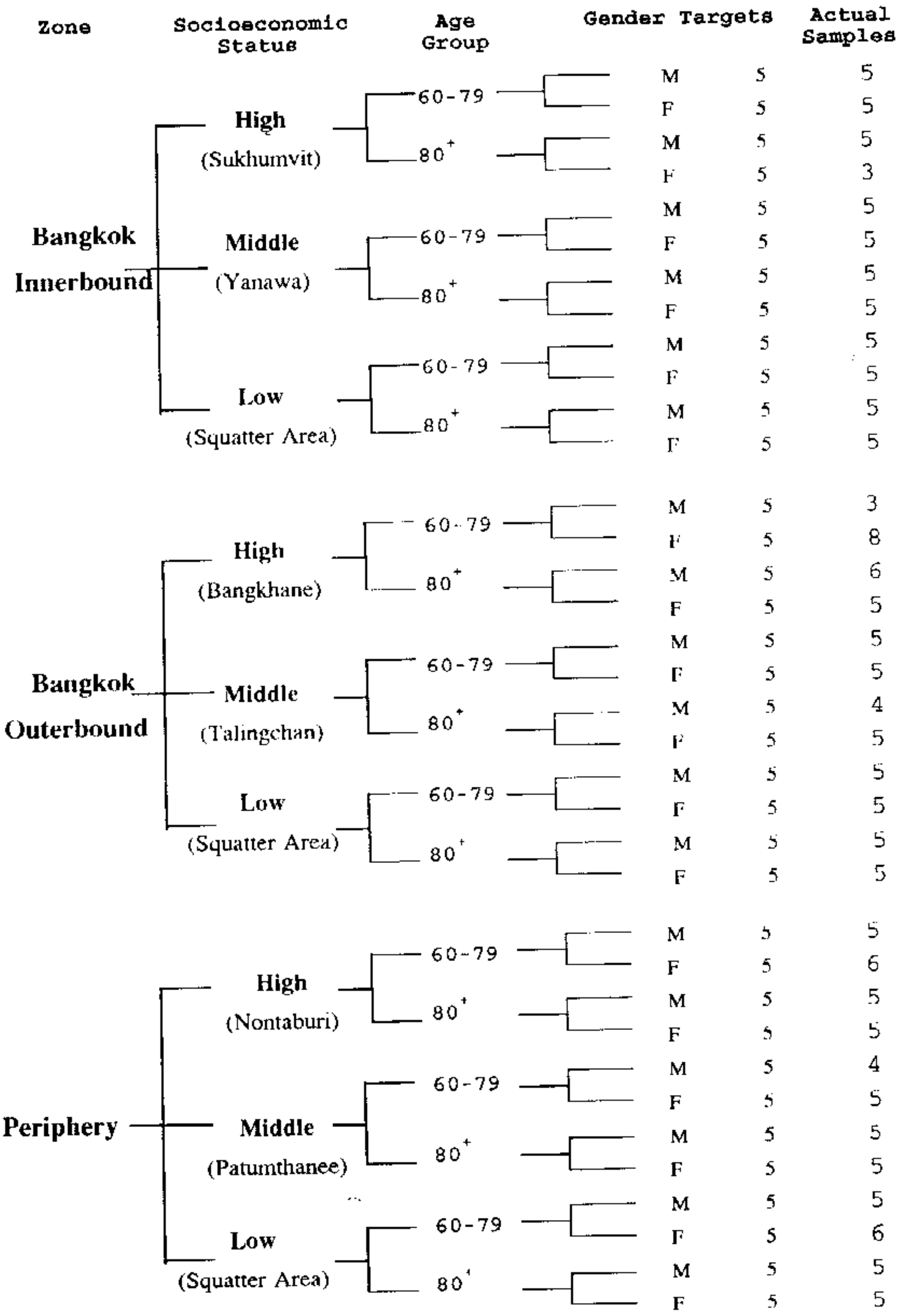


Figure 3.2 Sampling Scheme of the Non-Institutionalized Group Stratified by Area of Residence, Socioeconomic Status, Age Group and Gender, the Target Sample Size of Each Cell and Number of Actual Samples

The provision of sampling lists households with at least one member who is at least 60 years of age is courtesy of the Central Registrar Office of the Department of Interior. These lists provide information such as name, age, gender, and address of the elderly who live in the selected areas (Sukhumvit, Yanawa, Bangkok, Talingchan, Nontaburi and Patumthanee). However, the lists of names are randomly generated from the database by clusters of 'mu-barn' -- subdivisions or housing estates. One 'mu-barn' is sampled from each area.

2) The group of institutionalized. The sampling scheme described previously which is used for the elderly in the family to ensure equal proportions of gender, age group and socioeconomic status, is not quite applicable for this group of elderly. The type of nursing home (charity or profit-making) is itself a condition for classifying the socioeconomic status of its residents. Besides, in most government nursing homes, female residents outnumbers the males. Age is also another constraint as those over 80 tend to be frail and unable to communicate well; however, attempts are made to obtain 150 residents of government nursing homes balanced as regards to gender. Sampling residents of private nursing homes is quite restricted as quite a number of them do not communicate in Thai, while some are not willing to be interviewed. As a result, only 42 respondents out of the total residents from five free-of-charge nursing homes are interviewed and 75 samples out of its total 100 residents (approximately) in one private hospital-based nursing home are included in the study.

To sum up, there are two government nursing homes included in this sampling frame; four free-of-charge private nursing homes and one profit-making hospital based-nursing home.

Sampling Results

There is a total of 447 elderly people included in the study: 40.3 percent (or 180 samples) are in the non-institutional category; 33.6 percent (or 150 cases) are in free-of-charge government nursing homes; 9.4 percent (42 respondents) in free-of-charge private nursing homes and 16.8 percent (75 cases) are hospitalized in the profit-making nursing home. Tables 3.1-3.3 show the resulting samples in percentages and numbers as stratified according to zone or type (for the group living in institutions) of residence, gender, age group and socioeconomic class.

Table 3.1 Total Samples in Number and Percentage by Gender in Sample Groups According to Type of Care and Place or Type of Nursing Home

Sample Group	Total		Male	Female
	Number	Percent	Percent	Percent
Non-Institutional				
Bangkok Outerbound	58	13.0	6.7	6.3
Bangkok Innerbound	61	13.6	6.3	7.4
Periphery	61	13.6	6.5	7.2
Total	180	40.3	19.5	20.8
Institutional				
Government Free-of-Charge	150	33.6	16.8	16.8
Private Free-of-Charge	42	9.4	6.9	2.5
Private Profit-Making	75	16.8	6.0	10.7
Total	267	59.7	29.7	30.0
Grand Total	447	100.0	49.2	50.8

Table 3.2 Total Samples in Number and Percentage by Age Group and Gender in Sample Groups According to Type of Care and Place or Type of Nursing Home

Sample Group	Total		Male	Female
	Number	Percent	Number	Number
Non-Institutional				
Bangkok Innerbound				
60-79	30	6.7	15	15
80 and over	28	6.3	15	13
Bangkok Outerbound				
60-79	31	6.9	13	18
80 and over	30	6.7	15	15
Periphery				
60-79	31	6.9	14	17
80 and over	30	6.7	15	15
Total	180	40.3	87	93
Institutional				
Government Free-of-Charge				
60-79	90	20.1	49	41
80 and over	49	11.0	25	24
Private Free-of-Charge				
60-79	39	8.7	24	15
80 and over	14	3.1	8	6
Private Profit-Making				
60-79	38	8.5	19	19
80 and over	37	8.3	8	29
Total	267	59.7	133	134
Grand Total	447	100.0	220	227

Table 3.3 Total Samples in Number and Percentage by Socioeconomic Class and Gender in Sample Groups According to Type of Care and Place or Type of Nursing Home

Sample Group	Total		Male	Female
	Number	Percent	Number	Number
Non-Institutional				
Bangkok Innerbound				
High Class	17	9.4	10	7
Middle Class	20	11.1	10	10
Low Class	21	11.7	10	11
Bangkok Outerbound				
High Class	22	12.2	9	13
Middle Class	19	10.6	9	10
Low Class	20	11.1	10	10
Periphery				
High Class	21	11.7	10	11
Middle Class	19	10.6	9	10
Low Class	21	11.7	10	11
Total	180	40.3	87	93
Institutional				
Government Free-of-Charge				
High Class	26	5.8	12	14
Middle Class	61	13.6	29	32
Low Class	52	11.6	33	19
Private Free-of-Charge				
High Class	13	2.9	2	11
Middle Class	5	1.1	3	2
Low Class	35	7.8	27	8
Private Profit-Making				
High Class	75	16.8	27	48
Middle Class	-	-	-	-
Low Class	-	-	-	-
Total	267	59.3	133	134
Grand Total	447	100.0	220	227

Instruments for Data Collection

Collection of quantitative data was obtained by following a set of constructed questionnaires designed for face-to-face interviews; however, field interviewers were encouraged to record in detail information which was not pre-listed in the questionnaire but helped to enhance understanding of respondents' circumstances or inner feelings. The constructed questionnaires consisted of nine main sections as follows:

1) Demographic and socioeconomic background and family characteristics of the elderly person. This was information about the age, gender, marital status, educational attainment, working status, number of living children, family members and length of time living with present family or the family last stayed with before entering institutions, main care-giver, reason for moving out of the latest residence.

2) General health and functional status. This section was to capture information on the third dimension of quality of life developed in the studied framework. It was arranged to be at the beginning of the interview as experience during the pre-testing of the questionnaire had shown that opening with questions concerning their health conditions made it possible to gain a quick acquaintance with the respondents and it helped to make the rest of the interview easier. Three sets of questions were modified from the original instruments. They were: 1. a twenty-two item screen scale about particular symptoms in health care of the elderly constructed by the World Health Organization, 2. Multidimensional Instrument Questionnaire for Instrumental Activities of Daily Living Scale, and 3. Physical Activities of Daily Living (ADL) (Fillenbaum, 1984: 85-87, 98).

For the first scale, the original screening question of 'Lack of sexual desire?' was excluded because of the fact that most of the elderly who were institutionalized did not live with their spouse. Also it was excluded because this set of questions was asked at the beginning session of the interview, and that question might have caused embarrassment and, if considered in the Thai cultural context, this type of question might yield very low validity. The expected responses on this scale were the following: 'no', 'occasionally', 'often' and 'nearly or continuously' with scorings of 3 to 0 respectively, where higher score stood for absence of suffering from symptoms.

For the second scale of Instrumental Activities of Daily Living included the following activities: use of telephone, walk to places, go shopping, prepare own meal, do house-work, take own medicine, handle own money and wash own clothes. Two more items were added as they reflected activities of daily living in the city of Bangkok: use of pedestrian-bridge, and travel out of town.

For the third scale of Physical Activities of Daily Living, the original scale focused on six basic activities: bathing, dressing, going to the toilet, transfer (moving to and from bed and chair), continence and feeding. These items were hierarchically reversed to the regression during the aging process of individuals (Fillenbaum, 1984). In this study, the physical activity of stair-climbing was added in the scale as steps or stairs were generally part of most Thai houses or even most buildings of nursing homes. Each activity item on both scales was modified to expect four categories of answer: 'able to do without help', 'able to do with slight help', 'able to do with moderate help' and 'completely unable to do the activity unless done by others' with score of 3 to 0 assigned to them respectively. Additional questions about perceived health status, and chronic illness were also listed.

3) Life satisfaction. Two scales of Life satisfaction index A and B (Neugarten, et al. 1961) were adopted with modification for measuring the life satisfaction of the elderly. For the former, the scale statements were followed by a five-point Likert scale ranging from 'strongly agree' through 'undecided' to 'strongly disagree'. For the latter, scales were designed in the form of open-ended questions. The content of each response was to be evaluated for the negative or positive nature of the answer before scoring could be assigned within the ranges of 0 to 2. Each item of these indices was listed in the following:

Life Satisfaction Index A:

For this scale, agreement with the positive statement (as indicated in the parenthesis) would be given higher scores (4 or 5), whereas disagreement yielded lower scores (1 or 2); and vise versa for the negative statements.

1. I have had better opportunities or am luckier in life than most of the people I know. (positive)

2. I expect some interesting and pleasant things to happen to me in the future. (positive)

3. If I could I would like to change my past life. (negative)

4. These are the best years of my life. (positive)

5. When I think over my life, there are important things that have not been fulfilled. (negative)

6. All the time, there are things that worry me. (negative)

7. At this age, I would say my health is quite satisfactory. (positive)

8. I am happier than in any earlier period of my life. (positive)

9. At the moment, I am quite satisfied with my living conditions. (positive)

10. I am quite satisfied with my financial situation. (positive)

Life Satisfaction Index B:

1. What are the best things about being elderly?

2. Five years from now, how do you expect things will be different from the way they are now in your life?

3. What is the most important thing in your life right now?

4. How happy would you say you are right now, compared with the earlier periods in your life?

5. How often do you find yourself feeling lonely?

6. How often do you feel there is no point in living?

7. As you get older, would you say things seem to be better or worse than you thought they would be?

4) Self-esteem. The construct of self-esteem was modified from the Self-esteem Scale developed by Rosenberg (1965 cited in Robinson and Shaver, 1970: 83). The scale consisted of ten items answered on a five-point scale from 'strongly agree' to 'strongly disagree' (assigning scores of 5 to 1). In the same way as the life satisfaction index A mentioned earlier, agreement with the positive items (indicated in the parenthesis as follows) referred to high self-esteem and would be scored 4 or 5, whereas disagreement was assigned 1 or 2. These items are:

1. I feel that as a person I am of worth as much as before I was retired. (positive)

2. At this time, I think I am not able to do things as well as most other people. (negative)

3. I feel I do have much to be proud of. (positive)

4. On the whole, I am satisfied with myself. (positive)

5. I certainly feel I am still useful to others. (positive)

6. People around me pay less respect or have less consideration about me. (negative)

7. On and off, people come to me for some advice or counseling. (positive)

5) Living environment. Nine basic elements of environmental surroundings concerning the physical appearance and non-physical conditions were: cleanliness of surroundings, clean air, breeze, noise, convenience for going places, privacy, neighbors or friendly residents, structural condition of the house/building, safety from burglary, safety from fire, car accidents. These selected elements for assessing their living environment were considered to be applicable to the life in the family and the life in the institutions so that comparison of this dimension of quality of life between these two groups of elderly was justified. Each element was to be ranked from 'severe problem', 'some problem', 'all right', 'good' and 'very good' with the scores of 0 to 4 assigned for each response respectively.

Note that the above mentioned sections two to five: general health and functional status, life satisfaction, self-esteem, and living environments were measured scales of four dimensions of quality of life in this studied framework. The main considerations for selecting these scales (especially the first three) were their simplicity and coverage of components within the scale. After being translated into Thai, each question was reviewed by experts for the appropriateness of terms used in the Thai cultural context but nevertheless retained the content validity of the original scales. The modified instruments were further pre-tested. Tests of

reliability were performed and factor analyses were also applied to test their construct validity which were illustrated in Appendix A.

6) Economic well-being. This was assessed by inquiring through subjective and objective evaluation the respondents' own economic situations. By subjective evaluation, the respondents were asked if their present financial condition was sufficient for earning a living and whether they were in debt or possessed some savings. The objective evaluation was based on amount of monthly expenses and income. Before coming down to this calculation, ten questions about expenses and possible sources of income were asked. They were: expenses for food or snacks, medical expenses, lottery, religious devotions or offering, rental payment, utilities, tips, payment on long-term purchases, wages for maids/servants or home helpers, leisure or traveling expenses. Their possible sources of income were: income earned by working, rental or interest, pensions, petty cash from children, money from friends or relatives, money from compassionate visitors to Home for the Aged. The approximate amount of each of these expenses and incomes were itemized to ensure the accuracy of reporting the average monthly expenses or income.

7) Decision and assessments of care received. Apart from asking the reason for moving out of the latest residence to the present living place, the residents were also asked about who was the decision-maker for such a change (if there was one) and the person(s) they preferred most to live with through their later life. Two open-ended questions concerning any good points or bad points of the present residence were also asked. A sense of security in their existing care was conceptualized to be the essence of care assessments; assessing the permanency of care received and the availability of alternative care support were two main issues in focus. Three questions were used for the first issue: whether the respondents were confident of being taken care of, would settle

down in the present living place for good, and accept the existing care received as the best for themselves. For the second, assessments of availability of alternative care, they were asked if they had access to other places for a short visit, if they were invited to live with someone, and if there was someone available to take care of them when they became sick or weak. A positive answer to each question was assigned a score of one point and zero otherwise.

8) Needs or unmet needs in the elderly persons' life. This section aimed to examine the needs or problems encountered in the elderly persons' life, how they prioritized these needs and the level of their seriousness.

In an attempt to elicit honest responses regarding the unmet needs of the elderly and at the same time to avoid the over-reported responses, data were collected in two steps, open-ended questions and checklists. In the first step, an open-ended question was asked. The respondents were asked directly to indicate the existing problems in their lives. This simple question, however, had both an advantage and a disadvantage. The use of an open-ended question could prevent the response resulting from a leading question, that is, the induced unnecessary need. Yet, there was likelihood that the respondents might overlook or ignore some particular problems at the time of the interview. It was sometimes the case that Thai aging people appeared to be reluctant or too ignorant of their rights to services.

The checklist was, thus, employed in the second step to ascertain if a certain problem or need did exist and at what level of seriousness. This checklist contained need items based on Maslow's concept. These need items were also intended to assess the priority of the existing needs of the respondents. (For further discussions concerning the practical issues encountered during the interview of needs assessment see Appendix B.)

It was anticipated that the study concerning the unmet needs of the elderly would guide families and Homes for the Aged, either run by the government or the private sector, for the care or service rendered to provide suitable and relevant solutions for these groups of elderly as well as dealing with their problems more effectively.

9) Family and social networks and some aspects of personal life-style. The respondents were asked how often they received visits from their children/grandchildren, relatives or friends and whether they retained their social functions, religious activities. Questions in the interview also included the elderly persons' personal life in respect to self entertainment or leisure activities (listening to the radio, watching television, reading newspapers and chatting with friends or neighbors).

In conclusion, the above nine sections of the questionnaire were designed to record information from samples of the elderly in the family and in the free-of-charge institutions who were mostly autonomous and able to share dialogue. There were exceptions, such as hearing impaired, paralytic, and mentally handicapped respondents. These were included if a reliable informant was available.

However, a briefer questionnaire was designed for data collection from residents of the profit-making hospital based nursing home. Since most of the respondents were bedridden, questions concerning attitudes or the irrelevant issues were omitted. The omitted data were: care assessments, need assessments and measures of quality of life. The available data were: age, gender, past occupation, numbers of children, persons used to live with, reasons for admission, visits by children or relatives, and length of stay. These were obtained from the assistant nurses or the hospital's records. In the later chapter of data analysis and

output, if there is any information relevant to this fourth sample group, it is presented under the title heading of 'profit-making institutions'.

Concerning the main format of the constructed questionnaire, other than the Likert-attitudinal scales, the majority of the questions were close ended. All possible response choices with attached codes were pre-listed after each question statement. One of these codes would be the represented response choice for the respective question statement. Such a design of checklist with a coding questionnaire form, not only made it more convenient for the interviewers to record information during the dialogue with respondents, but also increased the accuracy in coding and data entry for computerizing.

Procedures of Field Work

The field survey was carried out during May-June of 1992 for interviewing the samples of residents in free-of-charge institutions. July-August 1992 was scheduled for interviewing the sampled non-institutionalized elderly persons with data collection in profit-making hospital based institutions following. Prior to the field work interview, the preliminary questionnaire was to be pre-tested with a few samples of residents of one nursing home and elderly people living with family, both males and females, of younger and older ages. Experiences from the pre-testing provided useful input for revising the drafted questionnaire as well as provided helpful tips for the actual field interview. The set of questions were reordered to increase a natural flow of conversation between the interviewer and the respondent. Possible choices of responses were added into the checklist which were not previously expected. Some questions were reworded to make them more explicit and some were added to seek further or 'deeper' information.

It was observed that most of the elderly were able to report their year of birth by the twelve Lunar Calendar characters more promptly than by the year of Buddhist Era or even their age. Each interviewer was provided with a ready formulated chart for comparing the Lunar year with the calendar year and the chronological age. It also was an efficient tool to recheck the reported age.

The personnel recruited to be field interviewers were required to have at least an undergraduate level of education as well as positive attitudes toward elderly persons. They were trained in interview techniques, ways to approach the respondents, and definitions of terms used in the questionnaire. Actual practice under supervision was also required. There were six interviews involved in this process of study.

As mentioned earlier, samples were stratified by socio-economic status of upper, middle and lower classes repeated in three zones of the Greater Bangkok area. The interviewers were given a guideline of criterion for such classifications other than just the specified residential areas because of the fact that some families of high socioeconomic status might be situated in the specified areas expected to be occupied by those of middle status or vice versa. Such criterion were combinations of: appearance of the residence (the size of the compound or the building), type of (previous) occupation of the elderly, their educational attainment, and reported income. Even though these criterion were objective and measurable, they were very much influenced by the subjective judgment of the interviewers. Appearance of living conditions could be the most obvious indicator of socioeconomic class; however, many times this ascribed status was greatly influenced by the social mobility of the elderly's children's socioeconomic class, especially if they were living with their children.

The designed sampling scheme that stratified over the residential zone, socioeconomic status, age group and gender, as stated earlier meant that samples of some characteristics such as age 80 years old and above or high socioeconomic status were sparse in the population. As the sampling results presented in Figure 3.2 indicate in Bangkok innerbound, there were only three elderly females of aged 80 years and over who could be classified as high socioeconomic status; and for the area of Bangkok outerbound, only three elderly males aged 60-79 years old of high socioeconomic class were sampled. In general, an opportunity to interview an elderly person of upper socioeconomic class by a random sampling process was more difficult to obtain than with the middle or lower classes. A maid who answered the door bell of an affluent household would usually refuse to allow the interviewers to visit, whereas elderly people who were seen resting in townhouses and easily returned a greeting were found to be of the middle class.

Another point to make was that the sampling list provided by the Central Registrar Office was a little out-of-date. Some residents had already moved away or sometimes the houses listed were torn down. When this occurred, the consecutive household on the list was made up for the next destination. Nonetheless, whenever a difficulty arose with the exact location of the listed address, the postman in the area was a helpful source for navigation.

Data Processing

After the field survey, all questionnaires were rechecked for completeness and internal consistency and encoded so as to be ready for data processing. A program for the data entry was an essential part of this process. Data entry screens were designed corresponding with each page of the questionnaire which helped the data entry personnel to work efficiently. A possible codes check, a range check, and codes with conditions were also built in the designed data entry program. Moreover, data were entered twice to ensure accuracy. Upon comparing the two data files, if there existed any discrepancies as notified by the program, a manual check with its respective questionnaire by the identification number was then required to substitute the correct code. When these two data files were proved to be identical, the accuracy of entry codes were ensured.

Method of Data Analysis

A preliminary analysis of the samples is presented descriptively by grouping samples in different types of setting and in analytically for group differences in some selected variables.

Crosstabulations of variables by total samples and subsamples of category are laid out. These categories are the non-institutionalized and the institutionalized group. The latter are further classified as government free-of-charge, private free-of-charge residents. The group in profit-making institutions is presented in certain variables if data is available.

Statistical tests are applied to test for group differences in some selected variables, i.e., Chi-squared test in variables measured on an nominal or ordinal scale and t-test in variables measured on aninterval scale. Groups of comparisons are: the

non-institutional and institutional, as well as government free-of-charge institutions and private free-of-charge institutions. For variables in which data of the profit-making institution is available, sample groups of free-of-charge and profit-making institutions are compared.

Further analysis employs two statistic techniques of discriminant analysis and the multivariate analysis of variance. The details of these analyses are presented in sections followed.

Analysis Model for the Use of Alternative Types of Care

To determine factors that affect the elderly's becoming institutionalized or remaining in families, discriminant analysis is selected as the optional method for examining these two mutually exclusive groups, the non-institutionalized and the institutionalized. The individual characteristics of the elderly and the characteristics of the family are the independent variables, or the predictor variables to form a linear combination for examining these relationships with the categorical dependent variable of groups. As presented in Figure 2.1, these predictors are: marital status, past occupation, reading ability, living children, person living with, main care-giver, household head, reason for changing to the present residence, and decision maker for the change.

The discriminant analysis employed in this study utilized the Wilks' lambda estimation procedure with the direct method for variable enter. This technique selected a discriminant function that maximized the separation among groups. For each variable, a discriminant function coefficient is calculated with standardized weights. These weights reflect each predictor variable's contribution to the function. Details of assumptions used in the analysis is discussed in Chapter VI.

Analysis Model of the Consequences on Quality of Life

Two analysis techniques of multivariate analysis of variance (MANOVA) and discriminant analysis are used for the assessment on the consequences of quality of life.

In assessing whether the groups of elderly who are cared for by the family or by institution show different level of quality of life, the analysis technique of multivariate analysis of variance (MANOVA) is used. MANOVA is necessary because several measures of quality of life are to be compared simultaneously. The dependent variables are the seven scales (or indices) for measuring the four dimensions of quality of life: scores of life satisfaction index A and B, scores of self-esteem, factor scores of general health, scores of instrumental activities of daily living, scores of physical activities of daily living and scores of assessments of living environment. These variables are tested for any presence of outliers or skewness that would lead to transformation of variables. Evaluations of the assumptions of linearity, homogeneity of variance are also required.

To predict the characteristics of the elderly distinguishing a person with a low level of quality of life from one with a high level, the technique of discriminant analysis is used. Each discriminant function is analyzed for each scale.

The dependent variable of this analysis is groups of elderly persons. They are the known cases with low and high scores of quality of life measurements. Groups of low or high scores are classified by the relative scores within the total samples of this study. That is, scores in each scale are sorted from the smallest to the largest. The respondents whose scores rank within the first quartile are subjected to be the group of low level of quality of life in that respective scale, whereas those with scores rank at or

above the third quartile are grouped for high level. This is to be classified repeatedly for each scale.

Note that for those ranked within the second and third quartile are dropped out of the discriminant analysis owing to their scores of central tendency.

The predictors or the independent variables are the ten variables of individual characteristics, the two economic well-being variables, and the six need factors. Eight variables describe the personal life-style of the elderly and one variable indicating whether the respondents are being institutionalized are also included. This totals 29 predictors to form a linear combination of the independent variables and to serve as the basis for assigning an elderly to one of these two groups, low or high quality of life.

The method of direct or standard is used in the discriminant function for all the scales of quality of life. As described in the analysis framework (Figure 2.3), those variables listed above are directly or indirectly related to one another which together define and assess quality of life. A priori reason for including these predictors in the discriminant function is they are equally important in predicting group membership. Thus, these variables are to be solve simultaneously. That is they are to enter the equation together. There are no priority orders of variable entry nor any intention for these variables to compete, by statistical criteria, with one another in a stepwise manner for order of entry. Each of these predictors is believed to effect the quality of life of any elderly person with equal probability.

In the interpretation of discriminant function, variables with large value of F-ratio, large value of pooled-within-group correlation, or small value of the Wilks' lambda are accounted to contribute most strongly to discriminate amongst groups.

CHAPTER IV

PROFILE OF THE THAI ELDERLY AND PROVISIONS OF CARE SERVICES IN THAILAND

This chapter is to provide some profile of the Thai elderly and overview of care services for the elderly in this country. Data are based mainly on secondary sources. For the care services provided by the non-governmental organizations in which existing documents are limited, information from personal communications during the field survey are supplemented.

Profile of the Thai Elderly

The focus of this documentary research is on the following characteristics of the Thai aging population: size, proportion, dependency ratio, life expectancy of the elderly, and socioeconomic characteristics such as literacy rate, marital status, household headship and family structure. The description aims to depict how the population structure of this country is undergoing its aging process and how it relates to the living arrangements of the Thai elderly and their well-being.

Population Structure

The 1990 population and housing census indicates an enormous increase in the size and proportion of the Thai aging population. This population group has grown to 4 million, or 7.4 percent of the overall population. This is a greater than the projected size of 3.4 million for the year 1990 and exceeds the projected percentage of 6.7 for the year 2000 (Table 4.1). The census also indicates that from 1960 to 1990, the elderly population tripled while the general population doubled. This trend is projected to rise even

faster as the elderly population is estimated to double every two decades.

Table 4.1 Numbers (in Million) and Proportions of Population by Age Group, Old Age Dependency Ratio and Sex Ratio of Census Data and Projections, 1960-2020

Number/Proportion	Census [1]				Projection [2]			
Ratio	1960	1970	1980	1990	1990	2000	2010	2020
Number								
Total Population	26.3	34.4	44.8	54.5	56.3	64.4	70.9	74.9
Age Under 15	11.3	15.5	17.2	15.9	18.8	17.7	16.3	14.4
Age 15 - 59	13.7	17.2	25.2	34.6	34.1	41.9	48.0	50.7
Age 60 and over	1.2	1.7	2.4	4.0	3.4	4.9	6.6	9.9
Proportion								
Age Under 15	43.2	45.1	38.3	29.2	33.4	27.4	23.0	19.2
Age 15 - 59	52.2	49.9	56.2	63.4	60.0	65.0	67.7	67.6
Age 60 and over	4.6	4.9	5.4	7.4	6.1	6.7	9.3	13.2
Old Age Dependency Ratio[3]	8.8	9.8	9.7	11.6	10.0	10.7	13.7	19.5
Elderly Sex Ratio[4]	118	120	119	116	119	121	118	115

Source: [1] National Statistical Office (1960 - 1990a).

[2] Kiranandana (1985: Table 3.1, p.33).

[3] Old Age Dependency Ratio = $\frac{\text{No. of Population Aged } 60^{+}}{\text{No. of Population Aged } 15\text{-}59} \times 100$

[4] Sex Ratio of the Aged = $\frac{\text{No. of Female Pop Aged } 60^{+}}{\text{No. of Male Pop Aged } 60^{+}} \times 100$

Comparing the figures of population projections with the trend of the population census over the past 30 years warns that the aging of the population in the future will reach higher levels than has been expected. The population structure implies an accelerate rate of the old-age dependency ratio. This ratio grew slightly from

1960 to 1980 from 8.8 - 9.7, and was found to have increased to 11.6 in the 1990 population census. This was even higher than the estimated ratio for the year 2000. It could be foreseen that the old age dependency ratio for 2010 and 2020 will be even higher than the projected figures of 13.7 and 19.5 (Table 4.1).

Consequently, in the next 30 years the working population aged 15 to 59 years may have to bear a heavier burden for their elderly. For instance, 100 descendants would be obliged to take care of 20 elderly people and even more than 24 elderly people in the year 2030. This increasing ratio appears to be continuing due to the effects of the longer life expectancy of Thai population (Table 4.2). It is also noteworthy that the high dependency ratio tends to be for the female elderly population rather than the male. This is because female elderly outnumber males, and because female elderly generally have higher life expectancy (Table 4.2).

Table 4.2 Life Expectancy of Population at Age 60, 65 and 75 by Gender (Based on Projections)

Population Group	1989[1]	1990[2]	2000[2]	2010[2]	2020[2]
Life Expectancy at 60					
Male	16.6	16.5	17.1	17.6	17.9
Female	19.9	18.4	18.8	19.3	19.8
Life Expectancy at 65					
Male	13.3	13.6	14.0	14.4	14.7
Female	16.2	15.0	15.4	15.8	16.1
Life Expectancy at 75					
Male	7.7	8.9	9.2	9.4	9.6
Female	9.5	9.7	9.9	10.1	10.3

Source: [1] National Statistics Office (1990b: Table M., p. 51).
[2] Kiranandana (1985: Table 3.4, p. 39).

Literacy

Figures in Table 4.3 illustrate the increasing proportion of literate elderly in the population during the census period of 1960 to 1990 as ranging from 26.0 percent to 32.4, to 42.6 and 71.0 respectively. The literacy rate of elderly females is notably lower than that of male. Yet, the female elderly literacy rate proved to increase much faster than the male. From 1980 to 1990, the overall elderly literacy rate increased 1.7 times, the highest increase in rate compared to any previous census; during this decade, the female elderly literacy rate significantly increased, 2.3 times, whereas the male rate increased by 1.4 times. In other words, the literate proportion of the elderly population has substantially increased since 1980 and especially so for elderly females. This could possibly be due to the declaration of the Compulsory Education Act of 1921 as a particular group of the population who reached school age or the target group for the Act reached 60 years of age in the 1980s. If the above assumption holds, it could be said that this requirement has affected the literacy of the female elderly at present relatively more than the male.

Table 4.3 Percentage Distribution of Literacy Rate of Population Aged 60 Years and over by Gender, 1960-1990

Gender	1960		1970		1980		1990
Population Aged 60 and over							
Whole Kingdom	26.0	1.2*	32.4	1.3*	42.6	1.7*	71.0
Male	22.4	1.2*	26.6	1.1*	28.1	1.4*	37.8
Female	3.6	1.6*	5.8	2.5*	14.4	2.3*	33.2

Source: National Statistical Office (1960 - 1990a).

* Increasing Rate $= \frac{Year_2 - Year_1}{Year_1} \times 100$

Marital Status

As for marital status of the elderly aged 60 and above, the proportion of currently married females tended to increase, especially from 1980 to 1990 (Table 4.4). There was a decline in the proportion of widows. Still, the proportion of widows tripled that of widowers consistently over the period, i.e. in 1990, elderly widows were 46.8 percent compared to 16.2 percent of elderly widowers. For those whose status was single, there had been a slightly increased proportion for females. For those who were divorced or separated, a trend of decrease was observed for both the male and female elderly.

Considering marital status by three age groups of 60-64, 65-69 and above 69 and by gender over the census years of 1980 and 1990 (Table 4.5), the proportions of single, widowed, separated or divorced elderly females were higher than those of male for every age group.

Table 4.4 Percentage Distribution of Marital Status of Population Aged 60 Years and over, 1960-1990

Marital	1960		1970		1980		1990	
Status	M	F	M	F	M	F	M	F
Single	1.8	1.9	1.7	2.2	1.5	2.1	1.5	2.4
Married	71.6	32.7	76.6	41.1	75.7	40.6	77.6	46.1
Widowhood	20.2	60.3	15.9	52.6	16.7	51.5	16.8	46.8
Separated /Divorced	2.9	3.8	2.3	3.1	2.0	2.8	1.8	2.6
Others*	3.5	1.2	3.6	1.2	4.1	3.0	3.0	2.1

Source: National Statistical Office (1960 - 1990a).

* Including monks, those of unknown status and those who have been married but are presently of unknown status

Amongst those whose status was currently married, elderly female were smaller in proportion than elderly male and this gap grew wider within the older age group (Table 4.5). For instance, the proportion of currently married women was 60.3 percent in the 60-64 age group and dropped down to 51.3, and 30.9 respectively in the age groups of 65-69 and above 69, for the census year of 1990, whereas the male elderly showed the proportions of 84.7, 80.4 and 68.1 percent for the same census year. This may result from the fact that females tend to marry males older than themselves (Martin, 1990: 97; Victor, 1994: 98) and that the average life expectancy of Thai females is longer than those of males. Therefore, females are more likely than males to lose their spouse at any given age. Another reason is that widowed males are more likely to remarry than widowed females. Such observations are also true in Singapore (Chen and Jones, 1989: 29-30).

Table 4.5 Percentage Distribution of Marital Status of Population Aged 60 Years and over by Age Group and Gender, 1990 Census

Age	Single		Currently Married		Widow-hood		Divorced/ Separated		Others*	
	M	F	M	F	M	F	M	F	M	F
Total	36.1	30.3	58.0	57.2	2.6	8.8	0.9	1.8	0.3	0.5
60+	1.5	2.4	77.6	46.1	16.8	46.8	1.8	2.6	3.0	2.1
60-64	1.6	3.0	84.7	60.3	9.8	32.4	1.8	3.2	2.1	1.1
65-69	1.5	2.4	80.4	51.3	13.7	42.0	1.8	2.8	2.7	1.6
70+	1.4	2.0	68.1	30.9	24.7	61.9	1.8	2.0	4.0	3.2

Source: National Statistical Office (1990a).

* Including monks, those of unknown status and those who have been married but are presently of unknown status

60+ = 60 years and above

70+ = 70 years and above

Household Headship and Family Structure

Other indicators which reflected the welfare and living arrangements of the Thai elderly were aspects regarding the family structure and household headship. The informal support system where the elderly could expect filial support from their descendants or close kin was likely to be found in an extended family rather than other types of family structure. Yet, the latest census report reveals a declining availability of the extended family as this type of living situation had dropped down from 46.2 percent in 1980 (NSO, 1980: Table 27) to be only 26.3 percent nationwide (NSO, 1990a: Table 28). It shows that Thai society is facing a changing pattern of family living. The increase of nuclear family living over extended family living issues a warning of weakening capacity to provide support and care for the elderly.

As for the status of household heads amongst Thai elderly, figures in Table 4.6 reveal that, in 1992, the proportion of households headed by people 60 years old and above was approximately 21.6 percent of the total households. This proportion remained constant throughout the decade 1976 to 1986, but has increased since 1990, which is apparently in concordance with the mounting proportion of the elderly population during the same period.

On consideration of residence areas, it appears that there has been a gradual decline in the proportion of households headed by the elderly--from 18.8 to 10.9 percent in the Bangkok Metropolis; a rising proportion is found among those under 30 years of age instead. Such trends are just the reverse for the non-municipal areas. There were, however, no remarkable changes in the municipality, or the sanitary areas. This might be due to the fact that during the past decade there has been a constant shift in the establishment or the definition of the mentioned areas, resulting in the inconsistency of geographical boundaries.

Table 4.6 Percentage Distribution of Household Heads by Area and Age Group, 1976-1992

Area	Year	Household Head				
		< 30	30-39	40-49	50-59	60+
Whole Kingdom	1976	12.1	23.9	26.5	19.3	18.7
	1981	16.4	23.5	23.8	18.5	17.8
	1986	15.3	25.7	21.8	18.8	18.4
	1988	15.4	25.6	21.4	18.8	18.8
	1990	13.2	24.4	22.5	19.8	20.1
	1992	12.8	24.7	22.2	19.0	21.6
Bangkok	1976	10.9	24.8	26.4	19.0	18.8
	1981	21.3	25.0	21.7	16.3	15.7
	1986	21.6	27.4	21.5	16.9	12.6
	1988	27.0	25.7	22.2	13.3	11.8
	1990	28.6	24.4	19.1	15.8	12.1
	1992	28.8	26.1	20.0	14.2	10.9
Municipal	1976	15.1	24.6	25.9	17.3	17.1
Area	1981	21.3	23.8	32.6	17.8	14.5
	1986	20.6	27.2	20.6	16.4	15.2
	1988	20.2	27.8	19.6	16.7	15.7
	1990	16.8	25.7	23.2	17.6	16.7
	1992	17.0	27.7	22.3	17.3	15.7
Sanitary	1976	13.7	21.0	25.9	18.3	21.0
Area	1981	15.8	21.2	22.7	19.8	20.5
	1986	13.8	27.0	22.4	18.2	18.6
	1988	14.3	25.5	19.9	20.0	20.3
	1990	10.6	24.4	22.2	19.6	23.2
	1992	10.8	25.4	20.5	19.8	23.5
Non-Municipal	1976	11.8	24.2	26.6	19.6	17.6
Area	1981	15.2	23.4	24.3	18.8	18.3
	1986	13.8	25.1	21.9	19.5	19.7
	1988	12.8	25.4	21.6	19.9	20.3
	1990	9.9	24.3	23.1	20.9	21.8
	1992	9.3	24.1	22.8	20.1	23.7

Source: National Statistical Office (1976, 1981, 1986, 1988, 1990, 1992).

60^{+} - 60 years and above

For the contrasting proportion of household heads among the metropolis elderly and those outside the municipalities, the report on the analysis of Thai elderly population (NSO, 1990b: 24) has additional details that the elderly who hold the household head status consists of 2.4 million or 59.2 percent of the whole aging population. This proportion is 60.4 percent for elderly people living outside the municipalities as compared to a lower percentage of 53.0 in the municipalities (Table 4.7). The occurrence of the changes and the differentials in proportion by area concurs with the modernization theory of Cowgill and Holmes (1972: 322) who proposed that "the status of the aged tends to be high in agricultural societies and lower in urbanized societies" and that "the status of the aged is inversely proportional to the rate of social change". The results of a study undertaken in Turkey also highly support this theory (Gilleard and Gurkan, 1987: 353).

Table 4.7 Percentage Distributions of Household Headship of Population Aged 60 Years and over by Gender and Area, 1990

Gender and Area	Headship				
	Household Head	Non-Household Head			
		Spouse	Parents	Relatives	Others
Total					
Whole Kingdom	59.2	20.8	14.5	0.8	4.7
Municipal	53.0	17.0	20.8	0.9	8.3
Non-Municipal	60.4	21.5	13.3	0.8	4.0
Male					
Whole Kingdom	85.3	2.2	7.2	0.8	4.5
Municipal	73.5	6.9	11.7	0.9	7.0
Non-Municipal	87.5	1.3	6.4	0.8	4.0
Female					
Whole Kingdom	37.0	36.7	20.6	0.8	4.9
Municipal	36.8	25.0	28.0	0.9	9.3
Non-Municipal	37.1	39.0	19.2	0.7	4.0

Source: National Statistical Office (1990b: Table 20a, p. 58).

The household headship rate of elderly males is about two times that of the elderly females (Table 4.7).

For those who do not hold the status of household head, an interesting issue seems to introduce itself: with whom do these age groups live? It was found that amongst the 15 percent non-household-head elderly males, those living with their children were of higher proportion than those living with their spouses (both in and outside municipal areas) (Table 4.7). The female elderly, who were not heads of their household constituted 63 percent of the total female elderly. Those who were in the municipal areas lived with their children at a slightly higher ratio than with their spouses. The contrast existed outside the municipality where 1.12 million non-household head elderly females were living with their spouses at a 2:1 ratio to those living with their children (Table 4.7). This occurrence seems to be in accordance with the increasing flow of youth migrating to urban areas for employment. The aged and the children are left in the rural areas. Also the higher ratio of rural elderly males as household heads than those in the urban areas is again reflected by the living arrangement of non-household head females.

Non-household headed elderly living with others who are not relatives constitutes 4.7 percent of the total aging population. This proportion is double (8.4 percent) in municipal areas compares to that of non-municipal areas (4.0 percent). This group of elderly may be viewed only as a small proportion; its size in number is about 190,000, however, should not be overlooked.

For those holding the status of household headship, 60 percent of the Thai elderly, the cited report provides no details about 'with whom they lived'. Nevertheless, data concerning the household heads classified by types of family structure are available (Table 4.8). It was found that of all the 2.4 million

households headed by the elderly, 39.7 percent were nuclear families while the extended families were about half (53.0 percent). In municipal areas, the proportion of nuclear family headed by the elderly is raised to 46 percent. Being the heads of nuclear families implies the possibility of insufficient members to help out with filial support in times of need. Younger generations are at the same time building up their own nuclear families. Figures in Table 4.9 show that nuclear families headed by those younger than 40 years of age are almost half (47.7 percent) of all the nuclear families. Note that amongst 2.4 million households headed by elderly people, 7.3 percent of them or about 173,000 in number are households of unrelated individuals or elderly person living alone.

Table 4.8 Percentage Distribution of Family Types Headed by Population Aged 60 Years and over by Area, 1990

Family Type	Whole Kingdom		
	Total	Municipal	Non-Municipal
Total Number in Million	2.4	0.3	2.0
Unrelated Individuals*	7.3	7.9	7.2
Nuclear	39.7	46.0	38.7
Extended	53.0	46.1	54.1
Total	100.0	100.1	100.0

Source: National Statistical Office (1990a: Table 28, p. 192).

* Including one-person household

Table 4.9 Percentage Distribution of Types of Family by Age Group of Household Head, 1990

Family Type	Age Group of Household Head					
	< 30	30-39	40-49	50-59	60+	Total
Total Number in Million	1.6	3.2	2.8	2.4	2.4	12.3
Unrelated Individuals*	30.5	20.0	13.2	13.5	22.8	6.2
Nuclear Family	15.2	32.5	24.8	16.2	11.3	67.6
Extended Family	3.8	10.2	18.6	28.5	38.8	26.3

Source: National Statistical Office (1990a: Table 28, p. 192).

* Including one-person household

60+ = 60 years and above

In summary, an ever decreasing trend in household headship rates by the aging population is quite obvious in the Bangkok Metropolis from 1976 onwards. It suggests a shift towards a lower status of the elderly in urban society. Regarding living arrangements, the latest census reports that the elderly in municipal areas who are non-household head and are living with other persons is twice the proportion of those in non-municipal areas. The same pattern is observed for those who are the household-head of a nuclear family. As it is generally assumed that living with someone other than their own relatives or being head of nuclear family, the elderly could expect less of the availability of filial support when they turn frail in later life. If so, elderly in municipal areas will be more likely to face a lack of potential family care-givers than their counterparts.

Care Services for the Elderly in Thailand

In this section, provision of care services for the elderly is focused on two main formal service renderers, government and non-governmental organizations. For the latter, some form of newly emerged services by profit-making private businesses will also be discussed. Observations during the filed visits to these settings are incorporated. Such information has not been appeared in any literature elsewhere.

Care Services Provided by the Government

Thai society is traditionally a closely-knit society where the value of kinship is highly recognized. The family has long been the customary institution which takes care of the elderly during their later years. Compared with Western societies, having descendants to look after them during old age is much the same as being provided with social security. Conventionally, each family is responsible for their own elderly. This responsibility is generally handled through a family system.

The government takes part in the assistance of caring for the elderly, especially in cases where the family has certain problems or some elderly face a lack of support and need assistance. In such cases, the Department of Public Welfare becomes the main sector to take charge of the welfare of the elderly and act as a coordinating center to deal with the other private sectors involved.

There are two types of welfare services provided for the elderly by the Department: institutional care and day care services.

Institutional Care

This form of service has been operational since 1953. Up to the present, the service has been available 14 places nation-wide. (The names of these homes are listed in Table 4.11.) Such places provide shelter for the elderly who are unable to care for themselves, are homeless, or are having some conflicts within their family, on the condition that females are at least 60 and males 65, that they remain physically autonomous (able to help themselves in daily living), that they do not have any contagious diseases and that they do not suffer from mental disorders. For those who apply for this type of care within Bangkok, applicants should present themselves at the central office of Department of Social Welfare at Saparn-Kao rather than simply at the nursing home before they are to be considered.

This form of service can be classified into three kinds:

1. **Free-of**-Charge

For this service, separate buildings for males and females are provided. Each room is equipped with beds and cupboards and will hold 20 to 30 people. There is a shared bathroom in each building, including four to five toilets with a central tiled tank. At mealtimes, food is served in the hall for all residents. The majority of aging people in Institutional Care take this kind of service. Apart from the accommodation, the residents can benefit from several facilities provided, such as a craft exhibition room where short occupational training in handicraft work is provided, a TV room, a physiotherapy room, a health care room, and pavilions for religious practice and recreation. This type of service is provided in all of the Homes for the Aged run by the Department of Social Welfare.

2. Hosted-Typed

A private single room or a double-bed room and other services available for those who can afford the rent -- 550 baht and 1,100 baht per month respectively. Yet, this type of service is offered only in Bangkhae Home in the Bangkok Metropolis. Only 40 rooms are provided. Presently, there are over 500 applicants on waiting list for this type of service (Singhakajend, Telephone interview). According to the interview, one female resident had been on this list for eight years before being admitted.

3. Private House

Thc aging people who are financially secure are privileged to be allowed to have a house built which conforms with the specified housing designs in a compound of a Home for the Elderly. This permission, however, is granted on the condition that the residents enter into a contract with the Department of Public Welfare and comply with the regulation that the department assumes ownership of the proporty upon the decease of the owner or his/her spouse. This type of service was once offered at Banglamung Home in Chonburi at a cost of more than 200,000 to 300,000 baht and the service were no longer be extended so as to reserve the area for the first and second type of services. Instead, some special projects will be set up by the Department of Public Welfare, i.e., a condominium for the elderly, Vai Thong Nives Home, and a row house for the elderly and their families, which will be made available in Vasanaves, Pra Nakhon Sri Ayuthaya Province. The cost for such living unit in Vasanaves is about 420,000 to 650,000 baht per unit (Suksawatdi, 1991: 4). Services provided in the Home for the Elderly include accommodation, daily meals and clothing, physical check-ups, occupational therapy, counseling, recreation, traditional festival activities, religious rites and funeral services.

Day Care Services

Due to the increasing number of aging residents under institutional care leading to the high cost of care, and the changing face of social situations by which the status of the elderly in the family and in society is greatly affected, new kinds of services, namely Social Service Centers, have been established. There are, at present, a total of twelve centers and more are in planning stages. Services provided at these centers are:

- Physical check-ups (two days a week), physical and occupational therapeutic activities (five days a week), physical exercise (sports, social work services, and recreation)
- Counseling
- Mobile units to serve the elderly in their own respective communities
- An Emergency Home Service is also temporarily available for the elderly facing problems within the family. The allowed residence period is no longer than 15 days, however.

Annual statistics showing the welfare services for both the institutional and day care services are presented in Tables 4.10 - 4.12. These observations provide an insight regarding the public services for the elderly in this country as follows:

1. The budget for the organization of the Home for the Elderly is quite limited. It ranged between 4.07 and 6.46 million baht over the period 1970-1980. Their capacity for housing their residents increased only 16.7 percent whereas the total aging population of this country increased up to 45.5 percent over the same period. Let us suppose that in this ten-year period there was a constant distribution of the proportion of the needy elderly population. It follows that the number of residents to be accepted in institutions should, at least, rise to 45.5 percent. This means that the welfare service for the elderly was considerably insufficient. Despite the vast increase in old people over this

period, the number of the elderly who are institutionalized remained about the same. Besides, in 1980, it was found that the average ratio of social workers to residents was 1:110. In addition, a study by Bunnag (1975: 108) reported that there was only one social worker at Bangkhae Home (or the ratio of social workers to the elderly members was only 1:370). The study suggested that there should be three to five more social workers. In other words, the ratio should be 1:75. More personnel, including psychiatrists, psychologists, physiotherapists and occupational therapists to working part-time were also recommended.

2. The welfare services of this country were expanded in such a pattern that a Social Service Center was established for each region and then for various localities respectively.

Table 4.10 Expenditure on Institutional Care and Number of Elderly Residents Serviced by the Department of Public Welfare, 1970-1980

Year	Expense		No. of Elderly Residents	
	(Million Baht)	% Increase*	Persons	% Increase*
1970	4.07	-	1140	-
1971	3.89	-4.4	1082	-5.1
1972	3.83	-1.5	1148	6.1
1973	4.42	15.4	1028	-10.5
1974	4.50	1.8	1019	-0.9
1975	5.52	22.7	1081	6.1
1976	5.67	2.7	1101	1.9
1977	5.64	-0.5	1199	8.9
1978	6.46	14.5	1305	8.8
1979	6.04	-6.5	1295	-0.8
1980	6.45	6.8	1330	2.7
Average	5.14		1157	-

Source: Department of Public Welfare (1982).
* Recomputed by the author

Table 4.11 Number of Residents in Institutional Care for the Elderly Provided by the Department of Public Welfare, 1980-1995

Home for the Aged	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1991	1992	1993	1994	1995
1. Bangkae Home	577	628	573	544	564	381	395	415	420	412	360	361	382	325	325
2. Banglamung	358	350	351	386	409	414	370	400	389	418	353	346	369	343	317
3. Pho Klang	200	75	162	231	211	215	264	251	202	180	203	170	171	129	140
4. Wat Muang	156	149	193	162	166	180	204	182	185	162	181	170	146	117	133
5. Chiengmai	170	189	236	216	215	221	219	218	222	208	236	228	229	181	172
6. Taksin Home	142	140	167	142	145	152	162	174	170	170	159	156	140	101	106
7. Kao Bo Kaew Home	-	-	51	58	61	59	70	69	76	79	77	71	64	74	69
8. Chantaburi Home	-	-	33	49	51	71	98	98	75	97	109	109	72	98	96
9. Uthong-Panangtak, Chumporn			-	-	-	-	69	63	68	77	71	82	62	74	72
10. Ban Mahasarakham	-	-	-	-	-	-	92	96	102	96	101	94	71	73	73
11. Vasanaves	-	-	-	-	-	-	175	225	206	205	227	227	187	183	183
12. Ban Nakhon Pathom	-	-	-	-	-	-	-	-	73	98	119	110	95	102	102
13. Piyammal Service Center, Vai Tong Nives			-	-	-	-	-	-	-	-	-	11	21	27	27
14. Ban Phu Ket			-	-	-	-	-	-	-	-	-	11	40	56	56
Total	1603	1531	1682	1759	1817	1675	1860	2144	2139	2150	2144	2135	2141	1808	1880
% Increase		-4.5	9.9	4.6	3.3	-7.8	25.9	15.3	-0.2	0.5	-0.3	-0.4	0.3	-15.6	4.0

Source: Department of Public Welfare (1980 - 1995).

Table 4.12 Number of Service Encounters at Day Care Service Centers for the Elderly Provided by the Department of Public Welfare, 1980-1995

Service Center	1980	1981	1984	1985	1986	1987	1988	1989	1991	1992	1993	1994	1995
1. Bangkae	258	2508	-	6613	9774	6648	8181	4058	3264	2446	4626	6719	16878
2. Pho Klang	-	1546	-	1890	2957	3929	3260	4029	4401	-*	1952	4166	2284
3. Pho Klang Elderly Clinic			-	-	2244	2651	2453	2369	-	-	-	-	-
4. Taksin, Yala	-	-	-	1150	3633	4254	6038	5083	2140	2373	1748	500	709
5. Northern Physical Therapy Center			-	-	1782	9555	4750	3561	1640	1458	780	-	-	-
6. Din Daeng	-	-	-	-	26276	21469	22480	24150	19546	21453	33376	50328	63343
7. Lop Buri	-	-	-	-	-	6248	12908	11786	3342	5404	6144	8335	3309
8. Srisukhot, Phisanuklok			-	-	-	254	74	2118	2664	5197	5494	4297	6648
9. Piyamal, Chiengmai	-	-	-	-	-	-	-	5716	10156	4008	6056	4302	66133
10. Chiengmai, Chiengmai	-	-	-	-	-	-	-	-	-	-	-	-	99370
11. Vai Tong, Chiengmai	-	-	-	-	-	-	-	-	-	-	-	1252	3808
12. Wat Muang, Nakornrachasima	-	-	-	-	-	-	-	-	-	-	-	-	37951
Total	258	4054	4772	11435	54439	50203	58955	60959	46971	41661	59396	79898	300433
% Increas	-	-	-	140	376	-7.8	17.4	2.6	-0.2	-0.1	29.9	34.5	276.0

Source: Department of Public Welfare (1980 - 1995).

* No services rendered due to building renovation

Data for the years 1982,1983 and 1990 are not available

3. The annual number of residents did not rise consistently. Reductions of services were found in some places like Bangkhae Home in the Bangkok Metropolis, Dharmapakorn Home in Chiengmai Province, and Pho Klang and Wat Muang in Nakornrachasima Province. Despite the fact that the data shown represented the whole year's admission in cumulative figures, which outnumbered that of the regular actual members by 15-20 percent. In the decade 1980-1989, the total numbers in 12 free-of-charge institutions rose to only 34 percent, whereas the whole number of the elderly population increased to 40 percent. At the same time the actual numbers of neglected or troubled elderly people tended to increase, as a result of rapid socioeconomic changes.

4. The expansion of Social Service Centers for day care services would start with the available homes for the elderly which already provided institutional care in each region.

5. Regarding the Social Service Centers catering for those aged people under day care services (Table 4.12), it was indicated that there was an inconsistent statistical increase in the services of each center each year and that the statistics showed an amount of encounters which could not reflect the rising services in accordance with the mounting proportion of the elderly population. This indicates that the services were determined by the supply potential rather than the demand of the target population.

Regarding the accessibility to institutional services amongst the Thai elderly, one study found that 59 percent of the total respondents had never heard of or been informed of the service of Home for the Elderly, 32.5 percent said they had never thought of staying there and the remaining 8.5 percent responded that they had considered staying in Home for the Elderly (Chayowan, et al. 1988).

This might result from the limited welfare budget available for publicity about this kind of service, as well as from the deep-rooted tradition of the elderly spending their old age with their own family. The idea of staying in the Home for the Elderly, therefore, scarcely existed. In addition, the Home for the Elderly tended to have a negative public image as a place for aged derelicts. Based on research carried out by the Department of Public Welfare in 1982 with a group of aged residents in Home for the Elderly, it was reported that 37.1 percent stayed there because they did not have any care-giver and many of them had no descendants to look after them. A study by N. Suwaporn et al. (1975) indicated that 62.7 percent had to stay there because of some outside pressure and 36.4 percent decided to stay there voluntarily. Nevertheless, the same study revealed that those who stayed in the Home for the Elderly were content with the services provided. In Bunnag's (1975: 104) study concerning problems and needs of the residents in Bangkae Home, four in every five of them were satisfied with their life in the Home and remained physically and mentally healthy.

Admission to the Home for the Elderly involves several steps. First, potential residents are interviewed by social workers who pay them a visit. After that they receive a medical check-up to make sure that they do not have any contagious disease. Then, if there is sufficient evidence that they are indeed in trouble, they are accepted.

The Department of Public Welfare realized the limitations in resource potential for the welfare service for the elderly and sought to find ways to cope with the problems, leading to one solution which was to encourage private sectors such as foundations, associations or some particular groups of people to be involved the provision of services (Department of Teacher Training, 1982).

Care Services Provided by Non-Government Organizations (NGOs)

Apart from services provided by the Thai government, there are other forms of services provided by the private sector. Several private organizations have contributed considerably to welfare services for the elderly in the form of charity. The organizations involved and the type of services rendered are presented as follows:

Non-Government Organizations (NGOs)

1. The Social Welfare Council of Thailand
(Spha-Sangkhom Songkhlo Haeng Prathet-Thai)

This organization deals with social work for elderly people and acts as a coordinating center, managing the support and co-operation between 485 private organizations all over the country, which have provided help in academic promotion, budgetary support, the publication of knowledge concerning the supervision of aged people, the solution of family problems, legitimacy problems and the promotion of education and religious practices.

2. The Foundations Formed by Religious Groups or Business Groups

With assistance from these organizations, Homes for the Elderly have been set up in four areas in the Bangkok Metropolis and its peripherals and have been in operation for more than 30 years. These foundations are: the Saint De Paul Association, Thananukro Foundation, Mitrapharpsongkro of Thailand Foundation, Paknamsusan Foundation and many more outside Metropolitan Bangkok.

3. **Elderly Clubs**

These clubs were intended to be centers to encourage senior citizens in each community in the development of quality of life and society, to enhance opportunities for association amongst the members as well as to knowledge exchange. There are now about 250 clubs set up in various communities nation wide. The coordinating agency responsible for running the organization is 'The Senior Citizen Council of Thailand' (Spha-Phu-Sung-aryu Haeng Prathet-Thai) which was established in 1987.

4. Other Private Businesses

The provision of the services for the aging as organized by the private business sector was initiated in the form of nursing services in the private hospitals. Service clinics for the elderly were also established as training centers for home helpers who would be paid monthly for the service given to elderly invalids in their own houses. Many small clinics in metropolitan communities, where assistance at childbirth and in the nursing of pregnant women after childbirth used to be provided, have been converted or have extended their services to become shelters for elderly patients. Moreover, businesses concerned about accommodation for the elderly have made available well-furnished single houses and condominiums built in the compounds of temples. The availability of this type of accommodation has satisfied the needs of some aging groups who seek a peaceful life in their old age.

Types of Service Rendered

The services for the elderly provided by the non-government organizations can be categorized into four main types, based on the nature of the main service rendered. They are nursing homes, hospital-based nursing homes, lodging services for the aged community and home helper services. This categorization does not

take into account whether or not the groups are profit-making charitable agencies. These four services are:

1. Nursing Homes

This kind of service has long been organized by certain charity groups, such as the Catholic Religion Groups and the Chinese Business Groups. This service is provided without any charge, except that in some places run by religious groups, a certain amount for maintenance fees may be required, but only from those who can afford it. That is not indeed a strict regulation since this organization is supported by donations. Most of the nursing homes available are two-storied buildings. Because of the spatial restriction, the residents who still remain healthy will be placed upstairs. The rooms they stay in are central halls of varying sizes according to the buildings. Some halls can accommodate 12-30 residents with some furnishings such as beds, pillows and cupboards. The newly-constructed buildings are also proportionally designed to allow for proper accommodation. These rooms with 3-4 bathrooms and screens are smaller and accommodate 6-8 residents on average. Three meals are provided each day. In some places meals will be served in the hall whereas in others meals will be brought to the residents at their bedside. Invalid residents are given intensive care by the staff. In the nursing homes run by religious groups, there are daily rituals for the members to attend; however, such activity is not compulsory. In the Home for the Elderly organized by the foundation of Chinese business people, an activity which is regularly held is the distribution of money to individual residents from benefactors. These donations enable the residents to afford things for their own convenience, including medical treatment expenses. Medical treatment services have been made available in the Homes for the Elderly, i.e. common drugs are provided in central office, medical check-ups are given at certain times and dates from visiting doctors, transportation to hospitals is also

made available without any charge. Apart from those services, the residents can enjoy themselves in a variety of activities annually held for them to attend, e.g. religious rites and traditional festival activities.

2. Hospital-based Nursing Homes

This type of service covers long term medical care as well as health rehabilitation for the elderly. This care is needed by invalid residents suffering from chronic diseases, or lacking any supporters. The hospitals which provide this kind of service intended extended-care hospitals to be a cross between hospitals and homes for the elderly. In other words, such hospitals are intended to cater for those who are in need of regular treatment and also those who seek mental support. Some hospitals have expanded their wards to provide long-term treatment which is needed by some relatives of the elderly. The services provided involve medical care from doctors and nurses, physical therapy and rehabilitation.

3. The Lodging Service for the Aging Community

From 1987 to 1990, there was a rapid expansion in the Thai economy, particularly in the real property and estate businesses. In 1991, the first lodging complex for the elderly community was established in the center of the Bangkok Metropolis. This complex consisted of 120 single units, well-equipped with facilities such as a dining room, an aerobics room, a swimming pool, a library, a religious practice room and a club. The allowance for occupancy was set at 30 years. In case of the person's death, her/his descendants hold the right of ownership until the end of the set time. The elderly involved in this form of services were found to be amongst the very high socioeconomic group who took shelter there upon their own decision and could afford all expenses. The services they received included household care by maids from the company, medical check-ups, physical exercise and recreational activities.

The above mentioned services could be regarded as luxurious in terms of the standard of living of the Thai elderly people, and required considerable courtesy and patience from the service staff. Yet, this form of service was only initiated in Bangkok and the project remained incomplete (at the time of field study). Some reserved units were left unoccupied. Some were temporarily rented by non-Thais; others were partly used as a club for the general public and this made the atmosphere at the complex not too dull for the residents.

Apart from the lodging services available as mentioned above, other housing projects were launched to provide shelters for the elderly inside the Bangkok Metropolis, i.e. high rise buildings. A wide range of facilities were provided to attract buyers. On purchase of a suit, buyers would be allowed to reserve the right of ownership but they would not be given a permanent proprietary right.

4. Home Helper Services

Another service that was provided by private agencies was the sending of home helpers to take care of the elderly in their own homes. These home helpers were required to be at least high school graduates and to have received a six-month educational training in child care and elderly care. They were also required to have some abilities in swimming, cooking and nursing. Other requirements included patience and flexibility in order to deal with the elderly and other family members alike. The fee for this kind of service in the initial year of their business (1992) ranged from 4,000 to 7,000 baht a month, depending on the ability of the elderly to help themselves and the convenience for the helpers in terms of accommodation and transportation. In addition, meals were also provided for these helpers. It was found that the need for home helpers was relatively high. The officials had a variety of choices

to make in the services offered and the service fee was continually revised.

Among the four kinds of caring services provided by the private sectors, the first form, run by charity groups, had been made available for over three decades. For the survey research in this study, 42 residents cared by this type of service were sampled from three nursing homes. The second type which started in the form of patient wards and was later developed to be a semi-hospital and semi-nursing home was first observed in 1991. There were 75 samples under this type of services in the study. The third and fourth kinds of service were not included in this study since the third form was a relatively new project. As for the fourth type -- the provision of home helpers, it was found that almost all elderly stayed with their own families. Note that none of these samples were included in the random sampling of the present study.

Living Conditions in the Various Types of Institutions

The life-style in non-governmental residential care is found to differ from that in the government homes in that the residents are allowed to use the common kitchen to cook their own food, and that cooking stoves are allowed in the rooms on some occasions. This permission, however, is granted at the discretion of those in charge. In the government homes, the residents are not allowed to cook for fear that accidents might occur. This limitation causes some residents to feel dissatisfied about living there. Another difference lays in the views about the pastimes of the elderly. In the non-governmental residential care, the residents are not encouraged to be involved in activities such as weaving, doing handicrafts, embroidering and carpentry as those in government homes are, despite the fact that that could gain them some extra income. Instead, they would be provided with a restful life so as to compensate for the struggle they had been through all

their lives (Kiartnamthai, Personal interview). Nevertheless, in some non-governmental free-of-charge homes, residents would be given an opportunity to take responsibility for an in-service chore and receive monthly payments. The requirements for the jobs included willingness and responsibility to work, good health, and their capability in those lines of job. It was learned from the residents during the interview that the jobs allocated included cleaning the bathrooms (1,200 baht per month), gardening (1,000 baht per month), cooking (1,500-2,400 baht per month), and handling office work (1,500 baht per month). The involvement of the residents in the administration enabled the Homes to solve both the problem of employing outsiders which cost them relatively higher amounts of money (at least twice as much as the rate for the insiders employment) and the problem of staff turnover. In addition, the capable residents themselves could benefit by having extra income from working.

The number of staff in the Home for the Elderly varied according to the size of each place. The staff group generally consisted of a manager, a superintendent, financial officers and workers (cooks, gardeners, cleaners). From interviews and observations, the manager and the superintendent tended to be professional social workers. And most of them were men (even in the Home for the Elderly Female residents). The duty of managers was quite varied. Their responsibility involved general administration, managing the concerns of the residents; sickness, death, disputes and the maintenance of regulations. In addition, their job involved the management of donations.

CHAPTER V

PRELIMINARY ANALYSIS OF THE SAMPLES

This chapter provides a preliminary analysis of the selected characteristics in this study. The main contents present differences between sample groups of different types of care in the selected characteristics in this study, which are the individual characteristics of the elderly person and the family structure, economic well-being, and some aspects of personal life-styles. Further examination of gender differences between sample groups in salient characteristics or patterns of association between variables is presented in Appendix C.

Individual Characteristics of the Elderly Person

As already introduced in the research design section of Chapter III, the three characteristics of gender, age group and socioeconomic class are selected to be obtained in equal proportions throughout the sampling procedure. The sampled outcomes presented in Tables 3.1 - 3.3 with percentages and numbers by gender, age group and socioeconomic class provide a general understanding of the sampling distribution. In this section, detailed descriptions concerning age, gender, marital status, educational attainment, literacy and past occupation of the elderly samples will be discussed.

Chronological Age

The average age of the total samples is 76.7 years. The average age in each group of samples by different types of care is nearly equaled at 76.5 - 77.1 years old (Table 5.1). Further classification of chronological age into seven age groups of five-

yearly intervals shows some different distributions amongst these samples.

For the group living in a family setting or under the title 'non-institution' in the Tables, half are between 80-89 years of age. For the group living in free-of-charge nursing homes, about 53 percent are between 70 and 79.

Note that the distribution of the age group between 60-65 among the samples of government free-of-charge homes is only 3.6 percent. This possibly could be due to the criterion for admittance to government nursing homes which requires the entry age to be at least 60 for females and 65 for males. A contrast is seen in private profit-making institutions where admission is open for all who seek care, and the proportion of those between 60-65 years of age is 14.7 percent.

Marital Status

Marital status is categorized as follows: single, living with spouse, widowed, separated or not living with spouse, and divorced.

Single status is found to be 1.7 percent of the samples living in a family setting. This is a quite contrast to the proportion of 24 percent amongst the samples living in free-of-charge institutions. For residents of profit-making institution, single status is also notable, 13.5 percent.

Widowhood status are approximately 42-49 percent for all types of sample groups which make up to 44 percent of the total samples, the largest proportion amongst all marital status.

Divorced status amongst the sample group living in family is much less frequent than those living in free-of-charge

institutions, (5.6 percent compared with 13.5 percent). This status is only 1.4 percent amongst the residents of profit-making institution, however.

The proportion of samples living with their spouses amongst those who live in the family is about 46 percent. For those who live in free-of-charge nursing homes, however, this proportion could be assumed to be very low or almost nil. There are a few cases of a couple being institutionalized together or of male residents who once in a while visit their own homes for a short stay, but for those in profit-making nursing homes, whose information is mainly recorded by the attending nurses, 19 percent of the residents are reported as living with spouse and 18 percent are separated or not living with spouse.

The distinctions amongst living with spouse, not living with spouse and separated are further discussed in Appendix C.

As for gender difference in marital status, it is found that amongst those living in family, the proportion of widow is about three times of the widower which is quite similar to the figures reflected in the census data of the aging population over the past three decades; however, the patterns of marital status within gender groups are quite different from the total aging population, because the sampling scheme in this study controls for equal numbers of age group and socioeconomic class. (See Table C.1 in Appendix C)

Table 5.1 Mean Age and Percentage Distribution of Age Group and Marital Status of the Elderly Samples by Type of Care

Individual Characteristic	Total	Non-Institution	Institution				
			Total	Free-of-Charge			Profit-Making
				Total	Government	Private	
Total (by number)	447	180	267	192	150	42	75
Age							
Mean	76.7	76.5	76.7	76.6	77.2	74.5	77.1
S.D.	8.6	9.6	8.2	7.7	7.5	8.3	9.6
Age Group							
60-64	10.7	16.7	6.7	3.6	2.0	9.5	14.7
65-69	11.6	13.3	10.5	11.5	10.7	14.3	8.0
70-74	19.7	10.6	25.8	28.6	28.0	31.0	18.7
75-79	16.8	10.6	21.0	24.5	24.7	23.8	12.0
80-84	21.0	27.8	16.5	14.6	16.0	9.5	21.3
85-89	11.6	13.3	10.5	7.8	9.3	2.4	17.3
90-102	8.5	7.8	9.0	9.4	9.3	9.5	8.0
Marital Status							
Single	13.2	1.7	21.1	24.0	23.3	26.2	13.5
Living with Spouse	23.1	45.6	7.9	3.6	4.7	-	18.9
Widowhood	44.4	42.2	45.9	44.8	46.7	38.1	48.6
Not Living with Spouse/ Separated	11.0	5.0	15.0	14.1	12.0	21.4	17.6
Divorced	8.3	5.6	10.2	13.5	13.3	14.3	1.4

Literacy and Educational Attainment

Literacy is defined as being able to read and write in Thai. Sixty-one percent of the total sample is literate (Table 5.2). This is almost twice as high as the literacy rate of elderly population reflected in the latest census. Again, this could be The result of controlling for equal socioeconomic class in the sampling scheme of non-institutionalized samples.

The literate amongst the samples of private free-of-charge and profit-making institutions is comparatively low (48 and 35

percent, respectively). This confirms the fact that their residents are predominantly Thai-Chinese.

The literacy rate is found to be exceptionally high, 79 percent, amongst the samples of government free-of-charge institutions, especially amongst the female residents (not shown in the Table).

A category of literacy; 'able to read only', is classified in this study because it has meaningful implications. There is 6.3 percent of the sampled elderly who report themselves able to read only. This occurs as frequently as one in every ten residents in government nursing homes. Even though they are unable to write in prose or by words, newspaper headlines, traffic signs or advertising stands are comprehensible. Many elderly people said their school years were terminated at the outbreak of World War II; however, being unable to finish elementary level or 'Prathom 4' can be a result of several other factors.

Considering educational attainment (Table 5.2), the proportion of the elderly samples who have never attended school is 35 percent, which is a little higher than the illiterate rate. Some elderly people revealed that they were self-taught or took lessons from monks.

About 18 percent of the elderly were unable to finish the elementary level of schooling and those able to finish up to such level are just about in the same proportion. Note that those who live in institutions show a greater proportion of high school or commerce level education than those who live in the family (8 percent as compared to 2.8).

Residents of government free-of-charge institutions have higher educational attainments than samples in other types of care. Illiteracy amongst females is double that of males, especially those

elderly female aged 80 years and over (not shown in Table). Their ratio is almost tripled when compared with males of the same age group (6 percent to 27). In brief, elderly males in the age group of 60-79 attain the highest level of education.

Table 5.2 Percentage Distribution of Literacy and Educational Attainment of the Elderly Samples by Type of Care

Individual Characteristic	Total	Non-Institution	Institution				
			Total	Free-of-Charge			Profit-Making
				Total	Government	Private	
Literacy							
Unable to Read and Write	32.4	35.0	30.7	18.8	10.7	47.6	61.3
Able to Read only	6.3	4.4	7.5	8.9	10.0	4.8	4.0
Able to Read and Write	61.3	60.6	61.8	72.4	79.3	47.6	34.7
Education							
Never Attended School	35.0	37.4	33.0	37.9	23.0	45.2	59.5
Not Finished P4 (Elementary)	18.0	18.4	17.6	20.0	20.3	19.0	5.4
Finished P4 (Elementary)	20.0	22.3	18.1	18.9	20.3	14.3	13.5
Finished P7/M3 (Primary)	11.8	8.9	14.1	16.8	16.9	16.7	-
Finished M6 (Intermediate)	7.9	8.4	7.5	7.9	9.5	2.4	5.4
Finished M8 (High School/Commerce)	5.7	2.8	7.9	7.4	9.5	-	10.8
University/ College	1.7	1.7	1.8	1.1	0.7	2.4	5.4

Working Status and Past Occupation

About 20 percent of the total sample reports currently working in jobs that generate income (Table 5.3). This proportion share the same across all sample groups of different types of care. Their current work activities, however, are rather different from their past occupations. (Work activities of these working elderly persons are further examined in Appendix C. An assessment of given reasons for not working follows after.)

Regarding patterns of past occupation, those who live in family tended to occupy more secure jobs in the past than those have chosen to live an institutional life. For instance, those who live in the family used to be merchants, business people or own-farmers more frequently than those living in institutions. Likewise, those living in institutions used to be engaged in labor work, be self-employed or housewives or were jobless more frequently than those living in the family (Table 5.2). Such a pattern is also holds for gender differences (see Table C.2 in Appendix C).

Occupations of their spouse are also examined in an effort to discern association with care used. The same interpretation can be concluded. Husbands of female residents in free-of-charge homes constitute a higher percentages of those who used to be unemployed or self-employed than those of female samples living in the family. Self-employment includes jobs like barbers, carpenter, sam-lor drivers, which tend to be unsteady.

Proportions of government pensioners or government/state-enterprise ex-workers amongst the samples of government free-of-charge homes are notably higher than those living in the family. This is also observed to be relevant when the husbands' past occupations are examined amongst the female samples. One-third of the ever-married female residents in government free-of-charge

homes are wives of the non-pensioned government workers (additional data from the survey not shown in Table). This extraordinarily high percentage of government-linked residents implies that there is a tendency for special selection for admission to government nursing homes.

Table 5.3 Percentage Distribution of Current Working Status and Past Occupation of the Elderly Samples by Type of Care

Individual Characteristic	Total	Non-Institution	Institution				
			Total	Free-of-Charge			Profit-Making
				Total	Government	Private	
Currently Work or Not							
No	79.8	79.3	80.2	80.2	77.3	90.5	100.0
Yes	20.0	20.7	19.8	19.8	22.7	9.5	-
Past Occupation							
Housewife, Never Worked	12.0	7.3	15.3	6.3	6.7	4.8	46.4
Laborer	21.1	18.0	23.4	26.0	23.3	35.7	14.3
Self-employed	13.8	10.1	16.5	20.8	16.0	38.1	1.8
Employees	8.0	7.3	8.5	9.4	10.7	4.8	5.4
Private Enterprise	3.8	3.9	3.6	4.7	5.3	2.4	-
Government (No Pension)	7.0	4.5	8.9	8.3	9.3	4.8	10.7
Government (On Pension)	7.7	7.3	8.1	9.4	11.3	2.4	3.6
Merchant, Businessman	16.9	22.5	12.9	11.5	13.3	4.8	17.9
Farm-owner	9.6	19.1	2.8	3.6	4.0	2.4	-

Perceived Health

Perceived health status or 'self-reported physical health' is classified into three simple categories: 1. poor health which is defined as weak, frail or having major health problems, 2. not strong but having no health problems, 3. in good health and feeling strong. Note that for the group of profit-making institutions, health status are assessed by physicians.

The group of samples living in the family report a better degree of health status than those in institution (Table 5.4). This is confirmed by the chi-squared test of association which shows a significant difference at α equals 0.01 level; however, there is no statistically significant difference of perceived health status between the group of government and the group of private free-of-charge homes (at α = 0.05 level). The same interpretation is found between the group of free-of-charge homes and profit-making institutions (not shown in Table 5.4).

Table 5.4 Percentage Distribution of Perceived Health Status of Elderly Samples by Type of Care

Perceived Health	Total	Non-Institution	Institution				
			Total	Free-of-Charge			Profit-Making
				Total	Government	Private	
Frail, Weak with Major Health Problem	12.1	5.0	16.9	15.6	17.3	9.5	20.0
Weak But No Major Health Problem	45.6	41.7	48.3	46.9	48.7	40.5	52.0
Good Health and Strong	42.3	53.3	34.8	37.5	34.0	50.0	28.0
N of cases	447	180	267	192	150	42	75
Total	100.0	40.3	59.7	100.0	78.1	29.2	100.0
χ^2 (P-value)		22.25 (.0000)			3.99 (.1360)		

On questioning whether the respondents presently suffer from any illness (Table 5.5), it is found that those who live in the family report a lower prevalence of chronic illnesses than those who live in institutions (54 percent as compared to 66 percent respectively).

The most common type of illness reported is related to the circulatory system, 24 percent amongst all reported illness. This is reported more amongst the group of younger elderly than among the older (31 percent compared to 20 percent). Report of circulatory system illnesses is also higher in the samples living in the family compared to those in institutions (29 percent and 24 percent respectively).

The second most common type of illness has to do with the musculo-skeletal system (14 percent), reported with quite equal frequency between males and females, also between the younger and the older age group but at much higher frequency amongst those who live in institutions (14 percent) than those who live in family (8 percent).

The third most frequent illness is in the digestive system, followed with the endocrine system, mental disorders, the nervous system, an so on. These illnesses are all reported to be higher amongst the elderly in institutions than those in the family.

Table 5.5 Percentage Distribution of Prevalence of Self-Reported Chronic Illness by Type of Care, Gender and Age Group

Self-Reported Chronic Illness	Total	Care Group		Gender		Age Group	
		Non-Institution	Institution	Male	Female	60-79	80 and over
No Illness	38.5	45.6	33.7	39.1	37.6	36.3	41.5
At Least One	61.5	54.4	66.3	60.9	62.4	63.7	58.5
1. Genito-Urinary System	1.6	1.7	1.5	2.7	0.4	1.6	2.2
2. Skin and Subcutaneous	0.2	-	0.4	-	0.4	-	0.5
3. Musculo-Skeletal	13.5	8.3	13.9	12.3	14.8	13.2	14.0
4. Blood and Blood Forming	1.4	0.6	1.5	1.4	1.3	1.6	1.1
5. Ill-Defined Conditions	2.5	-	3.0	2.3	2.7	2.7	2.2
6. Accidents and Related Condition	-	-	-	-	-	-	-
7. Circulatory System	24.4	28.9	23.5	27.3	26.0	31.1	20.4
8. Respiratory System	3.4	2.2	3.7	4.1	2.7	3.1	3.8
9. Digestive System	8.4	4.4	9.4	9.1	7.2	7.8	10.2
10. Infectious and Parasitic	-	-	-	-	-	-	-
11. Neoplasm	-	-	-	-	-	-	-
12. Endocrine	7.5	6.1	2.2	7.3	7.6	8.6	5.9
13. Mental Disorder	5.9	2.8	7.9	3.2	7.6	4.3	8.1
14. Nervous System	5.0	2.8	6.4	5.9	4.0	6.2	3.2
15. Opthalmo-Oto-laryngal	4.3	2.2	1.9	2.3	1.8	0.8	3.8
16. Allergic Disorder	1.6	1.2	1.9	0.1	2.2	1.6	1.6
17. Unknown	2.3	0.6	3.4	0.5	4.0	2.3	2.2

Family Structure

Unfailingly, family background significantly influences the provision of care and decision-making regarding going into institutional care. Information on the characteristics of family structure are recorded in two different areas: information about the elderly's present families in the case of the group of elderly living in the family, and about their previous families for those already living in institutions or nursing homes. Substantial variation in family living situations is observed among the elderly in different types of care, those cared for by family, in free-of-charge nursing homes, either organized by the government or private sector, and in the profit-making nursing home.

Persons the Elderly Live with

Regarding the people with whom the elderly live, those in the family who are living with their spouse or with their spouse and children account for 46 percent of the total; and those living with at least one child (with no spouse) are 44 percent (Table 5.6). About 6 percent are living with relatives such as nieces, nephews or siblings or other kin, one percent are living alone and the remaining 2.8 percent are living with friends or former employers.

In brief, as high as 90 percent of the group of elderly living in the family are living with their spouse and/or children. The opportunity to do this is as low as 40 percent for those who have entered the free-of-charge nursing homes. Furthermore, about one-third of these residents used to live with relatives other than their own children or spouse. The proportion of those living alone prior to a life in an institution is 13.3 percent which is considerably high. The status of dependence on friends or employers is also likely to be a predictor for seeking care from institutions as they aged, especially amongst those who have entered the private

free-of-charge nursing homes; as many as 29 percent of these residents used to live with friends or former employers.

Table 5.6 Percentage Distribution of Family Characteristics by Type of Care

Family Structure	Non-Institution	Institution				
		Total	Free-of-Charge			Profit-Making
			Total	Government	Private	
Persons Living with						
Alone	1.1	9.7	13.3	13.6	12.2	-
Spouse/Spouse and Children	46.1	16.0	16.0	14.3	22.0	15.9
Child or Children	43.9	33.5	22.9	25.9	12.2	62.3
Other Relatives	6.1	30.0	33.5	36.1	24.4	20.3
Friends, Employers	2.8	10.9	14.4	10.2	29.3	1.4
N of cases	180	257	188	147	41	69
Elderly Person's Care-Giver						
No one	13.6	40.8	55.5	58.2	46.6	1.5
Spouse	32.8	6.4	8.2	6.4	14.6	1.5
Child or Nephews	52.5	39.2	22.0	22.7	19.5	85.3
Other Relatives or Friends, Employers	1.1	13.6	14.3	12.8	19.5	11.8
N of cases	177	250	182	141	41	68
Head of Household						
Elderly or Spouse	50.8	38.2	38.2	38.9	35.9	-*
Children or in-Law	40.2	15.3	15.3	15.3	15.4	-*
Nephews, Relatives	3.9	8.2	8.2	8.4	7.7	-*
Friends, Employers	5.0	38.2	38.2	37.4	41.0	-*
N of cases	179	170	170	131	39	-*
Living Children						
None	4.5	26.3	33.1	14.8	26.7	7.5
At Least One	95.5	73.7	66.9	65.2	73.3	92.5
N of cases	176	198	145	115	30	53

* Data not available

Table 5.7 Average Numbers of Living Children and Persons in the Family by Type of Care

Family Structure		Non-Institution	Institution			
			Total	Free-of-Charge		Profit-Making
				Total	Government	Private	
Living Children	Mean	4.50	2.49	2.27	2.30	2.13	3.07
	S.D.	2.6	2.5	2.5	2.5	2.2	2.5
Living Sons	Mean	2.23	1.25	1.15	1.17	1.10	1.48
	S.D.	1.7	1.5	1.4	1.5	1.4	1.5
Living Daughters	Mean	2.27	1.25	1.71	1.13	1.03	1.60
	S.D.	1.6	1.5	1.5	1.6	1.2	1.4
Persons in the Family	Mean	4.06	2.58	2.58	2.55	2.72	-*
	S.D.	2.5	2.3	2.3	2.2	2.5	-*

* Data not available

Care-giver

For those in profit-making institutions, 62 percent used to live with at least one adult child, and 17 percent used to live with their spouse and children. The situation where a high proportion used to live with family members are quite similar to those in the presently living in family. In fact, the adult children of these residents are most frequently the decision makers and the cost bearers for putting them in profit-making hospital-based nursing homes. In other words, children are the main care-givers of these elderly (85 percent) before they become unable to provide care for their parents directly and are forced to place them in an institution, whereas for those residents of free-of-charge nursing homes, only 22 percent state that children used to be their main care-givers. Those whose spouses are their main care-givers are

only 8 percent. About half of these residents, or 56 percent, state that they have no care-giver and 14 percent said friends or former employers are their main care-givers.

The above proportions are just the reverse for the group living in the family: only 14 percent have no main care-giver and 52 percent have children, grandchildren, nieces, or nephews as care givers. Those having their spouse as care-giver are reported to be 33 percent. Note that a Thai expression which refers to 'children and grandchildren' many times may also refer to 'children and nieces/nephews'. They are not only the same words but also can be of the same connotation since nieces and nephews can be as close as children or grandchildren in many Thai families.

Head of Household

Regarding the person who is the head of the household, for those elderly in family, half of the interviewed samples report that either the elderly person themselves or their spouses are the head of the household. About 40 percent live in households headed by their children or children-in-law. Of the rest, only four percent live in households headed by nieces, nephews or other relatives, and five percent by friends or employers. For those who live in free-of-charge nursing homes, 38 percent used to live in households headed by other relatives, friends or employers. In this same group, however, those who are household heads constitute an equal proportion (38 percent). Moreover, a proportion of 15 percent are headed by adult children or the in-laws, and a small percentage (8 percent) used to live in a household headed by a niece or nephew. Information on household heads for elderly people who are cared for in hospital-based nursing homes is inapplicable; however, it is generally assumed that their adult children, who are the main care-givers, are also the household heads. In brief, the elderly in the

family who presently live in a household of which either they themselves or their spouse or their children are the heads account for 91 percent, whereas 35.5 percent of the institutional elderly used to hold such a position.

Living Children

Children traditionally are the substantial care-providers for their aged parents. In this study's samples, 95.5 percent of the elderly in the family have at least one living child (Table 5.6). The proportion is also found to be high amongst the residents of profit-making or the hospital-based nursing home; however, only 65 percent of the elderly in government free-of-charge nursing homes have at least one living child, and there is a slightly higher percentage of 73 percent for those in private free-of-charge nursing homes. Moreover, the average number of living children is also found to be significantly different amongst the elderly in different types of care (Table 5.7). As expected, elderly in the family have more living children than all other groups, an average of 4.5 children per elderly person from previous or present marriages. Those in profit-making nursing homes have an average of 3.1 children. The least numbers of children are found in those residents of free-of-charge nursing homes (2.3 children), with no difference between those who live in the government or the private institutions. Numbers of living sons and living daughters are also found to be balanced for each group of the elderly. It can be concluded that having living children and the number of living children is a significant characteristic associated with the types of care these elderly people are receiving. More than that, the number of people in the family is also found to be statistically different. Elderly in the family report their members to be 4.1 persons per family while those in free-of-charge nursing homes recall that their family members at the time when they used to live

with them are only 2.6 persons. The study records the total number of persons who live in the family rather than numbers of children living with the family as relationships within the family or the role of care-givers interacts with each other more than just between the aged persons and adult children. Besides, as already presented, some elderly do not live with their children.

Economic Well-being

It is generally assumed that the amount of income earned and the quantity of expenditures are the basic requirements for approaching the assessment of the economic well-being of individuals. Money, as figures, however, is only one factor which indicates a person's financial situation. There are other factors relevant to considering the elderly's economic well-being, such as how they perceive their financial circumstances, their consumption behavior, and sources of income.

Economic well-being is assessed by examining the average monthly income and expenses, the amount of income by each source and the amount of expenses in each category of expense pattern. How the elderly persons perceive their financial situation and if they presently have any savings or debts.

On average, the monthly income of elderly people who live in the family is four times higher than those who live in institutions (6,440 baht per month compared to 1,515 baht), whereas the average monthly expenses are a little over two-fold (2,164 baht per month to 978 baht) (Table 5.8).

Table 5.8 Average Monthly Income and Expense by Type of Care

Income/ Expense	Non-Institution	Institution		
		Total	Free-of-Charge	
			Government	Private
Monthly Income (Baht)				
Mean	6440	1515	1641	1073
S.D.	11958	1907	2086	954
N of cases	179	190	148	42
t-test (P-value*)	5.60 (.000)		1.71 (.089)	
Monthly Expense (Baht)				
Mean	2164	978	1010	867
S.D.	4616	1143	1223	800
N of cases	178	191	149	42
t-test (P-value*)	3.44 (.002)		.72 (.475)	

* One-tailed test

Assessed Financial Situation

Examining the subjective assessment of their financial situation, 22 percent of the elderly persons living in the family say they 'have more than enough' (Table 5.9), four times higher than those in institutional group. Only about 2 percent of those living in the family say they 'do not have enough' which is small compared to the 13 percent of elderly who live in institutions. From the above mentioned, even though those living in institutions may assess their financial situation as worse off than those living in the family (significant at α = 0.01 level), a majority of 70 percent of them say they just 'have enough, no problems'.

Elderly persons in private free-of-charge nursing homes may be considered as the group that is suffering most from financial hardship. Almost one-third of them say they 'do not have enough'. Only half say they 'have enough, no problem'.

In examining whether or not these elderly persons (regardless of different types of care used) have any savings or debts, only about two percent report having debts which they are paying off. About 43 percent say they have no debt or savings. About 55 percent report that they have some savings (Table 5.9).

Table 5.9 Percentage Distribution of Financial Situation and Having Savings or Debts by Type of Care

Financial Situation/ Have Savings or Debts	Total	Non-Institution	Institution		
			Total	Free-of-Charge	
				Government	Private
Financial Situation					
Do Not Have Enough	7.8	2.2	13.0	8.0	31.0
Barely Adequate	12.1	11.7	12.5	11.3	16.7
Have Enough, No Problem	67.2	63.9	70.3	76.0	50.0
Have More Than Enough	12.9	22.2	4.2	4.7	2.4
N of cases	372	180	192	150	42
χ^2 (P-value)		37.99(.0000)		17.59(.0005)	
Have Any Savings or Debts					
Are Paying Out of Debt	1.9	2.2	1.6	2.0	-
No Debt - No Saving	43.4	42.5	44.3	38.0	66.7
No Debt - Have Saving	54.7	55.3	54.2	60.0	33.3
N of cases	371	179	192	150	42
χ^2 (P-value)		.31(.8547)		11.24(.0036)	

Expenditure

Looking at the pattern of their expenditures (Table 5.10), amongst nine types of expense patterns, the two most frequent expenditures are on food and religious devotion. The monthly average expense on religious devotion is comparatively high compared to the average amount spent on food or medical expenses which are basic necessities. This occurs for both groups of elderly, in the family and in institutions.

For the elderly persons living in the family, spending at least five baht per month on devotion comes the most frequent (81 percent) expense and food comes as the second most frequent expense (61 percent). The average amount of expense on these two expenditures is about 823 baht and about 282 baht, respectively.

For those in institutions, 87 percent spend at least five baht per month on food; and 69 percent on religious devotion. These two types of expenditure have an average of 514 baht and 224 baht respectively.

Spending on the lottery is another area of frequent expenditure in all groups of elderly people; about 32 percent of the total samples spend an average of 100 baht monthly. (These figures are not shown in the Table.)

About nine percent of those living in families are responsible for their grandchildren by paying an average of 2,500 baht monthly. Such contributions are for raising grandchildren while the young couples are working. There are five institutional residents who state that they spend about 620 baht per month on their dependent children.

Table 5.10 Expenditure Patterns: Comparisons of Average Monthly Expenses and Percentage of Types of Expense at Least Five baht per Month Between the Group of Non-Institutionalized and Institutionalized

Expenses	Non-Institution			Institution		
(Baht per Month)	Mean	S.D.	%	Mean	S.D.	%
Food, Snacks	823	875	60.8	514	377	86.9
Devotion	282	811	81.4	224	670	68.8
Medical Expense	542	742	31.6	285	334	24.0
Lottery	99	128	30.7	96	134	33.9
Electricity, Water	708	992	33.3	484	992	11.5
Pay for Dependents	2531	3809	9.0	620	551	2.6
Leisure, Travel	617	577	8.7	177	199	13.7
Rental	520	462	5.6	-	-	-
Wages, Tips	883	550	3.4	153	138	8.3
Payments, Debt	125	106	1.1	775	1025	1.0

It is interesting to note that 8.7 percent of those living in the family spend 617 baht per month on leisure or travel which is considered to be a relatively large amount as compared to the average medical cost of 542 baht per month for the same reference group. Such findings correspond to the comment by Brown (1990: 170) "...leisure among the retired population of the world has created large and vital consumer markets". This fact should not be overlooked by Thailand.

Note also that rental expense of 520 baht per month amongst those elderly living in the family is just about the same as the charged fee of special room services in the government nursing homes. This low rental rate reflects poor living accommodation for the low socioeconomic elderly (Table 5.10).

Income and Sources of Income

Regarding sources of income (Table 5.11), about 40 percent of those living in the family earn an average of 4,655 baht per month from jobs, or the rental of properties, or interest. Institutionalized elderly also maintain such an income from jobs or rentals by 18 percent of the total but earned only 527 baht per month on average.

There are only 12 percent of the total samples who enjoy the privilege of receiving pensions, with an average of 7,221 baht and 3,920 baht monthly for the respective groups. Those receiving pensions had the highest amount of average earnings. This confirms the old saying 'Nam-Bor-Sai'-- 'never-dried-out well'. The Thai social norm that values working for the government as one of the most secure occupations is again proven to be true here.

Table 5.11 Sources of Income: Comparisons of Average Monthly Income and Percentage of Each Source of Income Between the Group of Non-Institutionalized and Institutionalized

Source of Income	Non-Institution			Institution		
(Baht per Month)	Mean	S.D.	%	Mean	S.D.	%
Job, Rental of Properties, Interests	4655	4978	39.9	527	673	17.7
Pension	7221	4579	11.8	3920	3346	2.4
From Children Living with Elderly Person	1222	1986	68.7	-	-	-
From Friends, Relatives	167	202	1.7	488	547	11.9
Children Not Living with Elderly Person	1155	1884	59.2	533	382	40.5
Given by Visitors	-	-	-	745	666	73.8

Traditionally, children are their parent's security in old age. In this study, 69 percent of the elderly people in the family receive money from their children, and 59 percent also receive cash allowances from children with whom they do not live, averaging up to more than one thousand baht per month. For those who live in institutions, cash handed over by compassionate visitors is often their main source of income (Table 5.11).

Personal Life-Styles

Religious Activities

In this studied sample, 93 percent of the total of elderly people sampled are Buddhist, 3.3 percent are Christians and the followers of Islam are 2.7 percent (not shown in Table).

Between 36 and 37 percent of the government nursing home residents and the elderly in the family state that they have not participated in religious activities in temples or other houses of worship for years (Table 5.12). About the same proportion say they do so only once or twice a year. The rest are frequent practitioners of religious activities several times per month.

An extreme pattern of frequency in joining religious activities is found amongst residents of private free-of-charge nursing homes; 81 percent say they have participated in no religious activities for years and another 10 percent say they practice their religions almost daily. The free-of-charge nursing homes operated by the government and by religious organizations both provide in their settings a pavilion or a general worship service hall within the compound which makes it convenient for their residents to practice religious services as a functional group; however, a solemn and solitary atmosphere is common except on special occasions. For those who do not participate in religious

activities, almost half of them have withdrawn for more than five years (Table 5.12).

Table 5.12 Percentage Distribution of Frequency in Participating Religious Activities by Type of Care

Participating Religious Activities	Total	Non-Institution	Institution (Free-of-Charge)		
			Total	Government	Private
None for Years	41.5	37.2	45.5	36.0	80.5
Once or Twice a Year	37.2	42.8	31.9	38.0	9.8
At Least Once a Month	6.2	5.0	7.3	9.3	-
2 - 3 Times a Month	12.9	14.4	11.5	14.7	-
Almost Every Day	2.0	0.6	3.7	2.0	9.8
N of cases	371	180	191	150	41
Total	100.0	48.5	51.5	78.5	21.5

Family Contact and Social Network

Obviously, the elderly in the family have better and closer family networking than those in institutions. As shown in Table 5.13, 22 percent of the elderly in the family live with at least one of their adult children, about 5 percent live near their children and see them almost every day, 18 percent are visited by their children every week, 21 percent have children who visit them almost every month, 14 percent receive visits at least once a year, and only 7 percent state that they have never been visited by their children. Thirteen percent, however, report that their children make telephone calls. The reports by those in free-of-charge institutions indicate distance in the family relationship, for three-quarters of them have received no visits from children for the

past year, 24 percent receive visits 1-6 times a year, 11 percent at least once a month and only 2 percent at least every week. The residents of private profit-making nursing home; however, receive quite frequent visits: 20 percent every week, 32 percent every month, 37 percent 1-6 times a year, only 1.3 percent had no visits from children for the past year. Nine percent of them have telephone calls from children.

Visits received from other relatives amongst the institutionalized elderly are also rare; only 26 percent have been visited by relatives at least once in the past year. In comparison, only 29 percent of the non-institutional elderly are in the above situation with regards to visits from relatives.

Daily Self-entertainment

Personal life-style with respect of daily self-entertainment is assessed by asking the elderly how frequently they involve themselves in the following personal activities of daily entertainment: watching television, listening to the radio, reading newspapers and chatting with friends. It is found that elderly in the family watch television and chat with friends or neighbors more often than the elderly in institutions (Table 5.14). There is no difference detected in the daily activities of listening to the radio and reading newspapers between groups of elderly in the family and in institutions and between the groups of residents in government and private institutions.

Table 5.13 Percentage of Frequency of Visits by Children and Relatives by Type of Care

Family Contact	Non-Institution	Institution				
		Total	Free-of-Charge			Profit-Making
			Total	Government	Private	
Visits by Children						
No Visits	7.4	54.4	75.5	79.6	61.0	1.3
1-3 Times a Year	7.4	16.0	13.3	12.2	17.1	22.7
4-6 Times a Year	7.4	8.0	5.3	5.4	4.9	14.7
Once a Month	21.1	11.4	3.2	2.0	7.3	32.0
Once a Week	17.7	4.6	2.1	0.7	7.3	10.7
Almost Every Day	4.6	2.7	-	-	-	9.3
Telephone Calls	12.6	3.0	0.5	-	2.4	9.3
Live in the Same House	21.7	-	-	-	-	-
N of cases	175	263	188	147	41	75
Visits by Relatives						
No Visits	29.2	73.4	73.4	74.0	71.4	-*
1-3 Times a Year	31.5	16.5	16.5	16.4	16.7	-*
4-6 Times a Year	5.6	5.3	5.3	6.2	2.4	-*
Once a Month	22.5	2.7	2.7	1.4	7.1	-*
Once a Week	3.9	1.6	1.6	2.1	-	-*
Almost Every Day	2.8	-	-	-	-	-*
Telephone Calls	1.1	0.5	0.5	-	2.4	-*
Live in the Same House	3.4	-	-	-	-	-*
N of cases	178	188	188	146	42	-*

* Data not available

Table 5.14 Percentage of Frequency in Daily Self-entertainment by Type of Care

Daily Self-Entertainment	Total	Non-Institution	Institution (Free-of-Charge)		
			Total	Government	Private
Watching TV					
Not at All	25.3	12.8	37.0	34.7	45.2
Very Little	32.3	29.4	34.9	42.0	9.5
Often	39.2	56.7	22.9	23.3	21.4
Have No TV Set	3.2	1.1	5.2	-	23.8
N of cases	37	180	192	150	42
	100.0	48.4	51.6	78.1	21.9
χ^2 (P-value)		54.19(.000)		46.68(.000)	
Listening to Radio					
Not at All	33.1	31.1	34.9	34.7	35.7
Very Little	20.2	22.8	17.7	19.3	11.9
Often	46.8	46.1	47.4	46.4	52.4
N of cases	372	180	192	150	42
	100.0	48.4	51.6	78.1	21.9
χ^2 (P-value)		1.62(.445)		1.31(.518)	
Reading Newspapers					
Not at All	55.1	52.8	57.3	55.3	64.3
Very Little	18.8	17.8	17.8	21.3	14.3
Often	26.1	29.4	22.9	23.3	21.4
N of cases	372	180	192	150	42
	100.0	48.4	51.6	78.1	21.9
χ^2 (P-value)		2.06(.357)		1.33(.513)	
Chatting with Friends/ Neighbors					
Not at All	6.2	5.6	6.9	6.8	7.1
Very Little	23.0	11.1	34.4	35.4	31.0
Often	70.7	83.3	58.7	57.8	61.9
N of cases	369	180	189	147	42
	100.0	48.8	51.2	77.8	22.2
χ^2 (P-value)		29.84(.000)		.283(.868)	

CHAPTER VI

PREDICTORS FOR USES OF ALTERNATIVE TYPES OF CARE

The search for factors that characterize whether elderly people remain with their families or enter institutions is the main concern of this chapter. The presentation is divided into three sections. The first section begins with a general description relating to the change to the present residence of the respondents: the decision-maker, age of the elderly at time the change is made, and the given reasons the change. The second section discusses samples included in the discriminant analysis, basic assumptions for the analysis framework and re-categorization of variables. Third is the results from discriminant analysis which aims to distinguish the characteristics of respondents who live in the family from those in institutions. These characteristics, with significant difference between groups of samples, represent the attributable effects for determining the use of alternative types of care. These findings are presented in the last section.

General View

Before beginning a search for factors that determine which elderly remain in the family or enter an institution, it is important to find out who the decision-makers are with regards to their present living arrangements and at what age the elderly are when these important decisions are made, the reasons given for such changes as well as the interrelation of these factors. Note that approximately nine percent of the elderly samples living in the family state that they have been living in that locality ever since they were young. The following presentation will incorporate only those who have made at least one move in their life.

Unlike the other parts of the presentation, the discussion in this general view section includes samples from the profit-making hospital-based nursing home. This is because the data about age of the residents at time of admission is in hospital records and information about decision-maker, reasons for admission is available from the key informants such as nurses, doctors and hospital administrators.

Decision-maker

Data in Table 6.1 shows that a majority (62 and 66 percent) of elderly samples in the family and in free-of-charge nursing homes say that it is their own decision (or a joint-decision with their spouse) to live in their present places, whereas a majority (87 percent) of those frail elderly in profit-making nursing homes are institutionalized at the request of their children.

Children who have decided that their elderly parents should live in their households accounts for 36 percent of those elderly living with their families.

For the elderly in free-of-charge nursing homes, the proportion of those who are following their children's decisions is rather low. This proportion is only 13.5 percent of those who have at least one child or only 9 percent of the total. This is partly because these elderly people may wish to avoid blaming their children or because the relationship they have with their children is quite distant, and partly because persons other than their children or spouses come forward and lend a hand in making these decisions. As many as 25 percent of the elderly say they are advised or referred by respected persons to find a restful life in these free-of-charge nursing homes. These referees are previous employers, neighbors, siblings or other kin. Some elderly are

referred by abbots since many spend periods of their lives as nuns, monks or worshipers. A few are referred by physicians.

Decisions made by persons other than children or spouses are reported to be about 10 percent amongst those who are residents of profit-making nursing homes. Mostly, these are the elderly person's closest kin, such as nephews or siblings, and they are responsible for the expenses in the nursing home. For those elderly in the family, only two percent state that there is someone else who makes the decision for them.

No differences are found between male or female elderly in the above pattern of decision making except amongst the group of elderly persons living in family. About 47 percent of the females have children making for their decision whereas amongst the elderly males, this is reported to be 24 percent (Table 6.1).

Table 6.1 Percentage Distribution of Decision-maker Regarding Present Residence by Gender and Type of Care

Type of Care	Decision-Maker			N	%	χ^2
	Elderly*	Children	Others**			(P-value)
Non-Institution						
Male	75.6	24.4	-	78	49.7	12.86
Female	49.4	46.8	3.8	79	50.3	(.0016)
Total	62.4	35.7	1.9	157	100.0	
Institution (Free-of-Charge)						
Male	67.6	8.6	23.8	105	55.0	.337
Female	64.0	10.5	25.6	86	45.0	(.8451)
Total	66.0	9.4	24.6	191	100.0	
Profit-Making Nursing Home						
Male	3.7	77.8	18.5	27	38.0	3.09
Female	2.3	93.2	4.5	44	62.0	(.1430)
Total	2.8	87.3	9.9	71	100.0	

* Elderly or elderly and spouse or spouse's decision

** Other relatives, friends, former bosses

Age at Time of Changing to Present Residence

The age of the elderly at the time of the decision for change is examined further in three age groups: under 60 years, between 60-69 and aged 70 and over (Table 6.2). A comparison is also made amongst the male and female elderly.

For those in the family who have made at least one move, more than half (54 percent) moved to their present residence before the age of 60, 19 percent make the latest move between the ages of 60 and 69, and the rest (27 percent) changed to their present residence after the age of 69. There is no gender difference in this concern.

For the elderly in free-of-charge nursing homes, due to the fact that the entry age to the institution is at least 60, there are no samples in the categorical group of age less than 60 years. Those who enter the institution in their 60's and those in their 70's are in equal proportion (55 percent to 45) with no statistically significant difference between genders.

Those admitted to the profit-making hospital-based nursing home, 17 percent enter between the ages of 60 and 69. A majority of 73 percent enter after the age of 69. This is a rather promising sign of family care in that families of these elderly retain their elderly at least during their early aged period. Only 10 percent seek these services before the age of 60. There is gender difference in age admitted to profit-making nursing home. More female residents enter after the age 69 than male.

Table 6.2 Percentage Distribution of Age at the Time of Changing to the Present Residence by Gender and Type of Care

Type of Care	Age at Time of Last Change			N	%	χ^2
	< 60	60-69	70 and over			(P-value)
Non-Institution						
Male	57.7	16.7	25.6	78	49.7	1.165
Female	49.4	21.5	29.1	79	50.3	(.5585)
Total	53.5	19.1	27.4	157	100.0	
Institution (Free-of-Charge)						
Male	-	51.4	48.6	105	55.0	.477
Female	-	45.3	54.7	86	45.0	(.4896)
Total	-	48.7	51.3	191	100.0	
Profit-Making Nursing Home						
Male	14.8	29.9	55.6	27	36.0	6.86
Female	6.3	10.4	83.3	48	64.0	(.0324)
Total	9.3	17.3	73.3	75	100.0	

A cross classification of age at time of changing to the present living arrangement and the decision makers for the change is found to show significant association. Table 6.3 shows that of the group of elderly living in the family who make their own decisions (or with their spouse) about their present living place, 71 percent of these decisions are made before they are 60, 16 percent are made between 60 and 69, and 12 percent after 69. The influences of children's decisions on the living arrangements of the elderly increase as the parents age. This is true for both moving into the adult children's family and entering free-of-charge nursing homes.

For elderly in free-of-charge nursing homes, those who make their own decision to enter between 60-69 and after the age of 69 are in equal proportions. Children's decisions for their elderly parents entering the free-of-charge nursing homes after the age of 69 are about 89 percent of the total, comparing to a smaller proportion of 11 percent who enter at an earlier age of 60 to 69. Those who report the decision to have been made by other persons and come in between the age of 60 and 69 formed 60 percent of the total, while 40 percent enter the home after the age of 69.

Table 6.3 Percentage Distribution of Decision-maker Regarding Present Residence by Age of Elderly Samples at the Time of Changing to Present Residence and Type of Care

Type of Care	Decision-Maker			N	%	χ^2
	Elderly*	Children	Others**			(P-value)
Non-Institution						
< 60	71.4	23.2	33.3	84	53.5	39.19
60-69	16.3	23.2	33.3	30	19.1	(.0000)
70 and over	12.2	53.6	33.3	43	27.4	
Total	62.4	35.7	1.9	157	100.0	
Institution (Free-of-Charge)						
< 60	-	-	-		-	
60-69	50.0	11.1	59.6	93	48.7	12.49
70 and over	50.0	88.9	40.4	98	51.3	(.0019)
Total	66.0	9.4	24.6	191	100.0	
Profit-Making Nursing Home						
< 60	-	8.1	28.6	7	9.9	9.00
60-69	50.0	14.5	42.9	13	18.3	(.0611)
70 and over	50.0	77.4	28.6	51	71.8	
Total	2.8	87.3	9.9	71	100.0	

* Elderly or elderly and spouse or spouse's decision

** Other relatives, friends, former bosses

The Given Reasons for the Change

For the elderly samples living in the family who have made at least one move, about 17 percent of them have had to leave their previous residence because of being alone, becoming homeless or having family problems. Moving out because of marriage, and of home ownership account for 20 and 30 percent respectively (Table 6.4). The remaining 33 percent give reasons related to changes during later life which include: moving to live with children, to be cared for by children, to help children with housework, moving after retirement, and losing spouse.

There is no gender difference for the above pattern. However, there seems to have some association between age at the time of changing residence and reasons for the change.

Table 6.4 Percentage Distribution of Given Reasons for Changing to the Present Residence by Gender and Age at the Time of Changing amongst Elderly Samples Who Live in Family

Gender/ Age	Being Alone, Homelessness, Family Problems	After Marriage	Bought New House	Other Reasons	Total
Total Respondents in Family	17.2	19.7	29.9	33.1	100.0
N of cases	27	31	47	52	157
Gender					
Male	51.9	58.1	59.6	34.6	49.7
Female	48.1	41.9	40.4	65.4	50.3
χ^2 (P-value)				7.48	(.0580)
Age at Time of Changing *					
< 60	59.3	87.1	57.4	26.9	53.5
60-69	22.2	9.7	21.3	21.0	19.1
70 and over	18.5	3.2	21.3	51.9	27.4
χ^2 (P-value)				34.97	(.0000)

* Calculated by age at time being interviewed minus number of years living in the present residence

For the group of residents in free-of-charge nursing homes, several reasons for entering the home are given. Forty-four percent give at least one reason related to problems with relationships within the family they used to live with, either of their own children or of other relatives (Table 6.5). Twenty-four percent turn to the nursing home because they are homeless. Twenty percent say it is because they are alone as a result of becoming widowed or separating from their spouse, or because they used to live with their employers, or with relatives who got married. The remaining 12 percent give their reasons as: a preference for spending their later life in institutions; that it had been planned that they would go; that they have been advised by their former boss; or that they are having health problems. For some, the above mentioned reasons are given to avoid to mentioning other personal problems. Those who give reasons having to do with sense of willingness to live in an institution, are given by female residents twice as often as by male residents. The number of reports of family problems in male residents is two-fold that of females (68 percent as compared to 32) which is in contrast with the given reason of being alone.

Table 6.5 Percentage Distribution of Given Reasons for Entering the Free-of-Charge Nursing Homes by Gender

Gender	Being Alone	Homeless -ness	Family Problems	Planned for	Total
Total Respondents in Free-of-Charge Institutions	20.2	24.0	44.3	11.5	100.0
N of cases	37	44	81	21	183
Gender					
Male	35.1	56.8	67.8	33.3	54.6
Female	64.9	43.2	32.1	66.7	45.4
χ^2 (P-value)				15.36	(.0015)

It is also desirable to examine the relationship between age at time of entering and these given reasons. There is a tendency for those who are alone or those who plan to spend their later life in institutions to enter the nursing home earlier than those who are homeless or have family problems. As figures shown in Table 6.6 indicate, 52 percent and 74 percent respectively of those who enter free-of-charge nursing homes because they are alone and because they plan to do so in later life enter between the ages of 60 and 69 years old whilst those who are homeless or have family problems, over half (59 percent and 56 percent, respectively) wait until after the age of 69 before entering the institutions. The chi-squared test of the null hypothesis that there is no association between given reasons and age at the time of entering the institutions is rejected at a P-value of 0.0266 .

Table 6.6 Percentage Distribution of Given Reasons for Entering the Free-of-Charge Nursing Homes by Age at the Time Entering the Nursing Home

Age	Being Alone	Homeless -ness	Family Problems	Planned for	Total
Age at Time of Entering *					
60-69	52.0	41.1	44.4	74.1	48.4
70 and over	48.0	58.9	55.6	25.9	51.6
N of cases	25	73	63	27	188
χ^2 (P-value)				9.21 (.0266)	

* Calculated by age at time being interviewed minus number of years institutionalized.

For the residents of profit-making hospital-based nursing homes, this information is obtained from interviews with the nurses, doctors, hospital administrators and from the personal observation of the researcher. The reason these elderly people need to be

hospitalized is because the care they require is of such a time consuming and intensive basis that it imposes too great a burden on family members. Besides, it is for the elderly person's own sake, because in the nursing home they can be under 24-hour supervision by medical professionals and their children are willing to pay expenses. There is also an exception for some cases whose underlying cause of admission is problems in their relationships with family members.

Remarks about Free-of-Charge Nursing Homes

The above observation gives us a clue that homes for the aged are no longer viewed in a negative light as has been believed in the Thai social context, at least by some 'selected groups' who recognize nursing homes as a secure shelter upon reaching the age of 60 or 65. For the elderly who are alone, single or widowed and childless, it is socially acceptable to desire a dependent life in a nursing home. Even some elderly of high educational attainment or high socioeconomic status apply to institutions. They also usually enter them in their early 60's. Such a plan for later life seems to exist exclusively amongst a selected group of people who have some connection with the institution or are well-informed of the situation within the nursing home. Subsequently, they feel quite at ease with a life in the institution. At the other extreme, there are the destitute elderly who suffer in their hardships until they have to give up and quite bitterly turn to nursing homes. Still, they are quite fortunate to be able to end their lives of struggle in a place where many more in similar circumstances will never be able to go. These people are likely to be the elderly who are homeless or who have family problems and have delayed entrance into the nursing homes until they are into their 70's.

Discriminant Analysis: Methods

Samples Included in the Analysis

In the following discriminant analysis only samples from free-of-charge nursing homes are included for comparison with the samples who live in the family. The residents of profit-making nursing homes are excluded due to a lack of detailed information. As mentioned in earlier chapters, their poor physical and mental health means that a personal interview is very difficult.

It is noteworthy that, although both groups are in institutions, the residents of the profit-making nursing home and those in free-of-charge nursing homes differ greatly in nature and their reasons for entering nursing homes. The latter has already been discussed in the previous section. Another distinction is that they usually have adult children or other family members who have taken financial responsibility for them. They also receive visits from their families often.

Basic Assumptions

The framework for the analysis of predictors of alternative types of care used includes the individual characteristics of the elderly person and the characteristics of his/her family. These variables are conceptualized to be predisposing factors that bring about the tendency to choose either one of the types of care in later life. Thus, the variables included in the analysis model have to be or assume to be characteristics that exist before the respondents have changed to the present residence. For those respondents who are living in nursing homes, the variables related to living arrangements apply to the time before they enter the institution. These variables are: person(s) the elderly person used to live with, the main care-giver, and the head of the household.

The individual characteristics of the elderly person which are focused on are: gender, marital status, education and previous occupation. These characteristics are assumed to be fixed, except for marital status which may have changed over the time these elderly persons have been institutionalized. Thus, it is necessary to trace each person's marital status before entering the institution since no direct question is asked about this matter. This is done by comparing the number of years the person has been in the nursing home with the number of years having been widowed, divorced or separated.

There is another important point to make about the variable of gender. In most nursing homes where both genders are housed, female residents generally out-number males. It is intended to include gender in the analysis model as one of the predictors in determining which elderly people choose which type of care; however, the sampling scheme of this study is designed to draw equal samples of males and females from each group of the elderly population. Therefore, instead of being a random outcome, the proportions of male and female respondents are the result of the sampling design. Thus, for this data set, it is illogical to include this variable in the model. To make up for this shortcoming, two separate discriminant functions by gender are to be performed in search of this effect.

In this discriminant analysis, three variables of individual characteristics and seven variables of family characteristics are to form a linear combination of independent variables which would serve as the basis for classifying cases into either the group of the non-institutionalized or the institutionalized.

Re-categorization of Variables

Variables used in the succeeding analysis models are re-categorized dichotomously according to the appropriate groupings or dummy variables. For each of these variables, its name, description, and assigned code for the new categories are presented in Table 6.7. This table also shows the crosstabulations of frequency percentages between the dependent variable -- type of care -- and these re-categorized independent variables. The chi-squared test with P-value less than 0.0005 rejects the hypothesis of no associations between the dependent and the independent variables, except for the variable 'number of children' which is measured in interval scale.

Table 6.7 Independent Variables for Discriminant Analysis and Their Percentages by Type of Care

Variable	Category	Institution (N=192)	Family (N=180)	χ^2 (P-value)
Individual Characteristics				
PREMAR				
(Previous marital status of the institutional respondent, present marital status of the non-institutional)	1 = No Spouse	87.3	54.4	47.02
	0 = Have Spouse	12.7	45.6	(.000)
	Total	100.0	100.0	
OCC				
(Respondent's past occupation)	1 =Insecure jobs*	53.1	35.4	11.05
	0 = Secure jobs**	46.9	64.6	(.000)
	Total	100.0	100.0	
READING				
(Reading ability of the respondent)	1 = Unable to Read	81.2	65.0	11.74
	0 = Able to Read	18.8	35.5	(.0006)
	Total	100.0	100.0	

Table 6.7 (Cont.)

Variable	Category	Institution (N=192)	Family (N=180)	χ^2 (P-value)
Family Structure				
CHILDREN (Number of living children)	-	-	-	-
LIVEWITH (Person lived with before entered the institution or presently lived with)	1=Not with spouse or children	62.8	10.0	102.1
	0=With spouse and or children	37.2	90.0	(.000)
	Total	100.0	100.0	
CAREGIVR (Main care-giver of the respondent)	1= No care-giver	55.5	13.6	67.7
	0= Have at least one	44.5	86.4	(.000)
	Total	100.0	100.0	
CHILDHEAD (Children as the head of the household)	1= Children or in-law	13.5	40.0	32.2
	0= Other than children	86.5	60.0	(.000)
	Total	100.0	100.0	
OTHERHEAD (Other persons as Household head)	1= Boss, friends and or spouse	41.1	8.9	49.2
	0= Family members or relatives	58.9	91.1	(.000)
	Total	100.0	100.0	
REASON (Reason for moving to present residence)	1=Family problems or homelessness	63.5	10.6	116.15
	0= Other than the above	36.5	89.4	(.000)
	Total	100.0	100.0	
DECISION (Decision-maker for changing to present residence)	1= Other persons	24.6	2.2	37.3
	0= The respondent and or spouse or children	75.4	97.8	(.000)
	Total	100.0	100.0	

* Insecure jobs include: labor work, self-employed, housewife and never employed

** Secure jobs include: private or government employment, own business and own farm

Output Interpretation

In discriminant functions, variables with small a value of Wilks' lambda or large value of F-ratio are considered good predictors. These are always accompanied with large standardized coefficients of the canonical discriminant function. Another indication is the pooled-within-groups correlation between discriminant variables and canonical discriminant functions. Regarding how high this correlation is interpreted, however, consensus is lacking. While Hedderson (1991: 178) suggests variables less than 0.20 are taken to be weak in interpreting the discriminant power, Tabachnich and Fidell (1983: 321) recommends correlation at least at 0.30 to be eligible.

In this study, correlation at 0.30 is considered as determining a good predictor of a discriminating function and any variables in excess of 0.45 are interpreted as good predictors of high priority.

Discriminant Analysis: Results

The results of discriminant analysis shows that there are five characteristics of family structure and one individual characteristic that appear to be good predictors to differentiate the elderly people in the family from those in institutions (Table 6.8). The univariate F-ratio of these predictors show observed significant levels (P-value) of less than 0.005 across all three separate functions for the subsample groups of males, females and total samples.

The good predictors for the function of total sample rank according to the value of the pooled-within-groups correlations at descending order are:

1) Person(s) lived with (LIVEWITH)

2) Given reasons for changing to the present residence (REASON)

3) Number of living children (CHILDREN)

4) Main care-giver (CAREGIVR)

5) Boss, friend, or relative which are persons other than own family member is the head of the household (OTHERHEAD), and

6) Marital status or marital status before entering the institution (PREMAR)

This suggests that there are many factors which contribute to the distinction between elderly people who become institutionalized and those who remain in the family. People are likely to be institutionalized if they are not living with their spouse and/or children, or if they are changing residence due to homelessness or family problems. Other important factors are: whether they have any living children; whether they have someone at home to be a main care-giver; whether they live in a household whose head is someone other than their spouse or children; and last whether or not they have a spouse.

Note that there are two predictors that do not give consistent significant variation at the α = 0.005 level in the discriminant function of male and female samples. They are CHILDHEAD and READING. Both have small correlations with the discriminant function of male samples but are higher than 0.3 in the function of female samples. Thus, it can be interpreted that children being the household head or not is a predictor for entering the institution for female samples. Also, reading ability seems to be a predictor for enter institution in female samples. This is not the cases for the male samples, however.

Table 6.8 Results of Discriminant Analysis for the Male and Female Subsamples and Total Samples: Wilks' Lambda, Univariate F-Ratio, Standardized Canonical Discriminant Function Coefficients and the Pooled-within-groups Correlation

Variable	Wilks' Lambda	F-Ratio	Signifi-cance	Std.Can* Coeff.	Within** Corr.
Male					
PREMAR	.72390	69.03	.0000	.35796	.47681
OCC	.95161	9.20	.0000	.03848	-.17410
READING	.99795	0.37	.5426	-.11799	-.03510
CHILDREN	.81688	40.58	.0000	-.25321	-.36555
LIVEWITH	.65441	95.59	.0000	.34453	.36106
CAREGIVR	.88836	22.75	.0000	.20056	.27370
CHILDHEAD	.97774	4.12	.0438	-.04300	-.11649
OTHRTHEAD	.82010	39.70	.0000	-.04722	.36160
REASON	.59929	121.00	.0000	.72484	.63133
DECISION	.88813	22.80	.0000	-.16639	-.27402
Female					
PREMAR	.95370	9.05	.0044	.18933	.17815
OCC	.97453	9.79	.0354	-.03507	-.13072
READING	.84931	26.59	.0000	.28275	.34058
CHILDREN	.64471	81.81	.0000	-.35077	-.60021
LIVEWITH	.67094	83.95	.0000	.19683	.56623
CAREGIVR	.67040	35.15	.0000	.47622	.56693
CHILDHEAD	.80968	7.82	.0000	-.04655	-.39199
OTHERHEAD	.85999	28.00	.0000	-.02524	.32623
REASON	.74755	50.53	.0000	.46941	.43822
DECISION	.79841	21.09	.0000	-.20367	-.28312
Total					
PREMAR	.87438	51.00	.0000	.25586	.37191
OCC	.96572	12.60	.0004	-.02295	-.15796
READING	.96171	14.13	.0002	.14467	.16729
CHILDREN	.75579	114.70	.0000	-.28776	-.47662
LIVEWITH	.68258	165.10	.0000	.30039	.57178
CAREGIVR	.80829	84.20	.0000	.32798	.40835
CHILDHEAD	.90949	35.33	.0000	-.08155	-.26451
OTHERHEAD	.84366	65.78	.0000	-.03610	.36094
REASON	.68666	162.00	.0000	.67661	.56641
DECISION	.89034	43.72	.0000	-.19112	-.29426

* Standardized canonical discriminant function coefficients

** Pooled-within-groups correlations between discriminating variables

These differences can be explained by examining the crosstabulation of these two variables by gender (not shown in the table). It is found that amongst females, the non-institutionalized live in a family where children are the head of the household in a much higher proportion than the institutionalized. For males, the non-institutionalized mostly live in households where they themselves are the head of the household. Hence, the dummy variable CHILDHEAD shows significant variation in the discriminant function of the female subsamples but not for males.

Regarding the characteristic of reading ability, this gender difference is due to the fact that institutionalized females have a much higher literacy rate than non-institutionalized females (84 percent as compared with 47). Knowing that this is due solely to the difference in the literacy rate of the institutionalized and the non-institutionalized females, misleading generalizations about ability to read being a predictor for using this type of care can be avoided. This variable, however, appears to be a significant predictor only in the discriminant function of female subsamples but not for that of the total samples.

These ten variables defined in the analysis model provide better discriminating potential for the group of male subsamples than for the females (Table 6.9). The canonical discriminant function of the male subsamples shows a greater eigenvalue, a greater canonical correlation, and a smaller value of Wilks' lambda. The group centroids which show the mean differences of discriminant scores between the groups of elderly samples who live in the family and those in institutions are also greater for the male subsamples than for the females (Table 6.10).

Table 6.9 Canonical Discriminant Functions: Compare amongst the Male and Female Subsamples and Total Samples

Subsample	Eigenvalue	Canonical Correlation	Wilks' Lambda	χ^2 (P-value)
Male	1.6776	.7915	.3735	173.35 (.0000)
Female	1.5297	.7776	.3953	154.99 (.0000)
Total	1.4224	.7663	.4128	309.66 (.0000)

Table 6.10 Comparisons of Canonical Discriminant Functions (Group Centroids) amongst the Male and Female Subsamples and Total Samples

Subsample	Care Group	Group Centroids
Male	Non-Institution	-1.39843
	Institution	1.18654
Female	Non-Institution	-1.17438
	Institution	1.28757
Total	Non-Institution	-1.21285
	Institution	1.16620

On average, these ten independent variables are together able to classify those who are non-institutionalized from those who are institutionalized with an accuracy of 90 percent (165 out of 183) for the discriminant function of male subsamples, with an accuracy of 90 percent (157 out of 174) for the female subsamples, and with an accuracy of 88 percent (314 out of 357) for the total samples (Table 6.11). All of them are considerably satisfactory.

Table 6.11 Classification Results of Discriminant Functions: Compare amongst the Male and Female Subsamples and Total Samples

Male

Actual Group	N	Predicted Group Membership	
		In Family	In Institution
	84	76	8
In Family		90.5%	9.5%
	99	10	89
In Institution		10.1%	89.9%

Percent of "grouped" cases correctly classified: 90.16%

Female

Actual Group	N	Predicted Group Membership	
		In Family	In Institution
	91	81	10
In Family		89.0%	11.0%
	83	7	76
In Institution		8.4%	91.6%

Percent of "grouped" cases correctly classified: 90.23%

Total

Actual Group	N	Predicted Group Membership	
		In Family	In Institution
	175	153	22
In Family		87.4%	12.6%
	182	21	161
In Institution		11.5%	88.5%

Percent of "grouped" cases correctly classified: 87.96%

In brief, the three most significant variables for the discriminant function of male subsamples are REASON, LIVEWITH and PREMAR. For the function of female subsamples, three best predictors are CHILDREN, CAREGIVR and LIVEWITH. For the discriminant function of total samples, LIVEWITH, REASON, CHILDREN, and CAREGIVR are the four with the largest values of statistics utilized to evaluate their importance (in descending order of importance).

Amongst those institutionalized who used to live in their own family, females are more likely to have children who are head of the household. In comparison, males have more of a tendency to be heads of the household. This could be an indicator as to why more females than males reside in nursing homes.

Conclusions

Various individual and family characteristics have shown to be good indicators in differentiating elderly people living with their families and those in institutions. The analysis has let it be understood that family size and living arrangements of elderly people clearly have a greater effect when deciding to reside in nursing homes than individual characteristics.

Mostly elderly who are without a solid family core are more likely to be institutionalized than other groups. To have regular residence and build up strong relationships within the family is also important as homelessness and family problems are main causes for entering institutions, especially for elderly males. Those who have no children or smaller family size tend to turn to institutions. Having no care-giver also predicts the use of institutional care. This characteristic may well reflect an elderly person's status as spouseless, having fewer living children or no living children, and having no other support network.

CHAPTER VII

ASSESSMENTS OF CARE AND UNMET NEEDS

Whether elderly people live in the family or become institutionalized, the supportive cares they receive and the living conditions they find themselves in can well be vastly different. It is interesting to evaluate how these elderly assess the care they presently receive and what the needs or problems in their lives that have not been addressed are.

Care Assessments

To evaluate how elderly assess the care they received at the time of the survey, two open-ended questions were asked to all participants: 'Are there any good points about being here?' and 'Are there any bad points of being here?'.

In response to the first question, about 90 percent of the respondents mention at least one positive point concerning their present circumstances (Table 7.1). The remaining 10 percent do not identify any positive points; this proportion is the same for those cared for by their families and those cared for by institutions.

Examining the positive points of view stated by respondents who live with their families (Table 7.1), the most frequent responses noted are the subjective evaluation of 'being in a convenient location for going places' (26.4 percent). This implies that factors which contribute to the autonomy of the elderly is considered very important to the respondents. Other good points noted by respondents include: feeling at ease with own home (18.4 percent), receive good filial care (17.2 percent), fresh air (16.1 percent), and good neighbors (12.1 percent).

Table 7.1 Positive Assessments of the Existing Care: Comparison Between Different Types of Care

Non-Institution		Institution	
Positive Assessments	Percent	Positive Assessments	Percent
In convenient locations	26.4	Provide basic requirements	40.5
Feel at ease with own home	18.4	Be relieved from previous problems	16.3
Receive good filial care	17.2	Attentive care from staffs	11.1
Fresh air	16.1	Receive donation	5.8
Have good neighbors	12.1	Provide medical care	4.7
		Provide entertainment	4.7
		Feel safe	4.2
		Others	3.2
Total positive assessments	90.2	Total positive assessments	90.5
No comments	9.8	No comments	9.5
Sum Total	100.0	Sum Total	100.0

For respondents in institutions, 40.5 percent say that the institutions provide the respondents with their basic requirements such as food and shelter; 16.3 percent say living in the institutions have relieved them from previous problems and they are quite thankful for this relief, 11.1 percent say they receive attentive care from the staff, 5.8 percent say that they are given donations from visitors (usually cash). Other positive points made by institutionalized respondents include: provision of doctor, medicine, physical therapy, provision of entertainment and feeling safe.

Note that positive view points of the institutionalized elderly are quite focused on the fulfillment of primarily physical needs. It reflects the fact that most of them are used to destitute conditions that can not adequately provide fulfillment of their physical needs.

The participants are asked a second question: 'Are there any bad points of being here?'. About half of them raise at least one negative point. The other half do not mention any negative points. Those participants who live in institutions appear to express pessimistic view points slightly less than those who live with their families (41.6 percent compared to 49.1 percent). Respondents note twice as many good points over negative points.

Considering the negative view points made by respondents residing with their family (Table 7.2), approximately 27 percent note traffic noise, 8.4 percent complain about pollution in their local environment (air, sewage), 7.9 percent admit they are concerned about fire, car accidents in front of their houses and burglars in the neighborhood, 4.2 percent are bothered by land reclamation. All of these complaints are quite typical for dwellers in large cities; however, the elderly in the Bangkok Metropolis are probably suffering more because they can not have imagined such a change in the environment from their youth.

The negative comments of those non-institutionalized respondents are more concerned with the environmental factors of their home surroundings and the disadvantages of living in the capital.

Of the institutionalized respondents, 41.6 percent express negative view points. Their complaints include: unsatisfactory food (12.9 percent), quarrels amongst residents (11 percent), inattentive staff (9.3 percent), and 2.8 percent report that their nursing homes have bad surroundings. A small proportion of respondents share the bad experience of having personal belongings stolen by other residents (2.2 percent), being scolded by staff or feeling over regulated (2.2 percent), and 1.1 percent say life in institution is quite lonely, particularly when one becomes frail.

Even though these comments are made by only a small percentage of respondents, they can be of significant for improvement of care provisions. These negative comments reflect the weakness of the administrative system within the nursing homes.

Table 7.2 Negative Assessments of the Existing Care: Comparison Between Different Types of Care

Non-Institution		Institution	
Negative Assessments	Percent	Negative Assessments	Percent
Traffic noise	26.7	Unsatisfactory food	12.9
Air, Sewage pollution	8.4	Quarrels amongst residents	11.0
Fire,road accidents,burglar	7.9	Inattentiveness of staff	9.3
Land reclamation	4.1	Unpleasant surroundings	2.8
		Stealing amongst residents	2.2
		Scolding by staff	2.2
		Loneliness, helpless when frail	1.1
Total negative assessments	47.2	Total negative assessments	41.5
No comments	52.8	No comments	58.5
Sum Total	100.0	Sum Total	100.0

The above presentation are opinions concerning important elements of care that are expressed by the respondents. These view points enhance our understanding of significant domains of care as cognizant by Thai elderly people through their experiences of urban life in the Bangkok Metropolis and life in institutionalized care.

Six more questions are constructed to evaluate how the respondents assess the care they receive for two aspects: a determination of the permanency of their existing care arrangements and the availability of any other supports if desired. The former question is intended to measure whether they are settled in their present living arrangements and content with their quality; on the other hand, it also reflects their sense of security for their later life. The latter evaluates whether the respondents have access to a network of support facilities which guarantee their security. Each of these two indices is simply constructed by the additive components of three questions. Each of these six questions provoke a dichotomous response: a positive answer is given one point, whereas a negative answer is given a zero point score. The questions are listed below:

Assessments of permanency of existing care arrangement:

1. Are you confident that you will be taken care of until your last days?

2. Will you settle down here for good?

3. Is this place the best place for you in your later life?

Assessments of availability of alternative support:

4. During your time here with this institution/family, have you ever traveled anywhere for a visit or a short stay?

5. Have you ever been invited to live with relatives or friends?

6. If you become sick or weak, will you have someone to take care of you?

The maximum score for each assessment index is three, representing a feeling of complete security in the current care arrangement and of complete security in accessing an alternative support network.

The result of the analysis of these two indices, shown in Table 7.3, indicate that the mean score of the assessments of permanency of care and the mean score of availability of alternative support are significantly higher for the respondents living in the family than the institutionalized respondents. This finding confirms the fact that family support provides the elderly with a greater sense of security than support delivered by institutions.

A comparison of the mean score differences between the residents of government nursing homes and private free-of-charge nursing homes also shows interesting findings. Residents of private free-of-charge nursing homes rate their desire to continue with the present care arrangement higher than those in government nursing homes; however, this difference is not statistically significant at $\alpha = 0.05$ level. A rather significant difference is found in the assessments of availability of alternative support. Residents of private free-of-charge nursing homes show a very low mean score of 1.05 which means that private free-of-charge institutions proved to be the last choice of care provision for the respondents.

The correlation of these two indices, permanency of care and availability of alternative support, have a negative association. Such an association is found to be much stronger amongst the elderly living in an institution. The interpretation is quite straight forward in that there is a tendency for those nursing home residents who have no other means of family or social network support to want to continue living in an institution. This decision is firm and they seem quite content with the type of care being delivered. Vice versa, those who assess their present care to be temporary or

not up to their expectations tend to have opportunities for alternative support.

Table 7.3 Mean Scores of Care Assessments: Comparison Between Different Types of Care

	Mean	S.D.	N	t-test (P-value)
Assessments of Permanency of Care				
Non-Institution	2.66	1.06	178	3.59
Institution	2.23	1.22	191	(.0004)
Total	2.44	1.14	369	
Institution				
By Government	2.15	1.27	149	1.78
By Private	2.52	0.94	42	(.0760)
Total	2.23	1.21	191	
Assessments of Availability of Alternative Support				
Non-Institution	2.17	0.78	179	6.03
Institution	1.56	1.14	190	(.0000)
Total	1.86	1.03	369	
Institution				
By Government	1.70	1.12	148	3.38
By Private	1.05	1.08	42	(.0009)
Total	1.56	1.11	190	

It is also interesting to explore these questions and examine the percentage distribution of responses made by respondents under different residential arrangements (Table 7.4). With regard to the first question concerning confidence of respondents about being cared for until their last days, both groups of respondents answer with highly positive attitudes. About 93 percent living in the family and 86.4 percent in institutions say they are confident or very confident. These proportions show no statistically significant difference between the two groups. The respondents in institutional care are confident because they have witnessed their fellow residents who have developed dementia or paralysis being fed and bathed. Besides, it is the stated commitment of the institutions to take care of their residents. These free-of-charge nursing homes admit new residents who are physically able and carry no transmittable diseases specified by nursing home regulations; however, once they become dependent, the institutions unconditionally continue to take care of them.

A discrepancy is observed in the answers to the second question: whether the respondents will continue living in institutions or settle in their present residence for good. The assurance of the non-institutionalized remains the same--92.2 percent, whereas the positive answers of the institutionalized drop to 74 percent. Amongst the remaining 26 percent who do not consider the institution permanent, only 3.1 percent say they have already planned to leave for elsewhere. A proportion of 17 percent, however, are not able to say what their next destination will be and 5.7 percent will choose to leave government nursing homes if they become sick or frail (not shown in table). This is because they expect a more reliable care-giver to be provided from within their own extended family network. The fact that there are some residents who plan for family care support in time of need contrasts with the assumption that, generally speaking families refer their

elderly to nursing homes when caring for them becomes too much of a burden.

The responses to the third question as to whether the elderly people consider their present living arrangement the most suitable for later life shows a similar trend of 86 percent and 80 percent of positive answers by the respondents living in family and in institutions, respectively. Both groups are quite content with their existing care arrangements.

Table 7.4 Percentage Distribution of Assessments of Permanency of Care by Different Types of Care

Assessments of Permanency of Care	Non-Institution	Institution (Free-of-Charge)		
		Total	Government	Private
1. Are you confident that you will be taken care of until your last day?				
Yes	92.7	86.4	83.9	95.2
No	7.3	13.6	16.1	4.8
χ^2 (P-value)	3.24(.0718)		2.67(.1012)	
2. Will you settle down here for good?				
Yes or likely to	92.2	74.0	72.0	81.0
No or not sure	7.8	26.0	28.0	19.0
χ^2 (P-value)	20.29(.0000)		.94(.3322)	
3. Is here the best place for you in later life?				
Yes	86.0	79.7	78.0	85.7
No or not sure	14.1	20.3	22.0	14.3
χ^2 (P-value)	4.13(.1265)		2.07(.35)	

Table 7.5 Percentage Distribution of Assessments of Availability Support by Different Types of Care

Assessments of Availability Support	Non-Institution	Institution (Free-of-Charge)		
		Total	Government	Private
4. Have you ever gone anywhere for a visit or a short stay?				
Yes	50.6	46.4	52.7	23.8
No or nowhere to go	49.4	53.6	47.3	76.2
χ^2 (P-value)	.50 (.48)		9.86 (.0017)	
5. Have you ever been invited to live with relatives or friends?				
Yes	72.8	54.5	59.1	38.1
No	27.2	45.5	40.9	61.9
χ^2 (P-value)	2.63 (.004)		5.0 (.0255)	
6. If you become sick or weak, will you have someone to take care of you?				
Yes or likely to	93.3	54.7	58.1	42.9
No or not sure	6.7	45.3	41.9	57.1
χ^2 (P-value)	68.3 (.0000)		2.49 (.1148)	

Examining another aspect of the assessments of care arrangement, the availability of alternative support (Table 7.5), it appears that institutionalized respondents have less access alternative support systems than respondents living in the family. Almost half of the institutionalized respondents (46 percent) have never been invited to stay with relatives or friends, nor do they have anyone available to take care of them if they become sick or weak (45 percent). This perhaps is one of the most important elements of care, that is, a sense of security.

Differences in care assessment also exist amongst those who live in government free-of-charge nursing homes and private free-of-charge nursing homes. Sixty-two percent of respondents living in private nursing homes have never been invited to live with relatives or friends; 76 percent have never gone anywhere for a visit or a short 'stay. This group of respondents have resided in the nursing homes for an average of 5.6 years. They have learned to be content with institutional life.

Need Assessments

An inquiry into the elderly's unmet needs is administered through three consecutive questions. It begins with an open-ended question: `Are there any problems or needs facing you at present?' Whatever the answers is, or even if the response is a denial, the second question is followed by a checklist of 24 selected needs or problems based on Maslow's concept to ensure that respondents have not overlooked or neglected some of their problems in the first question. If a problem exists for any particular item, the level of its seriousness is to be indicated as well. Furthermore, all the reported unmet needs or problems are to be ranked for the first three priorities by the third question.

The results from the analysis yield some interesting points (Table 7.6). From the first open-ended question, it is found that more than half of the subjects under study (66.2 percent) indicate 'No needs' or 'No problems'. Financial problems are reported as most frequent (20.3 percent of the total respondents), whereas health problems are found to be the second most frequent (3.9 percent). The rest (9.6 percent) indicate some other unmet needs or problems. This finding concurs with that reported in the previous research (Siripanich, et al. 1983; Chayowan, et al. 1988) which

points out that financial problems and health problems remain the major needs of the elderly.

Yet, the second question in the form of a checklist gives relatively different findings (Table 7.6). The percentage of the elderly who indicate 'No problems' declines from 66.2 to 12.9. Moreover, the number of those currently facing health problem rises from 3.9 percent to 9.8 and financial problems are indicated by only a few, 3.4 percent in contrast with 20.3 percent report in response to the open-ended question. Other problems or needs as listed in the checklist are identified up to 73.9 percent. By different approach of inquiring into the elderly's felt needs, the results reveal a dramatically contrasting response. This is because most elderly (74.7 percent) mention at least three items of need. Only 6.2 percent indicate one or two items of needs (Table 7.7).

Table 7.6 Comparison of Percentage of Expressed Needs by Different Approaches of Inquiry

Expressed Need	Inquiry Approach	
	Open-Ended Question	Reported by Checklist
Did Not State Needs	66.2	12.9
Financial Needs	20.3	3.4
Health Needs	3.9	9.8
Others	9.6	73.9
Total	100.0	100.0

Table 7.7 Percentage of Number of Needs Stated after Checklists

Expressed Needs after Checklist	Percentage
Did Not State Any Needs	12.9
Stated 1 Need	6.2
Stated 2 Needs	6.2
Stated 3 Needs or More	74.7

The above are comparisons of needs expressed in frequency by different approach of inquiry. Apart from the above mentioned, this study seeks to analyze the mean scores of the level of seriousness for each item on the checklist. For the purpose, a straight-forward method is employed; that is, each level of seriousness is given a score. The problem or need identified as non-problematic is marked '0', the one with moderate level is given '1' score and the one with high level of seriousness is assigned '2' score. Through this method, both the frequency and level of seriousness can be assessed.

The result (Table 7.8) shows the highest mean score in the visual problems of the elderly followed by the problem of lost appetite, poor health, chewing problems and walking problems respectively. They are basically physiological needs. Financial problems, which have been thought to be high in frequency or proportion when compared with other problems, receive the seventh highest mean. Amongst problems concerning emotional problems, feeling anxiety and insomnia shows higher mean score than any others. None of these items show a mean score greater than one.

A comparison of mean scores between different care groups reveals that the institutionalized aged group are facing more problems than those of their counterparts in almost every need item (significant at α = 0.05, Table 7.8), except the mean scores of problems regarding walking, bored or have nothing to do, lack of state welfare, and feeling unsafe or fear of physical harm or burglary. Regarding walking problems, they are personal health problems resulting from rheumatism or a deficient skeletal system rather than problems associated with being under different types of care. The mean scores of the rest of the problems which are reported to have relatively low mean scores compared with the above mentioned, also show higher severity in institutionalized group than non-institutionalized with statistically significant differences.

Table 7.8 Mean Scores of Severity of Unmet Needs in Descending Order: Comparison Between Different Types of Care

Unmet Need (in Descending Order)	Total	Non-Institution	Institution (Free-of-Charge)		
			Total	Government	Private
1. Visual Problems	.81	.71	.91 **	.91	.88
2. Food: Insufficient, Not Appetizing	.64	.42	.84 **	.87	.75
3. Poor Health	.60	.47	.73 **	.77	.58
4. Chewing/Dental Problems	.59	.46	.71 **	.81 **	.37
5. Walking Problems	.58	.51	.65	.67	.56
6. Feeling Unsafe When Traveling on Buses or Crossing Streets	.57	.43	.70 **	.73	.59
7. Financial Problems	.53	.36	.69 **	.60 **	1.02
8. Feeling Anxiety and Insomnia	.41	.29	.53 **	.57	.39
9. Being Concerned for Children	.39	.26	.51 **	.54 *	.36
10. Feeling Deprived of Family or Closeness	.38	.21	.55 **	.55	.52
11. Bored, Have Nothing to Do	.37	.35	.38	.40	.29
12. Feeling Lack of Respect and Being Overlooked	.34	.17	.50 **	.57 **	.25
13. Feeling Isolated, Lonely	.33	.17	.48 **	.45	.56
14. Unhappy Home	.33	.20	.44 **	.49	.28
15. Having a Troubled Family Non-Cooperative, Unconcerned	.29	.19	.38 *	.38	.38
16. House: Flooded, Run-down, Too Crowded, Displaced, Fire Risks	.28	.42	.15 **	.15	.15

Table 7.8 (Cont.)

Unmet Need (in Descending Order)	Total	Non-Institution	Institution (Free-of-Charge)		
			Total	Government	Private
17. Hearing Problems	.28	.20	.36 *	.39	.24
18. Lack of Care Attention or Service	.27	.13	.40 **	.45	.20
19. Receiving Inadequate State Welfare	.19	.13	.25	.25	.24
20. Feeling Unsafe, Fear of Physical Harm or Burglary	.16	.13	.20	.21	.17
21. Fear of Being Cheated, Not Cared for, Lack of Filial Piety	.15	.09	.21 *	.22	.15
22. Lack of Medical Treatment and Care	.12	.06	.19 **	.21	.10
23. Lack of Friends, No one Understand, Don't Know Anyone	.23	.10	.36 **	.34	.43
24. Feeling Unwanted	.20	.10	.32 **	.32	.32

* Significant at the 0.05 level (one-tailed t-test)

** Significant at the 0.001 level (one-tailed t-test)

The only unmet need that shows a higher mean score for elderly in the family than the elderly in institutions is the problem of poor facilities, e.g. fire risks or crowded living conditions. It is the only item of unmet needs which the respondents in institutionalized care are better off than those in the family.

The only problem that respondents in private institutions report higher than those in government institutions is financial problem. Such differences in problems of financial need between the elderly in private and government institutions can be explained by

one observation. Those in the government institutions receive more frequent visits or financial support from public benefactors than those in the private institutions. Thus the residents of private institutions are facing more financial problems than those in government institutions. One factor accounting for the more frequent visits at the state-run homes for the elderly seems to be that it has been long established and has thus become well-known nationwide. Another factor is their effective public relations. The elderly's skills and talents are highly encouraged. For instance, a performance demonstrating their musical talents is televised to the public. Being under the Royal patronage also brings more attention from the mass media which benefits the residents. Besides, the accessible location of the institutions, particularly those located in markets place or on main streets, like the Bangkae Home for the Elderly, makes it more convenient for visitors to come.

There are two need items that residents of government institutions expressed higher mean score of severity than those in private institutions. They are chewing or dental problems, and the need for respect from younger generations. Regarding chewing problems, it requires the organization to pay more attention to the food cooked and provided to reduce the problem as much as possible. It is found that many aged residents are faced with ill-fitting dentures and are unable to afford an expensive set. An interesting remark made by one elderly man is that he can identify the difference in the texture of steamed rice and boiled rice. When it is served as it is getting cold, the rice would lose its softness and necessitate chewing. This remark is surprisingly left unnoticed or somehow neglected by those in charge despite the fact that rice is the staple food and is served two to three times daily.

Regarding second issue, the need of respect from the younger generation, a qualitative study is carried out. A group of subjects are interviewed and the results show that such problems are partly caused by relationship conflicts among the residents whose ages spanned a large range - that is 30 years. The younger generation referred to in this case appears to be the younger residents in the same institutions rather than outsiders. This is a common problem in Thai culture in which the seniority system is regarded as important. Therefore, the elderly who are two or three years younger or older than one another needed to concern themselves with this matter.

An analysis based on descriptive statistics yields a conclusion that, to a certain extent, the problems and the needs of the Thai elderly in this century still involve basic physiological needs which, according to Maslow's hierarchical need theory (1954), are fundamental human needs.

Apart from the above, an attempt is also made to analyze the data by the statistical method of factor analysis. The aim is to determine the factors involving the needs of the elderly and to employ the new scales of factor scores yielded from such analysis for comparing differences in severity of needs amongst the elderly.

Analysis of Need Factors

It is obvious from the results of the above discussion (see also in Appendix B) that whatever 'need' is encountered in an elderly person's life, it is not a single measurable entity but is rather explained by numerous observed variables which are reported in correlated situations. For instance, those who say that they are lacking medical treatment are also very likely to face financial problems and usually live in poor housing conditions. For such reasons, an analysis technique, factor analysis, is employed. By

factor analysis, sets of many interrelated variables can be identified by their underlying dimensions or factors and this can greatly simplify the complex interaction.

Factor analysis is carried out with two purposes: 1. to reduce a large number of need items into a smaller numbers of underlying factors and 2. to estimate the factor scores of these need factors by using the gained factor coefficient matrix. Thus, the arbitrarily appointed scores of '0', '1' and '2' which are used to represent the level of seriousness of the unmet needs are then relatively weighted within their sets of variables and used for suceeding analysis.

The procedure for determining the ascertained model that fit with the data is proposed by the extraction method of principal component. It yields six factors quite adequate to represent the 24 items of unmet needs and the cumulative percentages of total variance explained by these factors equal 54.4. The items in each factor that appear to be the most interpretable pattern is by the rotation of equamax as all factor loading is quite high and the sets of variables are quite easy to interpret. These factors are represented as: I) Need for self-acceptance; II) Basic health needs; III) Need for social participation; IV) Need for security; V) Need for children's attachment; and VI) Problems in daily life and financial needs. The first factor accounts for 25.5 percent of the total variance, the rest are ranging from 7.9 to 4.3 percent. Each of these factors has an eigenvalue greater than one meeting the criterion to be included in the model (Table 7.9). Table 7.10 explains that those needs items within each factor are quite related and each factor reflects the underlying meaning of its components. That is to say, the listed items are self-expressive for their respective factors.

Table 7.9 Final Statistics of Factor Analysis of Unmet Needs

Factor		Eigenvalue	Percentage of Variance	Cumulative Percentage
I	Need for self acceptance	6.119	25.5	25.5
II	Basic health needs	1.886	7.9	33.4
III	Need for social participation	1.459	6.1	39.4
IV	Need for sense of security	1.284	5.4	44.8
V	Need for children's attachment	1.267	5.3	50.1
VI	Daily living and financial needs	1.038	4.3	54.4

Six newly constructed composite measure of need factors are subsequently used for a comparison analysis of needs factors amongst the elderly in different types of care. Tests of t-statistic are performed for group mean comparisons for each factor and the sum score of all factors between the samples cared for by their family and by free-of-charge institutions, as well as between the groups of government and private institutions. The results of these group mean comparisons are presented in Table 7.11.

The comparison of need factor scores between the elderly cared for by the family and by institutions shows that the latter expressed higher mean scores than the former with statistically significant difference in four of the six need factors. These factors listed in order are: basic health needs, the need for self-acceptance, the need for child attachment and the need for social participation. All of these four indicate the relatively higher level of problems amongst the residents of institution.

Table 7.10 Factor Analysis of Unmet Needs and Factor Loadings

	Factor	Need Items within Factor		Factor Loading
I	Need for Self-Acceptance			
		Feeling lack of respect and being overlook	(ND22)	.72865
		Lack of care, attention or service	(ND21)	.62360
		Lack of social welfare	(ND14)	.57411
		Problems in family	(ND23)	.56221
II	Basic Health Needs			
		Chewing/dental problems	(ND09)	.68183
		Walking problems	(ND10)	.60078
		Visual problems	(ND07)	.58376
		Hearing problems	(ND08)	.52478
		Poor health	(ND05)	.48347
		Food insufficient/not appetizing	(ND01)	.43013
		Feeling anxiety and insomnia	(ND16)	.38609
III	Need for Social Participation			
		Feeling isolated, lonely	(ND19)	.74275
		Lack of friends, no one understand, don't know anyone	(ND18)	.68383
		Feeling unwanted	(ND20)	.57194
		Feeling unsafe when traveling on buses or crossing streets	(ND12)	.40588
IV	Need for Sense of Security			
		Feeling unsafe, fear of physical harm or burglary	(ND11)	.74607
		Fear of being cheated, not cared for, lack of filial piety	(ND13)	.67305
		Unhappy home	(ND03)	.46345
V	Need for Children's Attachment			
		Feeling deprived of family company or closeness	(ND15)	.89616
		Being concerned for children	(ND24)	.89222
VI	Daily Living and Financial Needs			
		House: flooded, run down, too crowded, displaced	(ND02)	.64934
		Bored, have nothing to do	(ND17)	.60534
		Financial problems	(ND06)	.53504
		Lack of medical treatment and care	(ND04)	.46197

Table 7.11 Mean Scores of Need Factors: Comparison Between Different Types of Care

	Need Factor		Total	Non-Institution	Institution (Free-of-Charge)		
					Total	Government	Private
I	Need for Self-Acceptance	Mean	.235	-.023	.235	.260	.146
		S.D.	.68	.48	.68	.72	.52
				**			
II	Basic Health Needs	Mean	.891	.595	.891	.960	.636
		S.D.	.12	.51	.72	.72	.79
				*		*	
III	Need for Social Participation	Mean	.055	-.131	.055	.031	.145
		S.D.	.62	.46	.62	.63	.58
				*			
IV	Need for Sense of Security	Mean	-.034	.032	-.034	-.017	-.122
		S.D.	.61	.44	.61	.61	.62
V	Need for Children's Attachment	Mean	.467	.257	.467	.510	.308
		S.D.	.74	.52	.74	.74	.71
				*			
VI	Daily Living and Financial Needs	Mean	.340	.426	.341	.314	.455
		S.D.	.59	.63	.59	.58	.62
Total Mean Scores		Mean	1.68	.604	1.67	1.79	1.22
		S.D.	.18	.11	.18	.19	.13
				**			

* Significant at the 0.05 level (one-tailed t-test)

** Significant at the 0.001 level (one-tailed t-test)

Comparisons of mean scores between the institutional samples, only the factor of basic health needs that samples of government institutions expressed higher mean score than those in private institutions. Such a discrepancy is quite unexpected, considering that the living conditions and the standards of these free-of-charge institutions, whether run by government or private, are quite similar. Besides, their perceived health status as

presented in earlier chapter (Table 5.4) also shows no statistically significant difference. The only reason for such discrepancy might be due to the reporting behavior of the residents of government institutions. This group of elderly are more aware of health-related information and thus could be very conscious of their health status. The government Homes for the Elderly have many programs for health promotion such as schedules for physical therapy, morning exercises and clinics. These are not available in most of the private institutions.

Concerning the need for social participation, the problem of loneliness or isolation is more common amongst the residents of institutions than those in the family system. According to data about their family and social network, the proportion of those in institutions who have withdrawn from social activities for at least one year is 57 percent and approximately 76 and 73 percent rarely receive visits from their family or friends. In fact, there are visitors to the institutions to give money to or arrange special meals for these residents nearly every week or sometimes many times a week. Nevertheless, such visits are obviously formal or routine. These elderly need personal contact. As a result, their loneliness remains. Some additional information collected from the elderly themselves reveals that some nursing students will occasionally be sent to the institutions for a short training program which involve some useful activities like personal care for the elderly, e.g. trimming their nails, or cutting their hair. During this training, they are to stay in the institution and take care of the residents. Many of the residents find this program very useful and impressive, and they often recall it with happiness. This can be regarded as a starting point for the institutions to initiate a project open for interested members of public who are willing to foster or be companions of these elderly. In order to facilitate a foster program more efficiently, more telephone lines should be made

available so that the contact between the elderly and their foster families or friends can be enhanced or emergency cases can be dealt with promptly. In this case, cooperation and support from the authorities in charge of telephone allocation is necessary.

Similarly, the factor scores in the need for child attachment to the elderly in institutions appear higher than the scores of those in the family system. Whereas 65 percent of the institutionalized elderly have at least one child, 80 percent of them have never received any contact or visits from their children, grandchildren, nieces or nephews. It seems that their living in the institutions is regarded as their willing discontinuance of attachment with the family, the reason for which might lie with some family difficulties. To deal with their family problems, most elderly people (67-69 percent) turn to the government institutions. Twenty-two percent are referred by their acquaintances and respected employers, monks or doctors to institutions. Some (9.4 percent) are deliberately sent to the place by their families because their family are unable to or unwilling to care for them. As a result, a greater number of the institutionalized elderly are confronted with this problem than those living in their own families. Of those living in their own families, about 90 percent are living with their spouse and/or children.

Regarding the need factor for security and the need factor of daily living and financial needs, there are no significant differences exist between the group means.

Remarks and Summary

The comparison between the use of the checklist questionnaire and the use of open-ended questions reveals the anticipated assumption that the elderly, if not ask directly or thoroughly, would not express their existing needs. This is evidence for suggesting to the elderly person's descendants, as well

as the service officers, that they ought to give more concern to the elderly and realize their needs and problems which even the elderly themselves are too passive to mention. Furthermore, a quantitative study of their problems and needs in terms of frequency or proportion shows that the data presentation is quite varied according to the questioning method and relied on the number of choices for response. In comparing one study to another, one needs to be very careful. One finding is that amongst the available 24 items which are classified based on Maslow's principles of basic needs, the main problems and needs with high frequency are vision problems, food problems, chewing or dental problems and walking problems, all of which distressingly appear to be preventable chronic disabilities. This points out the lack of proper care for the elderly's curable health problems; however, this phenomenon also seems to be prevalent in some other countries. Several studies have demonstrated similar findings. Habid (United Nations, 1988: 207) quoted several studies to address the matter of chronic disabilities amongst the elderly. These include problems concerning vision, and hearing and dental care which are treatable conditions, but remain untreated. He also claims that there is a definite conclusion in international literature on the inadequacy of provision for the health needs of the elderly. Note also that the observed data shows a closer association between health status and socioeconomic status for the prediction of needs of the elderly than chronological age. This conforms with what has been observed by Kutza and Zweibel (1982).

Descriptive analysis by items of needs also helps in exploring some hidden facts that are worth mentioning. Those in the private institutions are faced with financial problems relatively more frequently than the rest. They receive cash directly in the form of donations from compassionate visitors less frequently than those in government institutions.

The only felt need the elderly in the family system reported more frequently than the institutionalized elderly is the problem of poor housing conditions. Many elderly live in old houses which need repair. These problems are even worse amongst those of low socioeconomic status.

Moreover, the development of an amenable atmosphere in the Home for the Elderly, a mutual caring relationship amongst the residents or between the residents and the staff, including paying attention to the elderly people's food would lead to the decline in the problems concerning the feeling of being overlooked by the younger generation and the chewing or dental problems.

Regarding the dental problems in particular, which cause suffering in 57 percent of all residents in institutions, the report mentions not only their inability to afford denture to solve the problem but also the deterioration of their oral cavities and gums. It is found that about half of the residents with a severe level of chewing problems chew food with their gums. Therefore, appropriate cooking and a suitable menu for them would be one of the ways to alleviate such problems. It is also anticipated that the solution of the two above-mentioned problems could lead to a decline in the problem concerning the loss of appetite, the second-ranking problem (Table 7.14), which is partly due to the poor condition to their teeth and gums and their emotional status, as well as to the food quality and their deteriorating sense of taste.

In further analysis, using the factor analysis technique, the 24 item list of need variables are simplified parsimoniously and new insight for interpretation is possible. Those residents of institutions feel a strong loss of self-acceptance; further more, they express their worry for their children more than their counterparts. Moreover, the most significant difference is found in problems of basic general health.

CHAPTER VIII

CONSEQUENCES ON QUALITY OF LIFE

Consequences on quality of life (QOL) of the elderly is the topic of this chapter. That is, whether the elderly in different types of care experience a different level of quality of life, and are there any characteristics or circumstances of the elderly that suggest attributable effects in determining an elderly person of high or low quality of life.

In the first section, the multivariate analysis of variance is used to examine the main effect of being in different types of care against the different dimensions of quality of life.

The second section presents the discriminant analysis for distinguishing characteristics of elderly persons whose reported scores of quality of life are high and those whose scores are low.

Test of Multivariate Analysis on QOL

Consequences of Different Types of Care

This section focuses on examining the differences between the quality of life of the elderly in two different types of care: family care or free-of-charge institutional care. That is, the single effect of variable 'TYPE' is tested against the four dimensions of quality of life. Multivariate analysis of variances (MANOVA) is chosen to be an appropriate tool for the analysis of this purpose. (For further discussion on the justifications of employing this statistical technique and the evaluations of normality assumptions, see Appendix D.)

In this analysis, there are six dependent variables which measure the four dimensions of quality of life. They are scales of life satisfaction index A and B (LSASCORE, LSBSCORE), self-esteem scale (SLFSCORE), factor scores of general health screen test (HLTHFCT), scores of instrumental activities of daily living (INSSCORE), and assessed scores on living environment (ENVIR). The mean scores and standard deviations of each of these scales by the independent group of elderly are presented in Table 8.1.

Table 8.1 Means and Standard Deviations of Six Dependent Variables of QOL by Group of Elderly in Alternative Types of Care

Variable	Type of Care	Mean	S.D.	N
LSASCORE				
(Life satisfaction	Non-Institution	35.80	7.32	155
index A)	Institution	34.37	8.50	153
	Total	35.08	7.95	308
LSBSCORE				
(Life satisfaction	Non-Institution	8.03	2.84	155
index B)	Institution	7.95	2.87	153
	Total	7.99	2.85	308
SLFSCORE				
(Self-esteem)	Non-Institution	25.31	4.64	155
	Institution	22.53	5.42	153
	Total	23.93	5.23	308
HLTHFCT				
(General Health)	Non-Institution	113.06	24.52	155
	Institution	116.71	24.54	153
	Total	114.87	24.56	308
INSSCORE				
(Instrumental ADL)	Non-Institution	13.79	3.90	155
	Institution	14.98	3.71	153
	Total	14.38	3.84	308
ENVIR				
(Living Environment)	Non-Institution	23.11	4.31	155
	Institution	25.19	4.25	153
	Total	24.19	4.25	308

Analytical Results

The multivariate tests of significance for analyzing the consequences on the quality of life of the elderly in two different types of care show a significant effect of 'TYPE' factor. All the four indicators: Pillias, Hotellings, Wilks, and Roys present the observed significant values less than 0.001 (Table 8.2). To further investigate in which quality of life dimension the differences between the non-institutionalized and institutionalized samples occur, the univariate tests for the individual dependent variables are examined. Table 8.3 shows there are significant univariate tests for the variables of SLFSCORE, INSSCORE and ENVIR. (Note that, the significant levels by this univariate test are not adjusted to account for the fact that six variables, rather than one, are being tested.) It can be concluded in this analysis that, as a result of being in different types of care, the reported scores for self-esteem, instrumental activities for daily living and the living environment of these two groups of sample are different.

Further information about the mean scores of these variables from Table 8.1 gives details of these differences which are that the elderly who live in their family report higher mean scores of self-esteem than those who live in institutions. A reverse, however, is found for the variables of instrumental activities of daily living and the living environment; those who live in institutions report higher scores than those who live in the family.

In other words, the elderly in institutions assess a better quality environment and perform more functional health activities than those in the family, but express a lower degree of self-esteem. There are no differences in their life satisfaction.

The canonical correlation in Table 8.2 equals 0.462 which shows that about 21.3 percent of the total variability is attributable to differences between groups ($0.462^2 = 0.213$). Table 8.4 shows the variable of self-esteem (SLFSCORE) has the largest standardized coefficient (0.926) and the variable of living environment (ENVIR) comes second (0.656). This suggests both variables are very important for separating the two groups of elderly. The univariate F tests are also of large value (23.39 and 21.56) compared with the rest of the variables. Again the correlation coefficient for dependent variables of SLFSCORE and ENVIR are most highly correlated with the discriminant function. The estimated effect for canonical variables, which equals 0.519, shows a moderate effect of contribution to the separation between groups.

Table 8.2 Multivariate Test on QOL of Single Effect of 'TYPE'

EFFECT .. TYPE

Adjusted Hypothesis Sum-of-Squares and Cross-Products

	LSASCORE	LSBSCORE	SLFSCORE	HLTHFCT	PHYSCORE	ENVIR
LSASCORE	156.908					
LSBSCORE	8.584	.470				
SLFSCORE	305.595	16.718	595.175			
HLTHFCT	-401.664	-21.973	-782.279	1028.203		
INSSCORE	-130.453	-7.136	-254.069	333.941	108.457	
ENVIR	-239.386	-13.096	-466.227	612.794	199.024	365.22

Multivariate Tests of Significance (S = 1, M = 2 , N = 149 1/2)

Test Name	Value	Approx. F	Hypoth. DF	Error DF	Sig. of F
Pillais	.21330	13.60155	6.00	301.00	.000
Hotellings	.27113	13.60155	6.00	301.00	.000
Wilks	.78670	13.60155	6.00	301.00	.000
Roys	.21330				

Eigenvalues and Canonical Correlations

Root No.	Eigenvalue	Pct.	Cum. Pct.	Canon Cor.
1	.271	100.00	100.00	.462

Table 8.3 Univariate F-Tests for Six Dependent Variables of QOL

Variable	Hypoth.MS	Error MS	F	Sig. of F
LSASCORE	156.91	62.87	2.50	.115
LSBSCORE	.47	8.14	.06	.810
SLFSCORE	595.18	25.45	23.39	.000
HLTHFCT	1028.20	601.69	1.71	.192
INSSCORE	108.46	14.46	7.50	.007
ENVIR	365.22	16.94	21.56	.000

Table 8.4 Discriminant Function Coefficients and Correlation Between Six Dependent Variables and Canonical Variable by Multivariate Test of Single Effect of 'TYPE'

Variable	Standardized Discriminant Function Coefficient	Correlation Between Dependent and Canonical Variable
LSASCORE	.115	.173
LSBSCORE	-.134	.026
SLFSCORE	.926	.531
HLTHFCT	-.148	-.144
INSSCORE	-.453	-.301
ENVIR	-.656	-.510

Analysis of Discriminant Between Groups of Low and High Quality of Life

To identify the elderly's characteristics and circumstances that serve to distinguish those with a low level quality of life from those with a high level, six discriminant analyses are performed in each of the quality of life measurement scales. In each scale, the elderly are classified into low or high quality of life group according to their reported scores. The following section discusses this classification procedure.

Samples Included in the Analysis

Respondents with low or high level of quality of life are grouped by their reported quality of life scores in each scale of measurements. Those who rank at or below the first quartile score are regarded as the low quality of life group, whereas those ranking at or above the third quartile score are grouped in the high quality of life category. By this criteria, they become known cases of low or high quality of life relative within their respective scales. The samples in these two groups are then included in the discriminant analysis for this section. Table 8.5 provides the descriptive statistics of these seven quality of life scale in the studied samples. Note that the scale of physical activities for daily living (PHYSCORE) appears to be highly skewed and thus, again, is dropped out of the following analysis.

The predictor, or independent variables, describe the characteristics and the existing circumstances of the elderly. They are individual characteristics, economic well-being, a personal life styles such as religious activities, family contact, social network and daily self-entertainment. Their existing circumstances in living arrangements, which are the subjective assessment of care received, and their expressed need factors are also taken into

account as they are related to quality of life. The operational definitions and the measurements of these predictor variables are illustrated in Table 8.6.

Table 8.5 The Score and Number of Cases at the First and Third Quartile of the Seven Scales of QOL Assessments and Other Descriptive Statistics

	Q_1 N_1	Q_3 N_3	Mean S.D.	Skew- ness	Min	Max
LSASOCRE	30.00	41.00	34.96	-.550	11.0	50.0
	90	93	7.94			
LSBSCORE	6.00	10.00	7.92	-.420	0.0	14.0
	100	119	2.87			
SLFSCORE	21.00	28.00	23.82	-.532	7.0	35.0
	90	94	5.49			
HLTHFCT	102.36	135.79	114.46	-.735	32.31	149.37
	82	75	24.87			
PHYSCORE	21.00	21.00	20.46	-6.25	.000	21.00
	372	0	2.22			
INSSCORE	12.00	18.00	14.26	-.768	.000	23.00
	111	131	3.87			
ENVIR	22.00	25.00	24.347	-.709	6.00	36.00
	94	120	4.32			

Note: Q_1 = The first quartile
Q_3 = The third quartile
N_1 = Total numbers of cases at and below the first quartile score
N_3 = Total numbers of cases at and below the third quartile score

Table 8.6 List of Predictor Variables in the Discriminant Analysis for Groups of Low and High QOL, Their Definitions and Measurement Scales

Predictor Variable	Definition	Measurement Scales
TYPE	Types of care the elderly person is currently receiving	0 = Cared for by the family 1 = Cared for by the institutions
Personal characteristics		
AGE	Age of the respondents	Continuous
GENDER	Gender of the respondents	0 = Male 1 = Female
MARRIAGE	Current marital status	0 = Not have spouse 1 = Have spouse
READING	Reading ability	0 = Unable to read 1 = Able to read
EDU	Highest education attainment	0 = Lower than P. 4 1 = P. 4 and Higher
WORK	Present working status	0 = Not working 1 = Working
OCC	Previous occupation	0 = Unstable Jobs 1 = Stable Jobs
HEALTH	Self-perceived health status	0 = Weak or not in good health 1 = In good health
CHILDREN	Number of living children	Continuous
CLOSE	Having someone to feel close with or not	0 = No one 1 = Someone
Economic Well-being		
INCOME	Monthly income (baht)	Continuous
FINANCE	Self-perceived financial status	0 = Do not have enough or barely adequate 1 = Have enough, or more than enough

Table 8.6 (Cont.)

Predictor Variable	Definition	Measurement Scales
Religious activity		
RELIGACT	Frequency in practicing religious activities with others	0 = None for years 1 = At least once a year
Family contact and social network		
VIST_CHL	Visits by children	0 = No visits 1 = At least once a year
VIST_REL	Visits by relatives	(same as above)
SOCIAL	Participation in social functions or meetings with friends	0 = None for years 1 = Occasionally or more
Daily self-entertainment		
TV	Viewing television	0 = No 1 = Yes
RADIO	Listening to the radio	(same as above)
NEWSPPER	Reading newspapers	(same as above)
CHATTING	Chatting with friends or neighbors	(same as above)
Care assessments		
CONTINUE	Assessed care regarding permanency of living arrangements	Continuous (0 to 3)
AVAILABL	Assessed care regarding availability of alternative supports	Continuous (0 to 3)
Need Factors		
NEEDFCT1	Need for self-acceptance	Factor scores
NEEDFCT2	Basic health needs	Factor scores
NEEDFCT3	Need for social participation	Factor scores
NEEDFCT4	Need for sense of security	Factor scores
NEEDFCT5	Need for attachment to children	Factor scores
NEEDFCT6	Problems of daily living and financial needs	Factor scores

Results of Discriminant Analysis

Six discriminant functions are performed to test each scale of quality of life by direct method. The aims are that whether 29 variables based on individual characteristics of the elderly's personal life-styles, various circumstances in care arrangements and their unmet needs will be, and to what extend, able to identify the elderly persons who are at a low or high level of quality of life.

Analytical results show that these functions are able to classify these known cases of low or high quality of life scores with an accuracy of 81 to 93 percent (see Appendix D., Table D.10). The canonical correlation of the discriminant functions ranges between 0.6512 to 0.8431 (see Appendix D., Table D.11).

It should be emphasized that from the MANOVA analysis, groups of respondents in two different types of care differ significantly in reported scores regarding self-esteem, instrumental activities of daily living, and living environment. As in this analysis, the independent variable TYPE appears to be a significant predictor amongst others in the functions of SLFSCORE and ENVIR. A summary of findings from six discriminant functions are presented in Table 8.7. The variables that correlate above 0.30 with a function are interpreted as best predictors of distinctions. These variables also have large coefficients of standardized canonical discriminant functions and their effects are considered stable. For detailed statistic outputs, see Table 8.8-8.13.

Table 8.7 Summary of Significant Predictors with Pooled-within-groups Correlations (in Parenthesis) Equal or Above 0.30 in Each Discriminant Function

QOL	Predictor				
LSASCORE	FINANCE	HEALTH	TV	SOCIAL	NEEDFCT2
	(.55)	(.45)	(.38)	(.37)	(.37)
LSBSCORE	SOCIAL	VIST_REL	FINANCE	HEALTH	
	(.48)	(.40)	(.38)	(.31)	
SLFSCORE	SOCIAL	HEALTH	FINANCE	VIST_CHL	VIST_REL
	(.53)	(.48)	(.41)	(.39)	(.34)
	NEEDFCT2	TV	NEWSPPER	TYPE	AVAILABL
	(.34)	(.34)	(.31)	(.31)	(.30)
HLTHFCT	NEEDFCT2	HEALTH	SOCIAL		
	(.61)	(.53)	(.32)		
INSSCORE	AGE	NEWSPPER	NEEDFCT2	HEALTH	SOCIAL
	(.42)	(.34)	(.34)	(.30)	(.30)
ENVIR	TYPE	NEEDFCT6	FINANCE		
	(.40)	(.39)	(.32)		

Life Satisfaction

The results of discriminant analysis for the scale of Life Satisfaction Index A and Index B (LSASCORE and LSBSCORE) are quite consistent (Table 8.7). As for the former, the variables FINANCE, HEALTH, TV, SOCIAL and NEEDFCT2 are significant predictors. For the latter, SOCIAL, VIST_REL, FINANCE, and HEALTH are the primary predictors of discrimination. These predictors all show correlations with the corresponding functions greater than 0.31, Wilks' lambda less than 0.91, and large value of F-ratio with significance less than the 0.001 level (Table 8.8 and 8.9).

From the analytic results of these two scales, both which reflect quality of life in the dimension of life satisfaction, it can be concluded that perceived financial situation, perceived health status and joined social functions such as meeting friends on a regular basis (FINANCE, HEALTH, SOCIAL) are the three primary factors distinguishing group membership. These variables all show higher group means for the high score group of life satisfaction than their counterparts.

In other words, it can be generalized that the elderly who perceive themselves to be financially stable, in good health, and join in social activities regularly are likely to be persons with a high level of life satisfaction.

Other characteristics that also differ significantly between being the elderly of high or low life satisfaction are: 1) watching television regularly 2) receiving visits from relatives (TV and VIST_REL).

Table 8.8 Results of Discriminant Analysis for Predicting Group Membership in the Groups of Low and High Scores of Life Satisfaction Index A (LSASCORE) Based on 29 Variables

Variable	Wilks' Lambda	F-Ratio	Signifi-cance	Std.Can* Coeff.	Within** Corr.
TYPE	.96109	6.56	.0114	.14510	-.17582
Individual characteristics					
AGE	.99544	0.74	.3902	.10424	.05915
GENDER	.97847	3.57	.0608	-.25345	-.12963
MARRIAGE	.99055	1.55	.2155	.07529	-.08537
READING	.99688	0.51	.4773	-.06697	-.04891
EDU	.99762	0.39	.5351	-.11695	-.04268
WORK	.98206	2.96	.0873	.06218	-.11811
OCC	.99039	1.57	.2117	.09869	-.08608
HEALTH	.79267	42.37	.0000	-.18304	-.44692
CHILDREN	.95354	7.90	.0056	-.18779	-.19290
CLOSE	.97201	4.67	.0323	-.18424	-.14829
Economic well-being					
INCOME	.95381	7.85	.0057	-.23407	-.19230
FINANCE	.71597	64.27	.0000	-.64493	-.55041
Religious activity					
RELIGACT	.96109	6.56	.0114	.04159	-.17582
Family contact and social network					
VIST_CHL	.93440	11.37	.0009	.14835	-.23154
VIST_REL	.91304	15.43	.0001	.08032	-.26968
SOCIAL	.84625	29.43	.0000	-.28363	-.37249
Daily self-entertainment					
TV	.83836	31.23	.0000	-.21308	-.38371
RADIO	.99855	0.24	.6280	.08979	-.03333
NEWSPPER	.96592	5.72	.0180	.13580	-.16413
CHATTING	.99928	0.12	.7336	.04679	-.02341
Care assessment					
CONTINUE	.93514	11.24	.0010	-.22538	-.23014
AVAILABL	.92906	12.37	.0006	.25857	-.24147
Need factors					
NEEDFCT1	.95593	7.45	.0070	.28058	.18764
NEEDFCT2	.85145	28.26	.0000	.60335	.36501
NEEDFCT3	.96374	6.10	.0146	.40395	.16951
NEEDFCT4	.99980	0.03	.8564	.07335	.01244
NEEDFCT5	.99949	0.08	.7743	-.00484	.01972
NEEDFCT6	.94796	8.90	.0033	.12624	.20474

Canonical Discriminant Function Evaluated at Group Means (Centroids)

Group	FUNC 1
Low	1.13734
High	-1.13734

* Standardized canonical discriminant function coefficients

** Pooled-within-groups correlations between discriminating variables

Table 8.9 Results of Discriminant Analysis for Predicting Group Membership in the Groups of Low and High Scores of Life Satisfaction Index B (LSBSCORE) Based on 29 Variables

Variable	Wilks' Lambda	F-Ratio	Signifi-cance	Std.Can* Coeff.	Within** Corr.
TYPE	.99335	1.27	.2619	.75596	-.07927
Individual characteristics					
AGE	.98426	3.02	.0838	.11383	.12247
GENDER	.99990	0.19	.8903	-.12841	-.00973
MARRIAGE	.97431	4.99	.0268	-.17675	-.15727
READING	.97187	5.47	.0204	-.15461	-.16478
EDU	.97688	4.47	.0357	.03018	-.14902
WORK	.97067	5.71	.0178	.00728	-.16837
OCC	.98484	2.91	.0897	.08968	-.12018
HEALTH	.90866	19.00	.0000	.18669	-.30708
CHILDREN	.97678	4.49	.0353	-.20456	-.14935
CLOSE	.98338	3.19	.0755	-.02411	-.12590
INCOME	.94322	11.38	.0009	-.14492	-.23765
Economic well-being					
FINANCE	.86643	29.14	.0000	-.17863	-.38030
Religious activity					
RELIGACT	.94909	10.14	.0017	-.10893	-.22433
Family contact and social network					
VIST_CHL	.93472	13.20	.0004	-.01129	-.25598
VIST_REL	.85574	31.86	.0000	-.21389	-.39769
SOCIAL	.80217	46.61	.0000	-.45688	-.48101
Daily self-entertainment					
TV	.92497	15.33	.0001	-.08554	.27587
RADIO	.99422	1.11	.2958	.15841	-.07386
NEWSPPER	.94758	10.45	.0014	.02681	-.22781
CHATTING	.96026	7.82	.0057	-.34846	-.19705
Care assessment					
CONTINUE	.97380	5.09	.0253	-.16191	-.15887
AVAILABL	.94131	11.78	.0007	-.15605	-.24185
Need factors					
NEEDFCT1	.93882	12.32	.0006	.42935	.24725
NEEDFCT2	.93357	13.45	.0003	.51992	.25838
NEEDFCT3	.93666	12.78	.0004	.49473	.25189
NEEDFCT4	.99983	0.32	.8572	.03639	.01270
NEEDFCT5	.99718	0.54	.4654	.25884	.05154
NEEDFCT6	.94353	11.31	.0009	.33912	.23695

Canonical Discriminant Function Evaluated at Group Means (Centroids)

Group	FUNC 1
Low	1.13480
High	-.92946

* Standardized canonical discriminant function coefficients

** Pooled-within-groups correlations between discriminating variables

Self-esteem

The variables which are potential predictors for life-satisfaction (both index A and B), reveal similarities in the discriminant function for self-esteem. The variables SOCIAL, HEALTH, FINANCE, VIST_REL, NEEDFCT2, and TV again appear to be significant discriminant factors (the pooled-within-groups correlations with function range between 0.34 - 0.53). Other variables having a correlation slightly above 0.30 are NEWSPPER, TYPE and AVAILABL (Table 8.7).

Further interpretation is gained from examining the group means of these variables. Such interpretations are that: the elderly with high self-esteem tend to be persons who still maintain social functions such as going out to meet friends, consider themselves to be in good health, and perceive their financial situation to be secure. The fourth to seventh factors are: receiving visits from children and relatives, reporting fewer problems of basic health needs and watching television regularly.

Apart from the above, there are other factors that pinpoint those elderly with high self-esteem. Some of these factors are reading a newspaper regularly, being non-institutionalized, and being in a circumstance in which alternative care support are available. The Wilks' lambda of the above mentioned variables range between 0.71 - 0.88 which is acceptable. The significant level of F-ratios are less than 0.001 (Table 8.10).

The variable TYPE, though confirms with previous analysis of MANOVA test, is the ninth predictor in this function. This implies that should the elderly in institutions participate in social functions, maintain good health, or keep contact with their children or relatives, they can well be ascribed as high self-esteem. Daily activities such as keeping abreast with news, social events and entertainment through television or newspaper should be encouraged.

Table 8.10 Results of Discriminant Analysis for Predicting Group Membership in the Groups of Low and High Self-esteem Scores (SLFSCORE) Based on of 29 Variables

Variable	Wilks' Lambda	F-Ratio	Signifi-cance	Std.Can* Coeff.	Within** Corr.
TYPE	.88021	24.63	.0000	-.08953	.30623
Individual characteristics					
AGE	.97848	3.98	.0475	-.17668	-.12310
GENDER	.99179	1.50	.2227	.16218	.07550
MARRIAGE	.93990	11.57	.0008	.00047	.02991
READING	.97815	4.04	.0458	.10175	.12406
EDU	.97782	4.11	.0442	-.15896	.12501
WORK	.96935	5.72	.0178	.13475	.14761
OCC	.93898	11.76	.0007	.19549	.21161
HEALTH	.74655	61.45	.0000	.38296	.48367
CHILDREN	.93515	12.55	.0005	.01298	.21859
CLOSE	.93629	12.32	.0006	.14870	.21654
Economic well-being					
INCOME	.88916	22.56	.0000	.15580	.29308
FINANCE	.80098	44.97	.0000	.23778	.41359
Religious activity					
RELIGACT	.95252	9.02	.0030	-.20639	.18534
Family contact and social network					
VIST_CHL	.81953	39.86	.0000	.11623	.38955
VIST_REL	.85345	31.08	.0000	.06550	.34398
SOCIAL	.71408	72.47	.0000	.43500	.52528
Daily self-entertainment					
TV	.85942	29.61	.0000	.14676	.33574
RADIO	.99983	0.03	.8600	-.18925	.01090
NEWSPPER	.87929	24.85	.0000	.28098	.30757
CHATTING	.99487	0.93	.3355	-.03995	.05958
Care assessment					
CONTINUE	.98223	3.28	.0720	.07033	.11167
AVAILABL	.88640	23.20	.0000	-.01424	.29717
Need factors					
NEEDFCT1	.97035	5.53	.0198	-.18582	-.14511
NEEDFCT2	.85916	29.67	.0000	-.19282	-.33609
NEEDFCT3	.95654	8.22	.0046	-.27001	-.17694
NEEDFCT4	.99906	0.17	.6805	-.05847	.02545
NEEDFCT5	.99967	0.06	.8072	-.01286	.01508
NEEDFCT6	.93221	13.16	.0004	-.19752	-.22385

Canonical Discriminant Function Evaluated at Group Means (Centroids)

Group	FUNC 1
Low	-1.07950
High	1.32960

* Standardized canonical discriminant function coefficients

** Pooled-within-groups correlations between discriminating variables

General Health and Functional Status

In this quality of life dimension, two discriminant functions are assessed: groups of low and high scores of the general health scale (or the Screen Test for Health Care, HLTHFCT) and instrumental activities of daily living scale (INSSCORE). The results in Table 8.7 show that the expressed needs related to basic health, self-perceived health status, and activities in social functions or meeting friends (NEEDFCT2, HEALTH and SOCIAL) are the three most distinct predictors among the groups for low and high general health scores. These predictors once again prove to be highly significant discrimination for the scale of daily living activities.

Another function of daily living activities, the five most notable contributors of discrimination are: AGE, NEWSPPER, NEEDFCT2, HEALTH, and SOCIAL. The group means of these variables suggest that the elderly who: 1) are younger in chronological age, 2) read a newspaper regularly, 3) express less problems with their basic health needs, 4) perceive themselves as healthy, and 5) are still socially active are more likely to be better able to function.

Note that chronological age, which is the first ranked predictor, appears to be a significant predictor only in this scale. Other than this, chronological age is not a good predictor for other dimensions of quality of life. Thus, any program granting assistance to the elderly should not be based solely on chronological age, unless the issue is closely related with the aspect of instrumental usage of daily living activities.

The above predictors all show pooled-within-groups correlations at least 0.30. The Wilks' lambdas are smaller than 0.91. The significant level of the F-ratios are less than 0.001 (Table 8.11 and 8.12).

Table 8.11 Results of Discriminant Analysis for Predicting Group Membership in the Groups of Low and High Scores of General Health Scale (HLTHFCT) Based on 29 Variables

Variable	Wilks' Lambda	F-Ratio	Signifi-cance	Std.Can* Coeff.	Within** Corr.
TYPE	.99991	0.01	.9073	.32050	-.00965
Individual characteristics					
AGE	.97154	4.57	.0341	.14282	.17695
GENDER	.98342	2.63	.1069	.16684	.13425
MARRIAGE	.99743	0.40	.5272	.12084	-.05246
READING	.99993	0.01	.9180	-.05272	-.00853
EDU	.99391	0.96	.3298	.04242	-.08092
WORK	.99561	0.69	.4081	.05536	-.06867
OCC	.99552	0.70	.4031	.08599	-.06939
HEALTH	.79248	40.85	.0000	-.21158	-.52907
CHILDREN	.99462	0.85	.3595	.07590	-.07608
CLOSE	.99735	0.41	.5208	-.19254	-.05328
Economic well-being					
INCOME	.95270	7.75	.0060	-.11964	-.23039
FINANCE	.93692	10.50	.0015	-.18228	-.26826
Religious activity					
RELIGACT	.98476	2.42	.1222	-.06451	-.12864
Family contact and social network					
VIST_CHL	.99374	0.99	.3231	.08345	-.08026
VIST_REL	.99279	1.13	.2889	.08950	-.08809
SOCIAL	.91336	14.80	.0002	.08611	-.31843
Daily self-entertainment					
TV	.98108	3.01	.0848	-.02618	-.14359
RADIO	.93512	10.82	.0012	-.01272	-.27233
NEWSPPER	.96915	4.97	.0273	.03846	-.18447
CHATTING	.98860	1.80	.1818	-.24871	-.11103
Care assessment					
CONTINUE	.98170	2.91	.0901	-.20556	-.14116
AVAILABL	.98186	2.88	.0916	.03111	-.14051
Need factors					
NEEDFCT1	.98179	2.89	.0909	.39021	.14083
NEEDFCT2	.74357	53.80	.0000	.95317	.60716
NEEDFCT3	.99997	0.00	.9499	.28814	.00521
NEEDFCT4	.98737	2.00	.1598	.29437	.11692
NEEDFCT5	.99946	0.09	.7711	.03388	.02413
NEEDFCT6	.95252	7.78	.0060	.40152	.23083

Canonical Discriminant Function Evaluated at Group Means (Centroids)

Group	FUNC 1
Low	.92523
High	-.99828

* Standardized canonical discriminant function coefficients

** Pooled-within-groups correlations between discriminating variables

Table 8.12 Results of Discriminant Analysis for Predicting Group Membership in the Groups of Low and High Scores of Instrumental ADL (INSSCORE) Based on 29 Variables

Variable	Wilks' Lambda	F-Ratio	Signifi-cance	Std.Can* Coeff.	Within** Corr.
TYPE	.98140	4.06	.0453	.52878	.08778
Individual characteristics					
AGE	.69362	94.53	.0000	.59028	.42383
GENDER	.96731	7.23	.0077	-.00329	.11722
MARRIAGE	.96958	6.71	.0102	-.20441	-.11259
READING	.86133	34.45	.0000	-.06227	-.25587
EDU	.84830	38.27	.0000	-.16058	-.26967
WORK	.91255	20.51	.0000	-.12047	-.19741
OCC	.98770	2.66	.1041	-.14715	-.07115
HEALTH	.81503	48.57	.0000	-.23763	-.30379
CHILDREN	.98731	2.75	.0987	.09691	.07230
CLOSE	.99918	0.18	.6756	.15254	-.01826
Economic well-being					
INCOME	.91757	19.22	.0000	-.18347	-.19113
FINANCE	.97873	4.65	.0321	-.02624	-.09402
Religious activity					
RELIGACT	.86111	34.52	.0000	.02204	-.25611
Family contact and social network					
VIST_CHL	.99604	0.85	.3573	.25268	.04021
VIST_REL	.99818	0.39	.5327	.26552	-.02724
SOCIAL	.82023	46.90	.0000	-.31105	-.29855
Daily self-entertainment					
TV	.97868	4.66	.0319	-.06007	-.09413
RADIO	.92216	18.06	.0000	-.33273	-.18527
NEWSPPER	.77817	61.00	.0000	-.22578	-.34048
CHATTING	.98972	2.22	.1374	.00148	-.06500
Care assessment					
CONTINUE	.97049	6.51	.0114	.15938	.11120
AVAILABL	.95924	9.09	.0029	-.34890	-.13145
Need factors					
NEEDFCT1	.97918	4.55	.0340	-.08149	-.09299
NEEDFCT2	.77834	60.95	.0000	.48573	.34032
NEEDFCT3	.00000	0.00	.9777	.31362	.00122
NEEDFCT4	.99347	1.41	.2370	.03848	.05170
NEEDFCT5	.99996	0.00	.9248	.07114	-.00412
NEEDFCT6	.99955	0.10	.7577	.03735	.01347

Canonical Discriminant Function Evaluated at Group Means (Centroids)

Group	FUNC 1
Low	1.69682
High	-1.43577

* Standardized canonical discriminant function coefficients

** Pooled-within-groups correlations between discriminating variables

Living Environment

The characteristics contributing to the identification of the elderly who assess different levels of quality of life in the living environment are: 1) type of care arrangement, 2) expressed needs related to financial problems, and 3) perceived financial status (TYPE, NEEDFCT6, and FINANCE) (Table 8.7 and Table 8.13).

The group means of these variables show that the elderly who live in nursing home settings assess better living environments than those who live with their families. The elderly who express fewer financial problems and problems about daily living are also likely to assess better living environments. The same is found for those who are optimistic about their financial situation and health status.

Summary

In summary, by evaluating all four dimensions of quality of life, three predictors consistently appear in most measuring scales and are found to be primary attributes in distinguishing the elderly of high-level quality of life and low-level quality of life. The primary predictors are such factors as taking part in social functions, and considering oneself to be both financially stable and healthy. Other factors that indicate those with a high quality of life level are frequent family contact through receiving visits from children or relatives. The basic health need factor is found to be negatively associated with high quality of life level scores, especially in general health. Watching television as daily self-entertainment is very likely to identify a person as having high life satisfaction. The need factor regarding financial and daily living problems is a strong predictor for quality of life in the living environment dimension. In other words, those who are poor and suffering from problems with daily living are also living in poor environmental conditions.

Table 8.13 Results of Discriminant Analysis for Predicting Group Membership in the Groups of Low and High Scores of Assessed Living Environment (ENVIR) Based on 29 Variables

Variable	Wilks' Lambda	F-Ratio	Signifi-cance	Std.Can* Coeff.	Within** Corr.
TYPE	.89510	22.03	.0000	1.09657	.39899
Individual characteristics					
AGE	.99444	1.05	.3064	.18594	.08719
GENDER	.99979	0.04	.8422	-.14165	-.01695
MARRIAGE	.97515	4.79	.0299	.18525	.18604
READING	.98523	2.82	.0949	-.28430	-.14268
EDU	.99861	0.26	.6097	.25877	-.04347
WORK	.99282	1.36	.2449	-.02067	-.09915
OCC	.99989	0.02	.8853	.06189	-.01228
HEALTH	.95429	9.00	.0031	-.25593	-.25508
CHILDREN	.99623	0.71	.3998	-.21040	.07173
CLOSE	.99864	0.26	.6136	-.06275	.04300
Economic well-being					
INCOME	.99476	0.99	.3210	-.25998	-.08458
FINANCE	.92935	14.29	.0002	-.21098	-.32136
Religious activity					
RELIGACT	.99918	0.15	.6947	.00794	-.03342
Family contact and social network					
VIST_CHL	.99969	0.58	.8096	-.43874	.02051
VIST_REL	.99960	0.07	.7854	.19787	-.02318
SOCIAL	.96769	6.28	.0131	-.01997	-.21297
Daily self-entertainment					
TV	.99730	0.51	.4761	.13714	-.06069
RADIO	.99853	0.28	.5996	.17969	-.04470
NEWSPPER	.99320	1.29	.2579	-.01585	-.09647
CHATTING	.99982	0.03	.8534	.01016	-.01573
Care assessment					
CONTINUE	.98182	3.48	.0637	-.16496	-.15858
AVAILABL	.99999	0.00	.9720	.02656	.00298
Need factors					
NEEDFCT1	.99861	0.26	.6094	.28051	.04351
NEEDFCT2	.97007	5.80	.0170	.42393	.20474
NEEDFCT3	.00000	0.00	.9990	.20153	-.00011
NEEDFCT4	.96928	5.96	.0156	.35699	.20750
NEEDFCT5	.99904	0.18	.6711	.25242	.03615
NEEDFCT6	.89954	21.00	.0000	.40482	.38950

Canonical Discriminant Function Evaluated at Group Means (Centroids)

Group	FUNC 1
Low	.96902
High	-.75167

* Standardized canonical discriminant function coefficients

** Pooled-within-groups correlations between discriminating variables

Conclusions

Regarding the type of care arrangement which has been hypothesized as the main effect for the multivariate test of quality of life, the results of discriminant analysis are found to be confirmed. That is, the elderly living with their families report higher self-esteem than those living in nursing homes. At the other extreme, they assess their living environments to be poorer than those who are in nursing home settings. This could be due to the fact that the study is carried out in Bangkok -- a place not known to be environmentally friendly. Regardless of being located in high, middle or low socioeconomic residential areas, elderly respondents report the same low-level assessment of their environmental surroundings. Even elderly in higher socioeconomical residential areas report being overwhelmed by foul odors from sewage and unsanitary toilets, as well as noise pollution, mostly from motorcycles, and car accidents.

There is no discrepancy in the level of life satisfaction between the two care groups of elderly. The three major characteristics found to be reliable predictors of high satisfaction in life of the elderly are secured financial status, health, and social involvement. This last factor confirms with the activity theory.

Another point to make is chronological age. It appears to be a significant predictor only once for the scales of instrumental activities of daily living. This suggests that any benefit program launched for the elderly should be carefully researched if based on the criterion of chronological age, this being due to the fact that chronological age is not at all a good predictor for the quality of life for the elderly in most dimensions.

It is noteworthy that the variable INCOME which assesses the financial status in quantity is not as a reliable predictor as the perceived status, FINANCE which is of subjective measurement.

CHAPTER IX

CONCLUSIONS

Before drawing any conclusions from this study, some limitations due to the study design should be stated. Firstly, about half of the studied samples are drawn from those who have lived in the institutions to compare their assessed quality of life with the other half who live with families. In this way the use of statistical techniques as an analysis tool for the study of determinants of alternative types of care is limited; however, it is made justifiable by applying the analysis of discriminant function for separating these two groups of samples. The predictive indicators from such analysis, which can foretell any elderly person's chance for institutionalized, are deduced to be deterministic factors for the use of alternative types of care. The findings from this analysis are generalizable and their proposed implications noteworthy.

Secondly, the framework used for the study of the predictors of alternative types of care only focuses on two sets of variables, individual characteristics of the elderly and family structure, while in actuality there are several other factors involved. This is due to the constraints of a cross-sectional study and the capability of the studied samples to recall events in the past pertaining to the decision to become institutionalized.

Summary

Results of Documentary Research

Demographic Profile

In summary, search into the census data has shown that the Thai aging population has increased much more rapidly than expected. This would yield a high dependency ratio of elderly, especially female, to the working-age population. The overall literacy rate of the elderly has increased substantially since 1980, especially amongst females. About 70 percent of them are literate. This could possibly a result of the Compulsory Education Act of 1921. There is an increase in the proportion of married couples with a decline in widows or widowers amongst the aging population during the 30-year period from 1960 to 1990. Other indicators which reflect their living arrangements are the decline in the extended family and the increment of the nuclear family headed by persons of the aged group, especially in the municipal areas. These factors issue warnings of a weakening capacity to provide support and care for elderly people.

Care Provision

Further search into welfare services provided by the government shows quite a limited budget. Institutional care services are inconsistent with regards to the increase of residents and the overall elderly population. The statistics of day care services do not adequately reflect the actual services rendered to the more needy elderly as it only reports the number of encounters in which services are rendered.

Results of Survey Research

Overall Samples

Regarding the survey research carried out, the average age of the total respondents is 76.7 years. Almost half are widowed, both for the sample group of living in family and the group living in institutions. Divorce is twice as common amongst those in institutions than those living in the family home. In addition, while only 1.7 percent of the elderly in the family are single, as many as 24 percent of those in free-of-charge nursing homes are. A large percentage (46 percent) of those living in the family are living with their spouses. Therefore, it seems that the single or divorced elderly are more likely to be institutionalized while those who are married and still living with their spouses are more likely to remain in families. The literacy rate is found to be 60 percent amongst those living in families and 79 percent amongst those in the government free-of-charge homes.

Twenty percent of those surveyed are currently working and generating income even though the jobs they performed are quite different from their previous occupations. Those in families are also found generally to have had more secure jobs in the past than those in institutions.

Regarding the self-reported assessment of perceived health, females report themselves to be in poor health twice as often as males, with little other differences between the elderly in different types of care. Chronic illness, however, is reported to be higher amongst the institutionalized than the non-institutionalized, 66 percent in comparison with 54 percent. The most common illnesses are those of the circulatory system and musculo-skeleton.

The family situation of the elderly is concluded to be a significant factor affecting the type of care which they receive. Whether a person has living children, and also the number of living children they have, is found to be relevant. Ninety six percent of those living in families have at least one living child compared with only 65 percent in government free-of-charge institutions and 73 percent in private free-of-charge institutions. Moreover, the non-institutionalized have an average of 4.1 family members, while those in free institutions have an average of 2.6 family members before moving out of their homes.

As many as 90 percent of the non-institutionalized are living with their spouse and/or their children; (46 percent with their spouse or spouse and children, and 44 percent with at least one child). Of the remainder, 6 percent live with other relatives, 1 percent alone, and 2.8 percent with friends or former employers. Amongst those in free-of-charge institutions, 39 percent had the opportunity to live with their spouse and/or children, and only 23 percent used to live with one of their children, while as many as one third of them used to live with other relatives and 13 percent used to live alone.

In profit-making homes, the situation is different in that 62 percent of the sample used to live with at least one child, and 16 percent with their spouse or spouse and children. In the majority of cases, it is the adult children who decide to send a parent to an institution. They are also responsible for covering the institution's costs. That means that as many as 85 percent of those in profit-making institutions used to have their children or nephews as their main care-supporters until the challenge of that care becomes too great.

An assessment of who is or was the head of household reveals that, of the elderly in families, 40 percent live in a household

headed by their child or their son/daughter-in-law, 4 percent headed by nieces, nephews or other relatives, and 5 percent headed by friends or employers. In comparison, 38 percent of those in free institutions used to live in households headed by relatives other than children, by friends or by employers.

The part of the survey relating to financial situations found that those in families are four times better off than those in institutions, receiving a monthly average of 6,440 baht compared with the 1,515 baht received by those in institutions. People who consider themselves to have a barely adequate amount of money comprise 12 percent of the total samples. The proportion of those who do not have enough reported to be only 2 percent amongst the samples living in the family and 13 percent amongst all those in free-of-charge homes. Of those in private free-of-charge homes, as many as almost one third do not have sufficient money. In sum, 74 percent of the institutionalized have enough and no problems or more than enough. The percentage of elderly persons who spend money regularly for religious affairs is found to be as high as 75 percent amongst all groups. People in institutions spend an average of 224 baht a month in this way, an amount equal to their medical expenses. Regarding income earned or received, the 12 percent who receive pensions have by far the highest average incomes. Receiving money from children is common amongst the non-institutionalized. For those in nursing homes, donations from compassionate visitors are a major source of income; seventy three percent of them receive on average 545 baht a month.

Predictors for Uses of Alternative Types of Care

In search of factors that determine whether elderly persons remain in the family or decide to enter nursing homes, discriminant analysis is performed in three functions by separating the groups into male, female subsamples, and total samples. The predictor

variables in the models include three variables of individual characteristics and seven variables of family structure regarding living arrangements. For those institutionalized, living arrangements apply to the time before entering the institutions. This information is assumed to be a predisposing factor that might bring about the tendency to choose alternative types of care.

Results from the analysis shows six characteristics that appear to differentiate the elderly in the family from those in institutions. It suggests that people are likely to be institutionalized due to not living with their spouse and/or children, or a change of residence due to homelessness or family problems. Other important factors are: if they have no living child or few children, if their main-supporter is a person other than their spouse or children, and if they live in a household which is headed by persons other than themselves or their own family member.

Females who reside in nursing homes are more likely to have children who are the head of the household. In comparison, males have more of a tendency to be the household heads, both from data in this studied samples and the latest census data. This can be an explanation as to why more females than males reside in nursing homes, as the analysis shows that being in the status of head of household predicts an elderly person's use of family care.

Assessments of Care Received

The elderly were given an opportunity to comment on the standard of care that they were receiving. Generally, those in institutions are less negative about that standard than those in families. Moreover, the issues raised are of a different nature. The positive points expressed by those in families relate to the convenience of their location, feelings of ease with own home, receiving good filial care, clean air, and pleasant neighbors.

Those in institutions, however, cite much more basic requirements and are positive about the fact that previous problems have been relieved. They are positive about the care they receive from the staff and donations from visitors. The negatives expressed by those in families are about traffic noise and pollution, and concerns about fires, car accidents, and land reclamation. On the other hand, a relatively smaller percentage of the institutionalized express any negative views, only 42 percent.

The assessment of the permanency of current living and care arrangements found that generally those in families have a higher sense of security about being cared for in the future than those in institutions and that those in institutions generally have less alternatives available to them.

A vast majority (93 percent) of the non-institutionalized are confident or very confident that they will be taken care of until their final days, 92 percent say that they will remain where they are until the end of their lives, and 86 consider the arrangement suitable for them in later life. While 86 percent in institutions feel confident or very confident of being taken care of, however, the percentage of those who say they will remain there until the end of their lives drops to 74 percent. Nevertheless, 80 percent consider the arrangement suitable, and of those in government homes, 5.7 percent say that they will choose to leave when they become sick or frail.

Unmet Needs

The needs of the Thai elderly in this study produce some very interesting and thought provoking results. As anticipated, the use of a checklist in questioning elderly people leads to a much higher percentage of respondents reporting that they have needs. When asked simply whether they have any needs or problems, 66

percent of those questioned answer no. This percentage drops sharply to 13 percent when the checklist is used, and over 80 percent state that they have more than one unmet need. Assessments of the seriousness of the elderly people's needs indicate that the problems of people in institutions are more serious than of those in families. Moreover, age is clearly not a factor which determines the severity of people's needs and should not, therefore, be used as a criterion for assessing eligibility for care services.

Regarding the types of needs which are reported, there are several findings worthy of comment. Financial problems are reported by a higher percentage of those in private institutions than those in any other type of care. This is the only problem more common in private than in government institutions, but it could be attributed to the fact that many compassionate members of the public visit the government homes and make donations. The fact that a large number of people visit government homes is probably due to it being long-established and well-known, and also easily accessible.

Many of the problems of elderly people are found to be basically physiological, and are classified by Maslow (1594) as being fundamental human needs. The use of factor analysis helps to clarify the types of needs which are most common by dividing the list into six more groups, or factors, and then giving each factor a score. The six factors are: 1) need for self-acceptance, 2) basic health needs, 3) need for social participation, 4) need for security, 5) need for children attachment, and, 6) problems in daily life and financial needs. When the scores for each factor are compared between the different types of care, there are differences in four of the factor scores between those in government institutions and those in families.

In the basic health needs factor, those in institutions, especially the government homes, report more problems than other

groups. This could be a result of their greater awareness of health issues due to information provided by the home and the institution's health programs which raise their consciousness about their health status. As for the areas of children attachment, need for self-acceptance, and need for social participation, residents of institutions also report more problems than those in families. As many as 80 percent of these residents have no contact with or visits from their children, nephews and nieces. There is no significant difference in these areas between those in private institutions and those in government. One response to these needs could be the establishment of a fostering or companion system which would link up interested members of the public with elderly people in institutions.

Consequences on the Quality of Life

The consequences of the quality of life of elderly persons concerns whether or not the elderly persons under different types of care experience different level of quality if life and/or if any certain factors or circumstances also play a role. Multivariate analysis of variance and discriminant analysis are performed. The results show that being in different types of care dose not effect life satisfaction nor the state of general health but does cause variations in self-esteem and the assessed living environment. Those institutionalized report lower self-esteem than the non-institutionalized. This is explained by the fact that a majority live quite withdrawn from outside social life, lose contact with family and have no living children. Contrarily, non-institutionalized elderly assess poorer living environment. This is because the environmental surroundings in most nursing homes are clean and quiet as compared to the general environment of Bangkok Metropolitan areas.

To distinguish factors that effect the quality of life of the elderly, six direct discriminant function analysis are performed. Each function uses 29 variables as predictors of membership in two groups of respondents. The three most reliable indicators in distinguishing an elderly person's high assessment of quality of life are: 1) remaining socially active, 2) considering oneself to be financially secure and 3) remaining healthy.

It is noted that chronological age should not be used as sole criterion for assessing eligibility for benefit programs, for it is not a factor which determines the severity of people's needs nor does it reflect the quality of life in a broader sense. Age itself only affects the ability to function independently in daily life.

Conclusions and Suggestions

Pertaining to Quality of Life

Based on the evidence that there are some characteristics of elderly people that serve as a factor in their high assessment of quality of life, some suggestions have been made as to promote their quality of life. It has been shown that those more socially active are most likely possess more satisfaction in their lives, have higher self-esteem, better general health, and functional abilities. Thus, encouraging the elderly to maintain active social roles can be a vital key in promoting their quality of life. One promotional strategy would be to organize elderly clubs in communities. On the family level, the elderly should be given a more prominent role to keep them active to help them maintain their feeling of self-worth. The elderly themselves should realize this and keep active contacts with friends and relatives.

Financial security and health are important factors in distinguishing whether a person has a low or high quality of life.

Financial security does not necessarily pertain to actual income or property, assets, etc., but a person's perception that he/she has adequate financial funds to live securely.

Both financial and health aspects can very well be the results of life-long experiences and conditions which are well planned and prepared for before a person becomes elderly. Children or family members should be sensitive to this fact. It is believed that in a shelter with food and basic medical facilities (as most institutions have), three in every four residents report adequate or more than adequate financial status in being able to live comfortably there.

Elderly persons should have access to health education and information whenever possible to raise health consciousness. This should be done not only through print, television or radio, but also by the informed young who could share their knowledge. With the illiteracy rate of 30 percent amongst aged population, print is viewed to be an inefficent media, though it may be conscience. Besides, many elderly people have impaired vision, as reported to be the first ranked need of the respondents in this study. Thus, radio media might well play an important role to inform the elderly. This will also install awareness or consciousness amongst relatives and the younger generations.

In observing the two programs the Thai government is in the process of granting the Thai elderly free-of-charge basic medical care and monthly subsistence allowance for the destitute, it can be seen that they are alleviating the health needs and financial problems that trouble many elderly. From the analytical results of this study, both factors are important issues in enhancing the elderly persons' quality of life. This government policy is clearly heading in the right direction if these two programs are administered with efficiency and consistency. The basic health

services such as routine medical checkups should be increased full scale in terms of population coverages, users satisfaction and service conveniences. Private hospitals or clinics should also be encouraged to get involve so as to meet with the health needs of elderly population at large.

Direction for Care Services

The analysis shows that family structure is an important factor in preventing elderly from institutionalization. Elderly persons living in the family are characterised as living with their spouse and/or children, have own children or more number of living children and have at least one family member to support them. In contrary, those without a permanent residence or have poor relationship within their own family are very likely to be institutionalized. Thus, both being taken care of by children as well as ownership of a home are important factors for keeping elderly from institutional.

The implication from the findings can be applied for both for individuals and for policy planers. At the individual level, one should well prepare one's living arrangement so that a secure shelter is guaranteed in later life. Besides, family relationships should be even more treasured and strengthened, not only in vertical line but also horizontal. As for those who have no children or small family size, other next of kin such as nieces or nephews can be a reliable source of support.

Concerns for care provision for aging population should be given more attention by policy planners. To retain elderly persons in the family or in the community as long as possible has been viewed in many countries as a better option for the elderly persons' quality of life and for the policy implementation. Based on findings of this study, living arrangement of an elderly person is an essential component for the decision of care used. Government

policy should encourage the low-income population group to own a private house or a living unit before retirement.

It is also desirable that public housing estates or large housing complexes be forced to provide a day care center within their building project. The elderly who need care and attention can be placed in these day care centers so their family members can perform their normal duties during the day to prevent the unnecessary or premature institutional care for some elderly persons.

In view of Thailand's family planning policy, which has for more than two decades successfully down-sized the family, larger numbers of living children are important factors in retaining elderly persons in the family, either as shelter providers, care-givers or both. Under circumstances where family size keeps reducing, policy planers should realize the increasing need for formal support. Provisions of domiciliary care and residential care should be well planned as these problems will inevitably emerge.

The expansion of the private business sector in rendering residential or domiciliary services in the very near future should emphasize the quality of the care provided and the equal access of services to all clients. Experienced and qualified home helpers will play an important role in affecting the life quality of the elderly.

These emerging services by the private businesses will raise many issues for government organizations concerned with elderly care. Should private nursing homes be licensed and monitored for quality of care and which organizations should be resposible for this? How could those short-term training courses offered to home helpers by profit-making agencies be assured of quality? Would long-term residents of hospital-based nursing homes be eligible for medical care cost reimbursements as ordinary inpatients? These

questions will become problematic if our society is not aware of the significant impliactions of these issues in their early stages.

The government should be committed to give more attention and aid directly and indirectly to the elderly as families become less able to support them. With trends of urbanization and industrialization, an increasing number of elderly are left in single households or are living with non-relatives. The government should reach out to these elderly rather than simply encourage families to care for and respect the elderly. At the same time, the government needs to support the private sector, both profit and non-profit organizations, in caring for the elderly. Thailand needs to learn from the experiences and failures of welfare systems in more developed countries in order to minimize the burden on the public. At the same time, it should also be responsible for those who are neglected by their families and communities and maximize the efficiency of resources allocated to these needy elderly.

Recommendations for Policy Implications

Government should strengthen the family network of support as a key issue for assurance of elderly people's welfare in later life. For those elderly who are childless or have small family size, kinship ties become even important both for granting care and emotional supports. Public awareness in this concern is to be reemphasized through formal educational system in the very fundamental level and the informal as well. Mass media, in particular, television, can be very effective means of carrying this message to public at large.

Family problems is frequently given as major reason for turning to institutions; many times this is caused by financial problems in the family which increase emotional strain and stress, or problems in relationship. In this case, tax benefits amongst low-wage earners who are taking care of their elderly relatives

should be taking into consideration in government financing policy. This should elleviate financial burdens in the family and make recognition for the presence of an elderly parent. Income distribution program is also an important measure to help preventing family problems and keeping elderly in their families with security.

Program implementations should give equal attention to the elderly living in crowded squatter areas of Bangkok and in remote areas of low socioeconomic status. Efforts should be made to ensure that they have access to health services. An example of one great problem for the elderly in squatter areas is the lack of adequate or suitable footpaths and roads. Paved paths of half-meter wide are only available for few main pavements in the communities. The rest of the areas are walking steps laid with pieces of plywood on top of muddy surface. Thus, it is difficult for unambulatory elderly to be mobile, even if wheelchairs are available. Mobile units with home health visitors should be arranged on a regular basis and distributed throughout the city. Besided, living environment in squatter areas should be improved in all aspects, despite that squatter areas are not encouraged to be permanent residences. In fact, many communities have been settled for decades.

Recommendations for Further Study

Projections into the future foresee demands for various types of care services used by the aging population to be essential for policy planning direction. Amongst these are the increasing demands of instituional care and home helper services. The present study determines characteristics that can be reliable predictors for this. Data of these characteristics are available from the population census which may provide studies at the macro level are: number of living children, number of persons living alone or with unrelated persons, number of aging population who are household heads of nuclear families, and number of non-currently married

elderly. Projections should also be analyzed for urban-rural or regional differential so that services and helps for the needy elderly can be equally distributed.

As an organization authorised for social services, the Department of Public Welfare should, periodically, evaluate the exiting services rendered to the destitute elderly in terms of efficiency of resource utilization, service coverage as well as the quality of care. Despite several studies carried out by researchers over two decades have reported that a majority of residents are satisfied with services received, improvement for quality of care remains a challenge. These areas include quality of food served to their residents, appropriate ratios of personnel to residents, rotation of working staff, prevention of personal injury amongst elderly residents caused by slippery floor, steps or levels, especially in bathrooms. A pilot program for fostering or companion system opened to interested members of the public should also be initiated. With service direction focusing on Elderly Day Care Service Centers, besides reporting their annual statistics by number of service encounters, the Department should consider the number of their regular members in relation to size of elderly population in the target communities. This will better reflect actual service demand and supply potential.

In response to the present care direction which emphasized on community involvement or 'care in the community', a feasible study of an appropriate model for Thai communities is beneficial for program implementation. This may also interest the private business agencies to take part in promoting quality of life of the elderly living with family. These services are transportation for elderly persons between home and elderly club or activity center and a comprehensive day care center in terms of cost effectiveness profitable for organisers as well as fair to clients.

APPENDICIES

APPENDIX A

VALIDITY AND RELIABILITY OF QUALITY OF LIFE SCALES

Test of Construct Validity and Reliability of the Measuring Scales for Quality of Life

It appeared that six out of seven selected instruments for the multidimensional assessment for quality of life needed to be adopted with some modification. As the original instrument was not developed for use in the Thai culture, a test to determine the construct validity and the reliability of these instruments was necessary.

The Construct Validity

One method of examining the construct validity of the instruments for measuring the quality of life was made possible by factor analysis, which was useful to assess the pattern of interrelationships among the item scales of each instrument used in the sampled groups. Such an exploration of the set of variables also helped in understanding the underlying structure of the empirical data which then served to confirm the hypothesized structure. The results of the factor analysis of each instrument were presented in Table A.1 - A.6 in such a way that statement scales (or variables) that clustered because of an underlying factor were put in descending order by their factor loading. The interpretation of these extracted factors were labeled. In interpreting a factor, item scales that shared greater factor loading were given greater weight.

Note that different extraction methods and rotation patterns were used to yield the optimal results of factor extraction for each respective scale in terms of highest percentage of total explained variance and highest factor loadings.

Life Satisfaction Index A

The factor analysis of nine item scales of life satisfaction index A was found to be most appropriate by principal component extraction and oblimin rotation. By this extraction method, it yielded three major factors with the highest total explained variance of 52.8 percent (Table A.1). The first factor was labeled as zest for life. The second factor was interpreted as achieved goal in life and the third was a desire in life. The percentage of explained variance were 30.2, 12.0 and 10.7 respectively.

Table A.1 Factor Analysis of Life Satisfaction Index A by the Principal Component Method of Extraction and Oblimin Rotation

Variable		Statement	Factor Loading		
			Factor I	Factor II	Factor III
FACTOR I		**ZEST FOR LIFE (3.020, 30.2%)***			
1	LSIA7	"...my health is considerably satisfactory"	.67988		
2	LSIA4	"these are the best years of life"	.67773		
3	LSIA8	"...happier than in any earlier period of life"	.63903		
4	LSIA1	"...have better opportunities or am luckier in life than most of the people"	.62777		
5	LSIA2	"...expect some interesting and pleasant things to happen"	.62211		
FACTOR II		**ACHIEVE GOAL IN LIFE (1.195, 12.0%)***			
6	LSIA9	"...quite satisfied with living condition"		.75415	
7	LSIA3	"If I could I would like to change my past life"		.72885	
FACTOR III		**A DESIRE IN LIFE (1.068, 10.7%)***			
8	LSIA5	"...there are important things which have not been fulfilled"			.79625
9	LSIA6	"...there are things that worry..."			.77271
10	LSIA10	"...contented with financial"			.57781

* (Eigenvalue, explained variance) of each factor

Life Satisfaction Index B

Following a similar extraction and rotation method to LSIA, LSIB showed two underlying factors: fortitude and mood tone for the seven items (Table A.2). The explained variance of the first and the second factor equaled 34.7 percent and 19.0 percent respectively; totaled up this made 53.7 which was quite similar to that of the previous index.

Table A.2 Factor Analysis of Life Satisfaction Index B by the Principal Component Method of Extraction and Oblimin Rotation

Variable	Statement	Factor Loading	
		Factor I	Factor II
FACTOR I	**FORTITUDE** (2.4210, 34.7%)*		
1 LSIB1	"What are the best things about being elderly?"	.74855	
2 LSIB7	"As you get older, things seem to be better or worse than you thought they would be?"	.69031	
3 LSIB2	"Five years from now, how will things be different from the way they are now?"	.61945	
4 LSIB3	"What is the most important thing in your life right now?"	.61261	
FACTOR II	**MOOD TONE** (1.330, 19.0%)*		
5 LSIB5	"How often do you find yourself feeling lonely?"		-.85104
6 LSIB6	"How often do you feel there is no point in living?"		-.83697
7 LSIB4	"How happy would you say you are right now, compared with the earlier periods in your life?"		-.56608

* (Eigenvalue, explained variance) of each factor

Self-esteem Scale

By principle component extraction and varimax rotation (for this method was used to yield the highest percentage of total explained variance and factor loadings), factor analysis separated the seven scales of self-esteem into two factors. (see Table A.3)

The first factor with an eigenvalue of 2.47 and an explained variance of 35.3 percent, had five items belonging to it which were interpreted as 'self-concept'. Two scales measuring life-esteem concerned with 'capable of doing things as well as others' and 'still as worthy as before retirement' were extracted in the second factor which was labeled 'self-acceptance related to functioning'. The explained variance of the second factor was 15.2 percent with an eigenvalue a little over one.

Note that the original Rosenberg scale of self-esteem was intended to be unidimensional (Dobson, 1979), but designed for adolescents. Thus, the discrepancy with this study was worthy of note for future study when this instrument was to be administered in differing population groups.

Screen Test for Health Care of the Elderly

As a result of the analysis, two tests of symptoms were discarded to yield a final factor extraction of discernible pattern. They were the symptoms of 'stomach pains' (H06) and 'diarrhea' (H07). This was because a relatively very low proportion of the respondents suffered from these symptoms within two weeks of the interview (approximately 95 percent of the total samples responded 'no').

A total of five factors were extracted from the eighteen-item screen test for health care of the elderly. All factors were considerably distinguishable and well designed. Each factor had an

eigenvalue above one and the total explained variance equaled 53.2 percent (Table A.4).

By the varimax rotation of principal component extraction, the first factor was interpreted as psychological symptoms leading to suspected depression and anxiety. This factor had an eigenvalue of 4.78 and explained 26.5 percent of the total variance. The second factor was labeled 'physical complaints' with eigenvalue equal to 1.44 and percentage of explained variance equaled to 8.0. The last three factors were: symptoms of autonomic nervous system related to psychosomatic symptoms, general symptoms and symptoms of aging which had only one item.

Table A.3 Factor Analysis of Self-esteem Scale by the Principal Component Method of Extraction and Varimax Rotation

Variable		Statement	Factor Loading Factor I	Factor Loading Factor II
FACTOR I	**SELF-CONCEPT**	(2.469, 35.3%)*		
1	SES4	"...satisfied with oneself as a whole"	.81915	
2	SES3	"...have much to be proud of"	.80810	
3	SES5	"...still useful to others"	.60623	
4	SES6	"people around pay less respect or have less consideration..."	.51229	
5	SES7	"...have people come for some advice or counseling"	.35797	
FACTOR II	**SELF-ACCEPTANCE IN RELATION TO FUNCTIONING**	(1.062, 15.2%)*		
6	SES2	"...not able to do things as well as most other people"		.84822
7	SES1	"...be a person of worth as much as before retirement"		.67193

* (Eigenvalue, explained variance) of each factor

Table A.4 Factor Analysis of Screen Test for Health Care of the Elderly by the Principal Component Method of Extraction and Varimax Rotation

Variable		Symptom	Factor Loading I	II	III	IV	V
FACTOR I		**PSYCHOLOGICAL SYMPTOMS LEADING TO SUSPECTED DEPRESSION AND ANXIETY** (4.778, 26.6%)*					
1	H18	Nervous tension, nervousness	.80412				
2	H20	Low spirit or depression	.66552				
3	H19	Irritability or bursts of anger	.63286				
4	H17	Difficulties in falling asleep	.53716				
5	H04	Lack of appetite	.41453				
FACTOR II		**PHYSICAL COMPLAINTS** (1.448, 8.0%)*					
6	H08	Back trouble		.74429			
7	H09	Aching or pain in the joints		.72497			
8	H15	Tiredness or feeling of faintness		.48519			
9	H14	Unwilling to do things or lack of energy	.47213				
10	H11	Tremor of hands	.36075				
FACTOR III		**SYMPTOMS OF AUTONOMIC NERVOUS SYSTEM RELATED TO PSYCHOSOMATIC SYMPTOMS** (1.202, 6.7%)*					
11	H13	Difficulty in breathing or shortness of breath			.80523		
12	H10	Palpitation of the heart			.67810		
13	H12	Excessive sweating without physical effort			.53809		
14	H16	Nightmares			.48015		
15	H05	Constipation			.41883		
FACTOR IV		**GENERAL SYMPTOMS** (1.134, 6.0%)*					
16	H02	Headaches				.86059	
17	H01	Sense of giddiness				.75788	
FACTOR V		**SYMPTOMS OF AGING** (1.015, 5.6%)*					
18	H03	Worsening of memory					.71029

* (Eigenvalue, explained variance) of each factor

Activities of Daily Living (Instrumental and Physical ADL)

The two scales of activities of daily living were analyzed together (the ten-item instrumental ADL and the seven-item physical ADL). The result confirmed the hypothesized structure of one instrumental and one physical related scales with an overlap of two items (Table A.5). That is, the first factor consisted of all the seven items of physical ADL, plus two items of instrumental ADL. It had an eigenvalue of 17.93 and explained variance of 74.7 percent which were both quite large. This was due to the strong correlation of this set of variables amongst the samples, in other words, the majority were capable of most of these physical ADL. (Note that it was also highly skewed as shown in Table 8.5 of Chapter VIII and Table D.6 of Appendix D.) The inclusion of two items of Instrumental Activities: 'take own medicine' (INSADL6) and 'handle own money' (INSADL7) in this first factor, suggested they were activities related to basic bodily maintenance rather than the activities basic to independent community residence as the original scale of instrumental ADL was intended for. The second factor consisted of the rest of the eight items of Instrumental ADL (INSADL1 to INSADL5 and INSADL8 to INSADL10) with an eigenvalue of 1.87 and explained variance of 7.8 percent.

Table A.5 Factor Analysis of Activities of Daily Living Scales (Instrumental and Physical) by the Principal Component Method of Extraction and Varimax Rotation

Variable		Statement	Factor Loading Factor I	Factor Loading Factor II
FACTOR I		**BASIC BODILY MAINTENANCE (PHYSICAL ADL) (17.925, 74.7%)***		
1	PHYADL2	able to dress and undress	.87232	
2	PHYADL6	able to take a bath	.87129	
3	PHYADL7	able to get to the toilet by one's self	.87070	
4	PHYADL1	able to eat	.86402	
5	PHYADL5	able to get in and out of bed	.83363	
6	PHYADL3	able to walk	.80642	
7	INSADL6	able to take own medicine	.77548	
8	INSADL7	able to count own money or change	.68987	
9	PHYADL4	able to climb stairs	.64557	
FACTOR II		**BASIC INDEPENDENT COMMUNITY RESIDENCE (INSTRUMENTAL ADL) (1.866, 7.8%)***		
10	INSADL9	able to use the pedestrian-bridge		.84763
11	INSADL3	able to go shopping for groceries or clothes		.83008
12	INSADL10	able to travel out of town alone		.81647
13	INSADL4	able to prepare own meals		.81287
14	INSADL5	able to do housework		.78646
15	INSADL8	able to wash own clothes		.75791
16	INSADL2	able to walk to places		.63740
17	INSADL1	able to use telephone		.58832

* (Eigenvalue, explained variance) of each factor

Assessments of Living Environment

By the principal component extraction and the varimax method of rotation, the factor analysis of nine items concerning perceived environment showed two factors underlying this matter which conformed quite well with the intention of the scale design. The first factor consisted mainly of the six items of physical appearance of the environmental surroundings (Table A.6), whereas the second factor included was the items about 'convenient location' (ENVIR4), 'privacy' (ENVIR5) and 'friendly neighbors' (ENVIR6) which were quite important for the non-physical element of perceived environment. This second factor had an eigenvalue of 1.22 and a percentage of variance explained equal to 13.6. The total explained variance of both factors equaled 45.3 percent, quite moderate.

Table A.6 Factor Analysis of Assessments of Living Environment by the Principal Component Method of Extraction and Varimax Rotation

	Variable Name	Statement	Factor Loading Factor I	Factor II
FACTOR I	**PHYSICAL APPEARANCE** (2.856, 31.7%)*			
1	ENVIR9	safety from fire, car accidents	.71396	
2	ENVIR7	structural condition of the house/building	.63191	
3	ENVIR1	cleanliness of surroundings	.53035	
4	ENVIR2	clean air, breeze	.52404	
5	ENVIR3	noise	.42690	
6	ENVIR8	safety from burglary	.34157	
FACTOR II	**NON-PHYSICAL MATTERS** (1.222, 13.6%)*			
7	ENVIR5	privacy		.43881
8	ENVIR6	neighbors or friendly residents		.43086
9	ENVIR4	convenience for going places		.40709

* (Eigenvalue, explained variance) of each factor

In summary, factor analyses were performed for the confirmatory capability for testing hypotheses about the structure of the underlying process of each instrument scale. Principal component extraction with various rotation methods was used to enhance the interpretability of the underlying structure. The results were quite satisfactory as the extracted factor was easy to understand or 'quite able to make sense' in its way of reflecting the sets of variables by factor. Resulting from this analysis, two symptoms of 'stomach pain' and 'diarrhea' were discarded from the screen test for health care of the elderly. This could be explained by the relatively very low frequency of those who reported such symptoms. It was also observed that the daily living activities, 'able to take own medicine' and 'capable of handling own money' which were hypothesized to be instrumental ADL were, however, observed to be related to components of physical ADL.

The Reliability Test

Before going into the analysis of data, a test of reliability of the constructed scales for measuring the four dimensions of quality of life was performed. It concerned the extent to which the information obtained was accurate and dependable. These instruments were the scales of (in parenthesis were the variable names of item scales): Life Satisfaction Index A (LSIA1 to LSIA10), Life Satisfaction Index B (LSIB1 to LSIB7), Self-esteem Scales (SES1 to SES7), Screen Tests for Health Care of the Elderly (H01 to H20) (or General Health Scale), Instrumental Activities of Daily Living (INSADL1 to INSADL10), Physical Activities of Daily Living (PHYADL1 to PHYADL8), and the assessment scales of Living Environmental (ENVIR1 to ENVIR9). The results of the reliability test by the coefficient of Cronbach's alpha demonstrated high values of alpha ranging from 0.6568 to as high as 0.9737 (Table A.7). All of these scales were considerably

satisfactory. The reliability of individual items in each instrument was also examined by the coefficient of alpha if the item was deleted from the instrument. None of these alphas of item analysis appeared to be higher than the alpha value of full scales or any negative of correlation, ensured that every item scale constructed was reproducible.

Table A.7 Reliability Coefficients of Cronbach's Alpha of Seven Scales for Measuring QOL

Instrument	Cronbach's Alpha	Number of Items	N of Cases
Life Satisfaction Index A (LSIA1 to LSIA10)	.7188	10	361
Life Satisfaction Index B (LSIB1 to LSIB7)	.6744	7	355
Self-esteem (SES1 to SES7)	.6568	7	367
Screen Test for Health Care of the Elderly (H01 to H20)	.8277	20	425
Instrumental ADL (INSADL1 to INSADL10)	.9500	10	325
Physical ADL (PHYADL1 to PHYADL7)	.9737	7	447
Assessments of Living Environment (ENVIR1 to ENVIR9)	.7313	9	349

APPENDIX B

DETAILS OF NEED ASSESSMENTS

Practical Issues in Need assessments

Mentioned in the section of Instruments for Data Collection of Chapter III, the assessment of needs and the priority of the needs of the elderly persons were ensured by using checklists of needs items based on Maslow's (1954) concept after the open-ended question. The respondents were then requested to state the level of seriousness of the needs they reported after the checklists. Further, they were to assess the three most priority of those needs they had reported.

In spite of employing these obvious and practical procedures, it was inevitable that the collected data were not quite direct and imperative. The underlying factors involved the communicative competence of the elderly themselves, which was probably affected by their health or emotional status, as well as their willingness to provide precise data. Moreover, some of the reported needs might be so closely related or mutually affected that they could not be classified or measured. One case frequently found in the study was that if an elderly person claimed to have a financial need for medical treatment, he/she also had a severe visual problem. These two problems were highly related. If he/she did not have a financial need, he/she would have been able to have early treatment and his/her vision would not be left severely affected. For these elderly people, it was not an easy matter to decide which problem should take first priority. Life in the Home for the Elderly was probably less affected by the financial problem than the visual problem. On the other hand, a visual problem might

not cause as much worry or trouble to a person as a financial problem.

From the interviews, it was reported that the elderly found it difficult to identify the priority of their own problems and that their opinions as well as their decision-making were sometimes influenced by the interviewers themselves. When the interview proceeded to this last stage, the acknowledgment of prior information about the respondent gained from the early sections of the questionnaire might possibly have led the interviewers to the subjective judgment regarding the setting of the priority and the level of seriousness of the problems. It was quite obvious that the needs with the greatest gravity or the needs mentioned by the elderly during interview would inevitably take the first priority.

Reports of problems and the levels of seriousness show differences in different health and socioeconomic status of the elderly. Table B.1 demonstrates that the elderly with weaker health indicate a higher level of seriousness of the three needs than those who have stronger health. Similarly, those who have lower socioeconomic status also point out a relatively higher level of seriousness (Table B.2). In terms of age, a comparison is carried out with three varying age groups: 60-69 years of age; 70-79 years of age; 80 years of age. The data from Table B.3 reveal no difference in the level of seriousness of the three indicated needs. This implies that chronological age cannot be regarded as a predictor for the indication of the needs of any particular group. Thus, it is not advisable for any assistance program aimed at the elderly to take into account chronological age as a sole criteria. Figures in Table B.1-B.3 have given empirical proof that health status is a characteristic attributing greater effect on overall well-being of the elderly than socioeconomic status, and both are associated with problem situations, not with age.

The last questionnaire requests that the respondents set the priority of the needs they expressed in the 24 item checklist (Table B.4). The first priority is found to fall amongst several problems including visual problems (21.8 percent) financial problems (17.7 percent), followed by poor health (8.1 percent), walking problems (7.3 percent) and poor food or no appetite (4.6 percent) respectively. The second priority similarly fell amongst visual problems, then chewing or dental problems, poor food or no appetite, walking problems, and poor health. A similar pattern of unmet needs or problems are found in the third priority need: walking problems, poor food or no appetite, chewing or dental problems, visual problems and poor health. In short, the problems or needs that ranked first, second and third in priority appear to be similar and all involve health problems.

Table B.1 Percentages of Levels of Seriousness of the First Three Priority Needs by Health Status

Level of Seriousness	Health Status			Total
	Weak, have Health Problems	Weak, But No Health Problems	Good Health	
First Priority Need				
Severe	89.5	52.3	43.1	52.8
Moderate	7.9	44.3	54.1	44.1
No Problems	2.6	3.4	2.9	3.1
χ^2 (P-value)			26.56	(.0000)
Second Priority Need				
Severe	84.2	38.3	27.0	38.9
Moderate	13.2	59.1	57.7	53.1
No Problems	2.6	2.7	15.3	8.0
χ^2 (P-value)			53.79	(.0000)
Third Priority Need				
Severe	65.8	29.5	20.4	29.9
Moderate	26.3	64.4	54.7	55.9
No Problems	7.9	6.0	24.8	14.2
χ^2 (P-value)			47.31	(.0000)

Table B.2 Percentages of Levels of Seriousness of the First Three Priority Needs by Socioeconomic Status

Level of Seriousness	Socioeconomic Status			Total
	High	Middle	Low	
First Priority Need				
Severe	37.2	49.0	64.1	52.8
Moderate	55.1	49.0	34.5	44.1
No Problems	7.7	1.9	1.4	3.1
χ^2 (P-value)			20.11	(.0005)
Second Priority Need				
Severe	28.2	36.5	46.5	38.9
Moderate	61.5	51.9	49.3	53.1
No Problems	10.3	11.5	4.2	8.0
χ^2 (P-value)			10.64	(.0309)
Third Priority Need				
Severe	23.1	26.9	35.9	29.8
Moderate	60.3	55.8	53.5	55.4
No Problems	16.7	17.3	10.6	14.8
χ^2 (P-value)			6.01	(.1984)

Table B.3 Percentages of Levels of Seriousness of the First Three Priority Needs by Age Group

Level of Seriousness	Age group			Total
	60-69	70-79	80 and over	
First Priority Need				
Severe	43.4	48.6	45.6	46.0
Moderate	42.2	33.6	40.9	38.4
No Problems	14.5	17.9	14.1	15.6
χ^2 (P-value)			2.51	(.6429)
Second Priority Need				
Severe	33.7	40.7	27.5	33.9
Moderate	44.6	37.9	55.0	46.2
No Problems	21.7	21.4	17.4	19.9
χ^2 (P-value)			9.13	(.0580)
Third Priority Need				
Severe	27.7	27.9	23.05	26.1
Moderate	44.6	41.4	57.7	48.7
No Problems	27.7	30.7	18.8	25.3
χ^2 (P-value)			9.25	(.0551)

Table B.4 Percentage Distribution of the First Three Priority Needs Reported by 24-item Checklist

Checklist of Unmet Needs	Responses of Unmet Needs					
	First Priority		Second Priority		Third Priority	
	%	N	%	N	%	N
No Needs	13.5	50	19.4	72	24.5	91
Basic Physiological Needs						
1. Food: Insufficient, Not Appetizing	4.6	17	7.0	26	7.5	28
2. House:Flooded,Run-down, Too Crowded, Displaced	4.0	15	4.8	18	2.2	8
3. Unhappy Home	2.4	9	1.3	5	4.3	16
4. Lack of Medical Treatment and Care	0.3	1	0.5	2	0.5	2
5. Poor Health	8.1	30	5.9	22	4.3	16
6. Financial Problems	17.7	66	4.3	16	2.4	9
7. Visual Problems	21.8	81	15.1	56	6.7	25
8. Hearing Problems	3.2	12	5.4	20	1.3	5
9. Chewing Problems	3.2	12	7.0	26	7.3	27
10. Walking Problems	7.3	27	6.5	24	9.7	36
Needs Regarding Safety & Security						
11. Feeling Unsafe, Fear of Physical Harm or Burglary	0.3	1	0.3	1	1.3	5
12. Feeling Unsafe When Traveling on Buses or Crossing Streets	2.2	8	7.0	26	6.2	23
13. Fear of Being Cheated , Not Cared for, Lack of Filial Piety	0.3	1	0.8	3	-	-
14. Receiving Inadequate State Welfare	-	-	0.8	3	0.3	1
15. Feeling Deprived of Family Company or Closeness	0.8	3	3.0	11	3.0	11
16. Feeling Anxiety and Insomnia	0.5	2	2.7	10	3.8	14

Table B.4 (Cont.)

Checklist of Unmet Needs	Responses of Unmet Needs					
	First Priority		Second Priority		Third Priority	
	%	N	%	N	%	N
Needs for Social Belonging						
17. Bored, Have Nothing to Do	1.1	4	1.9	7	2.7	10
18. Lack of Friends, No One Understand, Don't Know Anyone	0.3	1	0.8	3	0.5	2
19. Feeling Isolated, Lonely	0.5	2	1.9	7	3.2	12
20. Feeling Unwanted	0.8	3	0.3	1	1.6	6
Needs Regarding Self-esteem						
21. Lack of Care, Attention or Service	1.3	5	0.8	3	1.1	4
22. Feeling Lack of Respect and Being Overlooked	-	-	0.5	2	1.3	5
23. Having a Troubled Family, Non-Cooperative, Unconcerned	1.9	7	1.1	4	1.6	6
24. Being Concerned for Children	1.1	4	1.9	7	0.3	1
25. Others	2.9	11	0.3	1	1.2	4

APPENDIX C

DETAILS OF MARITAL STATUS, WORK ACTIVITIES AND REASONS FOR NOT WORKING

Marital Status

The distinction of 'living with spouse' and `not living with spouse' is based on subjective judgments drawn from the understanding of the clients' families throughout the services. 'Living with spouse' describes the status before entering the nursing home and on-and-off visits from the resident's spouse. On the other hand, 'not living with spouse' describes an absence of spouse's visiting that is not reported as widowed.

Difficulties in the distinction between the status of 'not living with spouse' and 'separated' for those who live in the family are also noteworthy. Not living with a spouse might be due to financial reasons or living arrangements in which the elderly person and the spouse are to be cared for by different children, especially in families of low socioeconomic status; however, stating `not living with spouse' is also an excuse to avoid mentioning separation or even divorce. If such ambiguity exists during the interview it is rather difficult for interviewers to try for further inquiry which might unnecessarily create a strained atmosphere during the interview.

Table C.1 examines the marital status amongst the two groups of samples adjusted for gender difference. The divorced rate in institutionalized males is twelve times higher than those males living in the family. The proportion of widowers amongst institutionalized samples is considerably higher for the general elderly males, almost twice the number of widowers living in the family.

Table C.1 Percentage Distribution of Marital Status by Gender amongst Non-institutionalized and Institutionalized Samples

Marital Status	Non-Institution		Institution	
	Male	Female	Male	Female
Single	-	3.2	20.3	21.8
Living with Spouse	71.3	21.5	10.5	5.3
Widowhood	19.5	63.4	33.1	58.6
Not Living with Spouse/Separated	8.0	2.2	24.1	5.3
Divorced	1.1	9.7	12.0	8.3
N of cases	87	93	133	133

Work Activities of the Working Elderly

Work activities of the elderly who are currently working are quite different from their past occupations. Amongst the working elderly who live in the family, only 8 percent remain in their previous professions: 12 percent keep their grocery stands or shops, 4 percent continue their apartment business. The rest are unlikely to be fully economically active. Amongst the elderly living in institutions, about one quarter of them are female residents of government nursing homes who work on handicrafts for sale within the settings, others are involved in religious rituals (9.3 percent), traditional healing (5.3 percent), fortunetelling (4.0 percent)), and life insurance (5.3 percent).

Given Reasons for Not Working

About 80 percent of the elderly samples, regardless of type of care, are not working in income-producing jobs. The given reasons for not working can be summarized as follows. Half of them give their reasons for not working as simply being too old to work.

Those live in the family have a sound reason; 'the children do not allow them to work anymore'. For those in nursing homes: `being institutionalized' is a common reason given for not working. Health problems are the reason given for not working for about one quarter of the institutionalized elderly, whereas only 3.6 percent amongst those who live with the family report this reason. Other reasons are: 'they have enough to spend', 'they deserve to quit because they have worked so hard', 'there are no suitable jobs' and 'they have reached retirement'.

Table C.2 Percentage Distribution of Past Occupation by Gender amongst Non-institutionalized and Institutionalized Samples

Past Occupation	Non-Institution		Institution	
	Male	Female	Male	Female
Housewife, Never Employed	1.2	13.0	2.3	29.7
Laborer	22.1	14.1	28.5	17.8
Self-employed	7.0	13.0	16.9	16.1
Employee	12.8	2.2	9.2	7.6
Private Enterprise	7.0	1.1	6.9	-
Government (No Pension)	8.1	1.1	9.2	8.5
Government (On Pension)	11.6	3.3	11.5	4.2
Merchant, Businessperson	22.1	22.8	12.3	13.6
Farm-owner	8.1	29.3	3.1	2.5
N of cases	86	92	130	118

Combining the reports of perceived health with evidence of any chronic illnesses (Table C.3), amongst those who consider themselves in good health and vigorous, half reported no chronic illness, whereas among those who perceive themselves unhealthy but with no health problems, almost one third have no chronic illness. For those who are not vigorous, the proportion of those having no illness is 13 percent.

There are also gender differences in the perception of health, as shown in Table C.3; females report to be weak or frail twice as often as the males and there are more males who were healthy and vigorous. Part of this could be influenced by reporting behavior as suggest by Gee and Kimbell (1985: 34) that women are more willing to report symptoms of illness and to react to those symptoms than men.

There also exists age-group differentials in health perception amongst elderly females. Perceptions of themselves as healthy and as vigorous amongst the age group of 60 to 79 females are found to be almost double those of the older women, 66 percent as compared to 34 percent, respectively. The ratio of those who report themselves as unvigorous, however, are just the reverse and seems exceptional. Amongst those who perceive themselves as weak and had health problems, 62 percent are female from the age of 60 to 79, which was almost twice the number of female age 80 and over (38 percent) (Table C.3).

Table C.3 Percentage Distribution of Perceived Health Status by Selected Characteristic

Selected Characteristic	Perceived Health				
	Frail, Have Problems	Not in Good Health	In Good Health	N	Total
Total	12.1	45.6	42.3	447	100
Sex					
Male	31.5	50.0	53.4	220	49.2
Female	68.5	50.0	46.6	227	50.8
χ^2 (P-value)				8.19	(.0166)*
Age group					
60-79	61.1	49.0	66.7	259	57.9
80 and over	38.9	51.0	33.3	188	42.1
χ^2 (P-value)				12.79	(.0017)
Socioeconomic Status					
Upper Class	39.4	32.0	38.9	33	12.7
Middle Class	15.2	29.0	34.1	100	38.6
Lower Class	45.5	39.0	27.0	126	48.6
χ^2 (P-value)				5.96	(.2018)
Male					
60 - 79	58.8	54.9	67.3	134	60.9
80 and over	41.2	45.1	32.7	86	39.1
χ^2 (P-value)				3.32	(.1898)
Female					
60 - 79	62.2	43.1	65.9	125	55.1
80 and over	37.8	56.9	34.1	102	44.9
χ^2 (P-value)				10.80	(.0045)
Self-Reported Chronic Illness					
Not Any Illness	13.0	28.9	56.1	173	38.5
At Least One Illness	87.0	71.1	49.3	274	61.5
χ^2 (P-value)				47.5	(.0000)

APPENDIX D

QUALITY OF LIFE: STATISTICAL JUSTIFICATION AND ANALYTIC RESULTS

Multivariate Analysis: Statistical Justification and Evaluation of Assumptions

One objective of this study is to examine the resulting quality of life for the two groups of elderly people in the alternative types of care: cared for by their families or cared for by the institutions. The single effect of the variable 'TYPE' is tested against the four quality of life dimensions. Quality of life is measured by seven scales. The following is to discuss the use of multivariate analysis of variance (MANOVA) for this analysis and the evaluations of assumptions of this technique before test of hypothesis is to carried out.

Justification of Statistical Technique

Due to the multidimensional nature of the measurement of quality of life, the statistical technique of multivariate analysis of variances (MANOVA) is chosen as an appropriate tool for the resulting analysis of the quality of life for the elderly in different types of care. In this study, there are seven dependent s which measure four dimensions of quality of life. All are observed to be correlated to one another at a significant level of α = 0.001, with exception for the variable PHYSCORE (Scores of Physical Activity of Daily Living) (Table D.1). For this reason, the application of MANOVA is found to be beneficial in this situation. Although the one-way analysis of variance test (ANOVA) can be computed separately for each of these dependent variables, this approach ignores the interrelation amongst the dependent variables and substantial information might be lost when correlation between

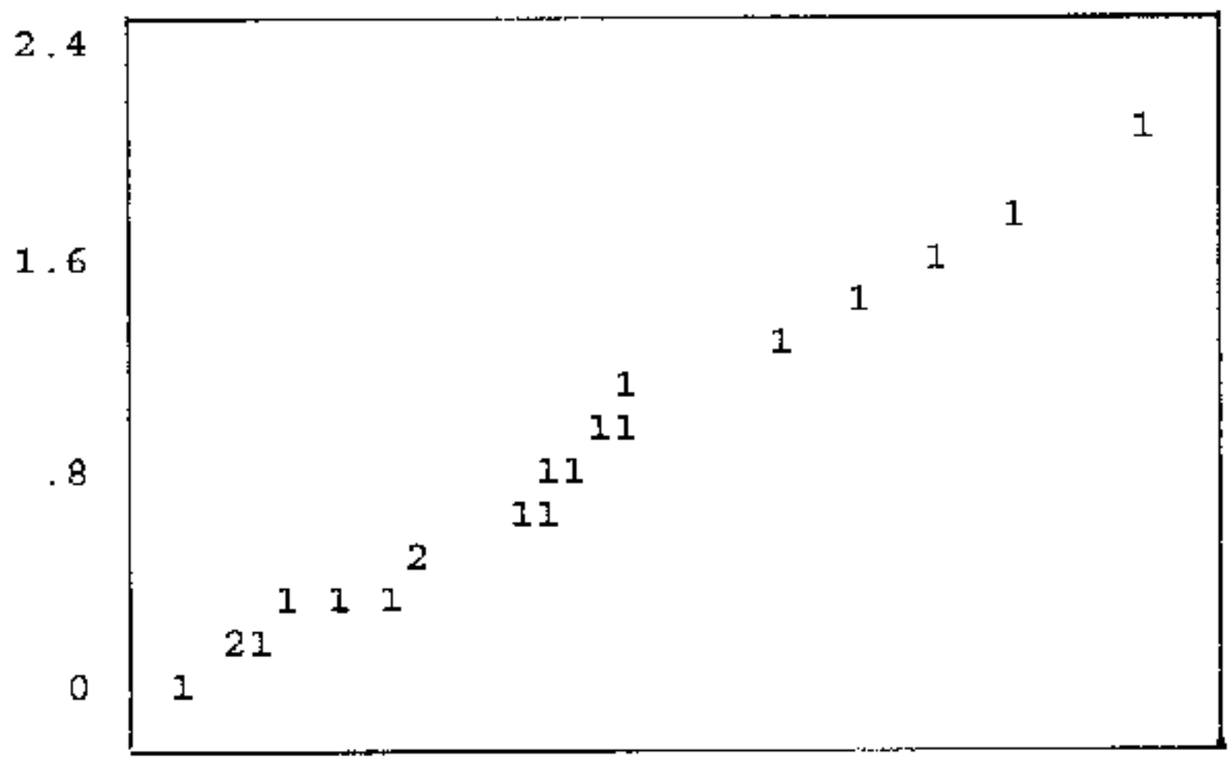
variables is neglected by such a computation method. Just as analyses of several bivariate regressions are no substitute for a multiple regression model which considers the independent variables jointly, similarly, in a similar way many tests of univariate analysis of variance are unable to replace the multivariate analysis of variance. More, however, procedures are required to test if the observed data fitted well for the MANOVA analysis technique. The first step is to examine if the correlation matrix of these dependent quality of life variables has an identity matrix which indicates the independence of these variables. After applying the Bartlett's test of sphericity, presented in Table D.2, which gives a low value of determinant close to Zero (0.16955) and an observed significant level less than 0.0005, the hypothesis that these variables are independent is rejected and a test of MANOVA for these dependent variables then becomes justifiable. Figure D.1 shows the plot of the transformed correlation coefficients for the correlation matrix in Table D.1. The plot shows deviations from linearity, suggesting that these seven dependent variables are not independent, a finding that is confirmed by the Bartlett's test above. The next step is then to test for normality assumption and the homogeneity of variance in the compared groups of population.

Table D.1 Correlation Matrix of Seven Variables of Quality of Life (QOL)

	LSASCORE	LSBSCORE	SLFSCORE	HLTHFCT	PHYSCORE	INSSCORE
LSASCORE						
LSBSCORE	.6463					
SLFSCORE	.5771	.5441				
HLTHFCT	.4512	.4905	.3152			
PHYSCORE	.0873	.1078	.0516	.0203		
INSSCORE	.1377	.2847	.2674	.2068	.3004	
ENVIR	.3447	.3341	.1981	.3364	.0514	.1809

Table D.2 Bartlett's Test of Sphericity for Interdependence of Seven Dependent Variables of QOL

Determinant =	.16955
Bartlett test of sphericity =	539.18352 with 21 D. F.
Significance =	.000
F(max) criterion =	102.12100 with (7,307) D. F.



Note: Y- axis stands for Exponential normal value

Figure D.1 A Half-Normal Plot of the Correlation Coefficients

Evaluation of Assumptions

The two assumptions necessary for the proper application of the ANOVA test are similar to those for the MANOVA. They are that the groups must be random samples from normal populations with the same variance, and that the dependent variables must have a multivariate normal distribution with the same variance-covariance matrix in each group. Assessment of the reasonableness of the normality assumption is made possible by the stem-and-leaf-plot of each variable as well as a normal probability plot under the MANOVA

procedures of the SPSS/PC+ program. Approximately straight lines are observed in the normal probability plots for each variable. Plots of the differences between each observed point and expected point, called detrended normal plots, also present values that cluster in horizontal bands about zero, ascertained for the normality assumption. Normal distributions are also observed through the stem-and-leaf plots for variables which measure the dimensions of life satisfaction (LSASCORE and LSBSCORE), self-esteem (SLFSCORE) and assessed living environment (ENVIR). For these same plots, patterns of skewness of data distribution are shown among the variables of general health functions: general health factor scores (HLTHFTC), instrumental activities of daily living (INSSCORE) and physical activities of daily living (PHYSCORE). There are, however, no significant violations of the normality assumption. If it had been otherwise, a linear transformation for some of these variables would have been required.

Once the distributions of the variables have been examined, a test of the hypothesis that there is no difference between the population means and the hypothesized values then follows. It requires a simultaneous test of the hypothesis that considers all variables together, and a test statistic of Hotelling's T^2 is usually used. Table D.3 shows that the observed significant level of this test is very small (less than 0.0005); therefore, the null hypothesis that the population means do not differ from the hypothesized constants is rejected. The univariate test is further examined to find out where the differences in these population means may lie. Table D.4 containes the univariate results for the seven dependent variables. All of their F values appear to be significant at α = 0.0005 level, which confirms that all of the population means are different.

Table D.3 The Hypothesis Sum of Squares and Cross-product Matrix and Hotelling's T^2 Statistic

EFFECT .. CONSTANT

Adjusted Hypothesis Sum-of-Squares and Cross-Products

	LSASCORE	LSBSCORE	SLFSCORE	HLTHFCT	PHYSCORE	INSSCORE	ENVIR
LSASCORE	379122						
LSBSCORE	86307	19648					
SLFSCORE	258572	58864	176353				
HLTHFCT	1241313	282586	846611	4064284			
PHYSCORE	243205	55365	165872	796297	156015		
INSSCORE	155423	35382	106003	508885	99703	63717	
ENVIR	261413	59511	178291	855916	167695	107168	180251

Multivariate Tests of Significance (S = 1, M = 2 1/2, N = 149 1/2)

Test Name	Value	Approx. F	Hypoth. DF	Error DF	Sig. of F
Pillais	.9927	5849.28	7.00	301.00	.000
Hotellings	136.0297	5849.28	7.00	301.00	.000
Wilks	.0073	5849.28	7.00	301.00	.000
Roys	.9927				

Table D.4 Univariate F Tests for Seven Dependent Variables of QOL

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
LSASCORE	379122.2	19395.81	379122.	63.179	6000.81	.000
LSBSCORE	19648.05	2489.948	19648.1	8.110	2422.52	.000
SLFSCORE	176353.6	8382.429	176353.	27.30	6458.81	.000
HLTHFCT	4064284.	185144.0	4064284	603.08	6739.27	.000
PHYSCORE	156015.0	1812.987	156015.	5.91	26418.6	.000
INSSCORE	63717.21	4532.792	63717.2	14.76	4315.48	.000
ENVIR	180251.3	5547.698	180251.	18.07	9974.79	.000

A test for the second assumption of homogeneity of variance and covariance matrices is necessary for the present study which involves two samples, the non-institutionalized and institutionalized elderly. The means and standard deviations of quality of life variables in each sampled group are preliminarily examined. As shown in Table D.5, most variables present their standard deviations equally between the two compared groups of non-institutional, and institutional except the variable of PHYSCORE (Physical Activities of Daily Living). The standard deviation of the non-institutionalized group is twice that of the institutionalized. Two homogeneity-of-variance tests (Cochrans C and the Bartlett-Box F) for each of these variables are further examined in Table D.6. Only the variable of PHYSCORE (Physical Activities of Daily Living) shows significant level (at α = 0.001) suggesting that the hypotheses that the variances in the two sampled groups are equal should be rejected. The result of Box's M test which equals 104.8 with a significant level at α = 0.001 also gives rise to suspicions about of the homogeneity-of-dispersion-matrices assumption (Table D.7).

An alteration of the dependent variables for the analysis model is to be considered. The solution is quite straight forward--eliminate the variable of PHYSCORE (Physical Activities of Daily Living) from the model of analysis of multivariate since it is the only variable violating the assumption for the analysis technique. Besides, there are two other variables, HLTHFCT (general health factor scores) and INSSCORE (instrumental activities for daily living), which should be sufficient for measuring the dimension of general health and functional status. The multivariate test for homogeneity of dispersion matrices of selected six dependent variables is again performed.

Table D.5 Means and Standard Deviations of Seven Dependent Variables of QOL by Group of Samples

Variable	Type of Care	Mean	S.D.	N
LSASCORE				
(Life satisfaction index A)	Non-Institution	35.80	7.32	155
	Institution	34.37	8.50	153
	Total	35.08	7.95	308
LSBSCORE				
(Life satisfaction index B)	Non-Institution	8.03	2.84	155
	Institution	7.95	2.87	153
	Total	7.99	2.85	308
SLFSCORE				
(Self-esteem)	Non-Institution	25.31	4.64	155
	Institution	22.53	5.42	153
	Total	23.93	5.23	308
HLTHFCT				
(General health)	Non-Institution	113.06	24.52	155
	Institution	116.71	24.54	153
	Total	114.87	24.56	308
PHYSCORE				
(Physical ADL)	Non-Institution	22.27	3.06	155
	Institution	22.75	1.53	153
	Total	22.51	2.43	308
INSSCORE				
(Instrumental ADL)	Non-Institution	13.79	3.90	155
	Institution	14.98	3.71	153
	Total	14.38	3.84	308
ENVIR				
(Living environment)	Non-Institution	23.11	4.31	155
	Institution	25.19	4.25	153
	Total	24.19	4.25	308

Table D.6 Univariate Homogeneity of Variance Tests

	Cochrans	Bartlett-Box	P-Value
LSASCORE	.57431	3.40808	.065
LSBSCORE	.50521	.01658	.898
SLFSCORE	.57722	3.68419	.055
HLTHFCT	.50031	.00006	.994
PHYSCORE	.80036	68.09347	.000
INSSCORE	.52505	.38302	.536
ENVIR	.54768	1.39273	.238

Note: Cochrans C(153,2), Bartlett-Box F(1,280867)

Table D.7 Multivariate Test for Homogeneity of Dispersion in Variance-Covariance Matrices of Seven Dependent Variables of QOL

Box's M =	104.79590	
F with (28,326166) DF =	3.65218, P =	.000 (Approx.)
Chi-square with 28 DF =	102.27004, P =	.000 (Approx.)

Table D.8 Multivariate Test for Homogeneity of Dispersion in Variance-Covariance Matrices of Six Dependent Variables of QOL (Excluding PHYSCORE)

Box's M =	31.59951	
F with (21,344270) DF =	1.47338, P =	.075 (Approx.)
Chi-square with 21 DF =	30.94300, P =	.075 (Approx.)

After the exclusion of the variable PHYSCORE, the Box's M test of these dependent variables is reduced to 31.6 with P-value of 0.075; there appears to be no reason to suspect the homogeneity-of-dispersion-matrices assumption (Table D.8). The variance-covariance matrices in each sampled group as well as the pooled variance-covariance matrix which the Box's M test is based on are presented in Table D.9.

In summary, the above are preliminary steps of examining the distribution of the dependent variables (six scales of quality of life measurements) for their interdependency, normality, and equality of population variances. There are no significant violations found. These are to be evaluated before the testing the hypothesis that there is no effect of alternative types of care on the elderly's quality of life by the MANOVA.

Table D.9 Variance-Covariance Matrices of the Two Compared Sample Groups and the Pooled Variances

Variance-Covariance Matrix of Non-Institutional Group

	LSASCORE	LSBSCORE	SLFSCORE	HLTHFCT	INSSCORE	ENVIR
LSASCORE	53.580					
LSBSCORE	14.038	8.051				
SLFSCORE	20.616	7.693	21.540			
HLTHFCT	94.051	37.959	58.063	601.318		
INSSCORE	6.113	3.655	6.396	26.895	15.178	
ENVIR	11.088	4.614	6.687	37.946	2.309	18.540

Variance-Covariance Matrix of Institutional Group

	LSASCORE	LSBSCORE	SLFSCORE	HLTHFCT	INSSCORE	ENVIR
LSASCORE	72.286					
LSBSCORE	15.269	8.221				
SLFSCORE	25.515	8.449	29.409			
HLTHFCT	85.225	30.977	28.015	602.058		
INSSCORE	3.159	2.637	6.037	9.965	13.730	
ENVIR	13.868	3.581	5.182	28.459	2.321	15.311

Pooled-within-cells Variance-Covariance Matrix

	LSASCORE	LSBSCORE	SLFSCORE	HLTHFCT	PHYSCORE	ENVIR
LSASCORE	62.872					
LSBSCORE	14.650	8.136				
SLFSCORE	23.050	8.069	25.449			
HLTHFCT	89.667	34.491	43.137	601.686		
PHYSCORE	4.645	3.149	6.217	18.485	14.459	
ENVIR	12.469	4.101	5.939	33.234	2.315	16.936

Analytic Results of Discriminant Analysis Between Groups of Low and High Quality of Life

Table D.10 Classification Results of Six Discriminant Functions for Six Measured Scales of LSASCORE, LSBSCORE, SLFSCORE, HLTHFCT, INSSCORE and ENVIR

Life Satisfaction Index A (LSASCORE)

Actual Group	N	Predicted Group Membership	
		Low	High
Low Level	82	68	14
		82.9%	14.1%
High Level	82	8	74
		9.8%	90.2%

Percent of "grouped" cases correctly classified: 86.59%

Life Satisfaction Index B (LSBSCORE)

Actual Group	N	Predicted Group Membership	
		Low	High
Low Level	86	75	11
		87.2%	12.8%
High level	105	17	83
		16.2%	83.0%

Percent of "grouped" cases correctly classified: 85.34%

Self-esteem (SLFSCORE)

Actual Group	N	Predicted Group Membership	
		Low	High
Low Level	80	72	8
		90.0%	10.0%
High Level	79	8	71
		10.1%	89.9%

Percent of "grouped" cases correctly classified: 87.98%

Table D.10 (Cont.)

General Health (HLTHFCT)

Actual Group	N	Predicted Group Membership	
		Low	High
Low Level	82	65	17
		79.3%	20.7%
High Level	76	12	64
		15.8%	84.2%

Percent of "grouped" cases correctly classified: 81.65%

Instrumental Activities of Daily Living (INSSCORE)

Actual Group	N	Predicted Group Membership	
		Low	High
Low Level	99	94	5
		94.9%	5.1%
High Level	117	10	107
		8.5%	91.5%

Percent of "grouped" cases correctly classified: 93.06%

Living Environment (ENVIR)

Actual Group	N	Predicted Group Membership	
		Low	High
Low Level	83	66	17
		79.5%	20.5%
High Level	103	20	87
		18.7%	81.3%

Percent of "grouped" cases correctly classified: 80.53%

Table D.11 Canonical Discriminant Functions of Six Measuring Scales for Assessing QOL

QOL	Eigen-value	Can. Corr	Wilks' Lambda	χ^2	DF	Sig
LSASCORE	1.3095	0.7530	0.4330	123.46	29	.0000
LSBSCORE	1.0659	0.7183	0.4840	126.61	29	.0000
SLFSCORE	1.4512	0.7694	0.4080	149.28	29	.0000
HLTHFCT	.9355	0.6952	0.5167	93.44	29	.0000
INSSCORE	2.4590	0.8431	0.2891	247.58	29	.0000
ENVIR	0.7361	0.6512	0.5760	95.71	29	.0000

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