EVALUATION OF RELIABILITY AND VALIDITY OF A
COMMUNITY NEEDS ASSESSMENT INSTRUMENT
FOR NURSING HOMES IN THE TAIWAN AREA

by

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ABSTRACT

Several studies have been done that identify an insufficient number of nursing homes as a major problem in the Taiwan area. However, no previous studies have investigated exactly what kind of service is needed and would actually be used, nor have any research instruments been designed to measure perception of need or use. Therefore, the purpose of this dissertation research was to establish reliability and validation of a community needs assessment instrument, called Perception Evaluation Tool (PET).

A psychometric evaluation study with cross-sectional longitudinal sampling techniques using a mailed questionnaire was conducted. A randomly selected sample of 168 community individuals and 151 key community informants who resided in the 10 survey towns was included in the study. The results generated from these participants have demonstrated the stability reliability, the internal consistency reliability, the convergent validity, and the discriminant validity of the PET. In conclusion, the final 67-item self-report PET is a reliable and valid instrument which can be used to assess the perceptions of need for nursing homes from general community individuals and key community informants in either suburban or rural communities in the Taiwan area.
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CHAPTER I

INTRODUCTION

Statement of the Problem and the Purpose

For the past 10 years, the elderly population in Taiwan has significantly increased from 902,000 in 1984 to 1,623,000 at the end of 1995. Several studies have been done which identify an insufficient number of nursing homes as a major problem for the elderly in the Taiwan area (Chiou & Wang, 1987; Hon, 1993; Hurng, 1987; Jung, Tsai, & Lin, 1990; Wu, 1993), but none of these studies have investigated exactly what is needed and would actually be used, nor have any research instruments been designed to measure perception of need or use for nursing homes in the Taiwan area. Therefore, two specific and purposive survey tools, the Community Individual Informant Tool (CIIT) and the Health Care Provider Informant Tool (HCPIT), were developed by me in a master's project. Face validity and content validity of the original tools have been evaluated (Chen, 1995).

The original CIIT and HCPIT I developed (1995) were revised and combined based on the principles of instrument development indicated by DeVellis (1991), Dillman (1978), Fink and Kosecoff (1985), Fowler, Jr. (1984), Mishel (1990), Nunnally and Bernstein (1944), and Witkin and Altschuld (1995). The purpose of this dissertation research was to evaluate the psychometric
properties of the modified CIIT and HCPIT, now called the Perception Evaluation Tool (PET).

Significance of the Study

The assessment of nursing home needs is becoming an important research endeavor because of the burgeoning elderly population, the need for establishing standards and regulations appropriate to the community needs, and the scarcity of resources for providing nursing home services. This study addressed measurement issues that were pertinent to an instrument designed to conduct of community nursing home needs assessment in the Taiwan area. This study provides a foundation for future research aimed at addressing the match between community needs for nursing home services and the resources available to provide those services. Although the results of this psychometric study are limited to a geographic area in Taiwan, the concepts, methods, and findings may be used as a blueprint for further research in other locations and in other population.

The PET was designed to conduct a needs assessment study in community settings, assessing factors associated with nursing homes and perception of need for nursing home services in the Taiwan area. However, the reliability and validity of the PET had not been established. Thus, it was important to evaluate the psychometric properties of this newly developed community needs assessment instrument. The PET is designed to identify the perception of (a) whether a need exists to have nursing home services provided in a community, (b) if needed, what services should be provided within nursing homes, and (c) the potential willingness to use services provided within nursing homes. It is important that
needs assessment studies be conducted prior to construction of any nursing home to ensure that the services customers expect to have are available and, also, to reduce the risk of marketing failure (Neuber, 1980; Rakich, Longest, & Darr, 1992; Soriano, 1995; Warheit, Bell, & Schwab, 1977; Zaura, Brachrach, & Hess, 1983).

The PET can be used not only by individuals who plan to build new nursing homes, but also its results can be used to market nursing home services in the Taiwan area. Furthermore, the tool can be used by policy makers who plan or develop long-term health care programs. I believe the people who will benefit most from this study are the nursing home customers (i.e., nursing home residents, family members of nursing home residents, service providers for nursing home living) and the potential nursing home customers (i.e., the general public).

Research Questions

The main concern for the current study was to establish the psychometric properties of the PET. According to Waltz, Strickland, and Lenz (1991), reliability and validity are fundamental considerations when evaluating an existing instrument for potential use. Reliability is concerned with how consistently the measurement technique measures the concept of interest. Validity of the PET referred to the ability of the tool to measure exactly what it was supposed to measure and nothing else. The psychometric methods of instrument evaluation as indicated by Carmines and Zeller (1979), DeVellis (1991), Lynn (1986), Mishel (1990), Nunnally and Bernstein (1994), and Waltz et al. (1991) were followed to
establish reliability and validity of the PET. Thus, the research questions for this study are as follows:

1. Is there evidence to support content validity of the PET?
2. What is the stability reliability of the PET?
3. Is there evidence to support convergent validity of the PET as examined by factor analysis?
4. What is the internal consistency reliability of the PET after revisions were made based on the factor analysis results?
5. Is there evidence to support discriminant validity of the revised PET?

**Assessment Model**

Based on the purposes of this study, an assessment model was developed by me for guiding the process of assessing perceptions of need for nursing homes in the Taiwan area using the PET. This assessment model is illustrated in Figure 1. The model was used to demonstrate how a community needs assessment using the PET discriminates a high-need community from a low-need community with regard to the perception of need for nursing home services and also identifies the services that should be provided within nursing homes to meet community demand. This model is used to demonstrate the path for assessing the outcomes for needs of nursing homes (i.e., whether or not a need exists to provide nursing home services within a surveyed community), NOT the input (i.e., what factors influence the needs of nursing homes), NOR the process (i.e., how people make the decision for nursing home placement).
Figure 1. A Model of Assessing Perceptions of Need for Nursing Homes
Three major assumptions for this assessment model are (a) the community needs assessment using the PET can discriminate a high-need community from a low-need community with regard to the needs of nursing home services, (b) community individuals, professional health care providers, and key community informants are able to identify the services that are needed for nursing home living, and (c) the proportion of the population who would use nursing home services within a high-need community is greater than that within a low-need community.

The five major components in this model are (a) need, (b) community, (c) needs assessment, (d) nursing home, and (e) nursing home services. The conceptual and operational definitions of these components are addressed below.

Need

According to Witkin and Altschuld (1995, p. 4), a need is generally considered to be a discrepancy or gap between "what is," or the present state of affairs in regard to the group and situation of interest, and "what should be," or a desired state of affairs. "Need" can also be defined in terms of what consumers state they want (Eustis, Greenberg, & Patten, 1984, p.52). By this definition of need, from a potential consumer's perspective, need can be affected by values, preferences, attitudes, knowledge, and information about what is an acceptable need status and the types of services available. For the purpose of this dissertation research, need was defined as "the necessity to provide nursing home services in an identified community from the perspectives of community individuals, professional health care providers, and key community informants."
Community

By definition, a community can be viewed as a collection of people who share some important features of their lives. More specifically, Green and Ottoson (1994, p. 42) define a community as "a social unit in which there is a transaction of a common life among the people making up the unit. As a social group, one which functions with norms of behavior and an organization of resources, the community regulates both the environment and behavior of its citizens." For the purposes of this study, community was defined as "a district or locality defined geographically and socially." For geographical convenience, 10 towns in Hsinchu County, Taiwan Province, Republic of China, were selected for this study. Each town meets the definition of community for this study, as it could be easily defined by a map and was made up of individuals with a similar social cultural background.

In the community needs assessment model (see Figure 1), community is illustrated as a circle. Based on the results of the nursing home community needs assessment using the PET, each community can be categorized into a "high-need" or "low-need" community with regard to nursing home services which are needed to meet the community demand. The black area in each circle (community) indicates the proportion of the population that uses nursing home services in the community (see Figure 1). Conversely, the white area in each circle (community) indicates the proportion of the population that DOES NOT use nursing home services in the community. Each community should contain both black and white areas. However, the ratio of black versus white area varies among different communities.
Needs Assessment

In earlier literature, a needs assessment was generally defined as part of a process used to plan social service programs and includes data collection by the researcher to document unmet needs of the target group (Phris, 1976; Siegel, Attkisson, & Cohn, 1977; Warheit et al., 1977). In recent literature, a needs assessment is broadly defined as "a systematic set of procedures undertaken for the purpose of setting priorities and making decisions about program or organizational improvement and allocation of resources" (Witkin & Altschuld, 1995). No matter which definition is used, these references all indicate that the emphasis is on identified needs. Once these needs are clearly identified, service programs can be developed and evaluated more rationally. In other words, a needs assessment provides informational input in the planning process.

A needs assessment for this study was defined as "a research and planning activity which was designed to assess the necessity to provide nursing home services in an identified community and the kinds of services that are needed." Conducting a needs assessment study to investigate exactly what types of nursing homes are needed and what exactly would be used is well supported by several references (Blum, 1974; Neuber, 1980; Phris, 1976; Siegel et al., 1977; Soriano, 1995; Warheit et al., 1977; Witkin & Altschuld, 1995; Zaura et al., 1983).

Nursing Home

The required equipment and environmental structure for nursing homes in the Taiwan area are regulated in detail by the Regulations of Nursing Facilities passed in August 1994 (Department of Health, the Executive Yuan, 1994). Based
on the Regulations of Nursing Facilities, a nursing home is defined as an institution which offers long-term care for patients who are in one of the following categories: (a) chronically ill patients who have been diagnosed by physicians and require long-term care, and (b) patients who are referred from acute care agencies and require continuing nursing care. Based on the law, to be a legally registered nursing home, or be called a licensed nursing home, the required personnel for nursing homes in the Taiwan area are as follows: (a) at least one nurse per 10 nursing beds, (b) at least one nurse assistant per six nursing home beds, (c) nurses should provide care under the supervision of physicians, (d) at least one social worker, if the total nursing home beds are greater than one hundred, and (e) other optional personnel, such as physician, physical therapist, occupational therapist, and dietitian. In this study, nursing home was defined as "an institution which offers skilled health care twenty-four hours a day, seven days a week and where skilled care is provided by a range of health professionals, such as nurses, physicians, dietitians, social workers, physical therapists, etc."

**Nursing Home Services**

Based on the Regulations of Nursing Facilities, medical service is the only nursing home service which is regulated. According to the law, medical services provided within nursing homes include a first physician visit within 48 hr after admission and regular physician visits at least once a month. For this study, nursing home services were defined as "the services provided within nursing homes for individuals who need such care; such services might include: nursing, medical, dietary, social services, rehabilitation, environmental, recreation,
religious, laundry, hospice, and other types of services." Ideally, it is expected that the services provided within nursing homes conform to or exceed legal regulations and meet the expectation of service consumers.
CHAPTER II

BACKGROUND AND LITERATURE REVIEW

The background and literature review for this study is organized as follows. First, the background of the Taiwan area is described. Second, a discussion about nursing homes in the Taiwan area is presented. Third, the relationship between nursing homes and the long-term care system in the Taiwan area is addressed. Fourth, the impact of social changes on the increasing need of nursing home care is discussed. This is followed by a description of measurement issues related to the need of nursing homes in the Taiwan area. The chapter concludes with a summary of the literature review.

Demography of the Taiwan Area

The Taiwan area is a 36,000-square-kilometer island nation with 21,357,431 people as of December 31, 1995 (Ministry of the Interior, the Executive Yuan, 1996). It consists of the areas under the effective control of the government of the Republic of China in east Asia. These areas include Taiwan Province, the island province of the Republic of China; the Pescadores, a group of islands just to the west of Taiwan; the islands of Quemoy and Matsu, which lie just off the Fukien coast of Mainland China; and the Spratly and Pratas island chains, which lie in the South China Sea to the northwest of the Pescadores. Taiwan
Province is an island of 13,885 square miles, slightly smaller than either Switzerland or the Netherlands or the combined area of three eastern states in the United States: Connecticut, Massachusetts, and Rhode Island. Less than one third of Taiwan Province is arable. The remaining two thirds are mountainous, covered by forests and of little commercial value. However, Taiwan is a place of considerable beauty.

For centuries, Taiwanese cultural values were derived from a long tradition of rural surroundings that emphasized cohesive human relationships in small communities. Hsu (1981) provides a brief summary of the historical background of this small island society. First, Taiwan Province was a frontier island to which migrants from Mainland China brought their cultural heritage, especially folk cultures with little elite influence. Second, because it had been a colony of Japan for 50 years, Taiwanese individuals experienced the early phase of modernization along a course different from that in Mainland China. Third, the rapid pace of economic growth in recent decades pushed the Taiwan area into industrialization and urbanization. The result is an uneasy integration of the old Taiwanese cultural values and the new pattern of life of the modern industrial world.

**Nursing Homes in the Taiwan Area**

Issues related to nursing homes in the Taiwan area are presented in the following four categories (a) the service delivery system, (b) the economic system, (c) the legislative system, and (d) the executive system.
Service Delivery System

Comprehensive and integrative long-term care services are needed as well as acute medical services to meet community demand in the Taiwan area. Nursing homes are one kind of long-term care facility that provides health care services for frail or disabled individuals. Because of the rapid cultural and social changes in the past 20 to 30 years in the Taiwan area, nursing homes may take the place of the traditional family-member caregivers and provide health care to frail or disabled individuals who need long-term care. According to one official estimate, 2.86% of the Taiwanese elderly will live in a long-term health care facility by the year 2020. At that time, the elderly population will comprise 12.95% of the total Taiwanese population (Department of Directorate General of Budget, Accounting, and Statistics, the Executive Yuan, 1990).

There are a large number of nursing homes in the Taiwan area. However, only 11 of them were legally registered as of July 1996 (Long Term Care Professional Association of ROC, 1996). These 11 licensed nursing homes provide 1925 beds to serve the total population of approximately 21 millions. In addition to the inadequate numbers of nursing homes, the geographic distribution of these legally registered nursing homes is problematic. All of these licensed nursing homes are located near acute hospitals in the urban area and do not serve the population equally (Lan & Shiung, 1993). This uneven distribution of nursing homes throughout the country severely limits accessibility to services.
Economic System

Unlike the United States, private payment is the only financial payment for nursing home residents in the Taiwan area (Department of Health, the Executive Yuan, 1996). The private-pay economic system definitely continues to limit the accessibility to nursing home services. To make matters worse, according to Huang (1988), only 22% of the community elderly individuals had pensions or personal savings as their major source of income. The remainder of the elderly participants depended on the income of their families (43.3% from sons, 5.6% from daughters, 3.8% from spouses, 1.8% from grandsons, and 23.5% from other sources of income). In spite of this fact, studies have been done to support an argument that nursing homes would be used, if available (Wu, 1993).

Legislative System

Nursing homes are complex specialized health care institutions that fulfill an important need in society for an increasingly dependent and vulnerable portion of the elderly population. Nursing home care can definitely raise a variety of provocative legal issues. However, there were only 11 nursing homes in the Taiwan area were legally registered and follow the regulations of nursing homes as of July 1996. Interestingly, advertisements for unlicensed nursing homes are commonly found in the Taiwan area. One study conducted by Wu and Chang (1995) has identified at least 125 unlicensed nursing homes in Taipei City, the capital of the Republic of China, and there were only two legally registered nursing homes in the same area. According to Wu and Chang (1995), there are many unlicensed nursing homes in the Taiwan area which cannot be located due to
their short-term existence, small size, or lack of public advertisement. Since the regulation of nursing homes in the Taiwan area is a new phenomenon, owners of nursing homes may be confused about the regulations and what they need to do to operate their nursing homes legally. Furthermore, nursing home residents may have no idea how to protect their rights as consumers.

**Executive System**

Today, long-term care facilities are far behind acute health care institutions in the Taiwan area, not only in quantity, but also in the quality of care provided (Lan & Shiung, 1993). Additionally, the administrative structure of the health organizations in the Taiwan area (portrayed in Figure 2) has indicated the lack of specialized long-term care programs in the Taiwan area. National executive bodies for planning, policy-making, coordinating, and evaluating long-term care programs may be either weak and ineffective in the Taiwan area. Proposals for the development, implementation, and integration of long-term care services need to be incorporate into the existing national health development plans.

The lack of long-term care programs has a serious negative socioeconomic impact. The frail elderly and the disabled with chronic diseases are admitted to acute-care hospitals instead of long-term care facilities, even though these individuals may not require the high-cost equipment, technologies, and services provided within an acute-care setting. This observation is supported by the results of a survey study conducted by Wei, Yang, & Wu (1993), which evaluated the utilization and possible barriers to health care services in South Taiwan. Inappropriate health resource utilization causes increased medical costs, wasted
Figure 2. Administrative Structure of Health Organizations in the Taiwan Area, 1996. 
hospital medical equipment and technologies, and low bed availability for patients with acute illnesses. Citizens may have little or no choice in deciding what kind of institutional care they actually receive, because of the lack of comprehensive long-term care programs in the Taiwan area. The availability of reliable and valid instruments to determine needed and desired services will contribute to the development of a more comprehensive health service system.

**Long-Term Care vs. Nursing Homes**

Long-term care encompasses a spectrum of health programs and services outside the acute hospital, ranging from home-based to community-based to institutional care. According to Levenson (1988), there are four components along the continuum of the long-term care system, including home-based services, community-based services, institutional services, and hybrid services. In-home services include home health services, meals on wheels, homemaker assistance, and supervised living. Community-based services include information and referral, senior centers, day care, day hospitals, mental health services, and rehabilitation. Institutional services include geriatric specialty hospitals, in-patient rehabilitation, respite care, and skilled and intermediate nursing care. Hybrid services include life care, domiciliary care, hospice, case management, and assessment. Which of these is the appropriate setting for care may depend on a variety of factors, such as the condition of the patient, the availability of home support for the patient, and the availability of and services provided by health care facilities in the community.
In the Taiwan area, long-term care is dominated by institutional care, but it also includes home health care and adult day care. The classic notion of institutional care is the nursing home. This type of facility takes sicker and more dysfunctional patients, because acute hospitals must discharge a growing number of those not fully recovered. They must also provide care to others who can no longer function in the community. Home health and day care programs will have much greater likelihood of success if the individuals who can benefit from these types of care have a support system of family, relatives, and friends on whom they can depend.

The above discussion indicates that contemporary Taiwanese society has a shortage of quality nursing homes, a shortage which will become more acute as the number of elderly individuals who need long-term care grows. Based on Hurng's study of a hospital-oriented long-term care system (1987), the quality of health care provided within unlicensed nursing homes varies and is usually quite low. Hurng suggests the reason for this low quality of health care is the severe limitations in how long-term care facilities cooperate with other health care organizations. Lee, Wang, and Jung (1990) directly evaluated the quality of 20 unlicensed nursing homes in Taipei suburban areas and found that 80% of the facilities delivered low-quality care. They were not qualified as facilities to which acute care hospitals may transfer their patients.

Taiwanese society has changed rapidly in the past 20 to 30 years. A review of the literature indicates that nursing home services are needed in Taiwanese society. For instance, Hon (1993) conducted a community needs assessment survey concerning geriatric health care. Based on the data generated from 878
randomly selected subjects in Hon's study, 7.2% of the study subjects said they thought it was very necessary to have nursing home services provided for their community; 40.9% of the subjects thought it was necessary to provide these services; 27% were undecided; and only 24.9% of the subjects thought nursing home services were not necessary. The major reason most of this 24.9% of respondents stated that it was not necessary to access nursing home services was because they thought their family members would provide health care for them if and when it was necessary. Hon generalized the study findings to the population, concluding that nursing home services were definitely needed in Taiwanese society.

A related study was conducted by Wu (1993) to evaluate the needs of the elderly for institutional care. Wu interviewed a randomly selected sample of 599 individuals (n= 548, aged less than 65; n= 51, aged 65 or older) from five cities and towns in the south of Taiwan Province by telephone. Wu found that 43.1% of the subjects were willing to live in a nursing home because they do not want to become a burden to their family. In a study on families with bed-ridden patients, Jung et al. (1990) found that 41.4% of the primary caregivers would like to send their bed-ridden family member to a long-term care institution (N=41). Chiou and Wang (1987) used the self-care score obtained from 567 elderly participants in face-to-face interviews to estimate the types of health care services needed. They found that 3.7% of the elderly participants needed skilled nursing care. Findings from other literature also support the need to provide nursing home services in the Taiwan area (Hurng, 1987; Lan & Shiung, 1993; Lee et al., 1990).
Impacts of Social Changes on the
Needs of Nursing Home Care

Nursing home services are needed in today's Taiwanese society mainly because of changes in Taiwanese family life, an increasing elderly population, changes in illness patterns, and lengthening life expectancy (Lee, 1981; Lin, 1991; Yang, 1988).

Changes in Family Life

For the past 20 to 30 years, the major changes in family life which have occurred in the Taiwan area include decreasing family size, declining family cohesion, changes in relationship between husbands and wives, and changes in family caregiver roles (Lee, 1981; Lin, 1991). It is more and more common that a two-generation or core family lives in an urban area while their elderly family members reside in the rural area. Because of industrialization and urbanization, the traditional concept of a family living together is no longer valued by youth or even the elderly (Wu, 1993).

Additionally, the relationship between husbands and wives has changed from one of inequality to equality. In the traditional Chinese family, men worked outside the home while women took care of in-house things. Now, however, more and more women must work to financially support the family. For example, 17.4% (n=452,400) of the total employed population was female in 1956 (Lin, 1991). This percentage increased to 36.8% (n=3,389,280) of the total employed population in 1986. Increasing employment affects a woman's ability to be a family caregiver, and therefore diminishes the availability of women to take care
of disabled family members. Traditionally, Taiwanese family members provided care for their frail elderly and disabled family members. This was a cultural expectation. However, the traditional family role as primary caregiver is difficult to maintain in contemporary Taiwanese society. It is especially difficult when the young and aged family members do not live together or the younger or female family members work outside of the home.

Changes in Elderly Population

The average number of elderly and their percentage of the total population of Taiwan from 1972 to 1995 is shown in Table 1. Taiwanese elderly, defined as

Table 1

The Number and Percentage of the Elderly Population in the Taiwan Area From 1972 to 1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Elderly Population</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>467,000</td>
<td>3.1</td>
</tr>
<tr>
<td>1977</td>
<td>621,000</td>
<td>3.7</td>
</tr>
<tr>
<td>1982</td>
<td>819,000</td>
<td>4.5</td>
</tr>
<tr>
<td>1985</td>
<td>947,000</td>
<td>5.0</td>
</tr>
<tr>
<td>1992</td>
<td>1,428,000</td>
<td>6.8</td>
</tr>
<tr>
<td>1995</td>
<td>1,623,000</td>
<td>7.6</td>
</tr>
</tbody>
</table>

those 65 years of age or above, comprised 3.1% of the total population in 1972; the percentage increased to 7.6% in 1995. This more than twofold percentage increase in the number of elderly individuals may be the result of a decreasing birth rate and lengthening life expectancy.

Based on the cohort subscale method used by Huang in his study (1992), the population projection demonstrates that elderly individuals will comprise 10% (n=2,420,000) of the total Taiwanese population by the year 2009. This percentage is estimated to increase to over 20% (n=5,320,000) by the year 2034. The results of Huang's study also show that the number of frail elderly will keep rapidly increasing even with advances in medical care and an improved standard of living.

According to a nationwide survey of the elderly in the Taiwan area, the population of "no-self-care-ability elders" was 55,000 in 1989 (Department of Directorate General of Budget, Accounting, and Statistics, the Executive Yuan, 1990). The term "no-self-care-ability elder" is defined as an individual who is 65 years old or above and has at least one functional disability related to activities of daily living, such as eating, dressing, bathing, using the toilet, moving on the bed, standing up from a chair, and continence. Each one of these elders had at least one chronic disease. For example, 35.5% of these elders had suffered a cerebrovascular accident; 19.4% had heart disease(s); and 14.5% were diagnosed with Alzheimer's disease. Additionally, the results of the governmental geriatric health study shows that most of the no-self-care-ability elderly (88.25%) live with family and receive nonprofessional health care from those family members. Only 11.75% (n=6,463) of these elderly have ever received institutional care, including
living in hospitals (9.08%), skilled nursing facilities (1.91%), or intermediate health care facilities (0.76%). According to Huang’s study (1992), the no-self-care-ability elders will comprise 34% (n=180,000) to 77% (n=410,000) of the total elderly population of the year 2034. These elderly will not be able to live independently and will require some level of health care from others. Based on these data, one can postulate that the needs for long-term care are getting more and more urgent in Taiwanese society, especially for aged individuals with limited self-care ability.

**Changes in Illness Patterns**

The causes of death in the Taiwan area have also changed. A comparison of the leading causes of death between 1952 and 1995 is shown in Table 2. In 1952, the majority of the 10 leading causes of death were various infectious diseases; in 1995, most of the leading causes of death were chronic diseases. Reasons given for the change in illness patterns are generally attributed to changes in life style and the increase in numbers of elderly.

**Changes in Life Expectancy**

In addition to the increasing number of elderly, another significant change occurring in the Taiwan area is the lengthening of life expectancy. The rapidly lengthening life expectancy from 1921 to 1995 is shown in Table 3. From 1921-1928, the life expectancy was 37.44 years for males and 41.96 years for females. In 1950, life expectancy increased to 52.90 years for males and 56.30 years for
Table 2

Ten Leading Causes of Death in the Taiwan Area in 1952 and in 1995

<table>
<thead>
<tr>
<th>Causes of death</th>
<th>Deaths (1/100,000)</th>
<th>Causes of death</th>
<th>Deaths (1/100,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastroenteritis</td>
<td>135.01</td>
<td>Malignant neoplasm</td>
<td>107.01</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>131.47</td>
<td>Cerebrovascular diseases</td>
<td>65.11</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>91.56</td>
<td>Accidents</td>
<td>64.58</td>
</tr>
<tr>
<td>Cardiac diseases</td>
<td>49.03</td>
<td>Cardiac diseases</td>
<td>59.90</td>
</tr>
<tr>
<td>Death of the postpartum</td>
<td>48.78</td>
<td>Diabetes mellitus</td>
<td>26.73</td>
</tr>
<tr>
<td>Cerebrovascular Diseases</td>
<td>44.06</td>
<td>Chronic liver diseases and liver cirrhosis</td>
<td>18.32</td>
</tr>
<tr>
<td>Nephritis</td>
<td>36.31</td>
<td>Nephritis and nephritis</td>
<td>14.83</td>
</tr>
<tr>
<td>Malignant Neoplasm</td>
<td>30.74</td>
<td>Pneumonia</td>
<td>13.00</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>28.13</td>
<td>Hypertensive diseases</td>
<td>10.95</td>
</tr>
<tr>
<td>Malaria</td>
<td>27.45</td>
<td>Bronchitis and emphysema</td>
<td>8.70</td>
</tr>
</tbody>
</table>

Table 3

Changes of Life Expectancy in the Taiwan Area From 1921 to 1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Male (in Years)</th>
<th>Female (in Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1921-28</td>
<td>37.44</td>
<td>41.96</td>
</tr>
<tr>
<td>1936-40</td>
<td>41.08</td>
<td>45.73</td>
</tr>
<tr>
<td>1950</td>
<td>52.90</td>
<td>56.30</td>
</tr>
<tr>
<td>1960</td>
<td>61.80</td>
<td>67.10</td>
</tr>
<tr>
<td>1970</td>
<td>66.10</td>
<td>71.20</td>
</tr>
<tr>
<td>1980</td>
<td>69.60</td>
<td>74.50</td>
</tr>
<tr>
<td>1990</td>
<td>71.33</td>
<td>76.75</td>
</tr>
<tr>
<td>1995</td>
<td>71.80</td>
<td>77.72</td>
</tr>
</tbody>
</table>


females. In 1995, life expectancy was 71.80 years for males and 77.72 years for females (Ministry of Interior, the Executive Yuan, 1996). Over the past 40 years, life expectancy has been lengthened about 20 years for both males and females in the Taiwan area, largely as a result of medical, technological, and socioeconomic improvement. People in the Taiwan area are living longer, and that alone suggests that more health care services are needed to serve the steadily increasing elderly population.

Measurement Issues

There are two measurement issues related to this psychometric study. They are addressed as follows. First, the instruments for the previous relevant studies will be reviewed. Second, the reasons for evaluating, revising, and modifying the
existing community needs assessment instruments, the CIIT and HCPIT, will be discussed.

**Review of the Previous Instruments**

Several survey studies have been done which identify the fact that nursing home services are needed in Taiwanese society (Chiou & Wang, 1987; Hon, 1993; Jung et al., 1990; Wu, 1993). A summary of the previous studies which identify the needs of nursing home services is presented in Table 4. The goal of this summary table was to help identify the direction of this study. It was found that none of the studies in Table 4 has defined the concept being measured (i.e., needs of nursing homes) or the dimension of the concept being measured (i.e., service needs, service utilization patterns, residential preference).

Most reviewed studies have simply stated that a structured interview guide was used to collect data. Only Chiou and Wang (1987) clearly described the instrument used, a modified self-care assessment tool which was developed by Rameijil (1983). The modified 20-item self-care assessment tool has five subscales, including communication, daily living, excretion, mobility, and psychosocial functioning. The higher the self-care score, the higher the dependency levels of the subject (self-care scores [SCS] ranged from 20 to 100). Chiou and Wang (1987) used the self-care scores obtained to estimate the services that would be needed by the elderly. These researchers suggested that for totally independent elderly individuals (SCS = 20), disease prevention and health promotion services were needed. For low-level, partially dependent individuals
### Table 4

**A Summary of Studies Which Identify Nursing Home Services Are Needed in the Taiwan Area**

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Sample (size)</th>
<th>Site (City/County)</th>
<th>Method (Number of interviewers) (Response rates)</th>
<th>Measures (Reliability and Validity)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiou et al.</td>
<td>Elderly individual (N=567)</td>
<td>Southern area of Taiwan Province (Kaohsiung, Pindung)</td>
<td>Face-to-face interview (2) (79.5%)</td>
<td>Self-care scores* (intrarater reliability: 91%)</td>
<td>3.7% of the sample needed nursing home services.</td>
</tr>
<tr>
<td>(1987)</td>
<td>Elderly individual (n=831) Family caregiver (n=47)</td>
<td>Central area of Taiwan Province (Fenguan)</td>
<td>Face-to-face interview (5) (82.7%)</td>
<td>Structured interview guide (expert validity)</td>
<td>Need or don't need nursing home services: very needed (7.2%), needed (40.9%), no opinion (27.0%), not needed (24.9%)</td>
</tr>
<tr>
<td>Jung et al.</td>
<td>Family caregiver (N=41)</td>
<td>Northern area of Taiwan Province (Taipei)</td>
<td>Face-to-face interview (2) (unknown)</td>
<td>Structured interview guide (no reliability or validity reported)</td>
<td>Would like to send patient to institutional care: Strongly agree (2.4%), Agree (39.0%), Disagree (34.2%), Strongly disagree (24.4%)</td>
</tr>
</tbody>
</table>
| (1990)        | Elderly individual (n=51) Adult individual (n=548)| Southern area of Taiwan Province (Kaohsiung, Tainan, Pindung) | Telephone interview (unknown) (unknown)          | Structured interview guide (no reliability or validity reported) | 43.1% of the sample would like to live in a nursing home | **The self-care scores were obtained by a self-care assessment tool modified from Rameijl, P. (1983). CADET, a self-assessment tool. *Geriatric Nursing, 4, 377-378.**

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(SCS range from 21 to 40), consultation services were needed. For mid-level, partially dependent individuals (SCS range from 41 to 60), home health care, adult day care, and intermediate nursing care were needed. For high-level, partially dependent individuals (SCS range from 61 to 80), skilled nursing care was needed. For totally dependent elderly individuals (SCS range from 81 to 100), acute care hospitals and hospice care were needed. It was apparent that Chiou and Wang (1987) had used an individual's self-care ability as a predictor of the types of services needed. Although the Chiou and Wang's approach helps to clarify needs across the continuum of self-care, it does little to evaluate the perception of need and type of services perceived as desirable.

Reasons for Evaluating the PET

Based on a critical review of these studies, I recognized that research is needed to evaluate, revise, and modify the existing community needs assessment instruments, the CIIT and the HCPIT, for the following reasons. First, previous studies have identified that nursing home services are needed in the Taiwan area, but none of these studies nor any research instruments have been designed to investigate exactly what kind of nursing home service is needed and what would actually be used. Second, information came primarily from the elderly or their caregivers, there were no reports on data collected from key community informants. A combination of key community informant and general community individual approaches is recommended by Neuber (1980) for performing a community needs assessment. Third, the reviewed articles do not make clear exactly how the needs of nursing home services were measured, i.e., the total
number of items, the structure of the tools, the format being used, and the scale being used. Fourth, the psychometric properties of any instruments used in these studies have not been established (see Table 4). Three of the reviewed studies involved more than one interviewer; however, only one study reported the interrater reliability (Chiou & Wang, 1987). Additionally, only one study had expert validation of the survey tool (Hon, 1993). There was no mention of any other type of reliability and validity evaluation among the reviewed articles.

**Summary of the Literature Review**

In summary, the significance of this dissertation research has been well supported by the literature. In addition to the increasing population and life-span, changes in illness patterns and family life make long-term health care problems serious in the Taiwan area. Traditional Chinese still cling to the value that it is the responsibility of family members to take care of their ill family members. However, because of urbanization and changing life styles, family members find themselves on the horns of a dilemma when they are faced with having to send a family member to a nursing home or a long-term care facility. Unfortunately, the nursing homes in the Taiwan area are insufficient in number, of generally low quality, require private payment, and receive lower priority for government regulation. After a review of relevant studies, I recognized that no measurement tool was found to be acceptable to measure the specific perceptions of need for nursing home services in community settings to obtain information for providing the services. Thus, research is needed to evaluate, revise, and modify the existing community needs assessment instruments, the CIIT and the HCPIT.
CHAPTER III

METHODOLOGY

Research Design

Based on the purpose of a psychometric investigation, the research design for this study was a psychometric evaluation study with cross-sectional and longitudinal sampling techniques using a mailed questionnaire approach. Results from the survey were used to assess reliability and validity of the PET which assessed the perceptions of need for nursing homes in the Taiwan area. It is not feasible to use face-to-face interviews to collect data for this survey, because of the large sample size required to answer the research questions, a limited budget, and the large geographical area being covered for this survey study. Another serious difficulty in using a face-to-face interview for this study was language limitation. In the survey towns, there are quite a few native Taiwanese speakers, and I am limited in such language.

A mailed questionnaire has the following major advantages which support the use of this mode of administration (de Vaus, 1990; Dillman, 1978; Seaman, 1987; Warheit et al., 1977; Witkin & Altschuld, 1995). First, a mailed questionnaire is usually easy to administer. A survey which depends on the mail usually can be completed with less cost and time than one which depends on the use of personal interviews. A mailed questionnaire usually requires fewer skills
and less cost to administer. Second, it ensures respondents' anonymity, thereby eliciting more frank answers. The respondents have an increased sense of privacy which permits them to make more thoughtful responses to the questions asked. Third, the use of a mailed questionnaire may provide greater accessibility to the population. With a mailed questionnaire it is possible to cover a wider geographical area and to reach a larger number of people. Fourth, individuals who are difficult to contact personally may be reached more easily through the use of a mailed questionnaire. Fifth, there is a certain possibility of personal danger associated with having interviewers working in face-to-face situations, especially in areas with high crime rates. The researcher should not be placed in situations where the possibility of personal danger exists. Another advantage of using a mailed questionnaire for this study is particularly to enhance the utilization of the PET in order to provide a measurement choice to the policy makers who plan or develop long-term health care programs and the individuals who are marketing nursing home services in the Taiwan area.

The most crucial disadvantage of mailed questionnaires is the number of persons in the general population who are not capable of responding to the questionnaire. If the subjects are illiterate or too ill to answer a questionnaire, another member within their household may complete the survey. A second main disadvantage of mailed questionnaires is the low response rates. Low sample size as a result of poor response rates can seriously affect the validity and reliability of the results. Although the response rate for mailed questionnaires tends to be lower than that of face-to-face interviews, the following strategies recommended by the literature were used in the study to maximize the response rate, including use of a
brief telephone contact prior to mailing, a pilot study, the most current telephone directories as the sampling frame, an appropriate cover letter, a telephone follow-up, and a follow-up mailing (Brink & Wood, 1994; Dillman, 1978; Siemiatycki, 1979; Wilson, 1989; Witkin & Altschuld, 1995). Additionally, strategies as recommended by Dillman (1978) and Fowler, Jr. (1984), which make the mailed questionnaires look more professional, more personalized, and more attractive, were used to improve response rates. A third disadvantage of mailed questionnaires is the lack of opportunities to probe certain responses in more depth or to clarify responses. It is known that a mailed questionnaire is usually less effective in getting at people's complex feelings. However, a mailed questionnaire was considered appropriate for this study because a limited amount of information was desired and the survey questions were not complex. In a mailed questionnaire, it is difficult to know whether a subject misunderstood the question unless the response is quite bizarre. To reduce this disadvantage, the kinds of questions which could be asked, the content of the items, and the format of the questionnaire were carefully examined. In addition to the suggestions from the literature (Converse & Presser, 1986; de Vaus, 1990; DeVellis, 1991; Dillman, 1978; Fink & Kosecoff, 1985; Fowler, Jr., 1984), Dr. Paula Meek, one of the dissertation supervisory committee members, was consulted to refine the format and the structure of the PET. Additionally, the items within the tool were arranged in an orderly sequence. According to Warheit et al. (1997), the systematic ordering of questions in terms of sequence, logic, and place can help reduce refusal rates and incomplete answers and increase the accuracy of the information received. Efforts were also made to make the questionnaire easy to complete.
Measures

The purpose of this study was to evaluate the psychometric properties of the PET, a measuring tool designed to assess the perception of need for nursing homes and services. Thus, the structure and development of the PET will be discussed in detail as follows.

Structure of the PET

The revised CIIT and the HCPIT, now called PET were used to collect information from general public and key community informants in each community. The overall structure of the initial PET is illustrated in Figure 3 and a copy of the questionnaire is in Appendix A. The PET was developed to assess the factors associated with nursing homes and to evaluate the perceptions of need for nursing home services in the survey communities. The initial PET consisted of 71 closed-ended items and was restructured into two sections. The first section of the PET is "Factors Associated With Nursing Homes," called Section 1: Factors, and the second section of the PET is "Perception of Nursing Home Services," called Section 2: Perception. There are three hypothesized subscales within each section. This study evaluated the reliability and validity of both sections of the tool. Three other Taiwanese individuals who were fluent in both English and Chinese and I translated the initial Chinese PET into English (Appendix B). The English PET was generated after a comparison between the four English translations.

The items in Section 1: Factors were developed based on previous studies conducted in the Taiwan area. There were three hypothesized subscales within the
### SECTION I - FACTORS ASSOCIATED WITH NURSING HOMES (44 ITEMS)

- **Awareness (10 items):**
  1. nursing services, 2. medical services, 3. dietary services, 4. social work services, 5. rehabilitation services, 6. environmental services, 7. recreational services, 8. religious services, 9. laundry services, 10. hospice services

- **Personal experiences (10 items):**
  1. nursing services, 2. medical services, 3. dietary services, 4. social work services, 5. rehabilitation services, 6. environmental services, 7. recreational services, 8. religious services, 9. laundry services, 10. hospice services

- **Risk factors (24 items):**
  1. Migrant from Mainland China, 2. living alone, 3. aged above 65, 4. stroke, 5. spinal injury, 6. heart disease, 7. diabetes mellitus, 8. hypertension, 9. mental disorder, 10. cognitively impaired, 11. Alzheimer's disease, 12. can't eat, 13. can't bath, 14. can't walk, 15. can't dress, 16. can't move from the bed, 17. can't sit on a chair, 18. urinary or fecal incontinence, 19. male, 20. widowed, 21. poor physical health, 22. poor mental health, 23. poor family relationship, 24. poor family enjoyment

### SECTION II - PERCEPTION OF NURSING HOME SERVICES (27 ITEMS)

- **Service needs (11 items):**
  1. nursing services, 2. medical services, 3. dietary services, 4. social work services, 5. rehabilitation services, 6. environmental services, 7. recreational services, 8. religious services, 9. laundry services, 10. hospice services, 11. overall services

- **Utilization patterns (11 items):**
  1. lives in nursing homes now, 2. will live in nursing homes within one year, 3. willing to live in nursing homes, 4. willing to place families into nursing homes, 5. willing to live in nursing homes even if family care is available, 6. willing to place families to nursing homes even if family care is available, 7. enough number of nursing homes, 8. needs to increase the number of nursing homes, 9. know where to find a nursing home, 10. concerns about licensing, 11. ability to pay the service bills

- **Residential preference (5 items):**
  1. live alone VS live in a nursing home, 2. live with family VS live in a nursing home, 3. live with relative VS live in a nursing home, 4. live with friends VS live in a nursing home, 5. live in a hospital VS live in a nursing home

---

**Figure 3.** Structure of the Initial Perception Evaluation Tool
first section of the PET, called “Awareness,” “Personal Experience,” and “Risk Factors” (see Figure 3). These items were designed to elicit information about awareness of nursing home services, experience of nursing home services, and the risk factors for nursing home entry.

For the items within the Awareness subscale of the first section of the PET, the respondents were asked to indicate whether they were aware of the 10 listed nursing home services. For example, the respondents were asked whether they were aware of recreational service which were provided within a nursing home by circling an applicable response (1=no, 2=yes, 0=don’t know or no opinion). “Awareness Scores” were generated by summing up the positive responses (yes) of the items which measure the awareness levels of nursing home services. Awareness Scores are used to indicate the number of nursing home services that the participants are aware of and range from 0 to 10.

For the Personal Experience subscale of the first section of the PET, the respondents were asked whether they or their family members have experienced any of the 10 listed nursing home services using the same scale (1=no, 2=yes, 0=don’t now or no opinion). The “Personal Experience Score” was generated by summing up the positive responses (yes) of the items which measured the participants’ personal experience of nursing home services. “Personal Experience Scores” indicate the number of nursing home services that the participants have ever used for themselves or their family members and range from 0 to 10.

For the Risk Factors subscale of the first section of the PET, the participants were asked to indicate whether or not they had the listed risk factors for nursing
home entry. For example, they were asked about their fathers’ birth places to indicate whether or not they were considered as a migrant from Mainland China, an identified risk factor for nursing home entry. All of the data collected from the items related to the risk factors of nursing home entry were dummy coded in order to generate a similar coding protocol for the items within the first section of the PET (1=have at least one risk factor; 0=no risk factor). After appropriate coding, the sum of the number of risk factors coded as “1” were then generated as “Risk Factor Scores,” which indicated the number of risk factors for nursing home entry the participants had and ranged from 0 to 24. The risk factors for nursing home entry of the respondents were identified based on relevant studies conducted in the Taiwan area and include migration from Mainland China, living alone, aged 65 or above, male, widowed, cognitive impairment, dysfunction related to activities of daily living, having certain types of chronic diseases, and reduced contact with family members (Lee et al., 1990; Lin, 1987; Lin, Chen, Lee, & Lin, 1984; Shiu, Shiung, Dai, Chen, & Huang, 1993; Wu, 1991). Those identified risk factors, except male, widowed, and migration from mainland China, are similar to the factors identified in the United States (Branch & Jette, 1982; Freedman, Berkman, Rapp, & Ostfeld, 1994; Palmore, 1976; Steinbech, 1992; U.S. Department of Health and Human Services, 1989, 1990, 1991; Weinberger et al., 1986; Wolinsky, Callahan, Fitzgerald, & Johnson, 1992).

On the other hand, to revise the items in the second section of the PET, needs of nursing homes were defined first, and then a series of questions were designed to elicit information about which services individuals needed for nursing
home living, utilization patterns of nursing homes, and preference for different residential options. There are three hypothesized subscales which consist of 27 items within the second section of the PET, including (a) Service Needs, (b) Utilization Patterns, and (c) Residential Preference. It was hypothesized that the needs for nursing homes were influenced by utilization patterns and residential preference. Additionally, if a great need for providing nursing home services within the survey community was identified, the results from the subscale of Service Needs would become recommendations for services within newly constructed or preexisting nursing homes. The results from the subscales of Utilization Patterns and Residential Preference would indicate the potential and willingness to use nursing home services.

The first hypothesized subscale of the second section in the PET was called "Service Needs." "Service Needs" referred to the need to provide 10 listed nursing home services in the survey community, including nursing, medical, dietary, social work, rehabilitation, environmental, recreation, religious, laundry, and hospice services. For example, the participants were asked to indicate their opinion about whether nursing homes should provide recreational service (1 = no; 2 = probably no; 3 = probably yes; 4 = yes; 0 = don't know or no opinion). Eleven close-ended items were included in the "Service Needs" subscale of the PET (see Figure 3 for detail).

The second hypothesized subscale of the second section in the PET is called "Utilization Patterns," which asks how nursing home services were utilized and how they will be utilized in the future. To measure utilization patterns, the
following items were included: potential for use of nursing home services, the number of nursing homes needed, accessibility to nursing homes, concerns about legal registration, and ability to pay the nursing home fees. A detailed description for each item in this subscale was addressed in Figure 3. For example, the participants were asked to indicate whether they thought their towns had enough nursing homes by circling one response (1 = no; 2 = probably no; 3 = probably yes; 4 = yes; 0 = don’t know or no opinion). Eleven close-ended items were included in the subscale of "Utilization Patterns."

The third hypothesized subscale of the second section in the PET was called "Residential Preference." The participants were asked to rate their preference for different types of residential options if they could no longer take care of themselves independently. Items in this subscale of the PET are answered on a 5-point scale. For example, the participants were asked to indicate their preference on living alone versus living in a nursing home (1 = strongly prefer live alone, 2 = mildly prefer live alone, 3 = no preference, 4 = mildly prefer live in a nursing home, 5 = strongly prefer live in a nursing home). Five close-ended items were included within this subscale.

Development of the PET

Based on the Community-Oriented Needs Assessment Model developed by Neuber (1980), the original CIIT and the HCPIT were developed by Chen (1995) to assess the need for nursing homes in Taiwanese communities. There are 27 items within the CIIT and 17 within the HCPIT which are related to the services and the number of nursing homes needed. The CIIT was designed to collect data
from community individuals who are 65 years of age or older using 5-point Likert-type scale. The HCPIT was designed to collect data from health service providers, such as owners of nursing homes, public health nurses, clinical nurses serving the elderly, directors of local health departments, geriatric professionals, or researchers who have expertise in nursing homes. In the HCPIT, questions are both open- and closed-ended. No subscales were proposed for the original tools. Both the CIIT and the HCPIT were developed to be used in face-to-face interviews. Face and content validation of the CIIT and the HCPIT was established in a prior study (Chen, 1995).

To be consistent with the present study purpose and design, the CIIT and HCPIT were revised based on the principles of instrument development indicated by Converse and Presser (1986), de Vaus (1990), DeVellis (1991), Dillman (1978), Fink and Kosecoff (1985), and Nunnally and Bernstein (1994). The CIIT and the HCPIT were also combined by the author to merge the data collected from various sources. Combination and modification of the original CIIT and the HCPIT resulted in a community needs assessment tool for nursing homes in the Taiwan area, called the PET. The PET was designed to report the perceptions of need for nursing home services within an identified community and is to be completed by individuals from the general public, professional health care providers, political leaders, social leaders, or other community informants who are familiar with the issue of long-term care or nursing homes. The PET was initially developed in English. It was then translated from English to Chinese by me and only the Chinese translation was evaluated in terms of reliability and validity, since the PET was designed to be used with a Chinese-speaking population.
After translating the English PET into Chinese, face validation was conducted. Face validity was defined as validity conferred by the lay person's acceptance that a procedure, statement, or instrument appears to be sound or relevant (Dilorio, Faherty, & Manteuffel, 1992; Waltz & Bausell, 1981). The purpose of conducting face validation of the PET was to ensure that the tools were clear, readable, and meaningful to the participants. The PET was viewed by 14 Taiwanese individuals to check the items for clarity and readability, including three elderly individuals, two housewives, two sixth-grade graduates, two college students, three graduate students, one nurse practitioner, and one hospital nurse. The face validation was initially obtained and helped to assess clarity of items, instructions and format.

After face validation, content validation was conducted. Content validity refers to an estimation of the adequacy with which a specific domain of content is sampled (Mishel, 1990). Lynn (1986) attempted to quantify the content validity process by determining the number of experts needed to evaluate the items and the proportion who must agree in order for content validity to be established. The use of at least five experts is recommended by Waltz et al. (1984) and Lynn (1986), a minimum of three experts is acceptable in order to obtain statistically justifiable results. Thus, five Taiwanese expert in nursing homes or in the conduct of community needs assessment were invited to review the PET. Based on suggestions made by the experts the tool was refined and all items were positively phrased. After revisions were made, the PET was reviewed by another five community individuals residing in the survey towns, including one 6th-grade graduate, one 9th-grade graduate, one 12th-grade graduate, one college graduate,
and one hospital nurse. Based on the responses from those five community individuals, no changes were made.

After face validity and content validity of the initial PET were established, a pilot study was conducted in the environment in which the survey was to take place. The purposes of conducting the pilot study were to (a) identify potential problems in the data collection procedure; (b) examine the differences between the survey towns with regard to administering the questionnaires, if any; (c) examine trends within each subscale of the survey tool; and (d) determine the final scale items. Based on these purposes, one community individual and one key informant from each survey town were surveyed for the pilot study. Twenty questionnaires were sent out for the pilot study on September 1996. Two follow-up mailings were conducted to enhance the return of survey questionnaire. However, it was found the second mailing follow-up had little to no effect. As recommended by the community individuals and local survey researchers, a telephone follow-up was added to the methodology procedure and had significant effects on boosting the survey response rate. The response rate for the pilot study was 75%. Another finding from the pilot study was the difficulty in collecting demographic data on those who declined to participate. Based on this initial pilot, modifications in the methodology procedures included adding the telephone follow-up, deleting the second follow-up mailing, and deleting the data collection procedure for the refusals. No changes were made in the PET based on the response from the pilot study. No trends within subscales of the PET could be identified during the pilot study, nor were there any differences among the survey towns with regard to administering the PET. Therefore, the face validation, expert validation, and the
pilot study were not repeated. After the instrument pretesting, the initial PET was used to conduct the community needs assessment for nursing homes in the identified towns and results from the survey were used to evaluate the psychometric properties of the PET.

To meet the goal of "quick completion of the scale," all of the questions within the PET were closed-ended questions with ordered response choices. Another goal of using close-ended items was to combine answers to form a multiple-item subscale. Thus, the questions in the proposed subscales would use similar response choices. The response to these questions allowed me to assess whether the differences between communities were large or small, information that would be particularly helpful in deciding where to construct a new nursing home. There are four advantages to fixed alternative questions (Dillman, 1978; Warheit, et al., 1977). First, the closed-ended questions are actually less demanding than questions of any other type. Second, they are simple and easy to administer. Third, they can be easily scored, coded, and analyzed, thereby consuming less time and expense. Fourth, they are easily standardized and can be made uniform for all respondents. Two disadvantages of fixed alternative questions are (a) the respondents may feel forced to make a choice where they may actually have no knowledge or opinion (to avoid this disadvantage, "don't know" or "no opinion" was used as one of the response alternatives) and (b) all respondents are limited to the same response choices, which may place artificial limits on the range of answers the researcher receives (Dillman, 1978). To limit the second disadvantage, some open-ended questions were added to the PET to allow
participants to express suggestions, opinions, thoughts, feeling, and comments they might develop during the survey and which were not covered in the questionnaire.

Unlike closed-ended questions, the open-ended questions were designed to encourage a respondent to express freely his or her feelings, beliefs, or perspectives regarding the issues of interest. It was believed that open-ended questions should be included in this type of community needs assessment study, because the issue of nursing home need was complex and the relevant dimensions were unknown. However, the use of open-ended questions for the community individual informants might not be appropriate, because of the lack of recognition and understanding of what a nursing home was and the services provided within it (Hon, 1993). Thus, for this dissertation research, 11 open-ended questions related to the service needs were added to the PET to elicit in-depth response from the designed key community persons only. For example, when the key community informants answered the 11 items within the subscale of Service Needs, they not only indicated their needs to have nursing home services by checking applicable responses on the 4-point scale but also explained the rationale for their responses using a open-ended format. The general community individuals responded to the service needs questions using the 4-point scale and were not asked to provide a rationale. The data collected from the open-ended questions were not analyzed for the current study, based on the purpose of this psychometric study.

Ten items were also used in the study to collect basic demographic data for statistical analysis purpose. They were age, birth place, years of residency in Hsinchu County, religious preference, education level, annual household income,
adequacy of the annual income, sources of first hearing about nursing homes, working in a nursing home, and willing to participate a 2-week follow up survey.

Because some Taiwanese individuals may not know what a nursing home is or may have some misconceptions about its services, the definition of a nursing home and a description of its services were also provided at the beginning of the questionnaire. This approach is based on the experience of Hon (1993), who assessed the knowledge of the elderly about long-term care services, focusing on nursing home services. According to Hon, only 7.6% of the elderly subjects (N = 831) had a real understanding of what a nursing home was and what services were provided within nursing homes. Most subjects in Hon's study (80.9%) indicated that they did not know what a nursing home was or the services provided, and 11.6% had misconceptions of a nursing home (N = 878).

**Setting**

For geographical and sampling convenience, 10 towns in Hsinchu County, Taiwan Province, Republic of China, were included in the study. Each was considered as a community for this survey. These 10 towns were selected based on the following inclusion criteria (a) they were located in Hsinchu County and (b) they had to have a population of at least 10,000. Three out of 13 towns in Hsinchu County, which had a population of less than 10,000, were dropped from the study because they would yield an expected sample size of less than 10. A sample of less than 10 from a community might be problematic when the surveyor wanted to generalize the results from these few people back to the whole community. The selected towns are located in the northwest of Taiwan Province. Detailed
demographic information on each town as of December 31, 1995, is shown in Table 5.

Based on Taiwanese designation, three of the selected communities are suburban and the remainder of the towns are rural. The total population for these towns was 388,293. The population of the survey towns ranged from 81,552 to 10,778. The average population density for the survey towns was 621 persons per

Table 5

Demographic Data of the Survey Towns

<table>
<thead>
<tr>
<th></th>
<th>Total Population</th>
<th>Total Area (sq.Km.)</th>
<th>Pop. Density (per sq. km.)</th>
<th>No. of Household</th>
<th>Average persons per household</th>
<th>Sex ratio (male/female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chudung</td>
<td>81,552</td>
<td>53.5</td>
<td>1524</td>
<td>20,046</td>
<td>4.1</td>
<td>1.07</td>
</tr>
<tr>
<td>Chubei</td>
<td>77,003</td>
<td>46.8</td>
<td>1645</td>
<td>17,886</td>
<td>4.3</td>
<td>1.06</td>
</tr>
<tr>
<td>Hukow</td>
<td>61,223</td>
<td>58.4</td>
<td>1048</td>
<td>15,305</td>
<td>4.0</td>
<td>1.10</td>
</tr>
<tr>
<td>Hsinfeng</td>
<td>41,056</td>
<td>46.3</td>
<td>887</td>
<td>9,445</td>
<td>4.3</td>
<td>1.10</td>
</tr>
<tr>
<td>Hsinpu</td>
<td>36,839</td>
<td>72.2</td>
<td>510</td>
<td>8,155</td>
<td>4.5</td>
<td>1.14</td>
</tr>
<tr>
<td>Guanshi</td>
<td>32,831</td>
<td>125.5</td>
<td>262</td>
<td>6,989</td>
<td>4.7</td>
<td>1.18</td>
</tr>
<tr>
<td>Chiunglin</td>
<td>19,014</td>
<td>40.8</td>
<td>466</td>
<td>4,373</td>
<td>4.3</td>
<td>1.12</td>
</tr>
<tr>
<td>Hengshan</td>
<td>15,759</td>
<td>66.4</td>
<td>237</td>
<td>3,583</td>
<td>4.4</td>
<td>1.19</td>
</tr>
<tr>
<td>Baushan</td>
<td>12,238</td>
<td>64.8</td>
<td>189</td>
<td>3,062</td>
<td>4.0</td>
<td>1.20</td>
</tr>
<tr>
<td>Beipu</td>
<td>10,778</td>
<td>50.7</td>
<td>213</td>
<td>2,510</td>
<td>4.3</td>
<td>1.18</td>
</tr>
<tr>
<td>Total</td>
<td>388,293</td>
<td>625.4</td>
<td>621</td>
<td>91,354</td>
<td>4.3</td>
<td>1.11</td>
</tr>
</tbody>
</table>

square kilometer and ranged from 189 to 1645. On average, there were 4.3 persons per house and the sex ratio was 111 males per 100 females. In the survey towns, the elderly population comprised 9% (n=33,819) of the total population. However, for the entire Taiwan area at that time, the elder population comprised only 7.6% of the total population (Ministry of the Interior, the Executive Yuan, 1996).

Sample

To maintain adequate representation of the survey communities, the sample size for each survey community is approximately 1 per each 1000 of the total population, and subjects were randomly selected from each town, including general public, health care providers, political leaders, religious leaders, and social leaders. An expected sample size of 270 for evaluating the PET is needed based on the results of power analysis (Cohen, 1988) and the recommendations from Comrey and Lee (1992), Gorsuch (1983), and Nunnally and Bernstein (1994). To obtain the projected sample size, 460 questionnaires were mailed to general community individuals (n=230) and designated key community informants (n=230).

The number of questionnaires being mailed was calculated based on the average response reported by Dillman (1978) which was 75%, with 100 questionnaires added to assure an adequate response. The number of survey questionnaires mailed per town is summarized in Table 6.

The number of questionnaires mailed to each town was obtained by
Table 6

The Number of Questionnaires Mailed by the Survey Towns

<table>
<thead>
<tr>
<th>District</th>
<th>Community Individuals</th>
<th>Key Informants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chudung</td>
<td>47</td>
<td>46</td>
<td>93</td>
</tr>
<tr>
<td>Chubei</td>
<td>45</td>
<td>44</td>
<td>89</td>
</tr>
<tr>
<td>Hukow</td>
<td>35</td>
<td>34</td>
<td>69</td>
</tr>
<tr>
<td>Hsinfeng</td>
<td>23</td>
<td>22</td>
<td>45</td>
</tr>
<tr>
<td>Hsinpu</td>
<td>21</td>
<td>21</td>
<td>42</td>
</tr>
<tr>
<td>Guanshi</td>
<td>19</td>
<td>19</td>
<td>38</td>
</tr>
<tr>
<td>Chiunglin</td>
<td>10</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>Hengshan</td>
<td>10</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>Baushan</td>
<td>10</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>Beipu</td>
<td>10</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>230</strong></td>
<td><strong>230</strong></td>
<td><strong>460</strong></td>
</tr>
</tbody>
</table>

selecting 0.001 of the population of each town and adding extra questionnaires (up to 100) based on that town's proportion of the total population. As indicated in Table 6, half of the surveys were mailed to the general public in each survey town. Inclusion criteria for those individual participants were as follows:

1. residing in the target community for at least 6 months
2. 20 years of age or older
3. ability to read and write (all Taiwanese use the same written language)

4. if the subjects were illiterate or too ill to answer a questionnaire, another
   member within their household who met the criteria above might complete
   the survey

Names and telephone numbers for the community individual informants
were randomly selected from the telephone directories. Sampling from the
telephone directory was chosen because it is almost impossible to gain a list which
contains all individual residents in the survey communities. Persons not included
are those without a telephone, those who have requested that their number not be
published, and those who have been assigned a telephone number since the most
current directories were published. Although the telephone directories used for
this study did not include the whole population, it was determined that selection
from telephone directories would yield a representative sample for the following
reasons.

First, according to information obtained from the local telephone
communication offices and the local telephone directories, approximately 99 to
100% of the households within the survey towns had at least one telephone as of
January 1997. Table 7 was used to summarize the information obtained from the
telephone communication offices with regard to the number of telephones
registered in each survey town. The number of telephones registered in Baushan
and Beipu were updated based on the number of telephones listed in the local
telephone directories. Second, about 98 to close to 100% of the registered based
on a personal communication with the director of telephone communication
Table 7

Number of Telephone Registered per Household by the Survey Towns

<table>
<thead>
<tr>
<th>Town</th>
<th>Total Population</th>
<th>No. of Household</th>
<th>No. of Telephone registered</th>
<th>No. of telephone registered per household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chudung</td>
<td>81,552</td>
<td>20,046</td>
<td>40094</td>
<td>2.00</td>
</tr>
<tr>
<td>Chubei</td>
<td>77,003</td>
<td>17,886</td>
<td>40007</td>
<td>2.24</td>
</tr>
<tr>
<td>Hukow</td>
<td>61,223</td>
<td>15,305</td>
<td>27321</td>
<td>1.79</td>
</tr>
<tr>
<td>Hsinfeng</td>
<td>41,056</td>
<td>9,445</td>
<td>15390</td>
<td>1.63</td>
</tr>
<tr>
<td>Hsinpu</td>
<td>36,839</td>
<td>8,155</td>
<td>10668</td>
<td>1.31</td>
</tr>
<tr>
<td>Guanshi</td>
<td>32,831</td>
<td>6,989</td>
<td>8812</td>
<td>1.26</td>
</tr>
<tr>
<td>Chiunglin</td>
<td>19,014</td>
<td>4,373</td>
<td>5504</td>
<td>1.26</td>
</tr>
<tr>
<td>Hengshan</td>
<td>15,759</td>
<td>3,583</td>
<td>3939</td>
<td>1.10</td>
</tr>
<tr>
<td>Baushan</td>
<td>12,238</td>
<td>3,062</td>
<td>3043</td>
<td>0.99</td>
</tr>
<tr>
<td>Beipu</td>
<td>10,778</td>
<td>2,510</td>
<td>2481</td>
<td>0.99</td>
</tr>
<tr>
<td>Total/Average</td>
<td>388,293</td>
<td>91,354</td>
<td>157,259</td>
<td>1.72</td>
</tr>
</tbody>
</table>


b Data obtained from the telephone communication offices by telephone interviews

office for Hsinchu County, Jen-feng Shie. It was also known from the contact with the director of telephone communication office for Hsinchu County, Shie, that the names listed in the telephone book were most likely the people who were literate or knew someone who was literate enough to fill out the paperwork for a telephone registration. This information strengthens the use of telephone directories as the sampling frame since the ability to read and write was required to complete the survey. Third, only 7% of people who lived in the survey towns in the year of 1995 have moved across Hsinchu County lines (Ministry of the Interior, the
Executive Yuan. 1996). In conclusion, the most current telephone directories should cover approximately 90 to 93% of the households in the survey towns.

A two-stage random selection was conducted to obtain a representative sample. First, pages of the local telephone directories were randomly selected for each town. Second, one subject from each selected page was randomly selected for the community individual informant group. After obtaining names and telephone numbers for telephone screening, the sample was stratified by age and participants were randomly selected from each age group within each town. Sixty percent of the sample from each town was between 35 to 64, representing the majority of people making decisions about nursing home placement; 20% of the sample from each town was aged between 20 to 34, and 20% was 65 and above. For instance, according to Table 6, 10 survey questionnaires were mailed to community individuals residing in Beipu Town. During telephone screening, I monitored the screening to ensure that 6 individuals were between 35 to 64 years of age, 2 individuals were between 20 to 34, and 2 individuals were 65 and above.

In addition to the general public, the other half of the survey questionnaires \( (n=230) \) were mailed to key community informants in each surveyed town. The inclusion criteria for the key community informants were as follows:

1. residing in the target community for at least 6 months
2. 20 years of age or older
3. ability to read and write
4. in a position which gave them special knowledge of community needs, i.e.,

    health care providers, political leaders, social leaders, and religious leaders
The key informants for this study were people in one of the following 11 categories: (a) directors of local health departments, (b) public health nurses, (c) local clinic physicians, (d) town mayors, (e) village mayors, (f) village citizen representatives, (g) various clergy persons, (h) chair of citizen service center, (i) members of community development committees, (j) chairs of women society, and (k) chair of the elder society. The categories described above were chosen to ensure consistency across all survey communities, because they were available across all survey towns.

Names, telephone numbers, and addresses for most of the key informants were obtained from the Hsinchu County Mayor, Jeng-jung Fan. The names and telephone numbers for the community religious leaders were obtained from the telephone directories. The names, and telephone numbers for the public health nurses were provided by the directors of the local health departments. In an effort to avoid duplication of the sample, due to multiple frames, I eliminated individuals from the study who showed up on other lists and combined lists to form one master list for the key informants. The names on the key informant list were eliminated from the community individual list to avoid duplication within that sample. Once a master list for the key informants was identified, a simple random sampling method was used to select the key informants. First, the key informants were identified by serial numbering of names in the master list. Then, sample selection was made using a table of random numbers found in most elementary statistics texts. The PET with 11 open-ended questions added was used to collect information from these key community informants in each community.
To evaluate the test-retest reliability, or stability reliability, of the second section of the PET, I measured a subset of the obtained sample twice, using the same items with different item orders. This subset of the sample was obtained by selecting the first 50 participants from both the community and key informant samples who indicated in their initial mailing, called Time 1, that they were willing to participate in a similar survey 2 weeks after the first one, called Time 2. With paper-and-pencil measures, a period of 2 weeks to a month is recommended between the two testing times (Burns & Grove, 1993). Fifty general public and 50 key community persons were invited to participate in the Time 2 survey. The procedure for the second mailing was similar to the first one, except the cover letter was slightly different to explain the reason for a second mailing and only the items within the second section of the PET were included in the Time 2 survey questionnaire.

**Procedure of Data Collection**

Because the Taiwanese telephone directories listed names and telephone numbers but no addresses, a brief telephone contact prior to the mailing was first conducted to obtain the mailing addresses for the possible participants. Therefore, the current mailing address of the selected sample were obtained for the general public group and verified for the key informant group after the telephone contacts. The telephone contacts were also used to describe the purpose of the study, to solicit assistance, and to obtain the screening information (i.e., aged 20 years and above and having resided in the survey towns for more than 6 months). Advance notification by telephone that a questionnaire was being sent generally increases
the response rates due to the advantage of personal contact (Dillman, 1978; Fowler, Jr. 1984; Warheit et al., 1977). Another advantage of using a telephone screening was that call-backs could be made repeatedly until the respondent was located, with very little cost. A native Taiwanese speaker was hired to enhance the process of telephone screening. The initial telephone contact was significant because it is at this point that most refusals occurred (Dillman, 1978).

The script for telephone screening of this study is illustrated in Appendix C. The results of the telephone screening were recorded using the worksheet in Appendix D. As questionnaires were returned, the number of responses was recorded daily, using a self-generated worksheet (see Appendix E) (de Vaus, 1990). The advantage of doing this was that a daily record of response rates helped identify especially low response rates at an early stage and then a telephone follow-up and a follow-up letter were used to increase the rate.

A cover letter, a survey questionnaire (the PET), and a stamped, self-addressed return envelope were mailed to the subjects who were willing to participate as indicated by the telephone screening in October and November 1996. A cover letter was enclosed with each questionnaire to introduce the researcher and also identify the purpose and importance of this survey study. The cover letter used for the general community individuals is included in Appendix F and for the key community persons in Appendix G. Assurance of confidentiality for inclusion in the study were also provided within the cover letter. To legitimize the study, I had scheduled a face-to-face interview with the Hsinchu County Mayor, Jeng-jung Fan, to obtain his permission to include his name in the letterhead of the cover letter.
An envelope that was standard in size, shape, and color was used as recommended by Dillman (1978). First-class mail was used to signal the importance of the contents and to assure higher handling priority by the Taiwanese postal service than bulk rate. An identification number was stamped in the upper right-hand corner of each page of the questionnaire, a position in which it is easily visible. The number corresponded to one similarly stamped next to the recipient's name on the mailing list. The contents were folded together; thus when the envelope was opened, all contents were removed together and the recipient's attention was drawn first to the cover letter. The way of assembling the mailout package was illustrated in detail by Dillman (1978, p.181).

A "thank-you" letter was sent to the subjects who responded (see Appendix H). Two weeks after the initial mailings, nonrespondents were contacted by telephone to inform them that questionnaire has not been received and appeal for its return. A follow-up letter as a friendly and courteous reminder was sent to the subjects who had not returned their questionnaires about 2 weeks after the telephone follow-up (see Appendix I). Data collection was closed 20 weeks after the initial mailings of the survey.

Data Analysis Plan

Based on the purposes of the study, the proposed research questions (RQ) and the data analysis plan for this study are as follows.

RQ 1. Is there evidence to support content validity of the PET?
Statistical tests for RQ 1 and (variables involved):
Descriptive statistics--If more than 20% of the expert panel indicated a item was either "not appropriate" or "probably not appropriate " to assess the perceptions of
need for nursing homes, the item would be eliminated from the survey tool (all items within the PET)

**RQ 2. What is the stability reliability of the PET?**

Statistical tests for RQ 2 (variables involved):

Pearson product-moment correlation (items within Section 1: Perception; [Time 1 vs. Time 2])

**RQ 3. Is there evidence to support convergent validity of the PET?**

Statistical tests for RQ 3 (variables involved):

Exploratory factor analysis (items within Section 2: Perception)

**RQ 4. What is the internal consistency reliability of the revised PET based on the results of factor analysis?**

Statistical tests for RQ 4 (variables involved):

Alpha reliability coefficient (variables/items within Section 1: Factors and Section 2: Perception)

**RQ 5. Is there evidence to support discriminant validity of the PET?**

Statistical tests for RQ 5 (variables involved):

1. Student t-test (Awareness score, Personal Experience score, Risk Factor score, and the multiple-item subscale scores of Section 2: Perception [general public vs. key community informants])

2. Student t-test (Awareness score, Personal Experience score, Risk Factor score, and the multiple-item subscale scores of Section 2: Perception [individuals who have heard of nursing homes prior to the survey vs. individuals who have never heard of nursing homes before])

3. One-way analysis of variance test (Awareness score, Personal Experience score, Risk Factor score, and the multiple-item subscale
scores of Section 2: Perception [20-34 years, 35-64 years, and 65 years and above]
CHAPTER IV

RESULTS

The results of this psychometric study are organized based on the proposed research questions and data analysis plan. The collected data were analyzed using the Statistical Package for the Social Science, SPSS for Windows 95. Descriptive and inferential statistical methods were used to analyze the collected data. Normality of each variable in the study was examined before running the descriptive and inferential tests. Nonparametric tests were used to analyze the collected data when the data did not meet the assumptions of the particular parametric tests. Due to the use of multiple statistical tests, the alpha level for the inferential tests was set at 0.01.

Demographic Characteristics of the Participants

Two hundred ninety-four general community individuals were located with the initial telephone contacts. Sixty-four of them refused to participate in the study. About two thirds (n=42) of the refusals were due to failure to meet the sampling criteria. The remaining refusals (n=22) were due to personal events which varied widely, such as not interested (n=6), never heard of nursing homes (n=5), too busy (n=5), planned to move out of town soon (n=3), did not trust research reports (n=1), just married (n=1), death in the family (n=1). Two hundred
thirty survey questionnaires were mailed to those general community individuals who agreed to participant in the study during the telephone screening. Based on the results of the telephone screening, the willingness to participant in the study for the general community individuals was 91.3%.

Two hundred thirty-four key community informants were located by telephone screening. Only 4 of them refused to participate the study. The reasons for refusals were as follows: (a) resided in the survey town less than 6 months, (b) facing retirement, (c) left the county during the survey period, and (d) poor health condition. Two hundred thirty survey questionnaires were mailed to those key community informants who agreed to participant in the study during the telephone screening. Based on the results of the telephone screening, the willingness to participant in the study for the key community informants was 98.7%.

A final sample of 319 individuals was obtained for the study. Most of the participants who completed the questionnaires were the general community individuals (52.7%), followed by health care providers (19.4%), social leaders (15.3%), and political leaders (12.6%). Table 8 shows the data about questionnaires mailed, returned, and response rate by participant types. The overall response rate for the survey was 69% which was adequate for assessing the psychometric properties of the PET. The strategies used in the study to increase the survey response rates appeared to be effective.

Overall, the sample contained 188 males and 131 females, ranging in age from 20 to 83 (\(M=44.8, \ SD=14.8\)). Most participants (62.4%) were born in Hsinchu County and had resided in Hsinchu for 30 years (\(M=30.2, \ SD=18.8\)).
### Table 8

**Number and Percentage of the Questionnaires Mailed, Questionnaires Returned, and Response Rates by Participant Types**

<table>
<thead>
<tr>
<th>Types</th>
<th>Survey Mailed n (%)</th>
<th>Survey Returned n (%)</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>General public</td>
<td>230 (50.0)</td>
<td>168 (52.7)</td>
<td>73.0</td>
</tr>
<tr>
<td>Health Care Providers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community nurses</td>
<td>77 (16.7)</td>
<td>62 (19.4)</td>
<td>80.5</td>
</tr>
<tr>
<td>Local clinic physicians</td>
<td>35 (7.5)</td>
<td>24 (7.5)</td>
<td>68.6</td>
</tr>
<tr>
<td>Director of health department</td>
<td>10 (2.2)</td>
<td>10 (3.1)</td>
<td>100.0</td>
</tr>
<tr>
<td>Social Leaders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clergy persons</td>
<td>25 (5.4)</td>
<td>14 (4.4)</td>
<td>56.0</td>
</tr>
<tr>
<td>Members of com. development</td>
<td>33 (7.2)</td>
<td>14 (4.4)</td>
<td>42.4</td>
</tr>
<tr>
<td>Chair of citizen service center</td>
<td>10 (2.2)</td>
<td>10 (3.1)</td>
<td>100.0</td>
</tr>
<tr>
<td>Chair of the elder society</td>
<td>10 (2.2)</td>
<td>7 (2.2)</td>
<td>70.0</td>
</tr>
<tr>
<td>Chair of women society</td>
<td>10 (2.2)</td>
<td>4 (1.2)</td>
<td>40.0</td>
</tr>
<tr>
<td>Political Leaders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Village mayors</td>
<td>30 (6.5)</td>
<td>19 (6.0)</td>
<td>63.3</td>
</tr>
<tr>
<td>Village representatives</td>
<td>25 (5.4)</td>
<td>14 (4.4)</td>
<td>56.0</td>
</tr>
<tr>
<td>Town mayors</td>
<td>10 (2.2)</td>
<td>7 (2.2)</td>
<td>70.0</td>
</tr>
<tr>
<td>Total</td>
<td>460 (100)</td>
<td>319 (100)</td>
<td>69.3</td>
</tr>
</tbody>
</table>
Most participants indicated their annual household incomes ranged from adequate (52.8%) to more than adequate (36.7%). About half of the participants (42.8%) indicated they had some religious preference at the time of survey. Also, about half of the participants reported there were one (33.9%) to two (16.3%) elderly family members living with them and 48% of the participants indicated there was no elder family member in their household. No participants indicated that they were working in nursing homes. Overall, 49% of the participants, including both the general public and the key community leaders, first heard about the term "nursing home" from the survey questionnaire. For those who had heard about nursing homes prior to the study (n=163), sources of information included newspaper (22%), friends (20%), television programs (15%), magazine (7%), family members (6%), radio (4%), relatives (3%), and the other resources (23%). About half of the participants (52.4%) indicated in their initial mailing that they were willing to participate in a 2-week follow-up survey similar to the first one. Detailed demographic characteristics of the participants are shown in Table 9.

Knowing the limitations of using the telephone directories and lack of demographic information from the refusals, I compared the demographic information collected from the participants from the general public with those from the census data for the target population Table 10. A binomial test was used to examine whether the community individual sample reflected the gender distribution of the general population. The results of the binomial test indicated that there was no significant difference between the proportion of male and female participants and that of the population (two-tailed p=0.24). Additionally, chi-
Table 9

Demographic Characteristics of the Participants by Types

<table>
<thead>
<tr>
<th></th>
<th>Community Individuals</th>
<th>Key Informants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N a</td>
<td>%</td>
<td>N a</td>
</tr>
<tr>
<td>Gender</td>
<td>168 100.0</td>
<td>151 100.0</td>
<td>319 100.0</td>
</tr>
<tr>
<td>male</td>
<td>97 57.7</td>
<td>91 60.3</td>
<td>188 58.9</td>
</tr>
<tr>
<td>female</td>
<td>71 42.3</td>
<td>60 39.7</td>
<td>131 41.1</td>
</tr>
<tr>
<td>Birth place</td>
<td>168 100.0</td>
<td>151 100.0</td>
<td>319 100.0</td>
</tr>
<tr>
<td>Hsinchu County</td>
<td>96 57.1</td>
<td>103 68.2</td>
<td>199 62.4</td>
</tr>
<tr>
<td>Other Taiwan area</td>
<td>43 25.6</td>
<td>41 27.2</td>
<td>84 26.3</td>
</tr>
<tr>
<td>Mainland China</td>
<td>29 17.3</td>
<td>7 4.6</td>
<td>36 11.3</td>
</tr>
<tr>
<td>Education level</td>
<td>167 100.0</td>
<td>151 100.0</td>
<td>318 100.0</td>
</tr>
<tr>
<td>no formal ed.</td>
<td>10 6.0</td>
<td>1 0.7</td>
<td>11 3.5</td>
</tr>
<tr>
<td>six-grade</td>
<td>27 16.2</td>
<td>15 9.9</td>
<td>42 13.2</td>
</tr>
<tr>
<td>nine-grade</td>
<td>26 15.6</td>
<td>18 11.9</td>
<td>44 13.8</td>
</tr>
<tr>
<td>twelve-grade</td>
<td>58 34.7</td>
<td>42 27.8</td>
<td>100 31.4</td>
</tr>
<tr>
<td>college/university</td>
<td>44 26.3</td>
<td>73 48.3</td>
<td>117 36.8</td>
</tr>
<tr>
<td>Master or above</td>
<td>2 1.2</td>
<td>2 1.3</td>
<td>4 1.3</td>
</tr>
<tr>
<td>Had religious preferences</td>
<td>168 100.0</td>
<td>150 100.0</td>
<td>318 100.0</td>
</tr>
<tr>
<td>yes</td>
<td>65 38.7</td>
<td>71 47.3</td>
<td>136 42.8</td>
</tr>
<tr>
<td>no</td>
<td>94 56.0</td>
<td>75 50.0</td>
<td>169 53.1</td>
</tr>
<tr>
<td>don’t know</td>
<td>9 5.3</td>
<td>4 2.7</td>
<td>13 4.1</td>
</tr>
<tr>
<td>Marital status</td>
<td>167 100.0</td>
<td>151 100.0</td>
<td>318 100.0</td>
</tr>
<tr>
<td>married</td>
<td>121 72.4</td>
<td>127 84.2</td>
<td>248 78.0</td>
</tr>
<tr>
<td>single</td>
<td>34 20.4</td>
<td>18 11.9</td>
<td>52 16.4</td>
</tr>
<tr>
<td>divorce</td>
<td>2 1.2</td>
<td>0 0.0</td>
<td>2 0.6</td>
</tr>
<tr>
<td>separated</td>
<td>1 0.6</td>
<td>2 1.3</td>
<td>3 0.9</td>
</tr>
<tr>
<td>widowed</td>
<td>9 5.4</td>
<td>4 2.6</td>
<td>13 4.1</td>
</tr>
</tbody>
</table>
Table 9 (Continued)

<table>
<thead>
<tr>
<th></th>
<th>Community Individuals</th>
<th>Key Informants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N a</td>
<td>%</td>
<td>N a</td>
</tr>
<tr>
<td>Where first knew nursing homes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>this survey</td>
<td>168</td>
<td>100.0</td>
<td>151</td>
</tr>
<tr>
<td>families</td>
<td>100</td>
<td>59.5</td>
<td>56</td>
</tr>
<tr>
<td>relatives</td>
<td>4</td>
<td>2.4</td>
<td>6</td>
</tr>
<tr>
<td>friends</td>
<td>16</td>
<td>9.5</td>
<td>16</td>
</tr>
<tr>
<td>television</td>
<td>18</td>
<td>10.7</td>
<td>7</td>
</tr>
<tr>
<td>radio</td>
<td>4</td>
<td>2.4</td>
<td>2</td>
</tr>
<tr>
<td>newspapers</td>
<td>13</td>
<td>7.7</td>
<td>23</td>
</tr>
<tr>
<td>magazines</td>
<td>5</td>
<td>3.0</td>
<td>7</td>
</tr>
<tr>
<td>others</td>
<td>6</td>
<td>3.6</td>
<td>31</td>
</tr>
<tr>
<td>Adequacy of income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>less than adequate</td>
<td>162</td>
<td>100.0</td>
<td>143</td>
</tr>
<tr>
<td>adequate</td>
<td>25</td>
<td>15.4</td>
<td>7</td>
</tr>
<tr>
<td>more than adequate</td>
<td>93</td>
<td>57.4</td>
<td>68</td>
</tr>
<tr>
<td>Annual household income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;250,000</td>
<td>146</td>
<td>100.0</td>
<td>142</td>
</tr>
<tr>
<td>250,001-500,000</td>
<td>22</td>
<td>15.1</td>
<td>12</td>
</tr>
<tr>
<td>500,001-750,000</td>
<td>46</td>
<td>31.5</td>
<td>27</td>
</tr>
<tr>
<td>750,001-1,000,000</td>
<td>34</td>
<td>23.3</td>
<td>25</td>
</tr>
<tr>
<td>1,000,001-1,250,000</td>
<td>19</td>
<td>13.0</td>
<td>25</td>
</tr>
<tr>
<td>1,250,001-1,500,000</td>
<td>17</td>
<td>11.6</td>
<td>21</td>
</tr>
<tr>
<td>1,500,001-1,750,000</td>
<td>4</td>
<td>2.7</td>
<td>14</td>
</tr>
<tr>
<td>1,750,001-2,000,000</td>
<td>1</td>
<td>0.7</td>
<td>3</td>
</tr>
<tr>
<td>&gt;2,000,000</td>
<td>0</td>
<td>0.0</td>
<td>3</td>
</tr>
</tbody>
</table>

* The number of respondents answering these questions varied owing to incomplete information.
Table 10

Comparison of Demographic Characteristics of the Community Individual Participants and the Target Population

<table>
<thead>
<tr>
<th></th>
<th>Individuals Participants</th>
<th></th>
<th>Target Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N a</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>male</td>
<td>97</td>
<td>57.7</td>
<td>142,923</td>
</tr>
<tr>
<td>female</td>
<td>71</td>
<td>42.3</td>
<td>125,985</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-34</td>
<td>38</td>
<td>22.6</td>
<td>109,212</td>
</tr>
<tr>
<td>35-64</td>
<td>92</td>
<td>54.8</td>
<td>124,014</td>
</tr>
<tr>
<td>65 and above</td>
<td>38</td>
<td>22.6</td>
<td>35,682</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no formal education</td>
<td>10</td>
<td>6.0</td>
<td>145,46</td>
</tr>
<tr>
<td>six-grade</td>
<td>27</td>
<td>16.2</td>
<td>78,922</td>
</tr>
<tr>
<td>nine-grade</td>
<td>26</td>
<td>15.6</td>
<td>67,788</td>
</tr>
<tr>
<td>twelve-grade</td>
<td>58</td>
<td>34.7</td>
<td>77,116</td>
</tr>
<tr>
<td>college/university</td>
<td>44</td>
<td>26.3</td>
<td>28,890</td>
</tr>
<tr>
<td>Master or above</td>
<td>2</td>
<td>1.2</td>
<td>1046</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>married</td>
<td>121</td>
<td>72.9</td>
<td>184,726</td>
</tr>
<tr>
<td>single</td>
<td>34</td>
<td>20.5</td>
<td>61,161</td>
</tr>
<tr>
<td>divorce</td>
<td>2</td>
<td>1.2</td>
<td>6950</td>
</tr>
<tr>
<td>widowed</td>
<td>9</td>
<td>5.4</td>
<td>160,71</td>
</tr>
</tbody>
</table>

a The number of respondents answering these questions varied owing to incomplete information.

square “Goodness of Fit” tests were used to examine whether the obtained sample was representative of the target population with regard to marital status and education level. No Goodness of Fit test was used for the variable of “age” due to the use of the stratified sampling procedure for age group in the study. Based on the results of chi-square tests, the obtained sample was representative of the target population with regard to their marital status (chi-square = 0.9, p = 0.82). However, the obtained sample tended to be better educated (chi-square = 53.5, p < 0.01) than the target population. The conclusion from the Goodness of Fit tests was that the obtained sample was generally representative of the target population, but with a higher level of education.

**Content Validity of the PET**

Content validity is the most basic form of validation and identifies how adequately items measure the concept of interest (Dilorio et al., 1992). Five Taiwanese experts in nursing homes or in the conduct of community needs assessment were invited to review the PET, including one home care nurse manager, one director of nursing of a 55-bed nursing home, two nursing faculty members with PhD degrees and expertise in long-term care or nursing home issues, and the director of the Program Development Department at Hsinchu County Government. Experts were asked to assess all items within the original PET for appropriateness to evaluate the perception of nursing home services, using a 4-point scale (from 1 = not appropriate to 4 = appropriate). For the 75 items of the original PET reviewed by the expert panel, no item had more than 20% of the
expert panel rate it as either "not appropriate" or "probably not appropriate" with the concepts being measured. Only four items were rated as "not appropriate" by one member of the expert panel. These same items were rated as "appropriate" or "probably appropriate" by the other experts. Based on the comments made by the expert panel, closely related items were combined, and ambiguously worded items were clarified. This revised 71-item PET (illustrated in Appendix A) was then subjected to further instrument testing (also see Figure 3 for the structure of the revised PET).

**Stability Reliability of the PET**

Stability by definition is the consistency of repeated measures across time. In this study this aspect of reliability is referred as test-retest. A subset of the obtained sample was measured twice over a period of 2 weeks. Seventy-nine Time 2 survey questionnaires were returned. Response rate for the Time 2 survey was 79%. Thirty-six of the returns came from the general community individuals and 43 of them from the key community informants. Only the 27 items within the second section of the initial PET, those which measured the perception of nursing home services were included in the Time 2 survey. It was decided not to include the items within the first section in the Time 2 survey because those items were used to assess the participants' awareness level of nursing home services, personal experience of nursing home services, and risk factors of nursing home entry. It would not be appropriate to ask those types of questions twice within a 2-week period. With the second section of the PET, the test-retest method was
appropriate, because the perceptions of need for nursing home services should remain relatively stable over the 2-week period in which the testing occurred.

The Pearson product-moment correlation procedure was used to determine stability reliability of the PET. The strength of the correlation was used to assess the relationship between Time 1 and Time 2 measures. The items within each hypothesized subscale were added and then divided by the number of items within each subscale to form a multiple-item score, including Service Needs score, Utilization Patterns scores, and Residential Preference scores.

Test-retest correlation coefficients for the hypothesized three subscale scores (Service Needs scores, Utilization Patterns scores, and Residential Preference scores) over a period of 2 weeks for 79 community participants were correlated at r=0.69 (p<0.0001), 0.69 (p<0.0001), and 0.71 (p<0.0001), respectively. The correlation coefficients for the hypothesized three subscale scores within Section 2: Perception between Time 1 and Time 2 are illustrated in Table 11. On the whole, the results of the correlation tests indicated positive strong relations between Time 1 and Time 2 measures with regard to the participants' perceptions of nursing home services, thus establishing the stability reliability of the second section of the PET.

Convergent Validity of the PET

Exploratory factor analysis was used in this study to evaluate convergent validity, one type of construct validity, of the 27 items in Section 2: Perception of the PET. Responses obtained from the second section of the PET were factor
Table 11

Mean, Standard Deviation, and Correlations of Time 1 and Time 2 Measures for the Hypothesized Subscales Within Section 2: Perception of the PET (N=79)

<table>
<thead>
<tr>
<th>Subscale Scores a</th>
<th>Mean</th>
<th>SD</th>
<th>Pearson r</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 1</td>
</tr>
<tr>
<td>Service needs</td>
<td>3.3</td>
<td>3.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Utilization patterns</td>
<td>2.0</td>
<td>2.3</td>
<td>0.7</td>
</tr>
<tr>
<td>Residential preference</td>
<td>3.3</td>
<td>3.5</td>
<td>0.6</td>
</tr>
<tr>
<td>Total</td>
<td>2.8</td>
<td>3.1</td>
<td>0.7</td>
</tr>
</tbody>
</table>

a Score range from 0 to 4. The higher score, the higher level of needs for nursing home services.

*p<0.0001

analyzed by principal components analysis and Varimax rotation for the purpose of determining initial convergent validity. Criteria used to select the number of factors and the number of items within a factor included (a) eigenvalue greater than 1.5, (b) item-factor loading of at least 0.30, (c) a difference between the highest and next highest factor loading of at least 0.15, and (d) factor interpretability.

In the current study, a principal components factor analysis with varimax (orthogonal) rotations was used to explore the underlying dimensions of the PET. Names of the factors and items together with factor loading, percentage of explained variance contributed by each factor, eigenvalues, and alpha reliability coefficients are shown in Table 12. The purpose of doing factor analysis was to
Table 12

Principal Components Factor Analysis With Varimax Rotation of Section 2: Perceptions of the PET (N=319)

<table>
<thead>
<tr>
<th>Perception of Nursing Home Services</th>
<th>Extracted Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Service</td>
</tr>
<tr>
<td></td>
<td>Needs</td>
</tr>
<tr>
<td>recreational services</td>
<td>.79</td>
</tr>
<tr>
<td>dietary services</td>
<td>.78</td>
</tr>
<tr>
<td>environmental services</td>
<td>.77</td>
</tr>
<tr>
<td>laundry services</td>
<td>.75</td>
</tr>
<tr>
<td>hospice services</td>
<td>.71</td>
</tr>
<tr>
<td>religious services</td>
<td>.67</td>
</tr>
<tr>
<td>rehabilitation services</td>
<td>.62</td>
</tr>
<tr>
<td>social work services</td>
<td>.58</td>
</tr>
<tr>
<td>willing to live in a nursing home</td>
<td>.71</td>
</tr>
<tr>
<td>live with family VS live in nursing homes</td>
<td>.70</td>
</tr>
<tr>
<td>willing to place families into nursing homes</td>
<td>.68</td>
</tr>
<tr>
<td>live alone VS live in nursing homes</td>
<td>.66</td>
</tr>
<tr>
<td>live with relatives VS live in nursing homes</td>
<td>.65</td>
</tr>
<tr>
<td>live in a nursing home with family care available</td>
<td>.64</td>
</tr>
<tr>
<td>live with friends VS live in nursing homes</td>
<td>.62</td>
</tr>
<tr>
<td>place families to nursing homes with family care available</td>
<td>.61</td>
</tr>
<tr>
<td>live in a hospital VS live in a nursing home</td>
<td>.50</td>
</tr>
<tr>
<td>family lives in a nursing home now</td>
<td>.59</td>
</tr>
<tr>
<td>enough number of nursing homes</td>
<td>.55</td>
</tr>
<tr>
<td>will live in a nursing home within 1 year</td>
<td>.55</td>
</tr>
<tr>
<td>concerns about licensing</td>
<td>.50</td>
</tr>
</tbody>
</table>

Percent of explained variance 25.8 14.6 8.9
Eigenvalue 5.42 3.08 1.87
Alpha reliability coefficient .93 .83 .47

Note: Item-factor loadings less than 0.30 are eliminated from this table.
Note: Item-factor loadings for respective factors are underlined.
determine the number of factors necessary to explain the relationships among the items within the second section of the PET. It was appropriate to use exploratory factor analysis to confirm whether the three hypothesized subscales of Section 2: Perception were supported. Items in resulting factors should exhibit high internal (within-factor) homogeneity and high external (between-factor) heterogeneity. If the factor classification was successful, items should be generated for each dimension. Thus, factor analysis was an important statistical tool to validate the structure of the PET.

The orthogonally rotated three-factor solution contained 21 of the initial 27 perceptions of need items and accounted for 49.3% of the explained variance. The results of factor analysis indicated that Section 2: Perception of the PET was multidimensional and measured three distinct domains, including Service Needs, Family Availability, and Potential for Use. Six items were eliminated from further instrument evaluation tests due to either low loading on the extracted factors or ambiguous loading on multiple factors, including items asking the participants whether it was necessary to provide medical services within nursing homes, whether it was necessary to provide nursing services within nursing homes, whether it was necessary to provide nursing home services within the surveyed towns, whether it was necessary to increase the number of nursing homes in the survey towns, whether they knew where to find a nursing home, and what ability they had to pay for nursing home services.

Sample size for the present study was sufficient for meeting the criteria of at least 10 subjects per items suggested by Nunnally and Bernstein (1994) for
performing factor analysis. In this study, Bartlett's test of sphericity and Kaiser-Meyer-Olkin measure of sampling adequacy were calculated to evaluate the strength of linear association among items and appropriateness of the correlation matrix for the factor model. Bartlett's test of sphericity was significant (chi-square = 2429, p = 0.000001). The Kaiser-Meyer-Olkin measure was 0.85, which was called "meritorious" based on Kaiser's (1974) classification for the values of Kaiser-Meyer-Olkin. Thus, a factor analysis model was appropriate to analyze the data, and it was expected that the items within the PET would share common factors.

The results of the factor analysis were reviewed in four stages. In stage 1, the major decision was to determine which items should be factor analyzed based on the interitem correlation which was demonstrated in the computed correlation matrix. The correlation should be high enough to index similarity between the items and yet not be so high that they index redundancy and they should average between 0.30 to 0.70. In the current study, the range of interitem correlations was from -0.37 to 0.71, and no items were deleted from the tool at this stage. In stage 2, the unrotated factor matrix provided guidance to determine the method by which the factors would be extracted and how the factor would be calculated. In the factor matrix, each row represents one variable included in the factor analysis and each column represents one factor. In the unrotated factor matrix, the elements within the matrix were the unrotated factor loading-numbers ranging between -0.44 and 0.70, which may be thought of as the "correlation" of the variable with the factor. The square of a factor loading represents the proportion of variance that
the item and the factor have in common; in other words this was the proportion of item variance explained by the factor. The item communality was generated by adding the squared loading across a row. This is the proportion of item variance accounted for by the various factors. By adding the squared loading contained in a single column, the eigenvalue for the factor is then obtained. The eigenvalue represents the total amount of variance explained by a factor. Factor eigenvalues and variance accounted for are the most important figures contained in the unrotated factor matrix. In this study, the strength of the factor eigenvalue was used to determine the number of potentially interpretable factors contained in the data. Although an eigenvalue equal to 1 is the most commonly used, it was not feasible in the current study because large numbers of eigenvalues met this criteria. For example, the eigenvalue = 1 criterion was initially used to select the number of factors in order to construct the PET. Seven of the extracted factors met the eigenvalue = 1 criterion. However, two of the seven extracted factors had only two items and two other factors had only three items. It became extremely difficult for me to construct the PET using the seven-factor solution due to the low factor interpretability. Therefore, eigenvalues of greater than 1.5 were used to determine the number of factors to put into the rotated factor matrix. In stage 3, factors were rotated for interpretation. Because unrotated factors rarely can be meaningfully interpreted, factor rotation is needed. From the rotated factor matrix, the researcher can determine which variables go with a factor. In stage 4, factor scores were computed for each item. In this study, at least 0.3 factor loading was used as the cutoff point and a difference between the highest and next highest factor loading of at least 0.15 was required.
Based on the results of factor analysis, the Pearson product-moment correlation procedure was used to determine stability reliability of the factored items within Section 2: Perception of the PET. The strength of the correlation was used to assess the relationship between Time 1 and Time 2 measures. The correlation coefficient for the three factored subscales within the second section of the PET between Time 1 and Time 2 are illustrated in Table 13.

The items within each subscale were added and then divided by the number of items within each subscale to form a multiple-item score, including Service

Table 13

<table>
<thead>
<tr>
<th>Subscale Scores a</th>
<th>Mean Time 1</th>
<th>Mean Time 2</th>
<th>SD Time 1</th>
<th>SD Time 2</th>
<th>Pearson r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service needs</td>
<td>3.2</td>
<td>3.6</td>
<td>1.1</td>
<td>0.6</td>
<td>.59*</td>
</tr>
<tr>
<td>Family Availability</td>
<td>2.9</td>
<td>3.1</td>
<td>0.7</td>
<td>0.6</td>
<td>.78*</td>
</tr>
<tr>
<td>Potential for Use</td>
<td>1.7</td>
<td>1.9</td>
<td>0.5</td>
<td>0.4</td>
<td>.39*</td>
</tr>
<tr>
<td>Total</td>
<td>2.8</td>
<td>3.0</td>
<td>0.7</td>
<td>0.4</td>
<td>.76*</td>
</tr>
</tbody>
</table>

a Score range from 0 to 4. The higher score, the higher level of needs for nursing home services.

*p<0.0001
Needs score, Family Availability score, and Potential for Use score. Test-retest correlation coefficients for the extracted three subscale scores (Service Needs score, Family Availability score, and Potential for Use score) over a period of 2 weeks for 79 community participants were correlated at \( r = 0.59 \) (\( p < 0.0001 \)), 0.78 (\( p < 0.0001 \)), and 0.39 (\( p < 0.0001 \)), respectively.

On the whole, the results of the correlation tests indicated positive strong relations between Time 1 and Time 2 measures with regard to the participants’ needs for nursing home services and the availability of family care, thus establishing the stability reliability of two of the factored subscales of the PET, Service Needs and Family Availability. However, the weak relationship (\( r = 0.39 \)) between Time 1 and Time 2 measures for the subscale of Potential for Use indicated a low-stability reliability and further reliability evaluation of this subscale was needed. The three subscale scores obtained for Time 2 survey were higher than the scores obtained for Time 1 survey. The participants possibly changed their responses based on the initial testing and responded to the second test differently.

**Internal Consistency Reliability of the PET**

In this study, reliability refers to the consistency of a measure across repeated conditions as well as consistency within the measure. Cronbach's alpha was used to evaluate the internal consistency of all 44 items within Section 1: Factors and the 21 factored items within Section 2: Perception of the PET. When examining the value of Cronbach's alpha, the interitem correlations were examined
to ensure they were high enough to index similarity between the items and yet not be so high that they indexed redundancy. Theoretically, interitem correlation should average between 0.30 to 0.70 (Mishel, 1990).

Section 1: Factors of the PET originally contained 44 items. The data in Section 1: Factors are dichotomous, making Kuder-Richardson 20 (KR 20) the appropriate statistical test for assessing internal consistency. In SPSS program, Cronbach's alpha is the default for KR 20 and is reported here (Norusis, 1994, p.152). Using all items from the hypothesized three subscales (Awareness, Personal Experience, and Risk Factors), the internal consistency reliability of this section of the tool was established at Cronbach's alpha=0.87. The alpha reliability coefficients for the subscales of Awareness, Personal Experience, and Risk Factor were alpha = 0.94, 0.93, and 0.73, respectively. The number of items within the subscale of Awareness and Personal Experience remained the same. However, the items which identified gender and migration from Mainland China as risk factors for nursing home entry were deleted due to the low interitem correlation and the alpha increase when the items were deleted. These two items were originally entered into the Risk Factor subscale based on previous studies conducted in the Taiwan area. However, being male and a migrant from Mainland China were only identified as risk factors for nursing home entry from the earlier study findings conducted by Lin et al. (1984) and the findings were not supported by the recent studies (Lee et al., 1990; Shiu et al., 1993; Wu, 1991). Based on this, I decided to eliminate these two items from the Risk Factor subscale.

For Section 2: Perception of the PET, alpha reliability coefficients were
used to evaluate the internal consistency of the 21 factored items. Internal consistency reliability for the three factored subscales was demonstrated by alpha reliability coefficients that were 0.93, 0.83, and 0.47, respectively (also see Table 12 for items within each subscale). The low alpha reliability coefficient of 0.47 did not support the internal consistency reliability for the subscale, Potential for Use. As addressed previously, the test-retest reliability for the same subscale, Potential for Use, was low at $r=0.39$. Therefore, the four items within the factored subscale, Potential for Use, were eliminated from further instrument evaluation tests, including items asking the participants whether family members currently lived in nursing homes, whether family members would live in nursing homes within 1 year, whether there were enough nursing homes in the surveyed towns, and whether they cared about the legal registration of a nursing home. The overall internal consistency alpha coefficient of the revised two-subscale model of Section 2: Perception of the PET ($\alpha = 0.90$) and each of the retained subscales indicated acceptable evidence for reliability, including Service Needs ($\alpha=0.93$) and Family Availability ($\alpha=0.83$). Nunnally and Bernstein (1994) states that a reliability coefficient of 0.70 or higher is an acceptable level for a new scale. In conclusion, the internal consistency reliability of both sections of the PET was established by alpha reliability coefficients. The finalized 59-item PET with three subscales in Section 1: Factors (item $n=42$) and two subscales in Section 2: Perception (item $n=17$) is in Appendix J in Chinese and Appendix K in English.

After this final refinement of the PET, the Pearson product-moment correlation procedure was used to examine further convergent validity of the PET.
A correlation coefficient of the subscales within the first section and the second section of the PET was generated to evaluate how these two sections of the tool relate to each other. After appropriate coding, responses for the items within each hypothesized subscale of the first section of the PET were added to form a multiple-item score, including Awareness score, Personal Experience score, and Risk Factors score. For Section 2: Perception, the items within each subscale were added and then divided by the number of items within each subscale to form a multiple-item score, including: Service Needs score and Family Availability score. Pearson product-moment correlation coefficients for the three hypothesized subscales of Section 1: Factors and the two factored subscales of Section 2: Perception are illustrated in Table 14. Higher correlations occurred between Service Needs and Family Availability, which is not surprising due to the relatedness of these items. The strong relationships between the subscales of Service Needs and Family Availability further support the convergent validity of the second section of the PET, since those two subscales converted to each other to a certain degree.

The correlation coefficients in Table 14 also indicate a moderate relationship between participants' awareness of nursing home services and their personal experience with nursing home services ($r = 0.27$), needs for nursing home services ($r = 0.32$), and the availability of family care ($r = 0.25$). A weak relationship occurred between the number of nursing home services experienced by the participants or their family members and the rest of the subscale scores within the PET, including Awareness scores ($r = 0.04$), Risk Factors scores ($r = 0.17$), Service Needs scores ($r = 0.04$), and Personal Experience scores ($r = 0.17$). A weak
### Table 14

**Pearson r Correlations of the Subscales Within the PET (N=319)**

<table>
<thead>
<tr>
<th>Subscale Scores</th>
<th>Section 1: Factor</th>
<th>Section 2: Perception</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Awareness</td>
<td>Personal Experience</td>
</tr>
<tr>
<td>Awareness a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Experience b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk Factors c</td>
<td>.27**</td>
<td></td>
</tr>
<tr>
<td>Service Needs d</td>
<td>.32*</td>
<td>.04</td>
</tr>
<tr>
<td>Family Availability e</td>
<td>.25**</td>
<td>.19</td>
</tr>
</tbody>
</table>

a Score range from 0 to 10. The higher score, the more nursing home services are aware of.
b Score range from 0 to 10. The higher score, the more nursing home services are experienced.
c Score range from 0 to 22. The higher score, the more risk factors for nursing home entry are perceived.
d Score range from 0 to 4. The higher score, the greater needs for the listed nursing home services.
e Score range from 0 to 4. The higher score, the LOWER level of availability of the family care.

*p<0.01 **p<0.0001

A relationship was also found between the number of risk factors for nursing home entry and the rest of subscales within the PET, including Awareness scores (r=0.11), Risk Factors scores (r=0.17), Service Needs scores (r=0.02), and Family Availability (r=0.19). These weak relationships between the subscales of the PET might be because the items within the subscales, Risk Factors and Personal Experience, were measuring the “actual” factors for nursing home living when the rest of items were predicting the “ideal” way to provide nursing home services.
Based on the Pearson correlation coefficients for the subscale scores, it might be appropriate to use the subscales of Personal Experience and Risk Factors separately from the rest of the tool.

In conclusion, the results of the Pearson correlation coefficient tests supported the convergent validity of Section 2: Perception of the PET. The weak relationships between both the Personal Experience and Risk Factors and the rest of the subscales within the PET might indicate the appropriateness of using these two subscales separately. However, further evaluation of the items within the subscales of Risk Factor and Personal Experience is needed, using different samples in different settings.

**Discriminant Validity of the PET**

Independent $t$ test and one-way analysis of variance (ANOVA) were used to evaluate the discriminant validity of the PET. Independent $t$ tests were used to examine the difference between the general community individual participants and the key informant participants with regard to their obtained subscale scores for the factors associated with nursing homes and their perception of nursing home services. Independent $t$ tests were also used to examine the difference between the participants who had heard of nursing homes prior to the survey and the participants who had not with regard to their obtained subscale scores on the PET. ANOVA tests were used to further examine the difference among the three age groups with regard to their obtained subscale scores for the factors associated with nursing homes and their perceptions of need for nursing home services. If the PET
was able to discriminate the groups of participants, the discriminate validity of the PET would then be demonstrated.

Based on the results of the $t$ tests, the key informant participants had a higher awareness level of nursing home services ($df = 317, t = -5.5, p < 0.0001$). The results are summarized in Table 15. The jobs or positions the key informants had might give them more exposure to the issues related to nursing homes, leading to a higher level of awareness for nursing home services.

However, according to the results of independent $t$ tests, there was no statistically significant difference between the general community individual participants and the key community informant participants with regard to their previous nursing home experiences ($df = 317, t = -1.2, p = 0.23$), risk factors for nursing home entry ($df = 315, t = -0.3, p = 0.76$), needs for nursing home services ($df = 317, t = -2.0, p = 0.04$), and the availability of family care ($df = 317, t = -0.4, p = 0.67$). That indicates the participants' jobs or positions did not necessarily result in the key informants perceiving a need for a different number of nursing

Table 15

<table>
<thead>
<tr>
<th>Participants</th>
<th>N</th>
<th>Awareness Score $^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td>Community Individuals</td>
<td>168</td>
<td>2.3</td>
</tr>
<tr>
<td>Key Informants</td>
<td>151</td>
<td>4.5</td>
</tr>
</tbody>
</table>

$^a$ Score range from 0 to 10. The higher score, the higher level of awareness for nursing home services.

*p<0.0001
home services, or having a different number of risk factors for nursing home entry from the community individuals. The results of the $t$ tests also indicated the key informants’ needs for nursing home services and the availability of family care were similar to those of the community individuals. Although the findings for these nonsignificant differences did not provide strong evidence to support discriminant validity of the PET, they did provide important information, such as that the listed nursing home services should be provided within nursing homes and that the availability of family care had similar influences on making decision about living in a nursing home for both the general community individuals and the key informants.

Due to the large percentage of participants (49%) who had never heard of nursing homes, independent $t$ tests were also used to examine the difference between the participants who had heard about nursing homes prior to the survey and those who had not. If the PET was able to discriminate these two group of participants, the discriminate validity of the PET would then be demonstrated. The results of the independent $t$ test s are summarized in Table 16.

According to the result of independent $t$ test, there was no statistically significant difference between these two groups of participants with regard to the number of risk factors for nursing home entry reported by the participants ($df = 315, t = 0.3, p=0.78$). That indicates that whether or not the participants had heard of nursing homes before, they perceived a similar risk for nursing home entry.

However, based on the results of the $t$ tests, the participants who had heard about nursing homes prior to the current survey had significantly higher subscale scores than those who had never heard of nursing homes before, including:
Table 16

**Mean, Standard Deviation, and Results of Independent t Test of the Awareness Scores, Personal Experience Scores, Services Needs Scores, and Family Availability Scores on Participants Groups**

<table>
<thead>
<tr>
<th>Participants</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness Scores a</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have heard of nursing homes</td>
<td>163</td>
<td>5.84</td>
<td>3.3</td>
<td>-16.2*</td>
</tr>
<tr>
<td>Never heard of nursing homes</td>
<td>156</td>
<td>0.80</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Personal Experience Scores b</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have heard of nursing homes</td>
<td>163</td>
<td>0.77</td>
<td>2.1</td>
<td>-4.3*</td>
</tr>
<tr>
<td>Never heard of nursing homes</td>
<td>156</td>
<td>0.04</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>Service Needs Scores c</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have heard of nursing homes</td>
<td>163</td>
<td>3.45</td>
<td>0.8</td>
<td>-4.2*</td>
</tr>
<tr>
<td>Never heard of nursing homes</td>
<td>156</td>
<td>2.96</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Family Availability Scores d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have heard of nursing homes</td>
<td>163</td>
<td>3.03</td>
<td>0.7</td>
<td>-3.6*</td>
</tr>
<tr>
<td>Never heard of nursing homes</td>
<td>156</td>
<td>2.73</td>
<td>0.8</td>
<td></td>
</tr>
</tbody>
</table>

*a* Score range from 0 to 10. The higher score, the more nursing home services are aware of.

*b* Score range from 0 to 10. The higher score, the more nursing home services are experienced.

*c* Score range from 0 to 4. The higher score, the greater needs for the listed nursing home services.

*d* Score range from 0 to 4. The higher score, the LOWER level of availability of the family care.

*p* < 0.0001

Awareness scores (df = 317, t = -16.2, p < 0.0001), Personal Experience scores (df = 317, t = -4.3, p < 0.0001), Service Needs scores (df = 317, t = -4.2, p < 0.0001), and Family Availability scores (df = 317, t = -3.6, p < 0.0001). The results of the t tests on the participants who had heard of nursing homes before versus those who had not established the discriminant validity of the PET, since the PET was able to discriminate these two group of participants. In addition to the independent t tests,
one-way analysis of variance (ANOVA) was used to evaluate the discriminant validity of the PET. ANOVA tests were used to examine the difference among the three age groups with regard to their obtained subscale scores for the factors associated with nursing homes and their perceptions of need for nursing home services ($N=319$). When differences were found, the Scheffe method, the most conservative post hoc multiple comparison procedure, was used to identify which group was significantly different. If the PET was able to discriminate these three age groups, the discriminate validity of the PET would be demonstrated.

According to the result of one-way ANOVA, there was no significant difference among the three age groups (aged 20-34; 35-64; 65 and above) with regard to their awareness of nursing home services ($F=0.6, p=0.53$), previous experience of nursing home services ($F=0.2, p=0.84$), and the availability of family care ($F=2.2, p=0.11$). Based on the results of ANOVA and post hoc comparison tests, the elderly participants tended to have more risk factors for nursing home entry than did the young people and middle-age individuals ($F=9.7, p<0.0001$). However, there was no significant difference between the young people and the middle-age individuals (mean difference=0.01, $p=0.99$). The result of the one-way ANOVA for the variable, Risk Factor score which indicated the number of risk factors for nursing home entry the participants had, is summarized in Table17.

The results of the tests also indicated the young people perceived higher needs for the listed nursing home services than did the elderly participant ($F=5.7, p<0.01$). However, there was no difference among the young people and the middle-age individuals with regard to their perceived needs for nursing home
Table 17

One-way Analysis of Variance of the Participant’s Risk Factors for Nursing Home Entry and Age Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>E</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>73.3</td>
<td>36.7</td>
<td>9.7</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Within groups</td>
<td>314</td>
<td>1181.5</td>
<td>3.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>316</td>
<td>1254.8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

services (mean difference=0.3, p=0.18). The result of the one-way ANOVA for the Service Needs scores which indicated the participants’ needs for those identified nursing home services, is summarized in Table 18.

The significant difference between the elderly and the young participants may be due to the social changes in the past 20 to 30 years in the Taiwan area (refer to the discussion under the impacts of social changes on the needs of nursing home care in Chapter 2). The social changes might have more impact on the young people than the elderly in terms of their needs for nursing home services. The young participants expected to have more listed services provided within nursing homes, so that the services are available for their family members or for themselves when they become older. It may be that the difference between the elderly and the young participants was simply because the elderly did not feel comfortable reporting their need for nursing home services on a survey.
Table 18

One-way Analysis of Variance of the Participant’s Perceived Need for Nursing Home Services and Age Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>2</td>
<td>12.6</td>
<td>6.3</td>
<td>5.7</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Within groups</td>
<td>316</td>
<td>287.3</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>318</td>
<td>299.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

questionnaire. In conclusion, the discriminate validity of the PET was further supported by the results of the ANOVA tests, because the multi-item subscale scores of the PET were able to discriminate the three age group, including Risk Factor scores and Service Needs scores.

Summary of the Results

The stability reliability, internal consistency reliability, content validity, convergent validity, and discriminant validity of a self-report 59-item instrument, the PET, were evaluated in the study.

Content validity of the PET was established based on the reviews of five content experts. Data obtained from the initial 71-item PET were then factor analyzed by principal components analysis with a varimax rotation for the purpose of determining initial construct validity of Section 2: Perception of the PET. The orthogonally rotated three-factor solution retained 21 items out of the original 27
items and accounted for 49.3% of the explained variance. The positive high correlation between the two-time measures of participants’ needs for nursing homes services ($r=0.59$) and the availability of family care ($r=0.78$) indicated the test-retest reliability of the factored subscales of the PET (Services Needs and Family Availability).

Internal consistency reliability of the PET was demonstrated by Cronbach's alpha at 0.87 for Section 1: Factors of the PET. Forty-two items out of the initial 44 items were retained for Section 1: Factors. In Section 2: Perception of the PET, because of the low test-retest reliability ($r=0.39$) and the low internal consistency reliability (Cronbach's $\alpha=0.47$) for the items loaded on the Potential for Use factor, these four items were eliminated from further instrument evaluation and resulted in a two-subscale Section 2: Perception with an overall Cronbach's alpha of 0.90. The two dimensions of Section 2: Perception were labeled as Service Needs (Cronbach's $\alpha=0.93$) and Family Availability (Cronbach's $\alpha=0.83$). Seventeen factored items within Section 2: Perception were retained after the process of internal consistency validation.

Based on the results from Pearson product-moment correlation tests, the positive strong relationships between the subscales within the second section of the PET demonstrated the convergent validity of Section 2: Perception ($r=0.41$). The results generated from the $t$ tests supported the discriminant validity of the PET, since the PET was able to identify a significant difference between the individuals who have heard of nursing homes prior to the survey and those who have not (see Table 16). The results generated from the one-way ANOVA tests by age group also demonstrated the discriminant validity of the PET (see Table 17 and 18).
Based on the findings generated from the sample of 319, I conclude that the PET is reliable and valid at distinguishing the difference in perceptions of need for nursing home services given variables that can influence the perception, such as people's awareness of nursing home services. Additionally, because of the use of close-ended questions, the PET is easy to score and analyze. Although testing of the PET demonstrates good reliability and validity, a sample from different community settings is recommended to further evaluate the psychometric properties of the PET in order to finalize the construct of the scale for use in the Taiwan area.
CHAPTER V

DISCUSSION AND CONCLUSION

Discussion of Study Findings

As discussed under measurement issues in Chapter II, there are no relevant instruments being evaluated or even developed for assessment of nursing home needs in the Taiwan area. The purpose of this study was to evaluate the reliability and validity of the PET, a community needs assessment instrument for assessing the perceptions of need for nursing homes. Based on the results generated from a random sample of 319 community individuals and key informants, the finalized 59-item PET is an instrument with good stability and internal consistency reliability and has demonstrated content, convergent, and discriminant validity.

The finalized PET consists of 59 closed-ended items and was restructured into two sections: Section 1: Factors (item n=42) and Section 2: Perception (item n=17). The first section of the PET consists of three subscales, including “Awareness” (item n=10), “Personal Experience” (item n=10), and “Risk Factors” (item n=22). The second section of the PET consists of two subscales, including “Service Needs” (item n=8) and “Family Availability” (item n=9). The strength of the PET is the underlying dimensions of Section 2: Perception was established by means of the principal components factor analysis with varimax rotation which allows for interpretation of the construct of the tool. Another strength of the PET
is that the PET was able to discriminate between people who had heard of nursing homes and those who had never heard of nursing homes in Taiwanese societies.

In the current study, 49% of the total participants (60% of the community individual participants and 37% of the key informant participants) had never heard of nursing homes prior to the survey. Similar results were found by Hon (1993), who assessed the knowledge of the elderly about long-term care services, focusing on nursing home services. According to Hon, only 7.6% of the elderly subjects (N = 878) had a real understanding of what a nursing home was and what services were provided within nursing homes. Most subjects in Hon's study (80.9%) indicated that they did not know what a nursing home was or the services provided, and 11.6% had misconceptions of a nursing home. The large percentage of participants who had never heard of nursing homes may be due to the lack of long-term health care programs at the national level and the fact that there are only 11 licensed nursing homes in the Taiwan area.

Use of a probability sampling method increased the generalizability of the study findings. As discussed previously, based on the results of the binomial and chi-square “Goodness of Fit” tests, the community individual sample did reflect the distribution of the general population with regard to gender (two-tailed p=0.24) and marital status (chi-square=0.9, p=0.82). Additionally, the use of a mailed questionnaire mode eased the process for administering the instrument and the use of close-ended questions on the PET eased the process of scoring, entering, and analyzing the obtained data.

Although the findings related to the survey towns’ needs for nursing homes were not the focus of the current study, a comparison between previous studies and
(1993), 47.9% of the 878 randomly selected individuals thought it was either very necessary (7.2%) or necessary (40.9%) to provide nursing home services within their communities. In the current study, 13% of the participants thought it was necessary to provide nursing home services in the survey towns and 71% thought it was very necessary. Additionally, in Wu’s study (1993), he found 43.1% of the community individuals were willing to live in a nursing home.

In the current study, 71% of the participants indicated that they were willing or probably willing to live in a nursing home, if needed. The findings related to the increasing needs for nursing homes and the increasing willingness to live in a nursing home may reflect changes in perception of nursing homes in the Taiwan area. The evidence of the increasing need and willingness to use nursing home services is a bonus of the study, which evaluated a nursing home community needs assessment instrument, the PET.

**Nursing Implications**

**Administrative Aspect**

The results of this study contribute to the field of long-term care in the Taiwan area. The PET will serve as a needs assessment tool for individuals who are interested in establishing nursing home services in Taiwanese communities. As discussed previously, it is important to conduct needs assessment studies prior to construction of any nursing home to reduce the risk of marketing failure and to ensure that the services customers expect to have are available.

The availability of reliable and valid instruments to determine needed and
desired services will contribute to the development of a more comprehensive health service system. For those who are involved with community program development, the results of a community needs assessment using the PET will demonstrate numerical evidence of a community’s needs for nursing home service. A nationwide needs assessment study using the PET would significantly contribute to the development, implementation, and integration of nursing home services. It is especially important to conduct a wide-ranging needs assessment study using the PET in the Taiwan area, since currently there are no specialized long-term care programs in the Taiwan area (see Figure 2 for the Administrative Structure of Health Organizations in the Taiwan area, 1996).

Clinical Aspect

For those health care professionals who already provide nursing home services in the Taiwan area, the PET will serve as a follow-up guide to ensure the services they provide have met their customer or potential customer’s demand. Nursing home service providers may use the PET to collect information about what kinds of nursing home services are needed by the communities close to their institutes. Results from the community needs assessment using the PET may also help the service providers develop plans and strategies to improve their existing nursing homes. For example, education programs for nursing home services may be implemented, if the results of a community needs assessment using the PET indicates a low level of awareness of nursing home services. Certain types of services may have to be provided if those are needed and indicated by the surveyed
communities. Nursing home services providers may consider increasing the number of nursing home beds, if the availability of family care is low in the surveyed communities.

Limitations

The use of telephone directories as the sampling frame was a major limitation of this study. This limitation minimized the generalizability of the study findings. However, as discussed previously, the use of the telephone directory was the most feasible method to obtain the sample for this study. A recommendation to increase the generalizability of the results of this study is to evaluate the PET in different Taiwanese communities. If the PET demonstrates similar results in different community settings, it will help establish the reliability and validity of the PET, which can then serve as a reliable and valid instrument for nursing home needs assessment in Taiwanese societies.

There were no nursing home personnel among the study participants, because there were no licensed nursing homes available in the survey towns or even in Hsinchu County. Although three unlicensed nursing homes were located, they were eliminated from the sampling list because nursing home personnel were not available across all survey towns. In the future, it is strongly recommended that nursing home personnel be included for the community needs assessment using the PET because of their specialty and practical experience in this area.

Although this study did not report on the findings from the open-ended questions which were added to the PET asking for further opinions, suggestions, or comments on the issue of nursing home services, this information is particularly
important where the PET is used for assessment. For example, some participants wrote down their suggestions about the services which they thought should be provided within nursing homes but which were not listed in the close-ended questions. These were services such as psychosocial consultation, management of personal events, transportation services, interaction with families of nursing home residents and encouragement of family members to visit the residents, customer information services, education programs related to disease prevention, health promotion, availability of outdoor facilities, and a public payment system.

Further Research Implications

Estimates of reliability are specific to the sample being tested. Thus, high reported reliability values on an established instrument do not guarantee that reliability will be satisfactory in another sample or with a different population. Therefore, reliability testing needs to be performed on each instrument used in a study prior to performing other statistical analyses. Validity testing actually validates the use of an instrument for a specific group or purpose rather than being directed toward the instrument itself (Burns & Grove, 1993). Thus, researchers should examine the validity of the instruments before using it in any investigation, because validity will vary from one sample to another and from one time to another time. Validity, as well as reliability, is not an all-or-nothing phenomenon but rather a matter of degree (Bohrnstedt, 1970). No instrument is completely reliable (that is, with no random error) or perfectly valid (without systematic error). Thus, the degree of reliability and validity of a measure should be established for each study.
Due to the limitation of money, time, and personnel involved in this study, only 10 towns in Hsinchu County were included in the study. As recommended earlier in this chapter, the expansion of this study to other community settings in the Taiwan area will strengthen the findings of this study. This study can serve as a blue print to conduct a similar study in different communities in Taiwan or, using different language version of the PET, in other areas.

Since many individuals in the current study had never heard of nursing homes, it is strongly recommended that a community needs assessment using the finalized 59-item PET be conducted in the same survey settings in 5 years to evaluate whether the PET will be able to detect the impact of social changes on the perception of need for nursing home services. For example, because of the rapid social changes in the Taiwan area, it should be very interesting to observe how the factor loading on each single item of the PET might change over time.

In the introductory chapter, a community needs assessment model for nursing homes in the Taiwan area was illustrated (see Figure 1). However, since this study was focused on the instrument evaluation of the PET, it was beyond the scope of this study to test the credibility of the self-developed assessment model. Further research may be designed to evaluate the model and to test further the nursing home community needs assessment model. Further psychometric studies might be needed to generate the criteria for discriminating high-need communities from low-need communities with regard to their needs for nursing homes services. The PET was generated and evaluated as a norm-referenced measure, because the intent was to evaluate a community’s nursing home needs relative to the needs of other communities in the Taiwan area. Further research is needed to move the
PET, a norm-referenced measure, to a criterion-referenced measure which will allow the surveyor to determine accurately the status of a community in terms of needs for nursing home services. If the PET can be used as a criterion-referenced measure, the PET will also fit better with the assessment model. Therefore, the surveyor will know to what extent a community can be classified as a high-need community or a low-need community.

Another recommendation for further research is to conduct a community needs assessment using the PET to assess the perceptions of need for nursing home services and the related factors. It is also recommended that the data be coded as it is on the scale used in the final version of the PET (see Appendices J and K). A similar system of data coding and data entry will allow a comparison or a combination of different data sets. To reach this goal, I have modified the original PET to ensure the same scale was used for items within the same section. This modification of the PET is in Appendix J for the English version and Appendix K for the Chinese version.

**Conclusions**

A heterogeneous sample of 319 community individuals and key informants was included in the study to evaluate the reliability and validity of the PET. The results generated from the study findings indicate the PET appears to be a reliable and valid instrument for assessing the perception of need for nursing home services and related factors in the Taiwan area. In summary, the finalized 59-item PET is an instrument with good stability and internal consistency reliability and has demonstrated content, convergent, and discriminant validity. According to
Norbeck (1985), at a minimum the results of psychometric testing should include two types of reliability testing (internal consistency and test-retest), at least one type of content validity, and at least one type of construct (or criterion-related) validity. These also constitute minimum standards for the information required to evaluate an instrument for use in research. Thus, it is appropriate at this point to use the PET for nursing home community needs assessment, since the psychometric properties of the tool have been carefully evaluated and established.

This study also demonstrated a process of instrument evaluation which might draw some attention from Taiwanese researchers and should enhance the recognition of the importance of instrument evaluation research. Use of a probability sampling method increased the generalizability of the study findings. However, further research will definitely be needed to provide or refine better services for nursing home living.
APPENDIX A

INITIAL PERCEPTION EVALUATION TOOL (CHINESE TRANSLATION)
新竹縣民對護理之家需求的意見評估

本問卷的目的在於了解及評估：①新竹縣民需要何種模式的「護理之家」，以及②如何改善目前「護理之家」所提供的服務。問卷中，有些問題只有幾個字不一樣。所以請您在回答問題之前，仔細閱讀題目內容，再填寫您的意見和看法。如果在回答問題本身有建議，請利用問卷旁邊的空白處，或者另外加紙張來書寫您的意見。我將會仔細閱讀您的建議，藉以改善問卷內容。請利用隨函所附的回郵信封，將填寫完畢的問卷寄至：

新竹縣湖口鄉勝利路二段 31 號
陳淑麗 小姐收
以下是護理之家可能提供的服務項目，請在仔細閱讀每個題目後，
圈選一個號碼，用來表示您個人的意見。

1. 您有沒有聽過護理之家所提供的「護理服務」？（例如：打針，給藥
   ，量血壓，餵食，吸痰，維護個人衛生）
   1. 有  2. 沒有  3. 不知道或沒意見

2. 您有沒有聽過護理之家所提供的「醫療服務」？（例如：醫生看診，
   一般性的健康檢查）
   1. 有  2. 沒有  3. 不知道或沒意見

3. 您有沒有聽過護理之家所提供的「餐飲服務」？（例如：一般飲食，
   治療飲食）
   1. 有  2. 沒有  3. 不知道或沒意見

4. 您有沒有聽過護理之家所提供的「社工服務」？（例如：社會補助金
   的申請，轉介病人到其他機構）
   1. 有  2. 沒有  3. 不知道或沒意見

5. 您有沒有聽過護理之家所提供的「復健治療」？（例如：物理治療，
   語言治療，職能治療）
   1. 有  2. 沒有  3. 不知道或沒意見

6. 您有沒有聽過護理之家所提供的「環境維護」？（例如：維護環境的
   安全，清潔和舒適）
   1. 有  2. 沒有  3. 不知道或沒意見

7. 您有沒有聽過護理之家所提供的「休閒娛樂」？（例如：戶外活動，
   電視，電影觀賞，書報閱讀，音樂欣賞）
   1. 有  2. 沒有  3. 不知道或沒意見

8. 您有沒有聽過護理之家所提供的「宗教服務」？（例如：提供佛堂及
   折合一給病人和家屬使用）
   1. 有  2. 沒有  3. 不知道或沒意見

9. 您有沒有聽過護理之家所提供的「洗衣服務」？（例如：床禦及個人
   衣物的洗滌）
   1. 有  2. 沒有  3. 不知道或沒意見

10. 您有沒有聽過護理之家所提供的「臨終照護」？（例如：維護瀕死病
    患的安寧及舒適）
    1. 有  2. 沒有  3. 不知道或沒意見

11. 除了以上所列的服務項目外，您還聽過護理之家提供那些服務？
    請說明：________________________
以下是護理之家可能提供的服務項目，請圈選一個號碼，用來表示您個人的意見。

1. 您或者您的家人，曾經接受過護理之家所提供的『護理服務』嗎？
   （例如：打針，給藥，量血壓，餵食，抽痰，維護個人衛生）
   1. 有   2. 沒有   3. 不知道或沒意見

2. 您或者您的家人，曾經接受過護理之家所提供的『醫療服務』嗎？
   （例如：醫生看病，一般的健康檢查）
   1. 有   2. 沒有   3. 不知道或沒意見

3. 您或者您的家人，曾經接受過護理之家所提供的『餐飲服務』嗎？
   （例如：一般飲食，治療飲食）
   1. 有   2. 沒有   3. 不知道或沒意見

4. 您或者您的家人，曾經接受過護理之家所提供的『社工服務』嗎？
   （例如：社會補助金的申請，轉介病人到其他機構）
   1. 有   2. 沒有   3. 不知道或沒意見

5. 您或者您的家人，曾經接受過護理之家所提供的『復健治療』嗎？
   （例如：物理治療，語言治療，職能治療）
   1. 有   2. 沒有   3. 不知道或沒意見

6. 您或者您的家人，曾經接受過護理之家所提供的『環境維護』嗎？
   （例如：維護環境的安全、清潔和舒適）
   1. 有   2. 沒有   3. 不知道或沒意見

7. 您或者您的家人，曾經接受過護理之家所提供的『休閒娛樂』嗎？
   （例如：戶外活動，電視電影欣賞，書報閱讀，音樂欣賞）
   1. 有   2. 沒有   3. 不知道或沒意見

8. 您或者您的家人，曾經接受過護理之家所提供的『宗教服務』嗎？
   （例如：提供佛堂及祈禱室給病人和家屬使用）
   1. 有   2. 沒有   3. 不知道或沒意見

9. 您或者您的家人，曾經接受過護理之家所提供的『洗衣服務』嗎？
   （例如：床禦及個人衣物的洗滌）
   1. 有   2. 沒有   3. 不知道或沒意見

10. 您或者您的家人，曾經接受過護理之家所提供的『臨終照護』嗎？
    （例如：維護晚期病患的安寧及舒適）
    1. 有   2. 沒有   3. 不知道或沒意見

11. 除了以上所列的服務項目外，您或者您的家人還曾經接受過護理之家提供的那些服務？
    請說明：
    ____________________________________________
    ____________________________________________
    ____________________________________________

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
以下是護理之家可能提供的服務項目，請選一個號碼，用來表示您對於護理之家需不需要提供這些服務的看法。

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<th>1. 您認為護理之家需要提供「護理服務」嗎？(例如：打針、給藥、量血壓、餵食、抽痰、維護個人衛生)</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>12. 除了以上所列的服務項目外，您認為護理之家還需要提供那些服務？</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>請說明：</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
下面的問題是關於您住的鄉鎮對護理之家可能的需求，請圈選一個號碼，用來表示您個人的意見。

1. 您有沒有家人目前住在您鄉鎮上的護理之家？（例如：祖父母、外祖父母、父母、配偶、兒女、媳婦、媳婿、女婿、兄弟姊妹及其配偶、孫子／孫女及其配偶）
<table>
<thead>
<tr>
<th>沒有</th>
<th>可能沒有</th>
<th>可能有</th>
<th>有</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

2. 您有沒有家人可能會在一年之內，住進您鄉鎮上的護理之家？
<table>
<thead>
<tr>
<th>沒有</th>
<th>可能沒有</th>
<th>可能有</th>
<th>有</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

3. 如果您無法照顧自己時，您願意住進護理之家嗎？
<table>
<thead>
<tr>
<th>不願意</th>
<th>可能不願意</th>
<th>可能願意</th>
<th>願意</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

4. 如果您的家人無法照顧他們自己時，您願意安排他們住進護理之家嗎？
<table>
<thead>
<tr>
<th>不願意</th>
<th>可能不願意</th>
<th>可能願意</th>
<th>願意</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

5. 當家裡的人可以照顧您時侯，您願意住進護理之家嗎？
<table>
<thead>
<tr>
<th>不願意</th>
<th>可能不願意</th>
<th>可能願意</th>
<th>願意</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

6. 當家裡的人可以提供照顧的時候，您願意安排您的家人住進護理之家嗎？
<table>
<thead>
<tr>
<th>不願意</th>
<th>可能不願意</th>
<th>可能願意</th>
<th>願意</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

7. 您住的鄉鎮，有沒有足夠數量的護理之家？
<table>
<thead>
<tr>
<th>沒有</th>
<th>大概沒有</th>
<th>大概有</th>
<th>有</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

8. 您住的鄉鎮，應該增加或者減少護理之家的數量？
<table>
<thead>
<tr>
<th>應該減少</th>
<th>大概應該</th>
<th>大概應該</th>
<th>應該增加</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

9. 您知道如何在您住的鄉鎮中尋找護理之家嗎？
<table>
<thead>
<tr>
<th>不知道</th>
<th>大概不知道</th>
<th>大概知道</th>
<th>知道</th>
<th>不確定或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

10. 如果您需要為自己找一間護理之家，您在乎這間護理之家是否有合法立案嗎？
    | 不在乎 | 可能不在乎 | 可能在乎 | 在乎 | 不知道或沒意見 |
    |--------|-------------|----------|-----|------------------|
    | 1      | 2           | 3        | 4   | 0                |

11. 您的家庭有沒有能力支付一個月約25,000至30,000的照顧費用給護理之家？
    | 沒有 | 可能沒有 | 可能有 | 有 | 不知道或沒意見 |
    |-----|--------|-------|---|------------------|
    | 1   | 2      | 3     | 4 | 0                |
請圈選一個號碼，用來比較您個人對以下居住方式的喜好程度。

1. 如果您無法照顧自己時，您會比較喜歡「個人獨居」還是「住進護理之家」？
   1 2 3 4 5
非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
個人獨居 個人獨居 偏好 護理之家 護理之家

2. 如果您無法照顧自己時，您會比較喜歡「和家人同住」還是「住進護理之家」？
   1 2 3 4 5
非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
和家人同住 和家人同住 偏好 護理之家 護理之家

3. 如果您無法照顧自己時，您會比較喜歡「和親戚同住」還是「住進護理之家」？
   1 2 3 4 5
非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
和親戚同住 和親戚同住 偏好 護理之家 護理之家

4. 如果您無法照顧自己時，您會比較喜歡「和朋友同住」還是「住進護理之家」？
   1 2 3 4 5
非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
和朋友同住 和朋友同住 偏好 護理之家 護理之家

5. 如果您因患有慢性疾病而無法照顧自己時，您會比較喜歡「住進醫院」還是「住進護理之家」？
   1 2 3 4 5
非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
住醫院 護理之家 偏好 護理之家 護理之家

6. 除了以上所列的居住方式外，如果您因患有慢性疾病而無法照顧自己時，您還會選擇那些種類的居住方式？
請說明：

    

下面的問題是有關於您個人的基本資料。

1. 您今年幾歲？_______足歲
2. 您在哪裡出生？________省________縣
3. 您的父親在哪裡出生？________省________縣
4. 您居住在現在所住的鄉鎮有多久了？_______年_______月
5. 包括您自己在內，目前共有多少人和您住在一起？_______人
6. 和您住在一起的人中，共有多少人已經超過65歲？_______人

（請接下頁的問題）
7. 請問住在您家裡的人中，共有多少人患有以下的疾病或症狀？如果沒有的話，請填“0”。

<table>
<thead>
<tr>
<th>疾病或症狀</th>
<th>多少人有這些疾病或症狀？</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 中風</td>
<td>人</td>
</tr>
<tr>
<td>2. 脊髓損傷</td>
<td>人</td>
</tr>
<tr>
<td>3. 心臟病</td>
<td>人</td>
</tr>
<tr>
<td>4. 糖尿病</td>
<td>人</td>
</tr>
<tr>
<td>5. 高血壓</td>
<td>人</td>
</tr>
<tr>
<td>6. 精神異常</td>
<td>人</td>
</tr>
<tr>
<td>7. 神智不清</td>
<td>人</td>
</tr>
<tr>
<td>8. 老人痴呆症</td>
<td>人</td>
</tr>
<tr>
<td>9. 其他（請說明：）</td>
<td>人</td>
</tr>
</tbody>
</table>

8. 請問住在您家裡的人中，共有多少個18歲以上的人，無法自己完成以下的日常活動？如果沒有的話，請填“0”。

<table>
<thead>
<tr>
<th>日常活動</th>
<th>多少成人無法完成這些日常活動？</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 吃飯</td>
<td>人</td>
</tr>
<tr>
<td>2. 洗澡</td>
<td>人</td>
</tr>
<tr>
<td>3. 走路</td>
<td>人</td>
</tr>
<tr>
<td>4. 穿脫衣服</td>
<td>人</td>
</tr>
<tr>
<td>5. 上下床</td>
<td>人</td>
</tr>
<tr>
<td>6. 坐臥在椅子上</td>
<td>人</td>
</tr>
<tr>
<td>7. 控制大小便</td>
<td>人</td>
</tr>
</tbody>
</table>

— 請圈選一個號碼，用來回答以下的問題。 —

9. 您的性別是？
   1. 男  
   2. 女

10. 您目前的婚姻狀況？
    1. 已婚  
   2. 未婚  
   3. 離婚  
   4. 分居  
   5. 與／寡  
   6. 其他（請說明：）

11. 您目前有特別的宗教信仰嗎？
    1. 有  
    2. 沒有  
    3. 不確定或沒意見

12. 您的最高教育程度？
    1. 未受過正式教育  
    2. 小學  
    3. 國中／初中  
    4. 高中／高職  
    5. 專科／大學  
    6. 研究所及以上  
    7. 其他（請說明：）

13. 您全家去年的收入，大約新台幣多少錢？
    1. 250,000 及以下  
    2. 250,001-500,000  
    3. 500,001-750,000  
    4. 750,001-1,000,000  
    5. 1,000,001-1,250,000  
    6. 1,250,001-1,500,000  
    7. 1,500,001-1,750,000  
    8. 1,750,001-2,000,000  
    9. 2,000,000 以上

14. 您全家去年的平均收入，是否足夠支付整個家庭的開銷嗎？
    1. 不夠  
    2. 剛好夠用  
    3. 還有餘額

（請接下一页的問題）
15. 您是從哪裡第一次聽到護理之家？
1. 這份問卷  2. 家人  3. 親朋
4. 朋友  5. 電視  6. 廣播電台
7. 報紙  8. 雜誌  9. 其他（請說明：  

16. 您目前在護理之家工作嗎？
1. 是  2. 不是

17. 兩週後，您願意再填寫一份類似的評估問卷嗎？
1. 願意  2. 不願意

18. 您過去一年的體況大致如何？
1  2  3  4  5
很差  不太好  普通  還不錯  很好

19. 您過去一年的精神狀況大致如何？
1  2  3  4  5
很差  不太好  普通  還不錯  很好

20. 您與家人之間的關係大致如何？
1  2  3  4  5
很不親近  不太親近  普通  還算親近  很親近

21. 您喜歡與家人相處的時刻嗎？
1  2  3  4  5
很不喜歡  不太喜歡  普通  還算喜歡  很喜歡

我瞭解您費了許多的心力與時間，填寫這份問卷。再一次誠摯地感謝您對本研究的貢獻。請利用隨函所附的回郵信封，將填寫完畢的問卷寄回給我。如果回郵信封遺失的話，請寄至：

新竹縣湖口鄉勝利路二段 31 號
陳淑麗 小姐收

如果您還有其他有關於，如何改善新竹縣護理之家的看法和意見，請利用下面的空白處來書寫。
APPENDIX B

INITIAL PERCEPTION EVALUATION TOOL
(ENGLISH TRANSLATION)
The purpose of this survey is to examine (a) what kinds of nursing homes are needed by Hsinchu citizens and (b) what can be done to improve existing nursing homes. Some of the questions in the questionnaire will differ in only a few words, so please read each one carefully and answer all of them. If you wish to comment on any question, please feel free to use the space in the margins or on a separate sheet of paper. Your comments will be read carefully and taken into account. Please use the enclosed return envelope and send the questionnaire to:

Shu-li Chen, R.N., M.S.
The term "nursing home" here refers to "an institution which offers skilled health care twenty-four hours a day, seven days a week, that is provided by a range of health professionals (i.e., nurses, physicians, social workers, physical therapists, and dietitians)."

Below is a list of services which might be provided within nursing homes. Please read each statement carefully and circle one number to indicate whether you are aware of these services.

1. Are you aware of NURSING services which are provided within nursing homes? (i.e., skilled nursing care, personal care)
   1. Yes  2. No  3. Don’t know or no opinion

2. Are you aware of MEDICAL services which are provided within nursing homes? (i.e., physician visits, regular physical exam)
   1. Yes  2. No  3. Don’t know or no opinion

3. Are you aware of DIETARY services which are provided within nursing homes? (i.e., regular diet, special diet)
   1. Yes  2. No  3. Don’t know or no opinion

4. Are you aware of SOCIAL WORK services which are provided within nursing homes? (i.e., finding sources of financial support, referring clients to other services)
   1. Yes  2. No  3. Don’t know or no opinion

5. Are you aware of REHABILITATION services which are provided within nursing homes? (i.e., physical, occupational, speech therapy)
   1. Yes  2. No  3. Don’t know or no opinion

6. Are you aware of ENVIRONMENTAL services which are provided within nursing homes? (i.e., maintenance of safety, cleanliness, comfort)
   1. Yes  2. No  3. Don’t know or no opinion

7. Are you aware of RECREATIONAL services which are provided within nursing homes? (i.e., outdoor activities, reading, music, TV, movie)
   1. Yes  2. No  3. Don’t know or no opinion

8. Are you aware of RELIGIOUS services which are provided within nursing homes? (i.e., a place for nursing home residents or their family members to pray)
   1. Yes  2. No  3. Don’t know or no opinion

9. Are you aware of LAUNDRY services which are provided within nursing homes? (i.e., linen laundry, personal laundry)
   1. Yes  2. No  3. Don’t know or no opinion

10. Are you aware of HOSPICE services which are provided within nursing homes? (i.e., care of terminal patients)
    1. Yes  2. No  3. Don’t know or no opinion

11. Other than the services listed above, what nursing home services are you aware of?
    Please specify: ________________________________

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Below is a list of ten services which might be provided within nursing homes. Please circle one number to indicate whether you have ever used the services for yourself or your family members.

1. Have you or your family ever used NURSING services which are provided within nursing homes? (i.e., skilled nursing care, personal care)
   1. Yes    2. No    3. Don’t know or no opinion

2. Have you or your family ever used MEDICAL services which are provided within nursing homes? (i.e., physician visits, regular physical exam)
   1. Yes    2. No    3. Don’t know or no opinion

3. Have you or your family ever used DIETARY services which are provided within nursing homes? (i.e., regular diet, special diet)
   1. Yes    2. No    3. Don’t know or no opinion

4. Have you or your family ever used SOCIAL WORK services which are provided within nursing homes? (i.e., finding sources of financial support, referring clients to other services)
   1. Yes    2. No    3. Don’t know or no opinion

5. Have you or your family ever used REHABILITATION services which are provided within nursing homes? (i.e., physical, occupational, speech therapy)
   1. Yes    2. No    3. Don’t know or no opinion

6. Have you or your family ever used ENVIRONMENTAL services which are provided within nursing homes? (i.e., maintenance of safety, cleanliness, comfort)
   1. Yes    2. No    3. Don’t know or no opinion

7. Have you or your family ever used RECREATIONAL services which are provided within nursing homes? (i.e., outdoor activities, reading, music, TV, movie)
   1. Yes    2. No    3. Don’t know or no opinion

8. Have you or your family ever used RELIGIOUS services which are provided within nursing homes? (i.e., a place for nursing home residents or their family members to pray)
   1. Yes    2. No    3. Don’t know or no opinion

9. Have you or your family ever used LAUNDRY services which are provided within nursing homes? (i.e., linen laundry, personal laundry)
   1. Yes    2. No    3. Don’t know or no opinion

10. Have you or your family ever used HOSPICE services which are provided within nursing homes? (i.e., care of terminal patients)
    1. Yes    2. No    3. Don’t know or no opinion

11. Other than the services listed above, what nursing home services have you or your family ever used?
    Please specify: _______________________________
Below is a list of services which might be provided within nursing homes. Please indicate your opinion about WHAT KINDS OF SERVICES SHOULD BE PROVIDED WITHIN NURSING HOMES by circling one number.

1. Do you think nursing homes should provide NURSING services? (i.e., skilled nursing care, personal care)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

2. Do you think nursing homes should provide MEDICAL services? (i.e., physician visits, regular physical exam)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

3. Do you think nursing homes should provide DIETARY services? (i.e., regular diet, special diet)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

4. Do you think nursing homes should provide SOCIAL WORK services? (i.e., finding sources of financial support, referring clients to other services)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

5. Do you think nursing homes should provide REHABILITATION services? (i.e., physical, occupational, speech therapy)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

6. Do you think nursing homes should provide ENVIRONMENTAL services? (i.e., maintenance of safety, cleanliness, comfort)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

7. Do you think nursing homes should provide RECREATIONAL services? (i.e., outdoor activities, reading, music, TV, movie)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

8. Do you think nursing homes should provide LAUNDRY services? (i.e., linen or personal laundry)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

9. Do you think nursing homes should provide RELIGIOUS services? (i.e., a place for nursing home residents or their family members to pray)
   - 1 = No
   - 2 = Probably no
   - 3 = Probably yes
   - 4 = Yes
   - 0 = Don't know or no opinion

10. Do you think nursing homes should provide HOSPICE services? (i.e., care of terminal patients)
    - 1 = No
    - 2 = Probably no
    - 3 = Probably yes
    - 4 = Yes
    - 0 = Don't know or no opinion

11. Do you think your town need the services provided by a nursing home?
    - 1 = No
    - 2 = Probably no
    - 3 = Probably yes
    - 4 = Yes
    - 0 = Don't know or no opinion

12. Other than the services listed above, what services do you think should be provided within nursing homes? Please specify:

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The following questions are related to the potential use of nursing home services in your town. Please indicate your response by circling one number.

1. Do you have a family member who is currently living in a nursing home in your town? (i.e., grandparents, parents, sons, daughters-in-law, daughters, sons-in-law, brothers and their spouse, sisters and their spouse, grandchildren and their spouse)
   1  2  3  4  0
   No  Probably no  Probably yes  Yes  Don't know or no opinion

2. Do you have a family member who will be living in a nursing home one year from now?
   1  2  3  4  0
   No  Probably no  Probably yes  Yes  Don't know or no opinion

3. If you are not able to take care of yourself, would you want to live in a nursing home?
   1  2  3  4  0
   No  Probably no  Probably yes  Yes  Don't know or no opinion

4. If your family members are not able to take care of themselves, would you place them into a nursing home?
   1  2  3  4  0
   No  Probably no  Probably yes  Yes  Don't know or no opinion

5. Are you willing to live in a nursing home even if someone in your family can provide the care?
   1  2  3  4  0
   No  Probably no  Probably yes  Yes  Don't know or no opinion

6. Are you willing to place your family members into a nursing home even if someone in your family can provide the care?
   1  2  3  4  0
   No  Probably no  Probably yes  Yes  Don't know or no opinion

7. Does your town have enough number of nursing homes?
   1  2  3  4  0
   No  Probably no  Probably yes  Yes  Don't know or no opinion

8. Should the number of nursing homes in your town be increased or decreased?
   Decreased  Probably yes  Increased  Don't know or no opinion
   1  2  3  4  0

9. Do you know where to find a nursing home in your town?
   1  2  3  4  0
   No  Probably no  Probably yes  Yes  Don't know or no opinion

10. When you are choosing a nursing home for yourself, would you care whether the nursing home is legally registered or not?
    1  2  3  4  0
    No  Probably no  Probably yes  Yes  Don't know or no opinion

11. Is your family able to pay the bills for a nursing home which cost about $25,000 to $30,000 New Taiwan dollars per month?
    1  2  3  4  0
    No  Probably no  Probably yes  Yes  No opinion

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The following questions are related to residential options. Please indicate your relative preference for the following options by circling one number.

1. If you can no longer take care of yourself independently, would you prefer “live alone” or “live in a nursing home”?
   - Strongly prefer live alone
   - Prefer live alone
   - No preference
   - Prefer live in a nursing home
   - Strongly prefer live in a nursing home

2. If you can no longer take care of yourself independently, would you prefer “live with family” or “live in a nursing home”?
   - Strongly prefer live with family
   - Prefer live with family
   - No preference
   - Prefer live in a nursing home
   - Strongly prefer live in a nursing home

3. If you can no longer take care of yourself independently, would you prefer “live with relative” or “live in a nursing home”?
   - Strongly prefer live with relative
   - Prefer live with relative
   - No preference
   - Prefer live in a nursing home
   - Strongly prefer live in a nursing home

4. If you can no longer take care of yourself independently, would you prefer “live with friends” or “live in a nursing home”?
   - Strongly prefer live with friends
   - Prefer live with friends
   - No preference
   - Prefer live in a nursing home
   - Strongly prefer live in a nursing home

5. If you can no longer take care of yourself independently, would you prefer “live in a hospital” or “live in a nursing home”?
   - Strongly prefer live in a hospital
   - Prefer live in a hospital
   - No preference
   - Prefer live in a nursing home
   - Strongly prefer live in a nursing home

6. Other than the options listed above, what residential options would you choose if you can no longer take care of yourself independently?
   Please specify:

   __________________________________________

   __________________________________________

The following questions ask you something about yourself.

1. What is your legal age? _____ years old
2. Where is your birth place? _______ Province _______ County
3. Where is your father's birth place? _______ Province _______ County
4. How long have you lived in your town? _______ years _______ months
5. How many people live in your household, including yourself? _______
   person(s)
6. How many people in your household are aged above 65, including yourself?
   _______ person(s)

(Please continue on next page)
7. The following is a list of diseases. Please indicate the number of people in your household who have this kind of disease. **If none, indicate "0".**

<table>
<thead>
<tr>
<th>Diseases</th>
<th>How many of them have it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Spinal cord injury</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Heart disease</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Mental disorders</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Cognitively impaired</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Alzheimer's disease</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Other (Please specify:________________)</td>
<td>__________ Person(s)</td>
</tr>
</tbody>
</table>

8. The following is a list of activities of daily living. Please indicate the number of people in your household who are aged over 18 years old and **CAN'T** perform this kind of activity independently. **If none, indicate "0".**

<table>
<thead>
<tr>
<th>Daily activities</th>
<th>How many of them CAN'T do it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Bathing</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Walking</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Dressing</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Moving from the bed</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Sitting on a chair</td>
<td>__________ Person(s)</td>
</tr>
<tr>
<td>Controlling urinary and fecal discharge</td>
<td>__________ Person(s)</td>
</tr>
</tbody>
</table>

| Please answer the following questions by circling one number. |

9. What is your gender?
   1. Male  2. Female

10. What is your present marital status?
    4. Separated  5. Widowed  6. Other (Please specify:________________)

11. Do you have a religious preference?
    1. Yes  2. No  3. Not sure or no opinion

12. What is your highest degree of education completed?
    1. No formal education  2. Elementary school  3. Junior high school
    7. Other (Please specify:________________)

13. What was your total annual household income for last year? (New Taiwan Dollars)
    1. Below $ 250,000  4. $ 750,001 - $ 1,000,000  7. $ 1,500,001 - $ 1,750,000
    2. $ 250,001 - $ 500,000  5. $ 1,000,001 - $ 1,250,000  8. $ 1,750,001 - $ 2,000,000
    3. $ 500,001 - $ 750,000  6. $ 1,250,001 - $ 1,500,000  9. Above $ 2,000,000

14. Is your annual household income adequate to meet your family's needs?

(Please continue on next page)
15. Where did you first hear about nursing homes?
   1. This questionnaire  2. From family members  3. From relatives
   7. From newspaper  8. From magazines  9. Other (Please
   specify: __________)

16. Do you work in a nursing home?
   1. Yes  2. No

17. Would you be willing to participate in a follow-up survey two weeks after this one?
   1. Yes  2. No

18. In general, how would you say your PHYSICAL health has been for the past year?
   1  2  3  4  5
   Very poor  Poor  Fair  Good  Very good

19. In general, how would you say your MENTAL health has been for the past year?
   1  2  3  4  5
   Very poor  Poor  Fair  Good  Very good

20. How would you describe your relationship with your family?
   1  2  3  4  5
   Not close  Not very close  Fair  Somewhat close  Very close

21. To what extent do you enjoy spending time with your family?
   1  2  3  4  5
   No  Not much  Fair  Some  Lots of
   enjoyment  enjoyment  enjoyment  enjoyment

I realize that this questionnaire required a great deal of effort and time. Your contribution
   to this study is greatly appreciated. Please use the enclosed envelope that was provided to
   return the survey. If this envelope was lost, my mailing address is:

   Shu-li Chen

   [Address]

If you have any further suggestions about the kinds of nursing homes you would like,
please use this space for that purpose.
APPENDIX C

SCRIPT FOR TELEPHONE SCREENING
Hello, is this the (Last Name) residence?

Yes

May I speak to (first name and last name)?
This is Shu-li Chen. I am a doctoral candidate at the University of Utah College of Nursing. I am doing a community survey to find out what kinds of nursing homes are needed by Hsinchu citizens and what can be done to improve them. Your telephone number was drawn in a small, but representative sample of Hsinchu County. I am calling to invite you to participate in this study. A questionnaire will be mailed to you if you are willing to participate in the study. Would you like to participate in this study?

Yes

No

The number I was calling is ______ and it was for (first name and last name) residence.

Correct number

Wrong number

Terminate with: I am sorry to have bothered you.

No

May I ask the reasons for refusing?

Try the strategies listed on next page.

Yes

No

Thank you for your willingness to participate in this study. Because of the purpose of this study, the survey questionnaire will be sent to individuals who are aged 20 or above and have lived in Hsinchu for more than six months. Thus, I need to ask two short questions. The first one is, are you aged ______?

Yes

The second question is, have you lived in your town for more than six months?

No

To send the survey questionnaire to you, I need to have your address. Would you give me your current address?

Get the address and repeat it back to the subject:

I will send the questionnaire to you next week. Thank you again and good-bye.

Yes

No

Where did you live before moving to the town where you live now?

Is the town one of the survey towns?

Yes

Start from the beginning.

No

May I know when will be the best time to reach him or her by phone?

Get the date and the time to call back.

No

I am sorry that you are not eligible for this study. But, is there anyone in your household who is aged 20 and has lived in Hsinchu for more than six months?

Yes

May I speak to him or her to introduce this study?

No

Terminate with: Thank you very much anyway. Good-bye.
Strategies to deal with reasons for refusals (adapted from Dillman, 1978, p.262)

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Possible responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too busy</td>
<td>To complete the survey questionnaire should only take about 10 to 15 minutes.</td>
</tr>
<tr>
<td>Bad health</td>
<td>I am sorry to hear that. Have you been sick long? Is there anyone in your household who can help you complete the survey questionnaire, so that your opinions can be part of the study? I really do want your opinion. (If lengthy or serious illness, substitute another member of household. If that is not possible, excuse myself.)</td>
</tr>
<tr>
<td>Illiterate</td>
<td>Is there anyone in your household who can help you complete the survey questionnaire, so that your opinions can be part of the study? I really do want your opinion. (If no, substitute another member of household. If that is not possible, excuse myself.)</td>
</tr>
<tr>
<td>Too old</td>
<td>Older people's opinions are just as important in this particular survey as anyone else's. In order for the results to be representative for all residents of the your town, I have to be sure that older people have as much chance to give their opinion as anyone else does. I really do want your opinion.</td>
</tr>
<tr>
<td>Feel inadequate: don't know enough to answer</td>
<td>The questions are not at all difficult. They mostly concern how you feel about your needs for nursing home services rather than how much you know about certain things. Some of the people who have already completed the questionnaire had the same concern you have, but once they got started they did not have any difficulty answering the questions. Maybe I could read just a few questions to you and you can see what they are like. The questions are like, does your town have enough nursing homes? or do you think medical services, such as regular physician visits should be provided within nursing homes? do you know someone who is currently living in a nursing home?</td>
</tr>
<tr>
<td>Not interested</td>
<td>It's very important that I get the opinions of everyone in the sample, so that I can accurately describe what kinds of nursing homes are needed by your town and how to improve them. I would really like to have your opinion, too.</td>
</tr>
<tr>
<td>Someone else will know what I think</td>
<td>I can certainly understand. That is why all of the return questionnaires are confidential. Protecting people's privacy is one of my major concerns and to do it people's name are separated from the questionnaires. An identification number will be assigned to each participant. No one in my study will be identified by name and I am the only one can get access to the completed questionnaire.</td>
</tr>
<tr>
<td>Objects to surveys</td>
<td>The survey is very important because the results can help the government officers, policy makers, and the interested citizens to know what kinds of nursing homes are needed by your town and what can be done to improve them. I would really like have your opinion.</td>
</tr>
</tbody>
</table>

If the subjects still don't want to participate, assess basic demographic data (i.e., age, gender, and educational level) and then terminate with: I think I can understand your feelings, and you are not wanting to participate in the study. But, thank you very much anyway. Good-bye.
APPENDIX D

FORM TO RECORD THE RESULTS OF TELEPHONE SCREENING
<table>
<thead>
<tr>
<th>ID</th>
<th>Name Address</th>
<th>Telephone Numbers</th>
<th>Age</th>
<th>Residency</th>
<th>Results - refusal or joining</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
APPENDIX E

FORM TO RECORD QUESTIONNAIRES RETURNED DAILY
<table>
<thead>
<tr>
<th>RECORD OF QUESTIONNAIRES RETURNED DAILY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Today's Date:</strong></td>
</tr>
<tr>
<td><strong>Total Returned Questionnaires (up To Date):</strong></td>
</tr>
<tr>
<td><strong>Total Completed Questionnaires (up To Date):</strong></td>
</tr>
<tr>
<td><strong>1. Questionnaires received today (List Identification Numbers):</strong></td>
</tr>
<tr>
<td><strong>2. Refusals today (List full name):</strong></td>
</tr>
<tr>
<td><strong>3. Unable to locate (List full name):</strong></td>
</tr>
<tr>
<td><strong>4. Incomplete questionnaires (List full name):</strong></td>
</tr>
</tbody>
</table>
APPENDIX F

COVER LETTER FOR COMMUNITY INDIVIDUAL INFORMANTS
November 19, 1996

Dear Mr./Ms.:  

My name is Shu-li Chen. I am a doctoral candidate at the University of Utah College of Nursing. Last week I called you to invite you to participate in the enclosed survey. The purpose of this community-based survey is to examine (a) what kinds of nursing homes are needed by the Hsinchu residents and (b) what can be done to improve existing nursing homes.

You were selected to participate this study through random sampling procedures. Thus, you are one of the representative sample of Hsinchu residents. It is extremely important that your questionnaire be completed and returned, so that the results of this survey will accurately represent the opinions of Hsinchu residents. Your information will be compiled with data and opinions from approximately 150 other community individuals and 150 service providers. This information will be used to assist health care professionals to understand Hsinchu residents' needs for nursing home services and eventually provide better care. The results of the study will be made available to officials and representatives in the Hsinchu County government and all interested citizens. You may receive a summary of results by writing your name and address on the enclosed blank envelope. I expect to have results ready to send in May or June 1997. Please DO NOT put this information in the questionnaire itself.

In order to maintain confidentiality, the information you provide will be coded with a number to avoid direct identification of you by name. You are assured of complete confidentiality. Your name will never be placed on the questionnaire. The questionnaire has an identification number for mailing purposes only, which is located on the upper-right-hand corner of the questionnaire. Please feel free to voice your opinions. It is important to know that the researcher, Shu-li Chen, will be the only one having access to the individual data. Your participation is strictly voluntary; you are under no obligation to complete this questionnaire. However, if you decide to complete the questionnaire and return it in the stamped envelope provided, you are declaring your willingness to participate. If you are not able to complete the enclosed questionnaire, the researcher has the right to withdraw your data from this study.

Although the questionnaire may seem long, it is estimated that the questions should only take approximately 15 minutes to complete. I would be most happy to answer any questions you might have. Please write or call. My 24-hour telephone number is [redacted]. If you have questions regarding your rights as a research subject or if problems arise which you do not feel you can discuss with the researcher, please contact the Institutional Review Board at [redacted]. No physical risks should occur during the study. In the event you sustain injury resulting from your participation in the research project, the University of Utah can provide to you, without charge, emergency and temporary medical treatment not otherwise covered by your own insurance. If you believe that you have sustained an injury as a result of your participation in this research program, please contact the Office of the Vice President for Research, phone number [redacted]

Your contribution to this important study is greatly appreciated.

Sincerely yours,

Shu-li Chen, Project Director
APPENDIX G

COVER LETTER FOR KEY COMMUNITY INFORMANTS
Dear Mr./Ms.

My name is Shu-li Chen. I am a doctoral candidate at the University of Utah College of Nursing. Last week I called you to invite you to participate in the enclosed survey. The purpose of this community-based survey is to examine (a) what kinds of nursing homes are needed by the Hsinchu residents and (b) what can be done to improve existing nursing homes.

You have been contacted because I feel you would be a good spokesperson for the individuals in Hsinchu. You are trusted and know the situations community individuals are experiencing. You are asked to complete this questionnaire and return it in the provided envelope. Your information will be compiled with data and opinions from approximately 150 other community individuals and 150 service providers. This information will be used to assist health care professionals to understand Hsinchu residents' needs for nursing home services and eventually provide better care. The results of the study will be made available to officials and representatives in the Hsinchu County government and all interested citizens. You may receive a summary of results by writing your name and address on the enclosed blank envelope. I expect to have results ready to send in May or June 1997. Please DO NOT put this information in the questionnaire itself.

In order to maintain confidentiality, the information you provide will be coded with a number to avoid direct identification of you by name. You are assured of complete confidentiality. Your name will never be placed on the questionnaire. The questionnaire has an identification number for mailing purposes only, which is located on the upper-right-hand corner of the questionnaire. Please feel free to voice your opinions. It is important to know that the researcher, Shu-li Chen, will be the only one having access to the individual data. Your participation is strictly voluntary; you are under no obligation to complete this questionnaire. However, if you decide to complete the questionnaire and return it in the stamped envelope provided, you are declaring your willingness to participate. If you are not able to complete the enclosed questionnaire, the researcher has the right to withdraw your data from this study.

Although the questionnaire may seem long, it is estimated that the questions should only take approximately 20 minutes to complete. I would be most happy to answer any questions you might have. Please write or call. My 24-hour telephone number is [redacted]. If you have questions regarding your rights as a research subject or if problems arise which you do not feel you can discuss with the researcher, please contact the Institutional Review Board at [redacted]. No physical risks should occur during the study. In the event you sustain injury resulting from your participation in the research project, the University of Utah can provide to you, without charge, emergency and temporary medical treatment not otherwise covered by your own insurance. If you believe that you have sustained an injury as a result of your participation in this research program, please contact the Office of the Vice President for Research, phone number [redacted].

Your contribution to this important study is greatly appreciated.

Sincerely yours,

Shu-li Chen, Project Director
APPENDIX H

A THANK YOU LETTER
Dear Mr./Ms.: 

Within last week or so, a questionnaire was sent to you seeking your opinion about what kinds of nursing homes are needed by your town, and what can be done to improve existing nursing homes. Your name was drawn in a random sample of households in your town. You have kindly completed and returned it to me. Please accept my sincere thanks. Your contribution to the success of this study is greatly appreciated.

Best wishes for a happy and healthy 1997.

Sincerely yours,

Shu-li Chen, Project Director
APPENDIX I

FOLLOW-UP LETTER
Dear Mr./Ms.

About two weeks ago I wrote to you seeking your opinion about what kinds of nursing homes are needed by your town and what can be done to improve existing nursing homes. As of today, I have not yet received your completed questionnaire.

This is the first study of this type that has been done in Hsinchu County. Therefore, the results are particularly important to the many citizens, community planners, and policy makers to determine what kinds of nursing homes should be provided to best meet the needs of Hsinchu County. The usefulness of the results of this study depends on how accurately I am able to describe what Hsinchu citizens want.

I am writing to you again because of the significance each questionnaire has to the usefulness of this study. You are one of a small but representative sample of your town. In order for the results of this study to be truly representative of the opinions of all residents in your town, it is essential that each questionnaire be completed and returned.

If by some chance you did not receive the questionnaire or it got misplaced, please call me right away, at [redacted] and I will get another one in the mail to you today. I will be happy to send you a copy of the results if you want them. Simply put your name and address on the blank envelope enclosed. I expect to have results ready to send next May or June.

Your cooperation and assistance are greatly appreciated.

Most Sincerely,

Shu-li Chen, Project Director
APPENDIX J

FINALIZED PERCEPTION EVALUATION TOOL
(CHINESE TRANSLATION)
本問卷的目的在於了解及評估：①新竹縣民需要何種模式的『護理之家』，以及②如何改善目前『護理之家』所提供的服務。問卷中，有些問題只有幾個選項，所以請您在回答問題之前，仔細閱讀問題內容。再填寫您的意見和看法。如果您對於問題有何建議，請利用問卷旁邊的空白處，或者另外加紙張來書寫您的意見。我將會仔細閱讀您的建議，藉以改善問卷寄至：

新竹縣湖口鄉勝利路二段31號
陳淑麗 小姐收
以下是護理之家可能提供的服務項目，請仔細閱讀每個題目後，
圈選一個號碼，用來表示您個人的意見。

| 1. 您有沒有聽過護理之家所提供的「護理服務」？（例如：打針，給藥，
  量血壓，餵食，抽痰，維護個人衛生）
  - 沒有
  - 有
  - 不知道或沒意見
| 2. 您有沒有聽過護理之家所提供的「醫療服務」？（例如：醫生看病，
  一氧化碳的健康檢查）
  - 沒有
  - 有
  - 不知道或沒意見
| 3. 您有沒有聽過護理之家所提供的「餐飲服務」？（例如：一般飲食，
  治療飲食）
  - 沒有
  - 有
  - 不知道或沒意見
| 4. 您有沒有聽過護理之家所提供的「社工服務」？（例如：社會補助金的申請，轉介病人到其他機構）
  - 沒有
  - 有
  - 不知道或沒意見
| 5. 您有沒有聽過護理之家所提供的「復健治療」？（例如：物理治療，
  語言治療，職能治療）
  - 沒有
  - 有
  - 不知道或沒意見
| 6. 您有沒有聽過護理之家所提供的「環境維護」？（例如：維護環境的安全，清潔和舒適）
  - 沒有
  - 有
  - 不知道或沒意見
| 7. 您有沒有聽過護理之家所提供的「休閒娛樂」？（例如：戶外活動，
  電視，電影觀賞，書報閱讀，音樂欣賞）
  - 沒有
  - 有
  - 不知道或沒意見
| 8. 您有沒有聽過護理之家所提供的「宗教服務」？（例如：提供佛堂及
  祈禱室給病人和家屬使用）
  - 沒有
  - 有
  - 不知道或沒意見
| 9. 您有沒有聽過護理之家所提供的「洗衣服務」？（例如：床單及個人
  衣物的洗滌）
  - 沒有
  - 有
  - 不知道或沒意見
| 10. 您有沒有聽過護理之家所提供的「臨終照護」？（例如：維護瀕死病人
  的安寧及舒適）
  - 沒有
  - 有
  - 不知道或沒意見
| 11. 除了以上所列的服務項目外，您還聽過護理之家提供那些服務？
  請說明：

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
以下是護理之家可能提供的服務項目，請圈選一個號碼，用來表示您個人的意見。

|  | 1. 您或者您的家人，曾經接受過護理之家所提供的「護理服務」嗎？
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>沒有</td>
<td>有</td>
<td>0. 不知道或沒意見</td>
<td></td>
</tr>
</tbody>
</table>
|  | 2. 您或者您的家人，曾經接受過護理之家所提供的「醫療服務」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |
|  | 3. 您或者您的家人，曾經接受過護理之家所提供的「餐飲服務」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |
|  | 4. 您或者您的家人，曾經接受過護理之家所提供的「社工服務」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |
|  | 5. 您或者您的家人，曾經接受過護理之家所提供的「復健治療」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |
|  | 6. 您或者您的家人，曾經接受過護理之家所提供的「環境維護」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |
|  | 7. 您或者您的家人，曾經接受過護理之家所提供的「休閒娛樂」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |
|  | 8. 您或者您的家人，曾經接受過護理之家所提供的「宗教服務」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |
|  | 9. 您或者您的家人，曾經接受過護理之家所提供的「洗衣服務」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |
|  | 10. 您或者您的家人，曾經接受過護理之家所提供的「臨終照護」嗎？
|  | 沒有 | 有 | 0. 不知道或沒意見 |

除了以上所列的服務項目外，您或者您的家人還曾經接受過護理之家提供的那些服務？

請說明：
以下是護理之家可能提供的服務項目，請圈選一個號碼，用來表示您對於護理之家需不需要提供這些服務的看法。

<table>
<thead>
<tr>
<th>項目描述</th>
<th>需要</th>
<th>可能不需要</th>
<th>可能需要</th>
<th>需要</th>
<th>不知道或沒意見</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 您認為護理之家需要提供「社工服務」嗎？（例如：社會補助金的申請，轉介病人到其他機構）</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>2. 您認為護理之家需要提供「復健治療」嗎？（例如：物理治療，語言治療，職能治療）</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>3. 您認為護理之家需要提供「環境維護」嗎？（例如：維護環境的安全、清潔和舒適）</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>4. 您認為護理之家需要提供「餐飲服務」嗎？（例如：一般飲食，治療飲食）</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>5. 您認為護理之家需要提供「宗教服務」嗎？（例如：提供佛堂及祈禱室給病人和家屬使用）</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>6. 您認為護理之家需要提供「臨終照護」嗎？（例如：維護瀕死病患的安寧及舒適）</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>7. 您認為護理之家需要提供「休閒娛樂」嗎？（例如：戶外活動，電視、電影觀賞，書報閱讀，音樂欣賞）</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>8. 您認為護理之家需要提供「洗衣服務」嗎？（例如：床單及個人衣物的洗滌）</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

除了以上所列的服務項目外，您認為護理之家還需要提供那些服務？

請說明：_________________________________________________________________________
下面的問題是關於您住的鄉鎮對護理之家可能的需求，請圈選一個號碼，用來表示您個人的意見。

1. 如果您無法照顧自己時，您願意住進護理之家嗎？
   1 2 3 4 0
   不願意 可能不願意 可能願意 願意 不知道或沒意見

2. 如果您的家人無法照顧他們自己時，您願意安排他們住進護理之家嗎？
   1 2 3 4 0
   不願意 可能不願意 可能願意 願意 不知道或沒意見

3. 當家裡的人可以照顧您時，您願意住進護理之家嗎？
   1 2 3 4 0
   不願意 可能不願意 可能願意 願意 不知道或沒意見

4. 當家裡的人可以提供照顧的時候，您願意安排您的家人住進護理之家嗎？
   1 2 3 4 0
   不願意 可能不願意 可能願意 願意 不知道或沒意見

5. 如果您無法照顧自己時，您會比較喜歡「個人獨居」還是「住進護理之家」？
   1 2 3 4 5
   非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
   個人獨居  住護理之家

6. 如果您無法照顧自己時，您會比較喜歡「和家人同住」還是「住進護理之家」？
   1 2 3 4 5
   非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
   和家人同住 住護理之家

7. 如果您無法照顧自己時，您會比較喜歡「和親戚同住」還是「住進護理之家」？
   1 2 3 4 5
   非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
   和親戚同住 住護理之家

8. 如果您無法照顧自己時，您會比較喜歡「和朋友同住」還是「住進護理之家」？
   1 2 3 4 5
   非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
   和朋友同住 住護理之家

9. 如果您因患慢性疾病而無法照顧自己時，您會比較喜歡「住進醫院」還是「住進護理之家」？
   1 2 3 4 5
   非常喜歡 比較喜歡 沒有特別 比較喜歡 非常喜歡
   住醫院  住護理之家

10. 除了以上所列的居住方式外，如果您因患慢性疾病而無法照顧自己時，您還會選擇那些種類的居住方式？

請說明：
下面的問題是有關於您個人的基本資料。

1. 您今年幾歲？________足歲
2. 您在那裡出生？________省________縣
3. 您居住在現在所住的鄉鎮有多久了？________年________月
4. 包括您自己在內，目前共有多少人和您住在一起？_______人
5. 和您住在一起的人中，共有多少人已經超過65歲？_______人
6. 請問住在您家裡的人中，共有多少人患有以下的疾病或症狀？如果沒有的話，請填“0”。

<table>
<thead>
<tr>
<th>疾病或症狀</th>
<th>多少人有這些疾病或症狀？</th>
</tr>
</thead>
<tbody>
<tr>
<td>①中風</td>
<td>_______人</td>
</tr>
<tr>
<td>②脊髓損傷</td>
<td>_______人</td>
</tr>
<tr>
<td>③心臟病</td>
<td>_______人</td>
</tr>
<tr>
<td>④糖尿病</td>
<td>_______人</td>
</tr>
<tr>
<td>⑤高血壓</td>
<td>_______人</td>
</tr>
<tr>
<td>⑥精神異常</td>
<td>_______人</td>
</tr>
<tr>
<td>⑦神智不清</td>
<td>_______人</td>
</tr>
<tr>
<td>⑧老人痴呆症</td>
<td>_______人</td>
</tr>
<tr>
<td>⑨其他（請說明：________）</td>
<td>_______人</td>
</tr>
</tbody>
</table>

7. 請問住在您家裡的人中，共有多少個18歲以上的人，無法自己完成以下的日常活動？如果沒有的話，請填“0”。

<table>
<thead>
<tr>
<th>日常活動</th>
<th>多少成人無法完成這些日常活動？</th>
</tr>
</thead>
<tbody>
<tr>
<td>①吃飯</td>
<td>_______人</td>
</tr>
<tr>
<td>②洗澡</td>
<td>_______人</td>
</tr>
<tr>
<td>③走路</td>
<td>_______人</td>
</tr>
<tr>
<td>④穿脫衣服</td>
<td>_______人</td>
</tr>
<tr>
<td>⑤上下床</td>
<td>_______人</td>
</tr>
<tr>
<td>⑥坐臥在椅子上</td>
<td>_______人</td>
</tr>
<tr>
<td>⑦控制大小便</td>
<td>_______人</td>
</tr>
</tbody>
</table>
請圈選一個號碼，用來回答以下的問題。

8. 您的性別是？
   1. 男   2. 女

9. 您目前的婚姻狀況？
   1. 已婚   2. 未婚   3. 離婚
   4. 分居   5. 靈／寡

10. 您目前有特別的宗教信仰嗎？
    1. 有   2. 沒有
    3. 不確定或沒意見

11. 您的最高教育程度？
    1. 未受過正式教育   2. 小學
    4. 高中／高職   5. 專科／大學
    7. 其他（請說明：__________）

12. 您全家去年的收入，大約新台幣多少錢？
    1. 250,000 及以下
    2. 250,001 - 500,000
    4. 750,001 - 1,000,000
    5. 1,000,001 - 1,250,000
    7. 1,500,001 - 1,750,000
    8. 1,750,001 - 2,000,000
    9. 2,000,000 以上

13. 您全家去年的平均收入，是否足夠支付整個家庭的開銷嗎？
    1. 不夠   2. 剛好夠用
    3. 還有餘錢

14. 您是從那裡第一次聽到護理之家？
    1. 這份問卷   2. 家人   3. 親戚
    4. 朋友   5. 電視   6. 廣播電台
    7. 報紙   8. 雜誌

15. 您目前在護理之家工作嗎？
    1. 是   2. 不是

16. 兩週後，您願意再填寫一份類似的評估問卷嗎？
    1. 願意   2. 不願意

17. 您過去一年的身體狀況大致如何？
    1. 非常好   2. 不太好   3. 普通   4. 還不錯   5. 很好

18. 您過去一年的精神狀況大致如何？
    1. 非常好   2. 不太好   3. 普通   4. 還不錯   5. 很好

19. 您與家人之間的關係大致如何？
    1. 非常不親近   2. 不太親近   3. 普通   4. 還算親近   5. 親近

20. 您喜歡與家人相處的時刻嗎？
    1. 非常不喜歡   2. 不太喜歡   3. 普通   4. 還算喜歡   5. 喜歡
我瞭解您費了許多的心力與時間，填寫這份問卷。再一次誠摯地感謝您對本研究的貢獻。請利用隨函所附的回郵信封，將填寫完畢的問卷寄回給我。如果回郵信封遺失的話，請寄至：

新竹縣湖口鄉勝利路二段 31 號
陳淑麗 小姐收

如果您還有其他有關於，如何改善新竹縣護理之家的看法和意見，請利用下面的空白處來書寫。
APPENDIX K

FINALIZED PERCEPTION EVALUATION TOOL
(ENGLISH TRANSLATION)
Perception of Nursing Homes: A Survey of Hsinchu Residents

The purpose of this survey is to examine (a) what kinds of nursing homes are needed by Hsinchu citizens and (b) what can be done to improve existing nursing homes. Some of the questions in the questionnaire will differ in only a few words, so please read each one carefully and answer all of them. If you wish to comment on any question, please feel free to use the space in the margins or on a separate sheet of paper. Your comments will be read carefully and taken into account. Please use the enclosed return envelope and send the questionnaire to:

Shu-li Chen, R.N., M.S.
The term "nursing home" here refers to "an institution which offers skilled health care twenty-four hours a day, seven days a week, that is provided by a range of health professionals (i.e., nurses, physicians, social workers, physical therapists, and dietitians)."

Below is a list of services which might be provided within nursing homes. Please read each statement carefully and circle one number to indicate whether you are aware of these services.

1. Are you aware of NURSING services which are provided within nursing homes? (i.e., skilled nursing care, personal care)
   1. No 2. Yes
2. Are you aware of MEDICAL services which are provided within nursing homes? (i.e., physician visits, regular physical exam)
   1. No 2. Yes
3. Are you aware of DIETARY services which are provided within nursing homes? (i.e., regular diet, special diet)
   1. No 2. Yes
4. Are you aware of SOCIAL WORK services which are provided within nursing homes? (i.e., finding sources of financial support, referring clients to other services)
   1. No 2. Yes
5. Are you aware of REHABILITATION services which are provided within nursing homes? (i.e., physical, occupational, speech therapy)
   1. No 2. Yes
6. Are you aware of ENVIRONMENTAL services which are provided within nursing homes? (i.e., maintenance of safety, cleanliness, comfort)
   1. No 2. Yes
7. Are you aware of RECREATIONAL services which are provided within nursing homes? (i.e., outdoor activities, reading, music, TV, movie)
   1. No 2. Yes
8. Are you aware of RELIGIOUS services which are provided within nursing homes? (i.e., a place for nursing home residents or their family members to pray)
   1. No 2. Yes
9. Are you aware of LAUNDRY services which are provided within nursing homes? (i.e., linen laundry, personal laundry)
   1. No 2. Yes
10. Are you aware of HOSPICE services which are provided within nursing homes? (i.e., care of terminal patients)
    1. No 2. Yes
11. Other than the services listed above, what nursing home services are you aware of?

Please specify:
Below is a list of ten services which might be provided within nursing homes. Please circle one number to indicate whether you have ever used the services for yourself or your family members.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Have you or your family ever used NURSING services which are provided within nursing homes? (i.e., skilled nursing care, personal care)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>2.</td>
<td>Have you or your family ever used MEDICAL services which are provided within nursing homes? (i.e., physician visits, regular physical exam)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>3.</td>
<td>Have you or your family ever used DIETARY services which are provided within nursing homes? (i.e., regular diet, special diet)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>4.</td>
<td>Have you or your family ever used SOCIAL WORK services which are provided within nursing homes? (i.e., finding sources of financial support, referring clients to other services)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>5.</td>
<td>Have you or your family ever used REHABILITATION services which are provided within nursing homes? (i.e., physical, occupational, speech therapy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>6.</td>
<td>Have you or your family ever used ENVIRONMENTAL services which are provided within nursing homes? (i.e., maintenance of safety, cleanliness, comfort)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>7.</td>
<td>Have you or your family ever used RECREATIONAL services which are provided within nursing homes? (i.e., outdoor activities, reading, music, TV, movie)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>8.</td>
<td>Have you or your family ever used RELIGIOUS services which are provided within nursing homes? (i.e., a place for nursing home residents or their family members to pray)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>9.</td>
<td>Have you or your family ever used LAUNDRY services which are provided within nursing homes? (i.e., linen laundry, personal laundry)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>10.</td>
<td>Have you or your family ever used HOSPICE services which are provided within nursing homes? (i.e., care of terminal patients)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. No</td>
<td>2. Yes</td>
<td>0. Don't know or no opinion</td>
</tr>
<tr>
<td>11.</td>
<td>Other than the services listed above, what nursing home services have you or your family ever used?</td>
<td></td>
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<td>Please specify:</td>
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Below is a list of services which might be provided within nursing homes. Please indicate your opinion about WHAT KINDS OF SERVICES SHOULD BE PROVIDED WITHIN NURSING HOMES by circling one number.

1. Do you think nursing homes should provide SOCIAL WORK services? (i.e., finding sources of financial support, referring clients to other services)
   - Yes
   - Probably yes
   - Probably no
   - Don't know or no opinion

2. Do you think nursing homes should provide REHABILITATION services? (i.e., physical, occupational, speech therapy)
   - Yes
   - Probably yes
   - Probably no
   - Don't know or no opinion

3. Do you think nursing homes should provide ENVIRONMENTAL services? (i.e., maintenance of safety, cleanliness, comfort)
   - Yes
   - Probably yes
   - Probably no
   - Don't know or no opinion

4. Do you think nursing homes should provide DIETARY services? (i.e., regular diet, special diet)
   - Yes
   - Probably yes
   - Probably no
   - Don't know or no opinion

5. Do you think nursing homes should provide RELIGIOUS services? (i.e., a place for nursing home residents or their family members to pray)
   - Yes
   - Probably yes
   - Probably no
   - Don't know or no opinion

6. Do you think nursing homes should provide HOSPICE services? (i.e., care of terminal patients)
   - Yes
   - Probably yes
   - Probably no
   - Don't know or no opinion

7. Do you think nursing homes should provide RECREATIONAL services? (i.e., outdoor activities, reading, music, TV, movie)
   - Yes
   - Probably yes
   - Probably no
   - Don't know or no opinion

8. Do you think nursing homes should provide LAUNDRY services? (i.e., linen or personal laundry)
   - Yes
   - Probably yes
   - Probably no
   - Don't know or no opinion

9. Other than the services listed above, what services do you think should be provided within nursing homes?

Please specify:________________________________________
The following questions are related to the potential use of nursing home services in your town. Please indicate your response by circling one number.

1. If you are not able to take care of yourself, would you want to live in a nursing home?
   | 1 | 2 | 3 | 4 | 0 |
   | No | Probably no | Probably yes | Yes | Don't know or no opinion |

2. If your family members are not able to take care of themselves, would you place them into a nursing home?
   | 1 | 2 | 3 | 4 | 0 |
   | No | Probably no | Probably yes | Yes | Don't know or no opinion |

3. Are you willing to live in a nursing home even if someone in your family can provide the care?
   | 1 | 2 | 3 | 4 | 0 |
   | No | Probably no | Probably yes | Yes | Don't know or no opinion |

4. Are you willing to place your family members into a nursing home even if someone in your family can provide the care?
   | 1 | 2 | 3 | 4 | 0 |
   | No | Probably no | Probably yes | Yes | Don't know or no opinion |

5. If you can no longer take care of yourself independently, would you prefer “live alone” or “live in a nursing home”?
   | 1 | 2 | 3 | 4 | 5 |
   | Strongly prefer live alone | Prefer live alone | No preference | Prefer live in a nursing home | Strongly prefer live in a nursing home |

6. If you can no longer take care of yourself independently, would you prefer “live with family” or “live in a nursing home”?
   | 1 | 2 | 3 | 4 | 5 |
   | Strongly prefer live alone | Prefer live alone | No preference | Prefer live in a nursing home | Strongly prefer live in a nursing home |

7. If you can no longer take care of yourself independently, would you prefer “live with relative” or “live in a nursing home”?
   | 1 | 2 | 3 | 4 | 5 |
   | Strongly prefer live alone | Prefer live alone | No preference | Prefer live in a nursing home | Strongly prefer live in a nursing home |

8. If you can no longer take care of yourself independently, would you prefer “live with friends” or “live in a nursing home”?
   | 1 | 2 | 3 | 4 | 5 |
   | Strongly prefer live alone | Prefer live alone | No preference | Prefer live in a nursing home | Strongly prefer live in a nursing home |

9. If you can no longer take care of yourself independently, would you prefer “live in a hospital” or “live in a nursing home”?
   | 1 | 2 | 3 | 4 | 5 |
   | Strongly prefer live alone | Prefer live alone | No preference | Prefer live in a nursing home | Strongly prefer live in a nursing home |
The following questions ask you something about yourself.

1. What is your legal age? ________ years old
2. Where is your birth place? ________ Province ________ County
3. How long have you lived in your town? ________ years ________ months
4. How many people live in your household, including yourself?
   ________ person(s)
5. How many people in your household are aged above 65, including yourself?
   ________ person(s)
6. The following is a list of diseases. Please indicate the number of people in your household who have this kind of disease. If none, indicate " 0 ".
   **Diseases** | **How many of them have it?**
   --- | ---
   Stroke | ________ Person(s)
   Spinal core injury | ________ Person(s)
   Heart disease | ________ Person(s)
   Diabetes mellitus | ________ Person(s)
   Hypertension | ________ Person(s)
   Mental disorders | ________ Person(s)
   Cognitively impaired | ________ Person(s)
   Alzheimer’s disease | ________ Person(s)
   Other (Please specify: ________________) | ________ Person(s)
7. The following is a list of activities of daily living. Please indicate the number of people in your household who are aged over 18 years old and CAN’T perform this kind of activity independently. If none, indicate " 0 ".
   **Daily activities** | **How many of them CAN’T do it?**
   --- | ---
   Eating | ________ Person(s)
   Bathing | ________ Person(s)
   Walking | ________ Person(s)
   Dressing | ________ Person(s)
   Moving from the bed | ________ Person(s)
   Sitting on a chair | ________ Person(s)
   Controlling urinary and fecal discharge | ________ Person(s)

(Please continue on next page)
Please answer the following questions by circling one number.

8. What is your gender?
   1. Male
   2. Female

9. What is your present marital status?
   1. Married
   2. Single
   3. Divorced
   4. Separated
   5. Widowed
   6. Other (Please specify: _______)

10. Do you have a religious preference?
    1. Yes
    2. No
    3. Not sure or no opinion

11. What is your highest degree of education completed?
    1. No formal education
    2. Elementary school
    3. Junior high school
    4. Senior high school
    5. College/university
    6. Graduate school
    7. Other (Please specify: _______)

12. What was your total annual household income for last year? (New Taiwan Dollars)
    1. Below $250,000
    2. $250,001-$500,000
    3. $500,001-$750,000
    4. $750,001-$1,000,000
    5. $1,000,001-$1,250,000
    6. $1,250,001-$1,500,000
    7. $1,500,001-$1,750,000
    8. $1,750,001-$2,000,000
    9. Above $2,000,000

13. Is your annual household income adequate to meet your family's needs?
    1. Less than adequate
    2. Adequate
    3. More than adequate

14. Where did you first hear about nursing homes?
    1. This questionnaire
    2. From family members
    3. From relatives
    4. From friends
    5. Over television
    6. Over radio
    7. From newspaper
    8. From magazines
    9. Other (Please specify: _______)

15. Do you work in a nursing home?
    1. Yes
    2. No

16. Would you be willing to participate in a follow-up survey two weeks after this one?
    1. Yes
    2. No

17. In general, how would you say your PHYSICAL health has been for the past year?
    1. Very poor
    2. Poor
    3. Fair
    4. Good
    5. Very good

18. In general, how would you say your MENTAL health has been for the past year?
    1. Very poor
    2. Poor
    3. Fair
    4. Good
    5. Very good

19. How would you describe your relationship with your family?
    1. Not close
    2. Not very close
    3. Fair
    4. Somewhat close
    5. Very close

20. To what extent do you enjoy spending time with your family?
    1. No enjoyment
    2. Not much enjoyment
    3. Fair enjoyment
    4. Some enjoyment
    5. Lots of enjoyment
I realize that this questionnaire required a great deal of effort and time. Your contribution to this study is greatly appreciated. Please use the enclosed envelope that was provided to return the survey. If this envelope was lost, my mailing address is:

Shu-li Chen

If you have any further suggestions about the kinds of nursing homes you would like, please use this space for that purpose.
REFERENCES


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