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Date November 21, 1985

A COMPARATIVE STUDY OF NEEDS ASSESSMENT METHODOLOGIES

A Thesis

Presented for the

Master of Science

Degree

The University of Tennessee, Knoxville

Maryanne Lynch

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Dedicated to the memory of my mother
who has been my greatest inspiration.

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ABSTRACT

This study tested the validity of the survey of knowledgeables needs assessment technique. Criterion-validation techniques were employed in this analysis using the target population needs assessment technique to measure validity.

Two surveys were conducted in the 15 counties located in the ETDD. The first, a face-to-face interview of 1,003 elderly residing in 732 households in rural areas of these counties was conducted in winter 1976-1977. This survey explored the social service needs of elderly living in rural areas. The second, conducted during the first six months of 1981, consisted of 75 telephone interviews with a purposeful sample of knowledgeables, representing six occupational groups, working in the study area. This survey assessed the needs of rural elderly by obtaining estimates of service need from knowledgeables employed in human service professions.

When responses to the service need questions in the target population interview were tabulated, percent of need for services varied by service and county. A pattern emerged where most counties had similar relative need ranks when compared to other counties. When service needs were ranked, there was some consistency of rank placement. The need for transportation was most often cited as the greatest need with seven counties citing it with a rank of eight. On the other end of the spectrum, companion services was ranked as the lowest service need with 12 counties giving it a rank of one.

Great discrepancies between knowledgeables' need estimates were shown when responses to the service need questions were tabulated. The standard deviations associated with the mean estimates were consistently large. Sixty-six percent of these standard deviations were above 19. The lack of a mode in more than 50 percent of the service need groups further illustrated this inconsistency. The large standard deviations coupled with the mode data indicated that knowledgeables were unable to reliably estimate the service needs of rural elderly.

Comparative analysis techniques including Spearman rank order correlation and the calculation of mean squared differences between the knowledgeables' mean estimates of service need and the target populations' expressed need were used to examine the validity of the survey of knowledgeables needs assessment technique when applied to a rural population.

Three of the 15 Spearman rank order correlation coefficients were significant at the .10 level or better: Grainger, Hamblen and Union Counties. Upon close examination no distinct similarities were found setting these three counties apart from the remaining 12.

When mean squared differences of service need were calculated and grouped by knowledgeable occupational category, knowledgeables working in primary health care clinics, planning agencies and social service agencies were found to be the best predictors of need. A limitation associated with this finding was cited as the sample size of primary health care clinics was very small and the appropriateness of generalizing to a larger population was questioned.

Overall, the comparative analysis showed little relationship between the expressed service needs of the target population and the mean estimates determined by the survey of knowledgeables. This discrepancy brought about questions of the validity of the survey of knowledgeables when applied to a rural population.

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CHAPTER I

INTRODUCTION

As policy decision makers concentrate their efforts on stretching their dollars to cover a full array of human service needs, they rely on the conceptual theme of quality of life to guide their decision making. Over the years needs assessment strategies have been systematically developed to determine the social service needs in a society as a method of assessing the quality of life. George and Bearon state that

> (o)n the whole, social scientists have failed to provide consistent and concise definitions of quality of life. The task is indeed problematic, for definitions of life quality are largely a matter of personal or group preference; different people value different things (1980:1).

Quality of life is closely connected to the concept of need for service which is also fraught with the conceptual problems indicated by George and Bearon. In the realm of human services, the word 'need' is used in two very different ways. First, it is used by various societal subgroups to voice a want or demand. Second, the word 'need' is used to represent a professional's judgment of what someone else needs. These two differing viewpoints often result in conflict over where the primary locus of need assessment should be found. There are serious problems with the use of both methods when determining needs. Some people do not know what they need and thus provide poor judgment in the needs assessment process. Professionals also may use poor judgment or allow bias to enter into the decision making process thus causing their judgments to be questionable (Bloom, 1983:147-148).

In an effort to find a more judgment-free method of needs assessment, social scientists developed a needs assessment technique called social indicators research. The hope of the social indicators movement was to detach needs assessment from these problems by developing a statistical overview of a specific population, community or society (Bloom, 1983:148-149). There are two inherent problems with this detachment social indicator research provides. First, it may cause the development of indicators that point to needs that are not defined as such by the potential clientele--the target population. Second, indicators are interpreted by the researchers that develop them thus leading to the same problems of professional bias noted earlier (Watkins and Watkins, 1984:171).

Possibly in an effort to solve some of the inherent problems with the existing methods used to measure the quality of life, Watkins and Watkins (1984:170) suggest that quality of life definitions, thus needs assessment strategies, "should focus on the objective conditions of life as well as on how those conditions as perceived by individuals." George and Bearon (1980:2) concur with the use of objective and subjective measures by arguing that the quality of life encompasses more than just material well-being but includes a level of satisfaction with that life situation. They suggest that "both objective conditions and subjective evaluations are important considerations in the assessment of quality of life."

The potential for collecting conflicting data from the three sources, people's perceptions, professional opinions and social indicators, created a tremendous problem for community decision makers.

They are left with the nagging question of which method within their means of money and time provides the most accurate results.

THE CONCEPT OF NEED

The body of literature concerning needs assessment focuses on the concept of need. Abraham Maslow described a four-level hierarchy of human needs:

1. physiological needs including the need for food, water, air and shelter;
2. safety needs such as security, stability, freedom from pain and threat of illness;
3. belonging and love needs, including need for affection, belonging and love, and;
4. esteem needs such as need for personal feeling of achievement or self-actualization and respect from others (Goble, 1970: 36-43).

The crux of Maslow's theory is his assertion that higher levels of needs can only be met when lower level needs are first satisfied. Thus physiological needs usually are met before concerns for self-esteem or self-actualization may be addressed.

Another distinction between types of needs which must be considered when exploring needs assessment theory is the difference between biological and social needs. Biological needs refer to the inputs necessary to keep the human body functioning (e.g., food, shelter, protection from the elements). These needs are consistent across cultures, although

slight variation may be found depending on climatic conditions. Social needs are not universal, but vary between and within cultures. Alfred Kahn describes needs as:

> social definitions, representing a view of what an individual or group requires in order to play a role, meet a commitment, participate adequately in a social process, retain an adequate level of energy and productivity--at a given moment in history (1969:63).

Because cultural frames of reference vary between and within cultures, social needs will also vary.

Decoufle' (1974:17) uses the concept of frame of reference to explain the variation in the demand for social services. He states that needs reflect an expected optimum level of living including social service provision. Group members recognize and demand services that are viewed as necessary to maintain a standard of living consistent with their perception of what is normative. As the frame of reference changes, so may the need for services.

Social need can be described as either perceptual or empirical. Perceptual needs are those that are perceived to be important; a subjective analysis based on the desires and expectations of the group members. Empirical needs, however, are needs that are derived from objective analysis. These needs are based on an accepted subjective definition of need and then substantiated by statistical information which reinforces this subjective opinion. In essence, empirical needs are culturally normative needs which are validated with appropriate data (Horton and Armentrout, 1976:2-3).

Upon comparison, a discrepancy may appear between perceptual and empirical needs. The data may pinpoint needs that may not be perceived

as important to the target population. This discrepancy arises from the different frames of reference used when determining needs.

The frame of reference used when defining needs and analyzing data to validate them should be closely examined before services are developed to alleviate them.

NEEDS ASSESSMENT

Needs assessment, as part of the planning process, is a technique employed to determine the discrepancy or gap between a group's needs and a culturally defined, established or expected level of living. More simply, needs assessment is the comparison of what is and what could be. This discrepancy infers that various individuals or groups are functioning at a different level than is considered to be the norm and that community intervention is necessary to close the gap. Needs assessment techniques are used as a means of determining needs and providing data for the planning of social services to meet those needs (National Institute of Mental Health, 1977:47; Warheit et al., 1977:3-4; Goldmeier and McDonald, 1978:27; Kaufman, 1977:62; Smith, 1973:6; and Klein et al., 1973:E-1).

Needs assessment research is change oriented research. "It reflects a desire to change social arrangements in order to bring them closer to what some groups consider a better state of affairs" (Perlman and Gurin, 1972:13). To speak of value free or nonjudgmental needs assessment is impossible, since such research is undertaken with the assumption that certain groups are functioning at a less than optimal

level in one or more domains of living. This assumption in itself is a value judgment (Center for Social Research and Development, 1974:3).

THE HISTORY OF NEEDS ASSESSMENT

Needs assessment has been with us virtually since the beginning of recorded history.

> Historically, the assessment of human needs has preceded actions which have produced solutions to problems of human needs. In the sixth chapter of the Book of Acts in the Bible (Acts 6:1-6), it is reported that the disciples were concerned about the problem of hunger among a group of widows. They promptly set out to determine the size and nature of the problem. With the proper information in hand, they examined the alternatives and then appointed a group of seven leaders to see that the widows were properly fed at special tables. This method seems to have solved the problem, but in so doing the disciples may have established the precedent of having citizen boards and commissions to supervise and direct the provision of human care services (Center for Social Research and Development, 1974:1).

Others throughout history have used such techniques to describe the characteristics of peoples and document the living conditions in cities, hospitals, and other institutions in an effort to effect social change. Dorothea Lynn Dix (1802-1887), travelled across the United States to document the living conditions of the mentally ill. So vivid was her description that officials were prompted to pass legislation to improve the plight of the mentally ill (Polansky, 1971:1100).

In England John Howard (1726-1790), used the survey method to document "several shocking practices in a number of prisons and hospitals" (Center for Social Research and Development, 1974:1). As in the case of Dorothea Dix, needed reforms resulted when the information was reviewed by decision makers.

Over the centuries, much time and energy has been poured into the development and perfection of needs assessment technologies.

THE PURPOSE OF NEEDS ASSESSMENT

The primary purpose of conducting a needs assessment is to provide decision makers with essential data for making sound decisions. The data generated from needs assessment research includes information on subgroup level of living which can point to service needs. These service needs are then compared to the existing service delivery system pinpointing gaps between needs and services. When faced with allocation decisions, decision makers may make judgments based on their personal interests and cultural frames of reference, when outside information is unavailable. Thus needs assessment can provide information which could directly impact the decision making process (Institute of Community and Area Development, 1977:38; Goldmeier and McDonald, 1978: 32; and Horton and Armentrout, 1976:18-19).

Realizing the allocation process is political brings to light the secondary purposes of conducting needs assessment research. These secondary purposes include creating visibility for nonpowerful groups and exposing overlapping services that may exist in the service delivery system. Proponents imply that needs assessment may increase the visibility of certain subpopulations, and thus increase their access to the decision makers. This visibility may be extended to include overlapping service delivery. When service needs are compared to the existing service delivery system, overlapping services may be exposed. This visibility in turn increases the probability that the needs of those

groups not in power along with the existence of overlapping services may be aired against the hidden agendas of the decision makers (Center for Social Research and Development, 1974:4; Institute of Community and Area Development, 1977:38; Horton and Armentrout, 1976: 18-19; and Shapek, 1975:755).

The last but probably the most universal reason for the use of needs assessment technology is that of legislative mandate and accountability. In most instances when financial support is solicited, service delivery agencies are required to substantiate need before funding is allocated. The government, as well as private funding sources, use needs assessment as a tool of accountability (Monti, 1975:3; and Institute of Community and Area Development, 1977:38.).

NEEDS ASSESSMENT MODELS

Ideally, a needs assessment is used to document resource needs, identify specific problems, "reveal zones of potentially high need for service within a catchment area, and uncover segments of the population inadvertently overlooked in the course of providing services" (Stewart and Poaster, 1975:67). Also, needs assessment is used to reveal continued need in spite of existing service delivery and may indicate the need for expansion of existing services. Information collected from needs assessment research provides a description of who the group members are, and what services are needed. Further analysis may indicate what services are provided and where the gaps in service delivery are located. Therefore, needs assessment research usually includes a rank ordering of needs, demographic data about the population and common

ties between demographic characteristics and services desired and used. Though most assessment models cover these areas, the method for acquiring the data varies with each model (Horton and Armentrout, 1976:3 and Zautra and Simons, 1978: 352).

Needs assessment models may be divided into two distinct types. The first is the perceptual, using techniques where information is acquired through the use of subjective methods documenting individual's or groups' perceptions of needs in so far as they are aware of them. The second is empirical, including methods where assumptions of needs are linked to social or biological facts which are used to indicate the presence of a need.

PERCEPTUAL METHODS OF NEEDS ASSESSMENT

Target Population Survey

This form of perceptual survey centers on the persons in the group who are identified by certain selected characteristics. These characteristics may include, but are not limited to, eligibility for services, present use of service, and geographic location (Horton and Armentrout, 1976:41). Information collected in this type of survey concern perceptual needs, the desire for services and a collection of various demographic characteristics. A target population survey provides a picture of recognized problems through the eyes of the potential service recipients. A more comprehensive view of needed services and barriers to service delivery may be examined using this technique because it concentrates on users or potential users of the service.

There are advantages and disadvantages with this technique. The major advantage is that the data collected are accurate on the perceived needs of the population, and the persons surveyed are likely to have some knowledge of the existing services and their associated barriers. The major disadvantage of this method is the difficulty in identifying and localizing an accurate sample of the target population. Other disadvantages include the lack of ability to generalize beyond the target population, the raising of expections of service delivery when implementing the survey; and the observations are limited to the perceptions of the target population (Horton and Armentrout, 1976:42 and Watkins and Watkins, 1984:171).

Survey of Knowledgeables

Another technique involves surveying knowledgeables (also called key decision makers, community elites, or key informants). Unlike the target population, those chosen to participate in this survey are included because of their knowledge, not their potential service usage. Most often knowledgeables included in a social service needs assessment are social workers, elected officials, medical personnel, and other community leaders who are presumed to have knowledge of the specific needs of a target population (Warheit et al., 1977:22).

It is believed that these knowledgeables can provide insight into service delivery patterns and problems, and available community resources. Such information may not be available from any other source. Knowledgeables provide:

1. information concerning problems or service needs which are not socially acceptable and target population respondents are reluctant to talk about (such as alcoholism, drug abuse and child abuse) will be more evident here;
2. a more complete inventory of available resources than a general population survey or a target population survey; and,
3. a comprehensive view of community needs (Horton and Armentrout, 1976:56).

As with all models, this technique has advantages and disadvantages. Among its advantages are the speed with which this population can be identified, and the quantity of information which they possess and the assurance that the data will be used because key decision makers are involved in the process. The major disadvantages of this technique are cultural bias and service favoritism. Cultural frames of reference may color the information obtained from knowledgeables. Also, unfounded emphasis may be placed on particular services due to agency affiliation or personal bias. Knowledgeables may not be aware of the needs of some target populations because of their isolation or powerlessness. If these issues of personal feelings and isolation are not carefully considered, data collected from a survey of knowledgeables may result in goal displacement and the development of unneeded services (Morasky and Amick, 1978:48-49; Warheit et al., 1977:21-22; and Watkins and Watkins, 1984:173).

Social Indicators

The second category of needs assessment technologies includes empirical studies, frequently in the form of secondary data analysis. Social indicators are "measures of social problems (or their absence) and, in their aggregate, measures that form indications of the quality of life" (Bell et al., 1983:144). Lin and Cleland describe the ideal social indicator as one that is:

> " . . . useful for academic work, meaningful to the public, and beneficial for decision-making in terms of its reflection of the actual situation in the society and changes which have occurred during a particular period of time. It should also be sufficiently sensitive to change that the measurement of change, when it occurs, can be easily visualized. At the same time, it should be accurate in measuring the actual social conditions and their change so it has value in facilitating concise comprehensive, balanced, and informed judgment regarding policy decision-making" (1975:12).

These empirical surveys fall on a continuum ranging from simple data collection efforts to a comprehensive analysis of a large number of data across many areas of social concern. "The underlying assumption of the approach is that it is possible to make useful estimates of the needs and social well-being of those in a community by analyzing statistics on factors found to be highly correlated with persons in need" (Warheit et al., 1977:30).

To maximize the credibility of this technique, several precautions must be taken. First, the data should come from a wide variety of sources to ensure reliability and validity. Second, the data should be available for the geographic unit for which you wish to generalize (e.g., county, census tract). Third, the data should be available on an

ongoing basis so they may be used for future longitudinal studies. Fourth, the data should be relevant and relate to the decisions being made (Horton and Armentrout, 1976:72 and Warheit et al., 1977:38).

As with other methods, there are advantages and disadvantages with this technique. The two major advantages of this method are flexibility and low cost (Warheit et al., 1977:38). There is a wealth of data available to those conducting social indicator research. The availability of information coupled with the advances in computer technology and the development of low cost software has reduced the cost of conducting secondary analysis. The major disadvantage of this method is in the interpretive stage. Objective indicators are still subject to the biases of the researchers and decision makers who interpret them. Watkins and Watkins state that social indicators can:

> "(r)epresent standards based on middle-class and/or professional biases, normative definitions of need risk patronizing and stigmatizing people or population subgroups whose own definition of standards may differ . . . " (1984:173).

Warheit and his associates (1977:38) concur with Watkins and Watkins contend that the data social indicator research provides an indirect measure of need which can lead to information which may be incongruous with the data collected from perceptual surveys. In other words, the needs derived from an objective data analysis may not be perceived as valid by the target population. This contrast may result in low service usage.

There are further problems with this method when applied to rural areas which parallel the limitations listed above. The major dis-

advantage is the objective nature of the indicators. Watkins and Watkins state that:

> "when rural people are asked about conditions of life, their responses are not congruent with objective conditions (Lee and Lassey, 1980) . . . (which) may be the result of a lack of awareness of the unavailability of services . . . (or) it may be reflective of the independent nature of rural people" (1984: 172).

Decision makers should be cautious when translating social indicators into service delivery plans as service provision could result in low service usage.

Whereas the total volume of available secondary data is large, there may be problems of timeliness and appropriateness of the data in indicating needs of specific populations. The United States Census of Population is the most often used source of data for rural areas. Unfortunately the Census may not be accurate for non-census years. "Between decennial censuses there is the opportunity for significant change in the elderly population" as was experienced between 1960 and 1970 through mortality and migration patterns (Center for Business and Economic Research, 1972:3). When the Census is excluded, there are very few data sources which provide rural-specific data.

The use of social indicators is not appropriate in a study of the needs of rural residents living in small geographic areas. A search of the literature reveals very few regularly published data sources that contain rural-specific data available for small places. The literature indicates that when available, these objective measures may not be appropriate for rural populations because of the lack of congruity with subjective measures. Due to the great limitations associated with the

social indicator method when applied to rural areas, it is not considered a valid measure of the needs of rural residents and will not be discussed further.

COMBINED METHODS

Though methods to assess perceived and empirical needs have their merits, as well as their demerits, the literature suggests the combination of both methods in an effort to overcome these limitations. These authors stress the importance of combining objective indicators with subjective information to ensure that needs data accurately reflect the situation and verify the existence of need (Horton and Armentrout, 1976:76, 81; Zantra and Simons, 1978: 353-360; Kivett and Scott, 1979:12 and National Institute of Mental Health, 1977:50).

SELECTING THE APPROPRIATE NEEDS ASSESSMENT MODEL

Choosing the most appropriate needs assessment model is a difficult but crucial decision. Several factors influence this decision making process. The most important question to explore is: What kinds of decisions will local officials be making and what types of data will they need to make these decisions? Asking this question is of the utmost importance to the success of a project, much time should be spent having the decision makers articulate their needs and desires before the needs assessment model is chosen. The next question to discuss is the availability of the data. The methodology selected must be based on the knowledge that data is accessible for the present and over time. After that question is answered, the next area to explore is resource availa-

bility. The amount of money available, the time and abilities staff are able to devote to the needs assessment project in addition to the technology available (e.g., computer software) all influence the appropriateness of the various techniques (Holland, et al., 1973:25). Other variables to consider are the significant actors involved in the project. The research staff must consider the wishes of the decision makers and whether the involvement of a target population group would be advantageous. Though these variables are very subjective, they are crucial to the success of the project and the use of the findings. If the significant decision makers are not consulted, there is the potential of misuse or nonuse of the study findings. The last factor to consider in this process is the amount of comfort the research staff has with the methodology. When choosing an appropriate methodology, all these factors must be considered to ensure a successful and useful project (Horton and Armentrout, 1976:9-10; Steadham, 1976:57; National Institute of Mental Health, 1977:46).

Comparison of Data from Surveys of Knowledgeables and Target Populations

Several studies compare the opinions of knowledgeables and target populations. The results of a needs assessment for blind services showed that though knowledgeables and the target population share different perceptions regarding the total rank ordering of high unmet needs, they agree to the need for employment and daily living skills services (Delaney, 1977:252). When studying the quality of life Coleman found that the similarities between the views of knowledgeables and the target population are more impressive than their differences though the

assessment of the knowledgeables was more optimistic than the target population. Coleman's conclusions are supported by Cleland (1975:2-3) who found though knowledgeables were more optimistic there was strong agreement between the two groups in the area of current worker income, fair agreement in the areas of employment and land use, and poor agreement about improvement in real income. Findings from these studies show that in some specific areas the judgment of knowledgeables is similar to the opinions of the target population. Coleman (1975:10) states that these similarities are so great that:

> . . . a quick survey of knowledgeable people in a county might serve as a partial substitute for a household survey and provide useful information as to how people feel about the quality of life in the area, so long as the level of favorableness is "discounted" somewhat--that is, we can assume that a cross-section sample will be somewhat less favorable but the two groups will not be at opposite poles in their assessments.

STUDY OBJECTIVES

This thesis assesses the validity of the survey of knowledgeables needs assessment technique when applied to a rural population. Criterion-validation techniques, which use a well accepted measure to assess the validity of a new technique (Phillips, 1971:198), were employed here. The target population survey was chosen to assess the validity of the survey of knowledgeables since a search of the literature indicated the target population survey to be a widely used and well respected technique.

The elderly populations residing in the open countryside and places with a population less than 2,500 in the 15 rural counties in the East Tennessee Development District (ETDD) were chosen as the populations to

be studied. Comparative analysis techniques were used to discern the validity of the survey of knowledgeable technique. Conclusions were drawn as to the applicability of each of the techniques to rural populations.

CHAPTER II

METHODOLOGY

AREA OF STUDY

The study population was the rural elderly (65 years of age and older) residing in the ETDD. As a result of an established working relationship with staff of the ETDD, respondent assessability and cooperation were greatly facilitated.

The ETDD contains 16 contiguous counties surrounding Knoxville, a major urban center. The ETDD is approximately 6,716 square miles (East Tennessee Development District 1977:1) and had a 1980 population of 845,121 (U.S. Department of Commerce, 1983a:44-213-44-220). It is composed of both urban and rural populations. Most of the area the district encompasses is rural; twelve counties are nonmetropolitan[1] while four counties made up the Knoxville Standard Metropolitan Statistical Area (SMSA). Individual county rural populations varied greatly, from the sparse Union county with a 1980 rural population of 11,707 to the metropolitan Knox county with a rural population of 74,160 the same year.

Though the total 1980 rural population varied between counties within the district, the percentage of rural elderly in each county was similar. Also there was very little difference in the percentage of

---

[1] Although there are minor variations in statistical differences between nonmetropolitan and rural statistics, for the most part these terms can be used interchangeably with out serious misrepresentation (Carlson, et al., 1981:55).

elderly residing in rural area between metropolitan and nonmetropolitan counties. Population figures for the rural areas (open countryside and places under 2,500) of counties in the ETDD are displayed in Table II-1. For the ETDD, the elderly represented 10.2 percent of the total population. For rural areas of individual counties the elderly population ranged from 7.0 to 11.5 percent of the total rural population.

Social Service Delivery Structure

A survey of the social service delivery system in 1980 showed three levels of social service provision in the district for elderly residents: (1) county, (2) subregional, and (3) regional levels.

First, located in each county seat were various offices of state public services, and in some counties, private agencies. These agencies included Tennessee Departments of Human Services and Health and Environment, the Office on Aging, county hospitals, housing authorities, and various locally funded service agencies. Services at this level were provided in locations other than the county seat. Satellite offices were located in towns having client populations large enough to support these services.

Second, services delivered on the subregional level consisted of several multi-county service delivery areas within the ETDD. This subregional combination of counties arose from the concept of "economy of scale;" service providers found that service delivery was more economical when delivered to a larger client population than available in individual counties. The services delivered at this level consisted of specialized services such as mental health services.

Table II-1. 1980 Rural Portion of the Total Population, Elderly Population and Percent of Total for East Tennessee Development District Counties

County	Total Rural Population	Elderly Rural Population	Percent of Total
Anderson[1]	34,208	3,749	11.0
Blount[1]	38,664	4,008	10.4
Campbell	23,927	2,572	10.8
Claiborne	22,065	2,546	11.5
Cocke	21,212	2,114	10.0
Grainger	16,751	1,945	11.6
Hamblen	29,617	2,074	7.0
Jefferson	25,672	2,791	10.9
Knox[1]	74,160	7,370	9.9
Loudon	19,164	2,048	10.7
Monroe	21,091	2,220	10.5
Morgan	16,545	1,826	11.0
Roane	26,477	2,273	8.6
Scott	15,984	1,566	9.8
Sevier	33,652	3,472	10.3
Union[1]	11,707	1,252	10.7
Knoxville SMSA	158,739	16,379	10.3
ETDD	430,896	43,826	10.2

[1] SMSA County

Source: U.S. Dept. of Commerce, Bureau of the Census. 1980 Census of Population, Vol. 1. Characteristics of Population, Chapter B General Population Characteristics, Part 44, Tennessee. Table 52, pp. 44-213-44-220.

Third, the Knoxville/Knox county area served as a regional center for the ETDD. This area contained regional offices for various public agencies and served as a source of centralized, specialized services such as medical services which could not be provided economically on the local or subregional level (East Tennessee Development District, 1977:85).

Included in these three levels of service delivery were approximately 196 agencies providing services to the elderly. One-hundred and thirty-seven agencies were located in the counties, 32 were located at the sub-regional level while 27 agencies located in Knox county provided services to the elderly residing in the District. Information concerning the number of agencies providing services to each county is displayed in Table II-2.

TARGET POPULATION SURVEY

This survey explored the social service needs of elderly residents residing in rural areas of 15 counties in the ETDD. Metropolitan Knox County was excluded. A pre-structured questionnaire was used by interviewers employed through the county Offices On Aging and Community Action Agencies to conduct face-to-face interviews with the target sample in December, 1976 and January, 1977.

Sampling Frame

A random cluster sampling technique was employed to select qualified residents age 65 and older living in the open countryside and places with populations under 2,500. The sample size was chosen to

Table II-2. Number of Agencies Serving Elderly Populations in 1980 by County and Service Delivery Level

County	County Agencies	Subregional Agencies[1]	Regional Agencies
Anderson	20	8	27
Blount	17	7	27
Campbell	8	7	27
Claiborne	10	8	27
Cocke	8	3	27
Grainger	7	8	27
Hamblen	7	3	27
Jefferson	10	7	27
Loudon	8	8	27
Monroe	9	2	27
Morgan	8	7	27
Roane	10	7	27
Scott	7	7	27
Sevier	5	9	27
Union	3	8	27
Total County Agencies	137		

[1] Agencies serving more than one county are included in each county total.

Source: The University of Tennessee Agricultural Experiment Station, Yellow Pages for Social Services, Special Reports 4 and 5, 1980.

enable the researcher to generalize back to the ETDD and each individual county. County sample size was determined by each county's proportion of the district's total elderly population residing in the open countryside and places with populations less than 2,500 (East Tennessee Development District, 1977:6-7).

Questionnaire Design

The survey instrument contained questions assessing the knowledge of need for and use of human services available to the elderly in addition to general questions about health status and living situation (Appendix A). This analysis focused on the perceived need of elderly respondents for specific services and used only a portion of the data gathered. Respondents were asked: "Of the following services that could conceivably be offered to senior citizens which do you need?" Following this question was a list of nine services with a brief description of each. These services included: home nursing, home repair, home delivered meals, housekeeping, legal aid, shopping, transportation, companion services and vision and hearing testing. They were chosen because the services were offered most frequently by public and private social service agencies. Respondents from each household surveyed were given the opportunity to answer 'yes' or 'no' to each part of the service need question. For the purpose of this analysis, only eight services were discussed here because they were basic to the comparative analysis. Vision and hearing testing were omitted.

Characteristics of Respondents

A total of 1,003 elderly persons in 732 households completed questionnaires, 580 females and 423 males representing 57.8 and 42.2 percent of the sample respectively. The mean age of the male respondents was 73.4 years while the mean age of the female respondents was 71.8 years. Married males constituted 81.8 percent of the male sample while only 48.6 percent of the females surveyed were married. An overwhelming majority of the respondents were Caucasian (96.9 percent). These demographic characteristics, listed by county, are shown in Table II-3.

SURVEY OF KNOWLEDGEABLES

This survey also assesses the needs of the rural elderly residing in the ETDD by obtaining the opinions of human services professionals. A pre-structured questionnaire was used by interviewers employed by the University of Tennessee Institute of Agriculture to conduct telephone interviews with the designated sample during the months of January through June, 1981.

Questionnaire Development

During the summer and autumn months of 1980 consultation on the content of the instrument was sought from professionals employed with the Tennessee Department of Human Services, the East Tennessee Development District and the East Tennessee Human Resources Agency. This consultation was to ensure the data gathered would provide decision makers with useful information. Staff from the Office of Continuing

Table II-3. Demographic Characteristics of Rural Elderly Included in the Survey Sample by Sex and County of Residence

County	TOTAL		FEMALE				MALE			
	Number of Households	Sample Size	Sample Size	Percent Married	Percent White	Mean Age	Sample Size	Percent Married	Percent White	Mean Age
Anderson	98	124	72	39	89	72.5	52	75	90	74.1
Blount	114	153	88	44	97	71.6	65	86	95	71.8
Campbell	35	43	25	36	100	70.7	18	72	100	77.3
Claiborne	56	80	46	54	100	72.3	34	94	100	73.0
Cocke	34	45	24	46	96	72.6	21	76	86	74.5
Grainger	35	49	26	50	96	72.4	23	70	96	73.5
Hamblen	34	55	30	70	93	70.4	25	92	100	73.5
Jefferson	41	57	34	50	100	71.8	23	70	100	75.6
Loudon	42	58	34	50	97	71.6	24	83	100	72.5
Monroe	43	57	37	46	100	71.6	20	80	95	73.1
Morgan	37	46	23	39	100	69.1	23	74	100	72.3
Roane	48	65	41	42	100	74.9	24	92	100	75.3
Scott	28	38	26	42	100	71.1	12	92	100	75.2
Sevier	58	85	48	58	100	71.0	37	83	100	72.1
Union	29	48	26	77	100	69.8	22	91	100	72.3
ETDD[1]	732	1,003	580	48.6	96.9	71.8	423	81.8	96.9	73.4

[1] Knox County was not included.

Social Work Education, University of Tennessee School of Social Work provided input into the instrument design.

The instrument contained questions assessing the knowledge of need for, the barriers to use of human services available to rural elderly and general demographic information about the respondents (Appendix B). It was specifically designed to provide data for comparative analysis of data gathered from the target population survey. This comparative analysis focused on the common elements present in both instruments, thus only a portion of the data from the survey of knowledgeables was examined. The respondents were asked to estimate the percent of elderly residing in the rural areas of their respective counties in need of human services. Following this general introduction, each service was listed and responses illicited.

Each interviewer had a service definition list which was used to clarify the scope of the services when respondents were unsure of the nature of the service. Human services professionals located in Knoxville were consulted during the development of this list to ensure the definitions accurately reflected the existing service delivery system.

Sampling Frame

A purposive sampling technique was employed to select qualified respondents for the survey. Staff of the East Tennessee Development District and the East Tennessee Human Resources Agency were consulted to develop a pool of human services roles from which a sample could be drawn. The criteria used to choose these human service roles was two-fold: 1) the unique role in the human service delivery system to

the elderly and 2) the universal existence of the role in counties contained within the study area. After the list of roles was developed, agencies were contacted and names of professionals in these roles, with the longest work experience in that particular county, were obtained.

Pretest

Knox County was chosen as the pretest site. This choice was made for several reasons: convenience of location, low implementation cost, and the similarities of the Knox County elderly population and those of the study area. The instrument was revised following the pretest. The respondent pool was modified to exclude staff working in nursing homes as those respondents felt their experience could not be generalized to the non-institutionalized population.

Characteristics of Respondents

Seventy-five human service professionals representing six occupational fields were interviewed during the first half of 1981. Interviewers hoped to contact at least one representative from each occupational category in each county. Not all occupational categories were represented in several counties. Data in Table II-4 reflect the number of interviews conducted by county.

The typical respondent was a female between the ages of 25 and 34 years, who attended college beyond the bachelor's degree level, had worked in her present position between one and three years and provided direct services to elderly clients. A complete breakdown of demographic characteristics is displayed in Table II-5.

Table II-4. The Number of Knowledgeables Interviewed by County

County	Frequency
Anderson	6
Blount	6
Campbell	4
Claiborne	5
Cocke	5
Grainger	6
Hamblen	7
Jefferson	4
Loudon	5
Monroe	4
Morgan	4
Roane	6
Scott	5
Sevier	4
Union	4
Total	75

Table II-5. Selected Characteristics of Knowledgeables Survey Respondents

Item	Frequency (n=75)	Percent
Education		
High School Degree	7	9
Some Undergraduate Training	14	19
Bachelor's Degree	22	29
Post Bachelor's Work	32	43
Occupational Category		
General Social Services	18	24
Home Nursing	13	17
Mental Health	11	15
Office on Aging	14	19
Primary Care Clinic	3	4
Planning	16	21
Do you provide direct service?		
Yes	53	71
No	22	29
Years in Present Position		
1 to 3 Years	38	50
4 to 6 Years	20	27
7 to 9 Years	12	16
10 Years or More	5	7
Mean = 4.5 Years		
Total Years in Service to the Elderly		
1 to 3 Years	27	37
4 to 6 Years	19	25
7 to 9 Years	10	13
10 Years or More	19	25
Mean = 6.4 Years		
Age		
Less than 25 Years	2	3
25 to 34 Years	35	46
35 to 44 Years	16	21
45 to 54 Years	17	23
55 Years and Older	5	7
Sex		
Female	58	77
Male	17	23

CHAPTER III

DATA ANALYSIS

TARGET POPULATION SURVEY

Face-to-face interviews were conducted with a sample of the elderly residing in rural areas of 15 counties in the ETDD to gather information assessing the knowledge of need for available human services. Respondents were asked: "Of the following services that could conceivably be offered to senior citizens, which do you need?" One response for each household was illicited for the eight part service need question and tabulated; percentages of need were calculated by county of residence.

Data in Table III-1 reflect the need for service and show that service needs varied greatly between counties. The need for home nursing ranged from 12.2 percent in Jefferson County to 70.6 percent in Cocke County. Housekeeping service needs ranged from 4.9 percent in Jefferson County to 64.7 percent in Cocke County. Anderson County had the low end of the range for shopping service needs with 7.1 percent while the high end of the range was Cocke County with 73.5 percent of the households in need of service. The need for companion services ranged from a low of 1.0 percent in Anderson County to a high of 51.5 percent in Cocke County. Home delivered meals were needed by a range of 7.3 percent of the residents in Jefferson County to 61.8 percent in Cocke County. Residents in Anderson County households expressed the lowest need for transportation services with 17.3 percent in need of services while virtually all residents of Union County households (96.9

Table III-1. Percent of Target Sample Households Desiring Services by County

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Anderson	23.5	6.1	7.1	1.0[1]	11.2	17.3	11.2[1]	26.5
Blount	30.7	18.4	21.9	4.4[1]	16.7	23.7	8.0[1]	27.2
Campbell	65.7	17.1	31.4	8.8[1]	42.9	37.1	22.9[1]	42.9
Claiborne	35.7	26.8	42.9	17.9[1]	25.0	58.9	23.6[1]	42.9
Cocke	70.6	64.7	73.5	51.5[1]	61.8	82.4	81.8[1]	76.5
Grainger	57.1	42.9	25.7	2.9	54.3	74.3	54.3[1]	48.6
Hamblen	29.4	17.6	38.2	5.9	26.5	44.1	33.3[1]	50.0
Jefferson	12.2	4.9	7.3	4.9	7.3	19.5	2.4	24.4
Loudon	31.0	21.4	26.2	2.4[2]	19.0	45.2	28.6[1]	26.2
Monroe	51.2	44.2	41.9	9.8[2]	32.6	46.5	14.3[1]	48.8
Morgan	51.4	8.1	24.3	8.1	24.3	70.3	5.4	56.8
Roane	41.7	29.2	33.4	8.3	18.8	47.9	39.6[3]	41.7
Scott	53.6	64.3	57.1	12.0[4]	39.3	39.3	79.2[5]	35.7
Sevier	29.3	24.1	29.3	6.3[2]	34.5	44.8	47.3[2]	32.8
Union	58.6	13.8	48.3	11.1[2]	13.8	96.6	77.8[2]	93.1

Note: [1] One response is missing.

[2] Two responses are missing.

[3] Four responses are missing.

[4] Ten responses are missing.

[5] Three responses are missing.

percent) expressed a need for transportation services. Jefferson County represented the low end of the range for legal services with 2.4 percent in need of services while 81.8 percent of the Cocke County households expressed the same need. The need for home repair ranged from 24.4 percent in Jefferson County to 93.1 percent in Union County.

The analysis of these data revealed a great discrepancy in perceived need for services among counties. Moreover a pattern emerged where most counties were consistently ranked in a particular segment along the need continuum. Data in Table III-2 reveal that when the need scale was divided into three segments: low, defined as a rank order of one through five; medium, including ranks of six through 10; and, high, defined as ranks of 11 through 15, most counties consistently fell into the same segment of relative need.

The most dramatic illustration of this point is Cocke County where for six of the eight service needs elderly residents expressed the highest level of need in the ETDD. It ranked next to the highest need for the other two service needs. On the other end of the spectrum, Anderson County had consistent ranks of less than five. Similarly, Jefferson had consistently low ranks with all ranks of five or less. All but four counties; Campbell, Grainger, Morgan, and Union received similar ranks across service needs. Claiborne, Hamblen, Loudon, Monroe, Roane and Sevier Counties were considered mid-ranged counties with most ranks between six and 10. The low need group with most ranks between one and five consisted of Anderson, Blount, and Jefferson Counties. Cocke County was the only county with consistent high need for all services.

Table III-2. Target Samples' Rank Ordering of Counties by Service Need and Cumulative Score

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair	Cumulative Score
Anderson	2	3	1	1	2	1	4	3	17
Blount	5	7	3	4	4	3	3	4	33
Campbell	14	5	8	10	13	4	6	8.5	68.5
Claiborne	7	10	12	14	8	11	7	8.5	77.5
Cocke	15	15	15	15	15	14	15	14	118
Grainger	12	12	5	3	14	13	12	10	81
Hamblen	4	6	10	6	9	6	9	12	62
Jefferson	1	1	2	5	1	2	1	1	14
Loudon	6	8	6	2	6	8	8	2	46
Monroe	9	13	11	11	10	9	5	11	79
Morgan	10	2	4	8	7	12	2	13	58
Roane	8	11	9	9	5	10	10	7	69
Scott	11	14	14	13	12	5	14	6	89
Sevier	3	9	7	7	11	7	11	5	60
Union	13	4	13	12	3	15	13	15	88

Note: The need for service was rank ordered where 1 = the county with the lowest need, and 15 = the county with the highest need.

To explain this pattern of need, a comparison of the expressed needs of the target sample and an objective indicator of need was conducted. The percent of rural elderly living in poverty, as defined by the 1980 Census of Population, was chosen as the objective measure of need. These data along with the cumulative need scores shown in Table III-2 were rank ordered by county. A Spearman correlation coefficient was calculated to compare these two data sets. The correlation coefficient of .688 was significant at the .05 level. This significance indicated a positive relationship between the expressed need of the target sample and income. These data are displayed in Table III-3.

The data displayed in Table III-4 are the rankings of percentages of service need within counties. Rank order of service need varied greatly among counties. The need for transportation was most often listed as the greatest need; seven counties cited it with a rank of eight. On the other end of the spectrum, companion services were ranked as the lowest service need with twelve counties giving it a rank of one.

When the need for service ranks were collapsed into two categories: low service need including ranks one through four and high service need with ranks five through eight some consistency was observed. The high need services were home nursing, transportation, home repair, and legal services. The low need services included housekeeping, companion, home delivered meals and shopping.

This analysis is for the purpose of putting service needs into perspective. It is not meant to reduce the importance of these needs but to show each need's relative importance as perceived by potential clients. This information is of importance to community decision makers

Table III-3. Overall Service Need Rank and Percent of Rural Elderly Population in Poverty Rank by County

	Overall Service Need Rank	Percent in Poverty Rank[1]
Anderson	2	4
Blount	3	2
Campbell	8	8
Claiborne	10	13
Cocke	15	15
Grainger	12	14
Hamblen	7	5
Jefferson	1	6.5
Loudon	4	3
Monroe	11	10
Morgan	5	11
Roane	9	1
Scott	14	12
Sevier	6	6.5
Union	13	9
Spearman Coefficient	.688[2]	

Note: The need for service and percent in poverty were rank ordered where 1 = the county with the lowest need or smallest percent in poverty, and 15 = the county with the greatest need or the largest percent in poverty.

[1] Source: U.S. Dept. of Commerce, Bureau of the Census. 1980 Census of Population, Vol. 1. Characteristics of Population, Chapter B General Population Characteristics, Part 44, Tennessee. Table 52, pp. 44-213-44-220 and General Social and Economic Characteristics, Part 44, Tennessee. Table 189, pp. 44-547-44-555.

[2] Significant as the .05 level.

Table III-4. Target Samples' Rank Ordering of Services within Each County

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Anderson	7	1	2	3	4.5	6	4.5	8
Blount	8	4	5	1	3	6	2	7
Campbell	8	2	4	1	6.5	5	3	6.5
Claiborne	5	4	6.5	1	3	8	2	6.5
Cocke	4	3	5	1	2	8	7	6
Grainger	7	3	2	1	5.5	8	5.5	4
Hamblen	4	2	6	1	3	7	5	8
Jefferson	6	2.5	4.5	2.5	4.5	7	1	8
Loudon	7	3	4.5	1	2	8	6	4.5
Monroe	8	5	4	1	3	6	2	7
Morgan	6	2.5	4.5	2.5	4.5	8	1	7
Roane	6.5	3	4	1	2	8	5	6.5
Scott	5	7	6	1	3.5	3.5	8	2
Sevier	3.5	2	3.5	1	6	7	8	5
Union	5	2.5	4	1	2.5	8	6	7

Note: The need for service was rank ordered where 1 = the service with the lowest need and 8 = the service with the highest need.

as funding allocation decisions force a choice between services resulting in rank ordering service needs by priority.

SURVEY OF KNOWLEDGEABLES

Seventy-five telephone interviews were conducted with knowledgeables, representing six occupational fields, in 15 counties in the ETDD. These knowledgeables were asked to estimate the percent of elderly residing in the rural areas of their respective counties in need of eight specific human services. Responses to the eight service need questions were tabulated. The mean percentage of need, standard deviation, mode and range were calculated for each service need in all 15 counties.

Data in Table III-5 show that service need varied greatly between and within counties. The mean value of the need for home nursing had a range of 17 percent in Sevier County to 65 percent in Hamblen County. Housekeeping mean service needs ranged from a low of 25 percent in Sevier County to 65 percent in Monroe County. The mean need for shopping services ranged from 23 percent in Anderson County to 68 percent in Morgan County. The lowest mean need for companion services, 28 percent, was found in Scott County; again Morgan County had the highest mean need with the knowledgeables estimating 61 percent of the target population in need of this service. The mean need for home delivered meals ranged from 17 percent in Scott County to 59 percent in Morgan County. The lowest mean need for transportation services was in Anderson County (43 percent); Blount, Morgan and Grainger Counties had the highest mean need, 73 percent. Campbell County represented the low end of the range

Table III-5. Estimates of Percent of Rural Elderly in Need of Human Services as Determined by Knowledgeables by County

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Anderson								
Mean	20	31	23	28	19	43	14	51
SD	22	21	18	17	8	24	12	14
Mode(s)	5	-	10	10/40	15	40	-	40/50
Range	5-60	5-55	10-55	10-50	10-30	10-75	3-35	40-75
Blount								
Mean	31	48	54	58	35	73	33	49
SD	29	32	28	32	29	25	31	30
Mode(s)	-	-	-	50	35	100	10	15/50
Range	5-80	15-95	5-85	5-98	10-90	40-100	10-75	15-85
Campbell								
Mean	24	34	25	40	29	46	11	48
SD	18	30	13	20	9	32	9	24
Mode	-	-	-	40	-	-	5	-
Range	9-50	10-75	10-40	15-65	20-40	15-85	5-25	30-75
Claiborne								
Mean	39	52	45	33	53	64	40	51
SD	32	34	34	27	15	21	35	35
Mode	25	-	-	-	-	-	20	-
Range	6-90	10-95	5-80	5-60	40-70	40-90	20-80	15-100

Table III-5 (Con't.)

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Cocke								
Mean	24	41	33	56	39	52	31	48
SD	19	36	12	25	38	14	17	32
Mode	-	-	-	-	-	50	-	-
Range	10-50	11-100	20-50	25-85	5-100	40-75	10-50	20-100
Grainger								
Mean	43	48	51	57	52	73	48	64
SD	30	38	33	39	32	21	27	29
Mode	-	10	-	-	-	50	50	50
Range	6-80	10-100	10-90	10-100	10-90	50-100	20-95	20-95
Hamblen								
Mean	65	44	54	41	49	64	53	52
SD	25	35	30	18	28	37	36	31
Mode(s)	50	-	90	20/50/60	40	-	75	50/75
Range	37-98	5-98	10-90	20-60	15-90	10-100	2-100	5-90
Jefferson								
Mean	22	33	53	45	28	61	51	43
SD	18	25	31	25	23	14	31	21
Mode	-	-	75	-	-	50	-	40
Range	4-40	6-65	10-75	15-75	10-60	50-80	20-80	20-70

Table III-5 (Con't.)

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Loudon								
Mean	28	55	41	56	36	72	48	64
SD	25	29	22	30	30	15	35	19
Mode	-	-	-	70	-	-	15	70
Range	5-60	10-80	15-75	15-90	6-80	50-90	20-100	35-85
Monroe								
Mean	36	65	55	38	29	53	33	31
SD	36	23	25	13	19	19	26	21
Mode	20	-	50	40	-	40	-	-
Range	15-90	35-90	30-90	20-50	10-50	40-80	5-65	10-60
Morgan								
Mean	21	34	68	61	59	73	43	68
SD	3	25	22	30	34	21	38	28
Mode	20	-	80	-	-	-	25	-
Range	20-25	10-60	35-80	20-90	14-90	50-100	20-100	40-100
Roane								
Mean	30	29	40	56	26	61	45	42
SD	29	19	24	32	25	18	23	18
Mode	15	20	-	80	15	80	40	50
Range	6-85	10-65	15-70	18-90	5-70	40-80	20-75	20-70

Table III-5 (Con't.)

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Scott								
Mean	24	39	46	28	17	63	14	45
SD	15	27	22	19	10	18	6	23
Mode(s)	-	40	50	15/25	10/15	-	10/20	35
Range	6-40	8-80	13-75	15-60	10-35	35-80	8-20	30-80
Sevier								
Mean	17	25	29	41	24	65	30	44
SD	8	18	23	33	18	17	14	11
Mode(s)	-	-	-	20	-	50/80	20	40
Range	6-25	8-50	10-60	20-90	10-50	50-80	20-50	35-60
Union								
Mean	43	39	39	40	33	58	45	53
SD	33	30	20	18	29	15	26	15
Mode	-	-	-	-	10	50	-	40
Range	8-80	10-80	15-60	18-60	10-70	50-80	20-80	40-70

of mean legal service needs with 11 percent while Hamblen County represented the high end of the range with 53 percent. The mean need for home repair ranged from 31 percent in Monroe County to 68 percent in Morgan County.

When observing the mean percentages for these service needs, the standard deviations were considered. The standard deviations associated with these scores were very large in most instances indicating very little agreement between judges. Though the data displayed in Table III-5 show standard deviations ranging between three and 39, the scores were concentrated at the higher end of this range. Only six scores (5 percent) ranged between three and nine while 34 scores (28 percent) ranged between 10 and 19. The highest frequency of standard deviations: 43 scores (36 percent) ranged between 20 and 29 while the remaining 37 scores (31 percent) ranged between 30 and 39.

While standard deviations varied by county somewhat, ten counties had most of the values that ranged between 20 and 39. All eight standard deviations in Blount, Grainger, and Morgan Counties exceeded 19. Seven counties: Claiborne, Hamblen, Jefferson, Loudon, Monroe, Roane and Union had at least five standard deviations ranging from 20 to 39. The remaining five counties had four or less standard deviations over 19. Sevier County had the fewest standard deviations (two) above 19. There was very little consistency between judges across counties.

When the standard deviations were grouped by service type, all but one service had at least nine of a possible 15 standard deviations that ranged between 20 and 39. Transportation had seven standard deviations that exceeded 19. The judges were not consistent across services.

These large standard deviations reflect the great inconsistency between the opinions of knowledgeables. Data concerning the mode supports this conclusion. More than 50 percent of the service groups did not have a mode; all scores were different. This information coupled with the wide range of mean estimates for all services showed that the knowledgeables were unable to provide consistent data when asked about the need for these eight services.

The mean scores derived from knowledgeables' estimates were rank ordered by county and displayed in Table III-6. These data revealed that when the need scale was divided into three segments: low, defined as a rank order of one through five; medium, including ranks of 6 through 10 and, high, defined as ranks of 11 through 15, most counties consistently fell into the same segment of relative need. The most dramatic illustration of this point was Anderson County where for seven of the eight service needs mean estimates, knowledgeables ranked them in the low need category. The remaining mean service need estimate was ranked in the medium need category. Most of the other counties had all ranks in two adjoining categories. Campbell, Roane, Scott and Sevier Counties had ranks in the low or medium need category. Blount, Grainger, Hamblen, and Loudon counties had ranks in the medium or high need categories while Claiborne, Cocke, Monroe, Morgan and Union and ranks placed in all three categories.

Data in Table III-7 show the mean scores derived from knowledgeables' estimates and their relative rank in each county. Rank order of service need varied between counties. The need for transportation was most often listed as the greatest need with 10 counties citing it with a

Table III-6. Rank Ordering of Counties by Knowledgeables' Mean Estimates of Rural Elderly in Need of Human Services

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Anderson	2	3	1	1.5	2	1	2.5	9.5
Blount	10	11.5	12.5	14	9	14	6.5	8
Campbell	6	5.5	2	5.5	6.5	2	1	6.5
Claiborne	12	13	8	3	14	9.5	8	9.5
Cocke	6	9	4	11	11	3	5	6.5
Grainger	13.5	11.5	10	13	13	14	12.5	13.5
Hamblen	15	10	12.5	7.5	12	9.5	15	11
Jefferson	4	4	11	9	5	6.5	14	3
Loudon	8	14	7	11	10	12	12.5	13.5
Monroe	11	15	14	4	6.5	4	6.5	1
Morgan	3	5.5	15	15	15	14	9	15
Roane	9	2	6	11	4	6.5	10.5	2
Scott	6	7.5	9	1.5	1	8	2.5	5
Sevier	1	1	3	7.5	3	11	4	4
Union	13.5	7.5	5	5.5	8	5	10.5	12

Note: The need for service was rank ordered where 1 = the county with the lowest need, and 15 = the county with the highest need.

Table III-7. Rank Ordering of Knowledgeables' Mean Estimates of Rural Elderly in Need of Human Services within Each County

County	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Anderson	3	6	4	5	2	7	1	8
Blount	1	4	6	7	3	8	2	5
Campbell	2	5	3	6	4	7	1	8
Claiborne	2	5	4	1	6	8	3	7
Cocke	1	5	3	8	4	7	2	6
Grainger	1	2.5	4	6	5	8	2.5	7
Hamblen	8	2	6	1	3	7	5	4
Jefferson	1	3	7	5	2	8	6	4
Loudon	1	5	3	6	2	8	4	7
Monroe	4	8	7	5	1	6	3	2
Morgan	1	2	6.5	5	4	8	3	6.5
Roane	3	2	4	7	1	8	6	5
Scott	3	5	7	4	2	8	1	6
Sevier	1	3	4	6	2	8	5	7
Union	5	2.5	2.5	4	1	8	6	7

Note: The need for service was rank ordered where 1 = the service with the lowest need and 8 = the service with the highest need.

rank of eight: the highest need rank. On the other end of the spectrum, the need for home nursing services was ranked as the lowest need with seven of the 15 counties giving it a rank of one. The other services had a range of ranks across counties. They all had ranks ranging from one to eight.

COMPARATIVE ANALYSIS

Two statistical techniques were employed to compare the results of the target population survey and the survey of knowledgeables. Spearman rank order correlation was used to measure how accurately the knowledgeables' mean estimates of service need reflected the expressed need of the target population sample. A comparison of mean scores by knowledgeable occupation category was conducted to determine which categories of knowledgeables provided the best estimates of need.

Spearman correlation coefficients were calculated to compare the need for service as expressed by the target population and mean estimates of service need derived from the knowledgeables surveyed. The rank ordering of needs along with the correlation coefficients are displayed in Table III-8. To indicate a perfect positive correlation a coefficient of +1 is needed. The correlation coefficients for these counties ranged from .006 in Grainger County to .839 in Union County. One tailed Z scores were calculated to determine significant positive correlations. Of the 15 coefficients only two, Claiborne and Union Counties, were significant at the .05 level. The correlation coefficient for Hamblen County was significant at the .10 level. This lack of significant correlation coefficients revealed that the rank ordering of

Table III-8. Comparison of Rank Ordering of Service Needs by the Target Population (T) and Mean Service Need Estimates by the Knowledgeables (K)

	Anderson		Blount		Campbell		Claiborne		Cocke		Grainger		Hamblen		Jefferson	
	T	K	T	K	T	K	T	K	T	K	T	K	T	K	T	K
Home Nurse	7	3	8	1	8	2	5	2	4	1	7	1	4	8	6	1
Housekeeping	1	6	4	4	2	5	4	5	3	5	3	2.5	2	2	2.5	3
Shopping	2	4	5	6	4	3	6.5	4	5	3	2	4	6	6	4.5	7
Companion	3	5	1	7	1	6	1	1	1	8	1	6	1	1	2.5	5
Home Delivered Meals	4.5	2	3	3	6.5	4	3	6	2	4	5.5	5	3	3	4.5	2
Transportation	6	7	6	8	5	7	8	8	8	7	8	8	7	7	7	8
Legal	4.5	1	2	5	3	1	2	3	7	2	5.5	2.5	5	5	1	6
Home Repair	8	8	7	2	6.5	8	6.5	7	6	6	4	7	8	4	8	4
Spearman Coefficient	.185		.120		.042		.684[1]		.143		.006		.619[2]		.024	

Table III-8 (Con't.)

	Loudon		Monroe		Morgan		Roane		Scott		Sevier		Union	
	T	K	T	K	T	K	T	K	T	K	T	K	T	K
Home Nurse	7	1	8	4	6	1	6.5	3	5	3	3.5	1	5	5
Housekeeping	3	5	5	8	2.5	2	3	2	7	5	2	3	2.5	2.5
Shopping	4.5	3	4	7	4.5	6.5	4	4	6	7	3.5	4	4	2.5
Companion	1	6	1	5	2.5	5	1	7	1	4	1	6	1	4
Home Delivered Meals	2	2	3	1	4.5	4	2	1	3.5	2	6	2	2.5	1
Transportation	8	8	6	6	8	8	8	8	3.5	8	7.5	8	8	8
Legal	6	4	2	3	1	3	5	6	8	1	7.5	5	6	6
Home Repair	4.5	7	7	2	7	6.5	6.5	5	2	6	5	7	7	7
Spearman Coefficient	.077		.048		.229		.363		.256		.298		.839[1]	

Note: [1] significant at the .05 level

[2] significant at the .10 level

target populations' expressed need for service and the mean estimates determined by knowledgeables were not consistently related.

In an effort to explain the three significant correlation coefficients, similarities between these counties that could distinguish them from the remaining counties were explored. Upon examination these three counties didn't have any distinguishing characteristics to separate them from the others. Grainger and Hamblen Counties were found to be the most similar of the three. They were of the same geographic size, had similar population characteristics and economic systems. Union County was found to be smaller, the only member of the Knoxville SMSA and had a poorer economy. Grainger and Hamblen Counties differed somewhat in the composition of their rural population. Though the absolute numbers were similar, the elderly population residing in rural places constituted a larger proportion (almost 12 percent) of the total population than the 7 percent in Hamblen County. Union County was more similar to Grainger County with almost 11 percent of its rural population composed of elderly residents (see Table II-1, p. 21).

There were no distinct similarities among these counties when the sample size and composition of the two surveys were investigated. The size and composition of the target sample in these three counties was similar to the other counties. The same was true of the knowledgeable survey. The number interviewed ranged from four to seven for these significant counties, the same range for the group of counties as a whole. The occupations of the knowledgeables for individual counties was reviewed and again there was nothing to distinguish them from other counties. Three occupational categories were represented in all three

counties: mental health, planning and the office on aging. These three occupational groups were included in the majority of the counties across the study area.

Very few correlation coefficients were significant at the .05 or .10 levels. Of those that were significant, distinct commonalities were not found that would explain the existence of significant correlation coefficients in these counties at the exclusion of others. The data from the two needs assessment methods were not found to be consistently related.

Further analysis was conducted to determine if particular categories of knowledgeables provided more accurate estimates of need than other groups. In other words, because of the nature of a particular job or career field, was a knowledgeable able to provide an estimate of need that was more closely related to the target population's expressed need for service?

To determine if certain occupation categories produced good judges of need data from the two surveys were manipulated to allow comparisons of squared mean differences between the target populations' expressed need for services and the knowledgeables' mean estimates of need grouped by occupation. Each knowledgeable's estimates of service need was subtracted from the respective county's target population expressed need for service. The resulting figures were squared (to remove negative values) and summed by knowledgeable occupation categories. A mean score was derived from these summations. These mean squared differences between target population expressed need and knowledgeable's mean estimates of need are displayed in Table III-9. Of the eight services

Table III-9. Squared Mean Differences Between Target Population Need Data and Knowledgeables' Need Estimates by Personnel Category

Occupation Category	Home Nurse	House-keeping	Shopping	Companion	Home Delivered Meals	Transpor-tation	Legal Services	Home Repair
Social Services	843	1,611	1,327	3,356	1,128	1,236	1,287	716
Home Nurse	1,133	1,847	975	1,847	1,530	1,091	2,155	1,617
Clinics	337	123	671	3,270	68	624	336	849
Planning	1,358	529	641	705	605	646	1,133	856
Mental Health	760	882	955	2,363	1,010	972	1,869	884
Office on Aging	929	1,412	1,365	2,083	716	1,383	913	795

listed, knowledgeables employed in primary health care clinics provided estimates of the need that were closest to the target population's expressed need for five services; home nurse, housekeeping, home delivered meals, transportation, and legal services. Knowledgeables employed in planning agencies provided closest estimates of the need for shopping, and companion services. The last service, home repair, was estimated most accurately by knowledgeables in the social services occupational category.

The assumption that the sample of knowledgeables employed in primary health care clinics were good judges has limitations as the category had a sample size of three. With a sample size this small, it was difficult to determine if good judgment was a result of the occupation or the unique qualities of the individual respondents. The sample size of planning and social service agencies was large enough in order that the assumption that the occupation and not the unique characteristics of the respondents was responsible for the close estimates of need for shopping, companion and home repair services.

This analysis did not measure how accurately the estimates of service need reflected the target population's expressed need but indicated those groups of knowledgeables which were able to provide the best estimates.

The overall comparative analysis showed little relationship between the expressed needs of rural elderly and mean estimates of need as determined by knowledgeables. Only three of 15 Spearman rank order correlation coefficients were significant. When mean squared dif-

ferences between the two populations were investigated no consistent pattern of good judges by occupational groups was shown.

This lack of consistency between the two measures of need raised questions over the validity of the measures when applied to rural areas. If the target population's expressed need for service is accepted as a reliable measure of need and used to test the validity of the survey of knowledgeables method of need assessment, then the validity of applying the second method to rural areas should be questioned.

CHAPTER IV

SUMMARY, CONCLUSIONS AND IMPLICATIONS

SUMMARY

Over the years both formal and informal needs assessment techniques have been employed to assess human service needs. In response to the needs of policy decision makers and federal mandate, social scientists refined these techniques and grouped them into two categories: subjective and objective. Subjective methods were designed to collect data concerning expressed need using interviewing techniques. Objective techniques were designed to enable researchers to interpret needs from a collection of social facts or indicators. Both methods were found to have advantages and limitations.

The literature revealed that selection of an appropriate needs assessment methodology depended upon several criteria. Included in these criteria were acceptability of the methodology to decision makers, its usefulness in collecting appropriate data, and availability of resources, such as, time, expertise and funds.

Though in response to the variety of circumstances surrounding the use of needs assessment and resources available, social scientists have designed many models, three of which were most often used. These three models were: target population survey, survey of knowledgeables and social indicators research. Data used for social indicators research was found to be inappropriate for rural areas because of a shortage of appropriate data and the lack of congruity between the results of

subjective and objective methods when applied to rural areas. Because of the limitations associated with social indicators research, it was not considered applicable to rural areas and not included in this study.

This study tested the validity of the survey of knowledgeables needs assessment technique. Criterion-validation techniques were employed in this analysis using the target population needs assessment technique to measure validity.

Two surveys were conducted in the 15 counties located in the ETDD. The first, a face-to-face interview of 1,003 elderly residing in 732 households in rural areas of these counties was conducted in winter 1976-1977. This survey explored the social service needs of elderly living in rural areas. The second, conducted during the first six months of 1981, consisted of 75 telephone interviews with a purposive sample of knowledgeables, representing six occupational groups, working in the study area. This survey assessed the needs of rural elderly by obtaining estimates of service need from knowledgeables employed in human service professions.

When responses to the service need questions in the target population interview were tabulated, percent of need for services varied by service and county. When data were ranked by county, a pattern emerged where most counties had similar relative need ranks when compared to other counties. The most dramatic example of this consistency was Cocke County where for six of the eight service needs elderly residents expressed the highest level of need in the ETDD. When service needs were ranked, there was some consistency of rank placement. The need for transportation was most often cited as the greatest need with seven

counties citing it with a rank of eight. On the other end of the spectrum, companion services was ranked as the lowest service need with 12 counties giving it a rank of one.

Great discrepancies between knowledgeables' need estimates were shown when responses to the service need questions were tabulated. The standard deviations associated with the mean estimates were consistently large. Sixty-six percent of these standard deviations were above 19. The lack of a mode in more than 50 percent of the service need groups further illustrated this inconsistency. The large standard deviations coupled with the mode data indicated that knowledgeables were unable to reliably estimate the service needs of rural elderly.

Comparative analysis techniques including Spearman rank order correlation and the calculation of mean squared differences between the knowledgeables' mean estimates of service need and the target populations' expressed need were used to examine the validity of the survey of knowledgeables needs assessment technique when applied to a rural population.

Three of the 15 Spearman rank order correlation coefficients were significant at the .10 level or better: Grainger, Hamblen and Union Counties. Upon close examination no distinct similarities were found setting these three counties apart from the remaining 12.

When mean squared differences of service need were calculated and grouped by knowledgeable occupational category, knowledgeables working in primary health care clinics, planning agencies and social service agencies were found to be the best predictors of need. A limitation associated with this finding was cited as the sample size of primary

health care clinics was very small and the appropriateness of generalizing to a larger population was questioned.

Overall, the comparative analysis showed little relationship between the expressed service needs of the target population and the mean estimates determined by the survey of knowledgeables. This discrepancy brought about questions of the validity of the survey of knowledgeables when applied to a rural population.

CONCLUSIONS AND IMPLICATIONS

A low level of agreement between the target populations' perceived need for service and the knowledgeables' perceptions of what the target populations needed was shown. Further, estimates of need by knowledgeables suffered from a low degree of reliability across judges. The discrepancy between levels of need generated by the survey of the target population and the survey of knowledgeables challenged the validity of the survey of knowledgeables needs assessment technique when applied to rural areas. This discrepancy and the lack of consistency in estimating needs by knowledgeables may have been caused by professional bias, lack of client contact or lack of qualified knowledgeables. The few areas of significant correlation may be related to the unique characteristics of the individual knowledgeables and not their occupational roles. Realizing the major limitation of this study was the small sample size of the survey of knowledgeables, additional studies should be conducted in areas where a larger supply of knowledgeables is available.

One concludes that the results of this research indicate that the survey of knowledgeables is not an appropriate substitution for the

target population survey method when applied to rural areas thus needs assessment should be limited to the later method. However, the reality of the needs assessment process and the limited funding associated with it does not permit this exclusiveness. Since the exclusion of knowledgeables from the needs assessment process is unrealistic perhaps another alternative may be pursued. New methods of information sharing between clients and service providers could be established in addition to the training of knowledgeables to foster awareness of the biases and frames of reference they bring to the needs assessment process to improve the knowledge base from which decision makers draw.

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APPENDIXES

APPENDIX A

SERVICES

Of the following services that could conceivably be offered to senior citizens, which do you need?

___ 1. Home nursing - if you have no one to care for you when ill, especially following hospitalization

0 no
1 yes

___ 2. Home repair service - for making minor household repairs

0 no
1 yes

___ 3. Home meal service - bringing prepared meal to your home occasionally

0 no
1 yes

___ 4. Housekeeping service - helping you clean house or occasionally prepare meals

0 no
1 yes

___ 5. Legal aid service - to help you in dealing with social security administration, inheritance, medicare and medicaid, taxes

0 no
1 yes

___ 6. Grocery shopping service - someone to deliver groceries for you to take you to the store

0 no
1 yes

___ 7. Van or bus service - to provide transportation into and around town and the county, to be used for shopping, trips to doctor, etc.

0 no
1 yes

28 If yes, would you be willing to pay 50¢ to ride on this service?

0 no
1 yes
8 not applicable

___ 8. READ - someone to read books, letters, the Bible, to you

0 no
1 yes

APPENDIX B

[COMPLETE BEFORE INTERVIEW]

_____ ID Number

_____ County Code

_____ Personnel Category

"The first four questions are just to collect some information about your professional experience."

_____ How many years have you been in your present position?

_____ How many years have you been providing services to the elderly?

_____ Do you have direct contact with the elderly in your present job?

(0) NO (1) YES

"The next section of the interview deals with the needs of the elderly in your county regardless of the present services provided by government or that may be obtainable privately.

"There are eight categories of need. I will read you the list of needs and ask you to rate each need on a scale from 0 to 100."

"For each need I will ask you: on a scale from 0 to 100 what percent of the elderly residing in the rural areas of your county are in need of each service?"

"Please ask for clarification of any terms I use that are unclear. Do you have any questions?"

% Need

_____ Home Nursing

_____ Housekeeping

_____ Shopping

_____ Companion

_____ Home Delivered Meals

_____ Transportation

_____ Legal Services

_____ Home Repair

* * *

"That completes the bulk of the interview. I have only two more questions."

_____ What is the highest level of education you have completed.
(1) HIGH SCHOOL DEGREE (3) B.A./B.S. DEGREE
(2) SOME COLLEGE (4) POST B.A./B.S. WORK

_____ In what year were you born

_____ Sex of Respondent (BY OBSERVATION)
(0) MALE (1) FEMALE

VITA

Maryanne Lynch was born on January 29, 1958 to Gerard and Mary Ellen Lynch joining two older brothers; Alan and Douglas. She was reared in Middletown, New Jersey where she graduated from high school in June 1975. Her college career began the following autumn at Westminster College in New Wilmington, Pennsylvania where she studied music and sociology. After two years of study she transferred to the University of Tennessee at Knoxville where in 1979 she received a Bachelor of Arts degree with a major in sociology. After completing her undergraduate education she accepted a job as a Human Resources Planner at the East Tennessee Development District in Knoxville. In January 1980 she began a graduate program in Agricultural Economics and Rural Sociology at the University of Tennessee Institute of Agriculture at Knoxville on a research assistantship. In May 1981 she accepted a job as a Research and Evaluation Specialist with the Office of Continuing Social Work Education, University of Tennessee School of Social Work. She graduated with a Masters of Science degree in agricultural economics and rural sociology in December 1985. She is presently continuing her work with the Office of Continuing Social Work Education as Coordinator of Research and Evaluation services and resides in Corryton, Tennessee with her husband, Donald A. Cunningham.