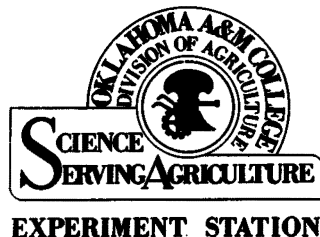


Bulletin No. B-477
September, 1956

Medical Service Relationships In Harper County Oklahoma

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SUMMARY OF THE FINDINGS

The Oklahoma Agricultural Experiment Station recently undertook a study to find: (1) If the lack of medical care in an area was detrimental to the health of the people in that area, and (2) what medical service relationships exist in an area presumed to be inadequate in local medical services.

The study was conducted in Harper County, Oklahoma. Findings led to the conclusions listed below.

1. With modern transportation and communication, the relative inaccessibility of medical care in an area is unimportant, provided that the residents of the area own automobiles or have other means of getting to medical care within a short time.
2. The residents of Harper County must depart from their traditional service relationships to obtain medical care. Seldom does a resident of the county go to towns with populations below 2,500 outside his immediate trading area except to secure medical services. Since these towns serve only as medical centers as far as Harper County is concerned, one may assume that those people would center all their business activities within their own county if it provided more complete medical care than it does now.
3. There is a definite relationship between non-use of goods and services, including medical facilities, and several socio-economic characteristics. In general, non-use increases with advancing age, declining education, lowering levels of living, more sectarian religious affiliation, urbanity, more poorly paid occupations, and non-possession of an automobile.
4. The distance from the principal doctor is not significantly related to non-use of medical care or other needs.
5. Many of these same socio-economic factors are associated with a tendency to remain in the county for the satisfaction of different wants, although there is no clearly defined relationship between staying in the county and education, religion, and distance from a physician.

6. In general, the young leave the county for medical and other services as do those with higher levels of living, the non-village population, farmers, and those with automobiles.
7. The comparison between socio-economic characteristics and health status shows that, in general, the healthiest people are the young, the better educated, those with high levels of living, members of churches classed as denominations, and those with automobiles.
8. There are no clear cut relationships, however, between health status and residence, occupation, or distance from the principal doctor of the family. This supports the inference that the health of rural people does not depend upon having a doctor in every village or small town.
9. Technically, these conclusions are applicable to Harper County only. However, to the extent that the citizens of this county may be considered representative of the State or the Nation, the results are valid.

It needs to be emphasized, however, that the level of living in Harper County is very high and the percentage of the people owning automobiles is unusually large. It is an area where it is customary to go long distances in search of rather minor goods and services. Consequently, the relative unimportance of distance from physicians to health in this county may not necessarily be expected in all areas with high levels of living.

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Medical Service Relationships In Harper County, Oklahoma

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For several decades, there has been an increasing trend toward the concentration of doctors in the larger cities of Oklahoma. In 1909, for example, 767 State towns and villages had medical doctors, compared to only 298 in 1950.¹ Thus farm people today must travel considerably greater distances, on the average, to secure medical care than they did in the past. Numerous writers and health authorities fear, therefore, that the rural family has become isolated from medical care to the detriment of its health. As yet, no conclusive studies have tested the validity of this fear.

Purpose of the Study

The study reported in this bulletin had the following objectives:

- First, to determine if the relative absence of medical care in an area necessarily has an adverse effect on health; and
- Second, to find what medical service relationships existed in an area largely lacking in local medical services.

The principal hypothesis of the study was that, under modern conditions of transportation and communication, distance is a relatively unimportant factor in determining health status.

The study included an intensive survey of a rural county in Oklahoma with few medical facilities. This county is characterized by a high level of living. The residents are, in general, able to pay for medical care, and have ample transportation and a generally favorable health record. Thus the purpose of the study might be stated as an effort to determine how individuals in a rural section deficient in local medical services maintain their apparent excellent health.

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¹ See John C. Belcher, *The Changing Distribution of Medical Doctors in Oklahoma*. Oklahoma Agricultural Experiment Station Bulletin No. B-459. (August, 1955).

Locale of the Study

The site of this study was Harper County in northwestern Oklahoma. The eastern portion of the county is in the gypsum hills section of the State, while the remainder lies in the high plains region. Rainfall is slight, averaging approximately 21 inches a year.

The economy is based primarily upon agriculture. The principal types of farming are range livestock and winter wheat. The level of living is among the highest in the State. The agriculture is highly mechanized and the farms are large, averaging 770 acres in 1950, with an average value of \$29,800.

There are no urban centers. Two towns, Buffalo (population 1,544 in 1950) and Laverne (population 1,269 at the same date), with an absence of manufacturing, exist principally as agricultural service centers. With the exception of these two towns, there are only three population centers (May, Rosston, and Selman). The largest of these had a population of but 143 in 1950.

Harper County was a part of the Cherokee Strip opened to white settlers on September 16, 1893. Settlement proceeded slowly in this section of the "Strip." The "run" brought only a few hundred into this western part of Oklahoma on the opening day in contrast with the thousands of home seekers in the eastern portion of the Cherokee Strip.²

Even as late as 1907 there was not a single organized town government in the county, although there were approximately ten country post offices, each tending to have one or more general stores. All of these points could be considered as "community centers." (Compare with Figure 1, which for all practical purposes indicates only two community centers today.) This change in the number of communities in the county seems to bear out the prediction of two writers on the Wheat Belt who believe that small towns and villages in the area are being replaced by an occasional "Petite City Community" in which all the activities of a subregion will be located. They further believe even farmers will live in these centers, especially during the winters.³

After 1900 and until Statehood in 1907, the population increased rapidly, reaching a high of 8,089 in 1910, but had dropped to 7,761 by 1930. Located in the "dustbowl" of the thirties, the population de-

² For an account of the early settlement and population backgrounds of Harper County, see L. M. Foster, *A History of Harper County*, unpublished master's thesis, Oklahoma A. & M. College, Stillwater; 1939.

³ See Carle C. Zimmerman and Richard E. DuWara, *Graphic Regional Sociology*, (Cambridge, Mass.: The Phillips Book Store, 1952), pp. 176-177.

clined to 6,454 in 1940 and further to 5,977 in 1950, at which point it seems relatively stable.

With no nonwhites and only 44 foreign-born whites, the population was over 99 percent native white in 1950.

Harper County, with the second smallest population among Oklahoma counties, has a similar rank in regard to medical facilities. At the time of the survey, there were only two M. D.'s (no county in Oklahoma having fewer), two osteopaths, one dentist, not a single active registered nurse, a six-bed osteopathic clinic-hospital, three drug stores, and one optometrist.

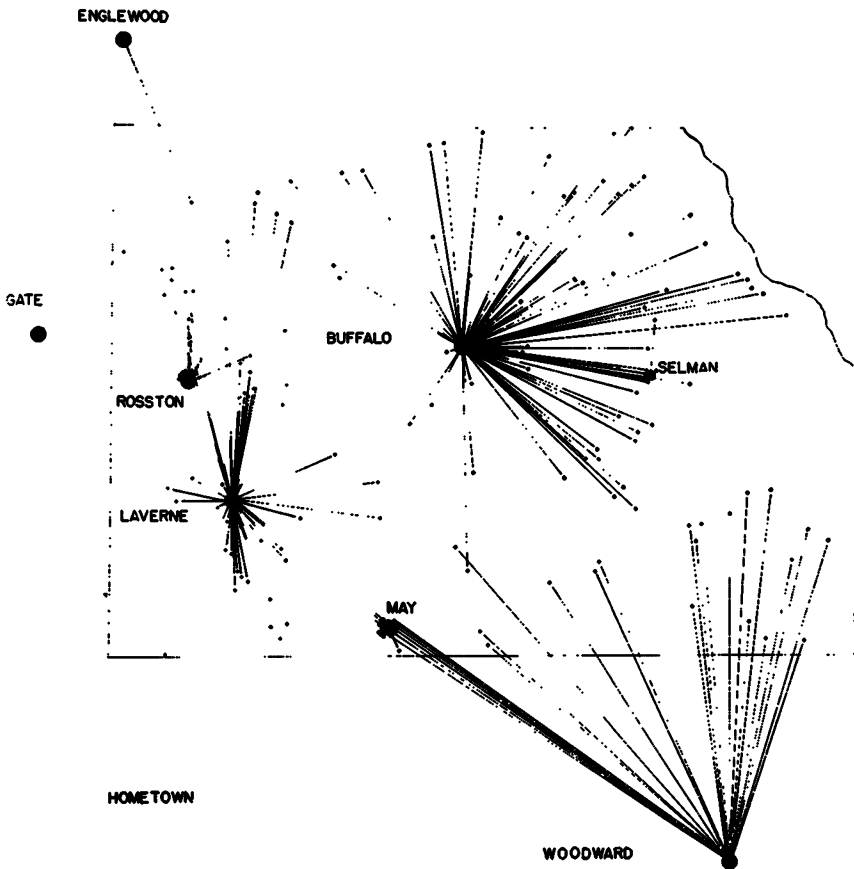


Figure 1 Centers the families interviewed consider as home town. These home town areas indicate community boundaries in Harper County.

There are no accurate indices of the health levels of Oklahoma counties. The small number of individuals rejected by Selective Service during World War II indicates that the residents of Harper County are unusually healthy. Of the 77 counties in the State, only five had smaller rejection rates than Harper, and all of these are in the same general economic area.

The Sample

A random 20 percent sample of the households was selected and interviewed on an area basis during the summer of 1954, giving a total of 301 acceptable schedules. For the town of Buffalo, the sample was only 15 percent because it was necessary to discard some schedules of questionable accuracy.

General Service Relations In Harper County

One of the major purposes of this study is to determine if the residents of an area with few medical services depart from their regular pattern of service relationships to obtain medical care. To find the answer to this problem, the 301 families contacted in the survey were asked the main town they went to for each of a number of activities. Table I summarizes their answers. Since previous studies have shown that the size of a center is important in determining what it provides, the towns were grouped by size according to the following classification.

1. Open country.
2. Villages in the county with population less than 500, including May, Rosston, and Selman.
3. The two largest towns in the county, Buffalo and Laverne, with populations of 1,544 and 1,269, respectively.
4. Villages with populations of approximately 500 or less outside the county.
5. Villages with populations 500-999 outside the county.
6. Towns outside the county with populations 1,000-2,499.
7. Cities with populations 2,500-9,999.
8. Major State cities of 10,000 or more.
9. Separate categories were provided to tabulate mail order purchases and families not using a given service.

The two largest towns, Buffalo and Laverne, supplied a majority of the goods and services which interviewed Harper County residents used. Other towns and villages tend to provide only a few selected functions which vary with the size of the center. It was found that:

1. The county has no stores or filling stations except those in the population centers. Consequently, the only marketing activities in the open country tend to be those of one farmer with another. It has no institutional groups except two schools and four churches, all of which are considerably smaller than in the past. Excepting limited religious and educational activities, the open country satisfies practically none of the functions listed in Table 1 other than visiting and recreation. Even these traditional open country services are largely concentrated in the towns.

2. May, Rosston, and Selman have schools and churches. They are commercially important mostly as centers for marketing grain (each having an elevator) and the purchasing of seed, feed, gasoline, and oil. Nearby residents buy some groceries at these points, but customarily, the people purchase the "week's supply" of groceries at larger towns. There is, of course, the visiting of friends and relatives in these centers, but by the large, residents in and near these villages satisfy most of their needs in Buffalo or Laverne.

3. The villages outside the county with populations under 500 tend to provide services similar to those found in May, Rosston, and Selman to families near the county line within the vicinity of these centers. These small villages attract few people from long distances except occasionally to visit relatives living in them or for some quite unusual reason.

4. For the purposes of this study, it is very significant that the small towns outside the county with populations of 500 through 999 draw residents of Harper County to them for medical services only, especially dentists and veterinarians.

5. Significantly, the outside towns with populations from 1,000 to 2,500 attract large numbers of the county residents primarily for the medical services they provide.

6. Residents go to cities in the size range from 2,500 to 10,000 for goods and services not available in the smaller towns of Buffalo and Laverne. The most important place of this size to the people of Harper County is Woodward, population 5,915 in 1950. It is but a few miles south of the Harper County line and serves as the principal trading center for those living in the southeastern portion of the county. It provides all the principal trading center functions to this group, and in addition is the place to which those within a radius of approximately 50 miles go for medical services unavailable nearer home, dress clothes, and recreational activities. Many of the people living near the northern

boundary of Harper County will average going to Woodward one or more times a week. Although the purpose of the trip might be to buy dress clothes (see Figure 2), they will, while there, make other purchases such as a supply of groceries.

7. Trips to the larger metropolitan centers of Oklahoma (here classed with all towns over 10,000) are relatively infrequent. These journeys ordinarily are made to obtain specialized medical service, purchase dress clothes, visit relatives, or sell a large load of livestock at a central market.

8. With the exception of medical services, Buffalo and Laverne supply the basic needs of Harper County residents. Here, most of the people of the county educate their children; bank; purchase groceries, gasoline, and drugs; sell their crops; go to church; visit friends and relatives, find recreation; and while at home, read the weekly newspaper from one of the towns. The life of practically everyone in the county

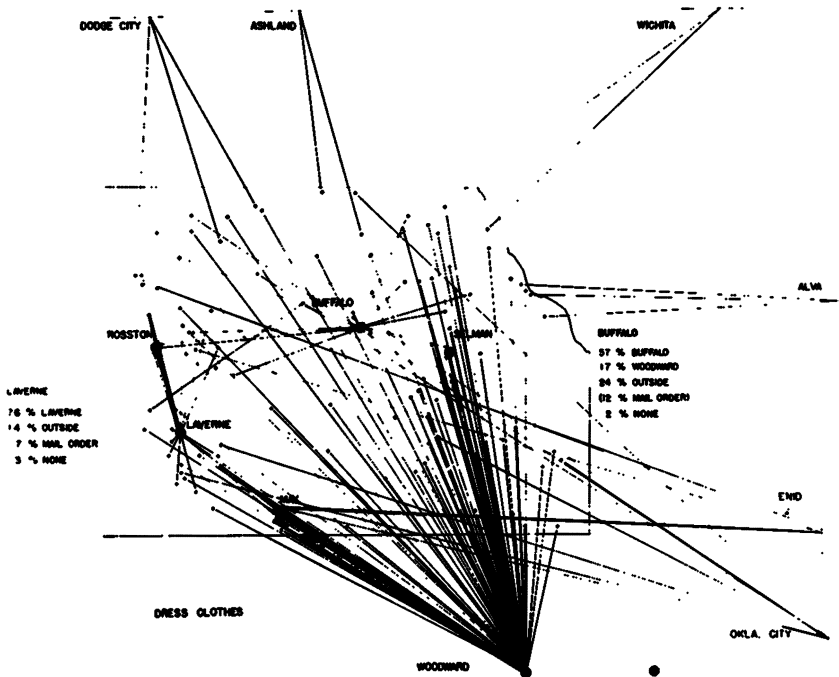


Figure 2 Where the residents of Harper County go to purchase dress clothes. (Each line represents a sample family. Percentage show where those living in Buffalo and Laverne purchase dress clothes).

revolves about one or the other of these two rival towns. Some meet all their needs in one of these centers and seldom go elsewhere. Economically and socially, they are the hubs of the county.

Medical Service Areas In Harper County

A recent study delineates the medical service areas of the United States.⁴ In this study, Dickinson places Harper County near the center of an area covering all or parts of nine Oklahoma and three Texas counties. The **Primary Medical Centers** of this region are reported as Shattuck and Woodward, with numerous secondary centers, including Buffalo and Laverne.

Dickinson defines the medical service areas as "areas in which populations depend upon physicians located in these circumscribed territories for most of their physician services."⁵ These service areas include territory around the designated **Primary Medical Centers**. The idea behind the medical service areas is one treated in numerous sociological researches—for each good or service, there tends to be a center with a surrounding region wherein people satisfy their needs for a specific commodity or service. These "trading areas" tend to be different for each good or service.

Figure 3, for example, shows a relatively small area within which all people go to the same center for religious activities.

Figure 1, showing the "home town" of the sample families, indicates the home town areas are larger and fewer than those about churches. The home town is the principal trading center of the population. Yet many things are not secured in these towns.

The trading area for dress clothes is much larger than the home town area, as Figure 3 shows. The previous discussion of the general service relationships in Harper County further indicates the relative size and number of trading areas for various goods and services in the county.

One might ask, however, if there is one service area for all medical services. Figures 4-7 inclusive, show where Harper County people go for several medical services. The smallest areas are for drug stores, the next largest for dentists, then principal doctors (including both osteopaths and physicians), and finally the largest areas—which take

⁴ Frank G. Dickinson, *Distribution of Physicians by Medical Service Areas*, (Chicago: American Medical Association, 1954).

⁵ *Ibid.*, p. 13.

almost all to centers outside the county—are the ones supporting hospitals. Further information about these findings is included below:

1. Seemingly, drug stores have the most clearly defined medical areas in Harper County. Although somewhat larger, they follow in general the home town areas, with only three major centers—Buffalo, Laverne, and Woodward.

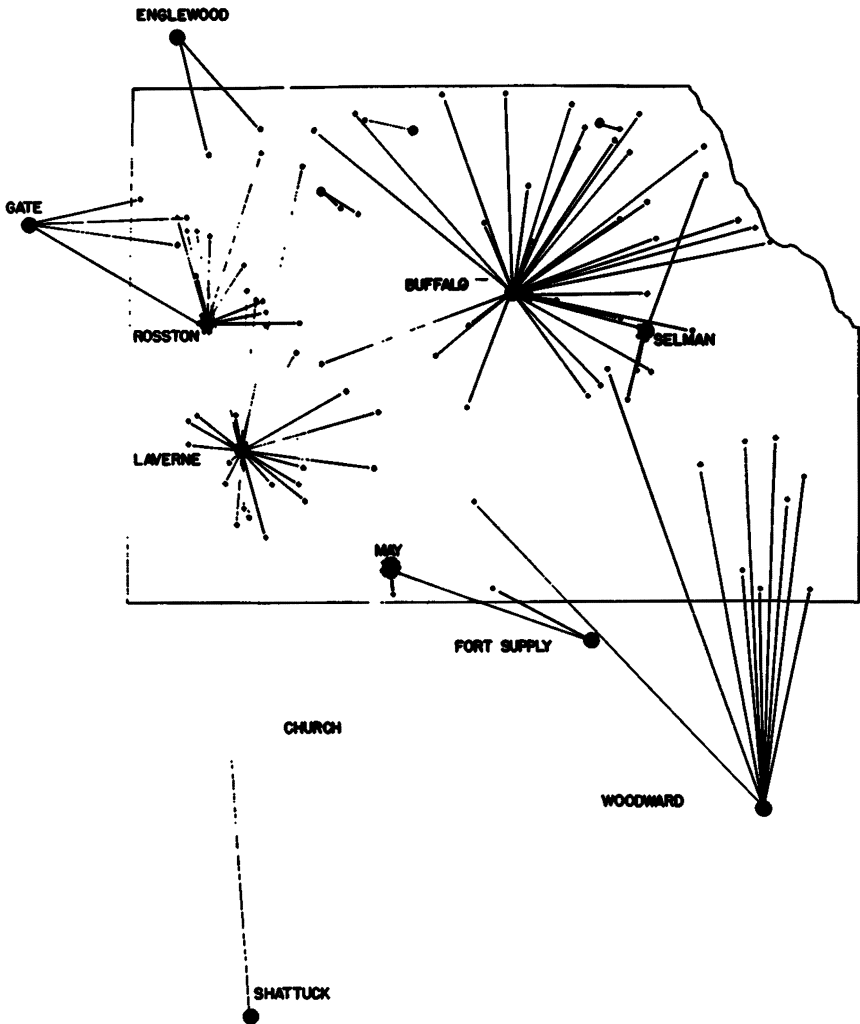


Figure 3 Where the families interviewed living outside of Buffalo and Laverne go to church. (One line represents one family).

2. Buffalo has the only dentist in Harper County. He draws most of his practice from the sections nearest Buffalo. However, some individuals in and near Buffalo go to more distant centers for dental care. Characteristically, those living near the county boundaries are more likely to go to outside centers than other residents.

3. Doctors have no sharply defined medical areas in Harper County, although most of the people there go to Shattuck and Woodward for medical care. Still, large numbers go to towns outside the medical area delineated by Dickinson.

One reason for the lack of a pattern on the map seems to be that there are several medical areas for doctors which vary with the type of treatment needed. A given family in Harper County will often go to several doctors in the course of a year. For example, members of

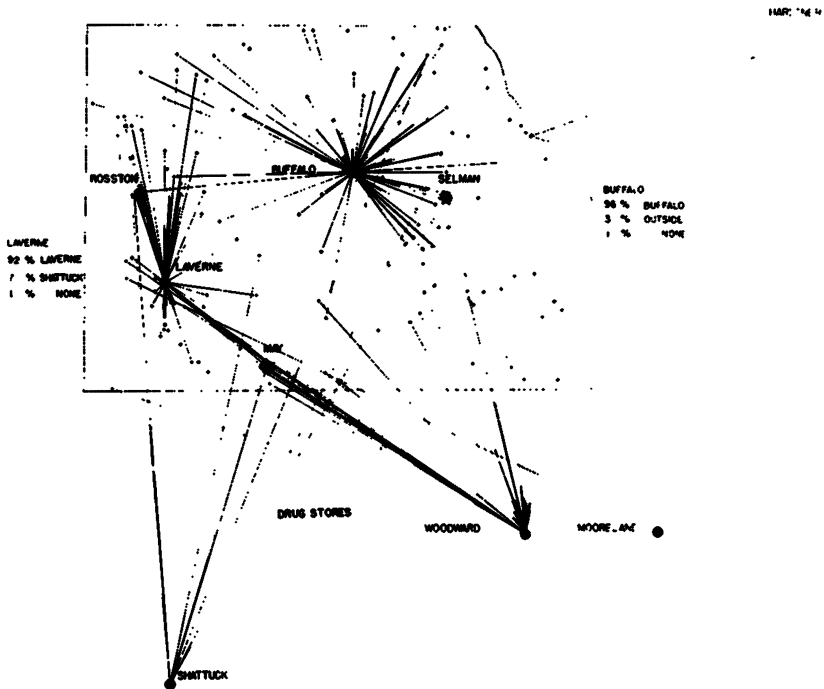


Figure 4 Where 301 families in Harper County go to the drug store. (Each line represents one family. Percentages are shown for Buffalo and Laverne).

the family will go to the nearest available practitioner for first aid or minor illnesses; but to a town with a well-equipped general hospital for obstetrical care, physical checkups, and serious illnesses. At times someone in the family might go to a city a hundred or more miles away to secure the services of a specialist. Few people in the county have a "family doctor" whom they consult regularly.

4. An examination of Figure 7 reveals that there are no sharply defined areas within which practically everyone goes to a given center for hospital care. Almost everyone leaves the county when in need of hospital care.⁶

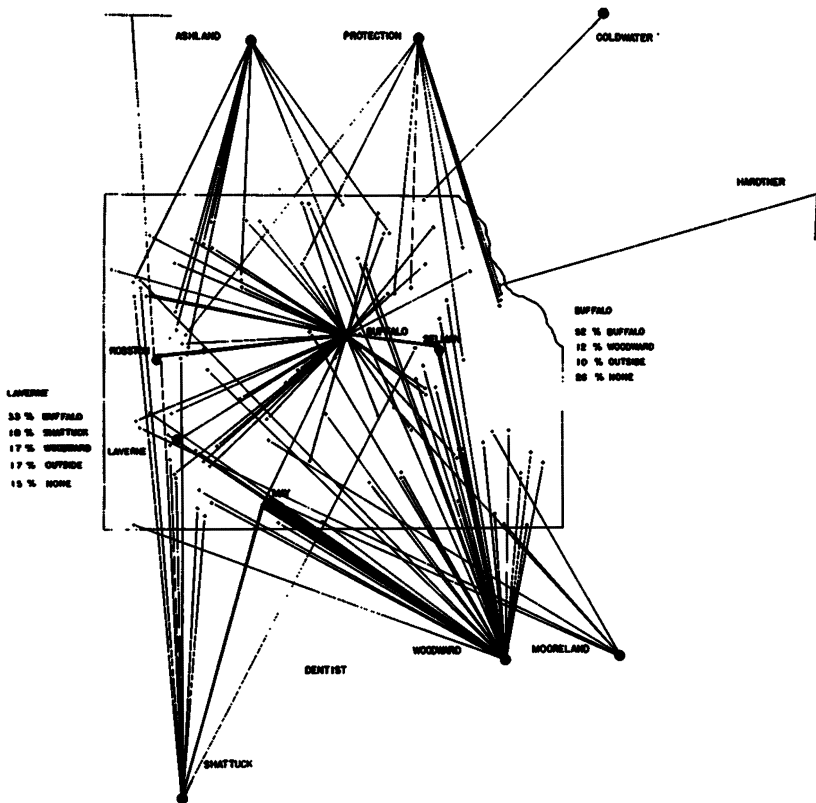


Figure 5 Where 301 families in Harper County secure dental care. (Each line represents one family. Percentages are for Buffalo and Laverne).

The Socio-economic Characteristics Of Those Not Using Selected Goods or Services

Table 1 also shows the extent to which the residents of Harper County do not use various goods or services. Since many of the families interviewed live in town and have no direct connection with agriculture, they do not market farm products, purchase farm implements, etc. Other

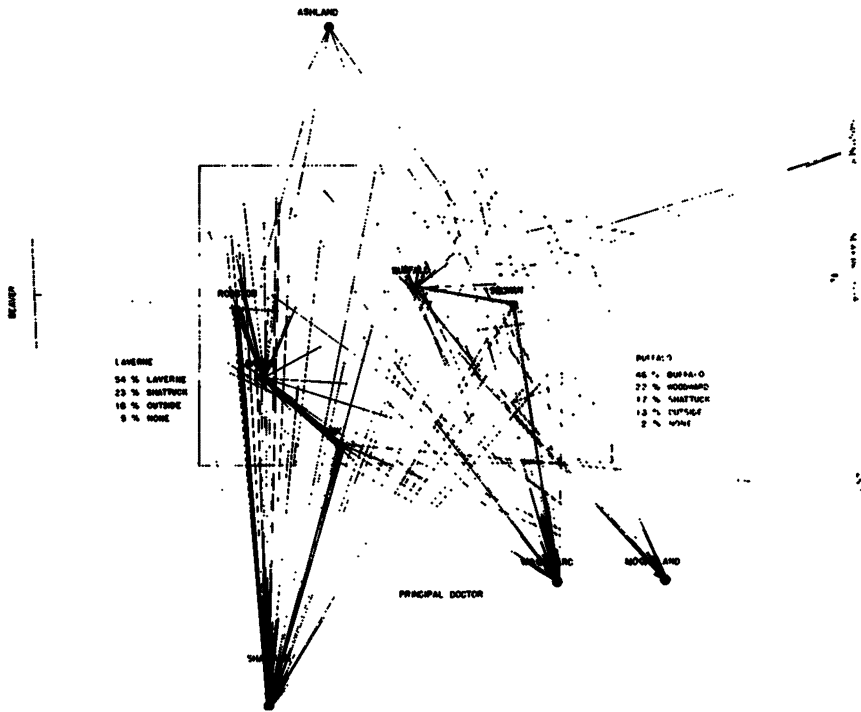


Figure 6 Where the principal doctor of sample families in Harper County is located. (Each line represents one family. Percentages show where residents of Buffalo and Laverne go).

⁹ In another study, the hypothesis has been advanced that, "Rural families with the prevailing distribution of physicians, system of medical care, and transportation and communication arrangement, are generally exercising free choice of physicians." (See Olaf F. Larson and Donald G. Hay, "Hypotheses for Sociological Research in the Field of Rural Health," *Rural Sociology* 16:235, September, 1951.) Free choice of medical care is, of course, impossible within an area deficient in medical care. It would appear that because the residents of Harper County do exercise free choice in the selection of medical care, there are no sharply defined "natural medical areas." On the other hand, if there were an abundance of medical practitioners and facilities in each town of the county, it is probable that there would be more clearly delineated natural medical areas.

families have no school age children. At the other extreme, every family purchases some groceries. Most of them utilize the services of a doctor occasionally.

In this survey, "non-use" means that no one in the family left the home to obtain specific goods or services. A "not-used" may refer to situations where the service is provided at home (e.g. many farmers do their own welding and repairing of farm equipment) or attributed to no need for a particular service (e.g., those with dentures ordinarily would report non-use of a dentist). Yet, some families do not use goods and services which most people would consider necessities. This section of the study analyzes the socio-economic characteristics associated with non-use of medical services, assuming that such "non-use" is related to low health status.

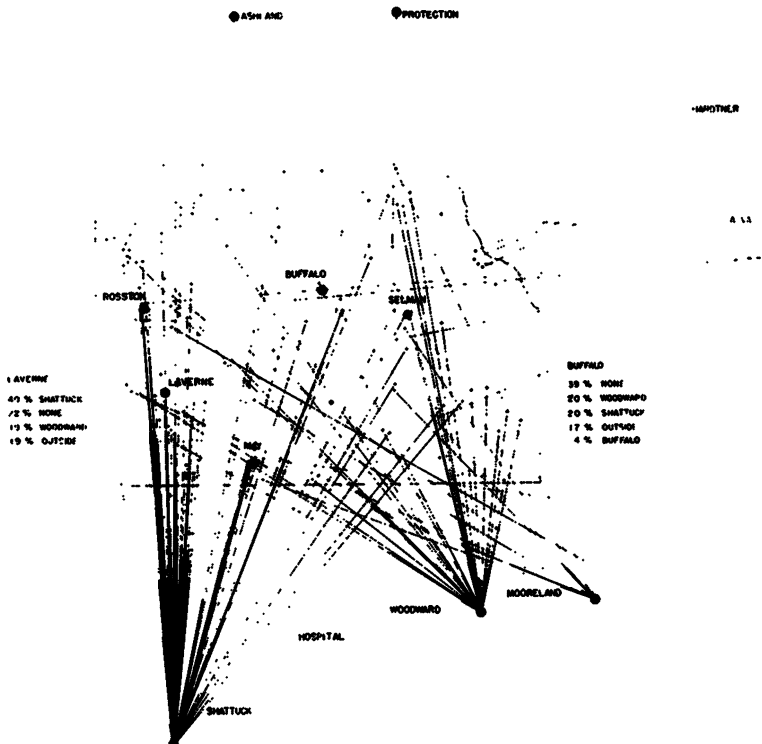


Figure 7 where the residents of Harper County obtained hospital care. (Each line represents one family. Percentages show where residents of Buffalo and Laverne go to the hospital).

Table 1.—Location of Various Goods and Services Obtained By the Population of Harper County, 1954.
(Percent of the sample of 301 families going to each group of towns.)

Service	Centers in Harper County				Centers Outside of Harper County				
	Not used	Open country	Selman, Rosston, May	Buffalo and Laverne	Towns under 500	Towns 500-999	Towns 1,000-2,499	Towns 2,500-9,999	Towns 10,000 and over
Principal doctor	3.0	0.0	0.0	39.9	2.7	4.3	26.3	23.6	0.3
Elementary school	69.4	2.0	9.3	17.3	1.3	0.0	0.0	0.7	0.0
High school	75.8	0.0	6.6	14.6	1.7	0.0	0.0	1.0	0.3
Hospital	25.6	0.0	0.0	1.7	2.3	6.3	36.2	23.9	4.0
Dentist	17.6	0.0	0.0	36.5	0.7	10.3	13.0	21.3	0.7
Banking	8.0	0.0	0.0	78.7	1.0	2.0	2.0	8.3	0.0
Groceries	0.0	0.0	4.0	85.1	0.0	0.0	0.0	11.0	0.0
Drugs	0.7	0.0	0.0	83.1	0.3	0.3	5.0	10.3	0.3
Dress clothes ¹	15.0	0.0	0.0	42.5	0.0	0.0	1.0	30.9	10.6
Marketing grain	59.1	0.0	12.0	16.0	3.3	0.7	0.7	8.3	0.0
Marketing livestock	59.8	0.0	0.3	18.9	1.3	0.0	1.7	12.3	5.7
Other marketing	79.1	0.7	1.3	8.0	0.7	1.7	1.0	6.3	1.3
Veterinarian	77.1	0.0	0.0	0.0	0.0	5.7	5.7	11.6	0.0
Buying machinery	61.8	1.0	0.0	25.3	0.0	1.7	1.0	8.6	0.7
Gas, oil, tractor fuel	13.0	0.0	8.3	72.1	1.7	0.0	0.3	4.7	0.0
Seed, feed, fertilizer	59.1	0.3	2.7	30.9	1.7	0.7	1.0	3.7	0.0
Repair, welding ²	64.1	0.0	2.7	27.9	0.3	0.7	0.0	4.0	0.3
Weekly newspaper	18.9	0.0	0.0	79.1	0.3	0.0	0.0	1.7	0.0
Movies	35.6	0.0	0.0	54.2	0.3	0.0	0.3	9.3	0.3
Saturday going to town	70.1	0.0	0.3	26.3	0.3	0.0	0.0	3.0	0.0
Church or Sunday School—Head	47.5	1.3	6.0	39.2	2.7	0.0	0.3	3.0	0.0
Church or Sunday School—Wife	24.9	1.7	8.6	58.5	2.7	0.0	0.7	3.0	0.0
Visiting relatives	32.9	14.6	3.3	28.9	4.0	1.3	0.7	6.6	7.6
Visiting friends	18.3	18.6	8.0	50.2	1.3	0.3	0.7	1.3	1.3
Swimming	63.1	2.3	0.0	27.2	2.0	0.0	0.0	5.3	0.0

¹ Includes 12.6 percent ordering most of dress clothes from mail order houses.
²Includes 7.6 percent doing most of repairing and welding at home.

Table 2.—Percentage of Families in Harper County Not Using Selected Goods and Services, by Age of Family Head.

Service	Age of Family Head			
	Under 44	45-54	55-64	65 or over
Principal doctor	0.0	5.2	0.0	6.6
Hospital	18.8	24.7	25.0	35.5
Dentist	7.3	11.7	11.5	40.8
Groceries	0.0	0.0	0.0	0.0
Drugs	0.0	0.0	0.0	2.6
Dress clothes	1.0	2.6	0.0	4.0
Weekly newspaper	24.0	18.2	5.8	22.4
Movies	18.8	24.7	38.5	65.8
Saturday going to town	75.0	64.9	69.2	69.7
Church or Sunday School—Wife	18.8	22.1	30.8	31.6
Visiting friends	17.7	19.5	15.4	19.7

Table 3.—Percentage of Families in Harper County Not Using Selected Goods and Services, by Education of Family Head.

Service	Number of Grades Completed			
	0-8	9-11	12	13 or more
Principal doctor	3.4	6.1	0.0	2.4
Hospital	27.5	36.7	16.1	19.5
Dentist	22.8	22.5	8.1	7.3
Groceries	0.0	0.0	0.0	0.0
Drugs	0.7	0.0	1.6	0.0
Dress clothes	3.4	4.1	0.0	0.0
Weekly newspaper	24.2	18.4	12.9	9.8
Movies	47.7	22.5	25.8	22.0
Saturday going to town	69.8	59.2	71.0	82.9
Church or Sunday School—Wife	30.2	22.5	25.8	7.3
Visiting friends	18.8	24.5	17.7	9.8

Age of Family Head.—Table 2 strongly indicates that as age of the family head increases, use of the selected list of goods and services decreases.

Education of Family Head.—Table 3 shows the percentage of families not using selected goods and services, according to the education of the head of the family. As the education of the family head decreases, the percent of the families not using principal doctor, hospital, dentist, dress clothes, weekly newspaper, movies, church or Sunday School, and visiting friends, increases. On the other hand, going to town on Saturdays varies inversely with educational attainment.

Level of Living.—As level of living rises, use of goods and services rises with nearly every item, according to Table 4. In the non-use of

¹ Level of living in this study is measured by an unpublished index composed of 10 items standardized for the total population of Harper County.

Table 4.—Percentage of Families in Harper County Not Using Selected Goods and Services, by Level of Living.

Service	Level of Living Score		
	80-119	120-129	130 or over
Principal doctor	4.9	1.8	1.5
Hospital	33.1	22.3	17.7
Dentist	26.5	13.4	8.8
Groceries	0.0	0.0	0.0
Drugs	0.8	0.0	1.5
Dress clothes	3.3	1.8	0.0
Weekly newspaper	27.3	18.8	4.4
Movies	45.5	28.6	29.4
Saturday going to town	73.6	70.5	63.2
Church or Sunday School—Wife	38.0	16.0	16.2
Visiting friends	19.8	20.5	11.8

Table 5.—Percentage of Families in Harper County Not Using Selected Goods and Services, by Church Membership.

Service	Church Membership		
	No church membership	Denom- national affiliation	Sectarian affiliation
Principal doctor	6.1	0.9	9.3
Hospital	18.2	24.3	35.2
Dentist	27.3	14.0	25.9
Groceries	0.0	0.0	0.0
Drugs	0.0	0.5	1.9
Dress clothes	3.0	1.4	3.7
Weekly newspaper	30.3	15.4	25.9
Movies	42.4	25.7	70.4
Saturday going to town	72.7	67.3	79.6
Church or Sunday School—Wife	90.9	17.8	13.0
Visiting friends	21.2	17.3	20.4

movies and church or Sunday School, families with a level of living score of 130 and above had a slightly higher percentage than families with a score of 120 and above.

Religion.—Table 5 indicates that there is a higher percentage of non-users of various goods and services among those following sectarian types of religion and those belonging to no religious group than among members of denominational groups.* This trend varies with only two items—the non-use of the hospital is greater among denominational members than among those who are members of no religious group, and the non-use of church or Sunday School by the wife in these families is smaller in sectarian groups than among denominational members.

Residence.—Table 6 shows that the rural-farm population tends to use the specified goods and services more than do the rural-nonfarm residents (those living in the towns and other nonfarm dwellers).

Table 6.—Percentage of Families in Harper County Not Using Selected Goods and Services, by Residence.

Service	Residence	
	Rural farm	Rural non-farm
Principal doctor	1.7	3.8
Hospital	21.2	28.4
Dentist	13.6	20.2
Groceries	0.0	0.0
Drugs	0.0	1.1
Dress clothes	1.7	2.2
Weekly newspaper	11.9	23.5
Movies	19.5	45.9
Saturday going to town	68.6	71.0
Church or Sunday School—Wife	33.1	19.7
Visiting friends	21.2	16.4

Table 7.—Percentage of Families in Harper County Not Using Selected Goods and Services, by Occupation of Family Head.

Service	Occupation					
	Farmer	White collar worker	Skilled laborer	Laborer	Not in labor force	Others
Principal doctor	3.1	8.6	0.0	4.2	5.1	0.0
Hospital	21.7	17.2	18.2	37.5	40.7	23.3
Dentist	13.4	10.3	15.2	25.0	35.6	6.7
Groceries	0.0	0.0	0.0	0.0	0.0	0.0
Drugs	0.0	0.0	0.0	0.0	3.4	0.0
Dress clothes	1.0	0.0	0.0	4.2	5.1	3.3
Weekly newspaper	6.2	22.4	33.3	41.7	20.3	6.7
Movies	21.7	27.6	33.3	33.3	74.6	23.3
Saturday going to town	70.1	72.4	75.8	54.2	71.2	70.0
Church or Sunday School—Wife	27.8	13.8	18.2	41.2	22.0	36.7
Visiting friends	22.7	10.3	18.2	29.2	15.3	16.7

Occupation of Family Head.—Table 7 classifies the families studied by occupation of the family head. These classifications are: farmer, white collar worker, skilled laborers, those not in the labor force, and others (this includes part-time farmers who receive some of their incomes from work done away from the farm). Those classified as "others" do not vary greatly in their use of these services in comparison with farmers.

The white collar workers use the hospital, dentist, church or Sunday School, and visit friends more than the other groups.

Those individuals classified as not being in the labor force include the disabled and aged, and have the highest percentages of non-use of such items as hospital, drugs, dentist, dress clothes, and movies, but tend to use a doctor, weekly newspaper, church or Sunday School and visit friends as much as the other groups.

* The term "sectarian" generally refers to small religious groups, while "denomination" applies to older, larger, generic groups.

Distance to Principal Doctor.—The distance a family resides from its principal doctor seems to have no relationship with the use or non-use of this group of goods and services. (Table 8).

Possession of Automobile.—As expected, Table 9 shows a significant relationship between the use of the above goods and services and possession of an automobile. The percentage of families not using these services rises greatly with those not possessing an automobile.

The Socio-economic Characteristics Of Those Remaining in Harper County For Selected Goods and Services

Since non-use of various goods and services correlates closely with the socio-economic characteristics of the families, it seems probable that a relationship might exist between these same factors and a tendency to satisfy most wants in the county. Those who seldom leave the county would, of course, be more dependent than others upon the limited medical facilities available, and their health might suffer accordingly.

Table 8.—Percentage of Families in Harper County Not Using Selected Goods and Services, by Distance to Principal Doctor.

Service	Number of Miles			
	0-9	10-29	30-49	50-99
Principal doctor	8.4	0.0	0.0	0.0
Hospital	39.3	25.3	16.2	14.3
Dentist	26.2	17.0	9.5	16.7
Groceries	0.0	0.0	0.0	0.0
Drugs	0.9	0.0	1.0	0.0
Dress clothes	3.7	2.1	1.0	0.0
Weekly newspaper	23.4	19.2	12.3	23.8
Movies	46.7	27.7	28.6	33.3
Saturday going to town	66.4	70.2	74.3	69.1
Church or Sunday School—Wife	27.1	36.7	19.1	21.4
Visiting friends	20.6	27.7	12.4	16.7

Table 9.—Percentage of Families in Harper County Not Using Selected Goods and Services, by Possession of Automobile.

Service	Possession of Automobile	
	Yes	No
Principal doctor	2.6	5.6
Hospital	23.8	38.9
Dentist	13.3	47.2
Groceries	0.0	0.0
Drugs	0.8	0.0
Dress clothes	1.1	8.3
Weekly newspaper	17.0	33.3

Table 10.—Percentage of Families Remaining in Harper County for Selected Goods and Services, by Age of Family Head.

Service	Age of Family Head			
	Under 44	45-54	55-64	65 or over
Principal doctor	33.3	37.0	36.5	59.2
Hospital	3.9	1.7	0.0	2.0
Dentist	50.6	44.1	32.6	46.7
Groceries	86.5	85.7	88.5	96.1
Drugs	84.4	80.5	82.7	86.5
Dress clothes	36.8	30.7	50.0	60.3
Weekly newspaper	97.3	95.2	98.0	100.0
Movies	83.3	81.0	84.4	92.3
Saturday going to town	91.7	85.2	81.3	95.7
Church or Sunday School—Wife	91.0	90.0	86.1	98.1
Visiting friends	97.5	88.7	93.2	95.1

Table 11.—Percentage of Families Remaining in Harper County for Selected Goods and Services, by Education of Family Head.

Service	Grade of School Completed			
	0-8	9-11	12	13 or over
Principal doctor	45.1	45.7	33.9	32.5
Hospital	1.9	3.2	0.0	6.1
Dentist	44.4	31.6	43.9	60.5
Groceries	90.6	91.8	85.5	85.4
Drugs	85.1	83.7	82.0	80.5
Dress clothes	48.6	50.0	33.9	31.7
Weekly newspaper	98.2	100.0	94.4	97.3
Movies	83.3	86.8	78.3	90.6
Saturday going to town	91.1	90.0	88.9	71.4
Church or Sunday School—Wife	92.3	94.7	91.3	86.8
Visiting friends	95.0	94.6	96.1	86.5

Age of Family Head.—The data in Table 10 indicate that for principal doctor, groceries, dress clothes, weekly newspaper and movies, the younger people tend to leave Harper County more than the older. This is a general trend, even though it is not true for every item.

Education of Family Head.—Table 11 shows no pronounced tendency among the better educated to leave the home community to obtain goods and services. However, as education increases, the percentage of families remaining in the county for principal doctor, groceries, dress clothes, drugs, and "Saturday going to town," decreases. The other items show no particular trend.

Level of Living.—As level of living rises, the percentage of families remaining in Harper County for principal doctor, groceries, drugs, dress clothes, church and Sunday School, and visiting friends, decreases. Although, in many cases, level of living is not significantly related to whether the family remains in Harper County or goes elsewhere for

goods and services, there is a pronounced trend for families with a higher level of living to leave the county for its principal doctor, and a general trend for them to leave for other items (Table 12).

Religion.—The religious status of the family does not seem to be very important in determining whether the family remains in Harper County to obtain various goods and services, according to Table 13.

Residence.—A greater proportion of the rural non-farm population remains in Harper County to obtain goods and services than of the rural farm population in every instance except visiting friends (Table 14).

Table 12.—Percentage of Families Remaining in Harper County for Selected Goods and Services, by Level of Living.

Service	Level of Living Score		
	80-119	120-129	130 or over
Principal doctor	53.0	36.4	28.4
Hospital	3.7	1.2	1.8
Dentist	40.5	45.4	50.0
Groceries	90.9	90.2	83.8
Drugs	87.5	83.0	77.6
Dress clothes	70.1	48.2	45.6
Weekly newspaper	97.7	96.7	98.5
Movies	83.3	85.0	83.3
Saturday going to town	84.4	90.9	92.0
Church or Sunday School—Wife	94.7	90.4	89.5
Visiting friends	100.0	91.0	88.3

Table 13.—Percentage of Families Remaining in Harper County for Selected Goods and Services, by Church Membership.

Service	Church Membership		
	No church membership	Denom- national affiliation	Sectarian affiliation
Principal doctor	41.9	39.6	16.9
Hospital	3.7	2.5	0.0
Dentist	33.3	46.2	45.0
Groceries	93.9	88.8	87.0
Drugs	81.8	83.1	86.8
Dress clothes	62.5	53.1	65.4
Weekly newspaper	100.0	97.2	97.5
Movies	79.0	86.2	68.8
Saturday going to town	88.9	91.4	72.7
Church or Sunday School—Wife	66.7	91.5	93.6
Visiting friends	100.0	92.1	97.7

Table 14.—Percentage of Families Remaining in Harper County for Selected Goods and Services, by Residence.

Service	Residence	
	Rural farm	Rural non-farm
Principal doctor	27.6	50.0
Hospital	2.2	2.3
Dentist	40.2	48.0
Groceries	78.8	95.6
Drugs	75.1	89.0
Dress clothes	18.1	59.8
Weekly newspaper	95.2	99.3
Movies	71.6	96.0
Saturday going to town	81.1	94.3
Church or Sunday School—Wife	82.3	96.6
Visiting friends	96.8	92.2

Table 15.—Percentage of Families Remaining in Harper County for Selected Goods and Services, by Occupation of Family Head.

Service	Occupation of Head					
	Farmer	White collar worker	Skilled laborer	Laborer	Not in labor force	Others
Principal doctor	34.0	37.5	42.4	52.2	66.1	13.3
Hospital	0.0	4.2	3.7	6.7	0.0	4.4
Dentist	39.3	53.9	50.0	55.6	42.1	35.7
Groceries	80.4	94.8	97.0	100.0	96.6	73.3
Drugs	76.3	86.2	78.8	95.8	87.7	76.7
Dress clothes	19.8	48.3	60.6	65.2	69.6	24.1
Weekly newspaper	96.7	100.0	95.5	100.0	100.0	92.0
Movies	77.6	87.5	86.4	100.0	93.3	56.5
Saturday going to town	86.2	87.5	87.5	100.0	94.1	77.8
Church or Sunday School—Wife	85.7	98.0	100.0	85.7	93.5	84.2
Visiting friends	96.0	88.5	96.3	100.0	90.0	100.0

Occupation of Family Head.—According to Table 15, those who are classified as "others" (part-time farmers who receive some of their incomes from work done off the farm) leave Harper County more often than the others for principal doctor, dentist, groceries, weekly newspaper, movies, Saturday going to town, and church and Sunday School. Full-time farmers tend to leave relatively more often than do white collar workers, skilled laborers, laborers, and those not in the labor force. For hospital, dentist, groceries, drugs, movies, Saturday going to town, and visiting friends, the laboring group remains in Harper County more than the other occupational groups.

Distance to Principal Doctor.—Table 16 indicates that there is little, if any, relationship between the percentage of families remaining in Harper County for goods and services and the distance they are from the principal doctor.

Table 16.—Percentage of Families Remaining in Harper County for Selected Goods and Services, by Distance to Principal Doctor.

Service	Number of Miles			
	0-9	10-29	30-49	50-99
Principal doctor	98.9	46.8	1.0	0.0
Hospital	6.2	2.9	0.0	0.0
Dentist	48.1	28.2	45.3	54.3
Groceries	96.3	61.7	92.4	90.5
Drugs	95.3	61.7	81.7	83.3
Dress clothes	59.2	13.0	46.2	31.0
Weekly newspaper	98.8	94.7	100.0	90.6
Movies	93.0	52.9	92.0	82.1
Saturday going to town	97.2	64.3	92.6	84.6
Church or Sunday School—Wife	100.0	66.7	91.8	93.9
Visiting friends	96.5	91.2	93.5	91.4

Possession of Automobile.—Table 17 indicates without doubt that a greater percentage of families who do not possess an automobile remain in Harper County to obtain all of their goods and services.

The Relationship Between Health Status and Selected Socio-economic Characteristics

The study to this point reveals that several socio-economic factors are associated with non-use of services and also with where Harper County people go for various medical services, as well as for other goods and services.

It is believed that socio-economic factors are more likely to determine the health status of Harper County families than the accessibility of physicians. To investigate this hypothesis requires comparisons of health status with (1) age of family head, (2) education of family head, (3) level of living, (4) religion, (5) the principal trading center, (6) residence, (7) occupation of family head, (8) the distance to the principal

Table 17.—Percentage of Families Remaining in Harper County for Selected Goods and Services, by Possession of Automobile.

Service	Possession of Automobile	
	Yes	No
Principal doctor	36.4	76.5
Hospital	2.5	0.0
Dentist	44.5	47.4
Groceries	87.6	100.0
Drugs	82.1	94.4
Dress clothes	38.2	84.9
Weekly newspaper	97.3	100.0
Movies	83.4	100.0
Saturday going to town	88.0	100.0
Church or Sunday School—Wife	90.5	100.0
Visiting friends	93.6	96.6

Table 18.—Health Status of the Population of Harper County, by Age of Family Head.

Age of family head	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
34 and under	54.9	32.0	6.5	6.5
35 — 44	42.8	37.9	11.1	8.2
45 — 54	49.5	34.7	9.1	6.7
55 — 64	33.3	40.0	13.3	13.3
65 — 74	30.3	41.4	12.1	16.2
75 and over	18.8	35.9	26.6	18.8

Table 19.—Health Status of the Population of Harper County, by Education of Family Head.

Number of grades completed	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
0 — 4	22.2	40.7	7.4	29.6
5 — 8	38.5	33.3	15.1	13.1
9 — 11	43.8	39.9	11.2	5.1
12	43.9	40.5	8.3	7.3
13 — 15	51.5	40.9	1.5	6.1
16 and over	56.6	30.1	8.4	4.8

family doctor, (9) possession of an automobile, and (10) distance to trade center.

If the increasing concentration of physicians in a few urban centers adversely affects the health of rural people, then distance to a physician would be expected to influence health status more sharply than any of the other socio-economic factors.

The "Symptoms Approach," developed several years ago at Michigan State University, was used as a measure of health status.⁹ Each person interviewed was asked if he or a member of his family had any one of 27 different medical symptoms. For each symptom reported, the respondent was asked by whom, if at all, the symptom was treated. Each of these symptoms is considered of sufficient importance to warrant the attention of a doctor. The list of symptoms was so selected that there should be no embarrassment in asking about them. Individuals having no positive symptoms are, of course, considered healthier than those having one or more of the symptoms.

⁹ Charles R. Hoffer and Edgar A. Schuler, "Measurement of Health Needs and Health Care," *American Sociological Review*, 13:719-724. December, 1948.

Age of Family Head.—As a course of nature, the incidence of death and illness increases with age. With the advancing age of the head of the household, the older the average age of the other family members becomes and the lower is the expected health status. Table 18 clearly shows this tendency. The older the family head, the fewer are the members of the family with no positive symptoms, and the greater the percentage of people with untreated symptoms and symptoms treated at home or by unlicensed persons.

Education of Family Head.—Health status tends definitely to improve with increasing education of the family head. Table 19 indicates a sharp increase in the number of people with no positive medical symptoms as the education of the family head increases. With greater education, there is a decline in the percentage of people having treated symptoms and a very significant decline in the percentage with untreated symptoms.

Level of Living.—The influence of level of living upon health status is not as pronounced as for the factors discussed above. There is some tendency for those with higher levels of living to be free from medical symptoms. Those with higher levels of living who do have positive symptoms tend to seek treatment from medical doctors or osteopaths, while those with low levels of living rarely have any professional treatment. They either treat themselves or go to an unlicensed practitioner. (See Table 20).

Religion.—The differences in the percentage of people possessing no symptoms according to religion are not large. There is, however, a somewhat greater number of the members of the sectarian groups reporting no positive symptoms. Since many members of sectarian religious groups are reluctant to secure the services of doctors, it would appear probable that they are not prone to recognize minor symptoms. Those with symptoms often go to a "non-doctor" for treatment or remain untreated. (See Table 21).

Table 20.—Health Status of the Population of Harper County, by Level of Living.

Level of living score	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
80 — 99	45.3	29.3	14.7	10.7
100 — 109	38.9	32.2	15.4	13.4
110 -- 119	38.4	34.5	15.8	11.3
120 — 129	45.8	38.6	7.1	8.5
130 — 134	42.4	40.4	10.1	7.1

Principal Trading Center.—If every population center needs a doctor for its people to maintain good health, health status should be higher for those persons whose "home town" has a doctor than for those without one. The smallest percentage of people claiming to be free from medical symptoms is in the three small towns of the county having no doctor. However, one may attribute this condition largely to age peculiarities of the people living in these villages. Apparently, a large proportion of these people have been treated by a medical doctor or by an osteopath, but a very high percentage have untreated symptoms.

The largest percentage of people claiming to be free from medical symptoms is in or near the three centers having doctors. Persons calling Woodward their principal trading center or home town tend either to have no symptoms or to go to a licensed physician. Those considering Laverne their home town, or one of the small towns outside the county, relatively seldom go to either an osteopath or a medical doctor, but tend either to treat their own ailments or go to a non-medical practitioner. Buffalo differs little from the average for the county except in having a fairly high percentage of its citizens with positive symptoms going to M. D.'s or D. O.'s. (See Table 22.)

Table 21.—Health Status of the Population of Harper County, by Church Membership.

Church membership	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
No church membership	41.7	33.3	8.3	16.7
Denominational affiliation	42.2	40.2	10.0	7.6
Sectarian affiliation	44.9	22.8	18.0	14.4

Table 22.—Health Status of the Population of Harper County, by Principal Trade Center.

Principal trade center	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
Supply. Englewood, Gate, Ashland, and Freedom	40.0	30.0	20.0	10.0
Buffalo	41.5	41.3	8.4	8.9
Laverne	45.5	29.1	15.2	10.3
Selman. Rosston. and May	32.0	44.0	6.0	18.0
Woodward	41.9	43.0	9.3	5.8

Residence.—The rural-farm and the rural-nonfarm populations (excluding Buffalo and Laverne) differ little in health status. The residents of these two towns are more likely to go untreated, use home remedies, or go to other practitioners, while most of the other residents go to medical doctors or osteopaths. (See Table 23.)

Table 23.—Health Status of the Population of Harper County, by Residence.

Residence	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
Rural farm	42.1	41.2	8.5	8.2
Rural non-farm ¹	42.4	42.4	5.1	10.2
Buffalo	41.5	37.1	8.8	12.7
Laverne	44.9	23.6	22.2	9.3

¹ Excluding Buffalo and Laverne.

Occupation of Family Head.—There are several significant differences in health status in the area according to the occupation of the family head. The families of skilled laborers, “others,” white collar workers and farmers tend to be relatively free from positive symptoms. Farmers and white collar workers usually receive treatment from M. D.’s or osteopaths, while at the other extreme, laborers and those not in the labor force are prone to go to other practitioners, use home remedies, or have no treatment. (See Table 24.)

Table 24.—Health Status of the Population of Harper County, by Occupation of Family Head.

Occupation	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
Farmers	42.2	40.6	8.8	8.4
White collar workers	41.2	39.2	10.3	9.3
Skilled laborers	58.1	25.0	10.5	6.5
Laborers	40.5	27.0	18.9	13.5
Not in labor force	23.6	37.3	18.2	20.9
Others	48.5	37.9	9.1	4.6

Distance to Principal Family Doctor.—A more sensitive indicator of the role distance plays upon health status would appear to be the distance people live from their principal doctor. **Over half the residents of Harper County live more than 30 miles from their regular doctors.** (See Table 8). In spite of the relatively great distances, there is no clear relationship between health status and the distance from the doctor, with the exception that home treatment and treatment by unlicensed practitioners tends to decline as distance from the doctor increases. (See Table 25.)

Possession of Automobile.—Modern transportation minimizes the importance of distance from a doctor. Only 56 (or 5.8 percent) of the 964 people giving information lacked automotive transportation. Only 18 percent of this small group is free from positive symptoms. The vast majority of those with positive symptoms go untreated, use home remedies, or go to unlicensed practitioners for treatment. (Table 26.)

Although the typical Harper County resident can get to a physician in a town many miles away more quickly than a person a half century ago could prepare a horse to "fetch" a doctor, those few people without modern transportation have little opportunity to secure medical care.

Distance to Trade Center.—An indicator of the distance to medical care is the distance to the family's principal trading center. This measure does not necessarily show how far these people are from physicians but more the isolation from all medical facilities. Table 27 shows that the percent of the population with no positive symptoms declines as the distance to trade center increases. However, a very large percentage of the more isolated residents receive treatment from medical doctors and osteopaths with few going untreated or using other types of treatment. It seems possible that those isolated from all medical facilities are more health conscious than others in the county and as a result are more apt to identify symptoms and have them treated without delay.

Table 25.—Health Status of the Population of Harper County, by Distance to Doctor.

Distance to doctor	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
0 — 9 miles	40.2	29.9	18.3	11.7
10 — 19 miles	46.2	33.3	6.4	14.1
20 — 29 miles	45.4	33.7	10.5	10.5
30 — 39 miles	42.1	41.7	9.6	6.7
40 — 49 miles	40.2	48.2	5.4	6.3
50 — 99 miles	47.5	36.5	5.8	10.2

Table 26.—Health Status of the Population of Harper County, by Possession of Automobile.

Possession of automobile	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
Yes	44.3	37.6	9.6	8.6
No	16.1	19.6	37.5	26.8

Table 27.—Health Status of the Population of Harper County, by Distance to Trade Center.

Distance to trade center	Percent with no symptoms	Percent using M.D. or D.O.	Percent treated by other practitioners	Percent untreated or by home remedy
0—9 miles	43.7	33.1	12.9	10.3
10—19 miles	41.1	43.7	7.0	8.3
20 miles and over	37.3	46.3	9.0	7.5