

Geographic Distribution of Psychologists in Rural Kansas

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A predominantly rural Midwestern state, Kansas, was studied and the population-related distribution of psychologists who were certified or listed in the "National Register of Health Service Providers in Psychology" was found to be similar to the distribution previously found in other areas of the United States. A rural part of the state was surveyed in more detail; included were all psychologists actually delivering services in addition to certified and registered psychologists. Contrary to previous findings, no low density rural counties were found to lack a psychologist. Only 5% of the psychologists in this rural area were listed in the "National Register". Previous conclusions concerning the maldistribution of psychologists based on the "National Register" may greatly underestimate the number of psychologists delivering services in rural areas.

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The President's Commission on Mental Health (1978) has identified rural areas as underserved, due in part to the apparent lack of mental health service providers in rural areas relative to urban settings (Flax, Wagenfeld, Ivens, Weiss, 1979). Only 3% of psychiatrists surveyed in one study, for example, indicated a practice in rural areas (National Institute of Mental Health, 1973).

Only two studies have examined the distribution of psychologists in a large area of the United States. Using states and cities with populations of 25,000 or more as units of analysis, Richards and Gottfredson (1978) found that the degree to which an area had a high urban population was highly correlated with the psychologist-population ratio. This study also found that areas with an emphasis on large scale agriculture tended to contain fewer psychologists per 100,000 population. Only APA members and psychologists listed in the *National Register of Health Service Providers in Psychology* (Council for the National Register of Health Service Providers in Psychology, 1978) were included in the analysis. The *Register* lists doctoral level, licensed psychologists who have had 2 or more years of supervised experience providing psychological services. Keller, Zimbelman, Murray, and Feil (1980) examined the distribution of psychologists in the northeastern United States using counties as the units of analysis in order to reveal trends obscured by studying large geographic areas such as states. A significant relationship was found between county population density and the number of psychologists per 100,000 persons. They also found that 57% of the counties did not have a single registered psychologist and 78% of the counties with fewer than 100 persons per square mile did not have a psychologist.

Although Keller et al. (1980) used the *Register* to determine the location of psychologists, the *Register* is far from being inclusive of all doctoral level psychological service providers, perhaps particularly so for rural areas. Keller et al. (1980) observed that psychologists in rural areas may be less likely to seek listing in the *Register* and may not perceive its cost as a useful investment. It also does not list master's level psychologists, a group that appears to find greater employment potential in towns with populations under 50,000 (Weinberg, 1979).

The present study involved two parts. In the first part, a predominantly rural midwestern state, Kansas, was examined to determine if the distribution of registered and certified psychologists was comparable to that found in the Keller et al. study. In the second part of the study, a telephone survey was conducted to identify the total number and characteristics of all individuals delivering psychological services in a sparsely populated, rural region. Both master's level and doctoral level psychologists were included in this phase of the study. It was expected that the distribution of psychologists in rural counties would be greater when all psychologists were counted in addition to those listed in the *Register*.

Method

The location of registered and certified psychologists in the 105 counties of Kansas was determined through their listing in the *National Register of Health Service Providers in Psychology* (1980) and *Certified Psychologists: State of Kansas* (Behavioral Science Regulatory Board, 1980). Certified psychologists in Kansas are required to have a Ph.D. in psychology and 2 years of postdoctoral experience. Individuals who practice psychology in federal, municipal, or state agencies and those who work under the direct supervision of a certified psychologist are not required to be certified. Therefore, individuals who have only a master's degree in psychology do not meet the requirements for certification but may practice under the supervision of a certified psychologist.

In addition, an intensive telephone survey was conducted of the High Plains Mental Health Center catchment area which spans nearly 19,000 square miles (20 counties) in rural northwest Kansas. This is one of the most sparsely populated areas of the state. The county population densities ranged from two to 28 persons per square mile. All practitioners who used the title *psychologist* professionally and were involved primarily in the delivery of psychological services, including individuals with master's degrees in any area of psychology, were counted in this phase of the study. Several sources of information were used in initially identifying psychologists practicing in this catchment area. These included the APA Directory (American Psychological Association 1981), the *National Register of Health Service Providers in Psychology* (Council for the National Register of Health Service Providers in Psychology 1980), the *Certified Psychologists: State of Kansas* (Behavioral Science Regulatory Board, 1980), lists of psychologists on staff at the two largest employers of psychologists in the catchment area (High Plains Mental Health Center and its satellite branches and Norton State Hospital), and names of school psychologists obtained by calling superintendents of all school districts in northwest Kansas.

Each of the psychologists identified by this procedure was contacted by phone and asked to furnish names of other psychologists working in his locale. Psychologists so identified also were contacted by phone and asked to provide additional names. In most cases subjects were aware of other psychologists practicing in their locale and were able to provide a comprehensive listing as indicated by multiple cross-references which were obtained for most names on our final list. Each of the psychologists was interviewed by phone using a standard format. The data obtained included the location of the subject's home and place of work, his or her job title, whether employment was full- or part-time, and the geographical area served. Subjects also characterized the type of clients they served and gave estimations of *normal* caseload.

The data for both the state and the 20-county catchment area were subjected to a correlational analysis. Both variables, population density and the rate of psychologists per 100,000 people, formed ratio scales. Because of numerous tied ranks in the observed data, Kendall's *tau* was used to assess the strength of correlational relationship between variables (Nie, Hull, Jenkins, Steinbrenner & Bent, 1975).

Results

The distribution of psychologists for the state as a whole is plotted in Figure 1. A total of 135 registered psychologists and 315 certified psychologists were included. For the 105 counties, the correlation between county population density and number of registered and certified psychologists per 100,000 persons yields a moderate and positive relationship ($r = .44$, $p < .001$). This result is almost identical to the Kendall's *tau* correlation coefficient of .42 found by Keller et al. (1980) in the northeastern section of the United States using registered psychologists.

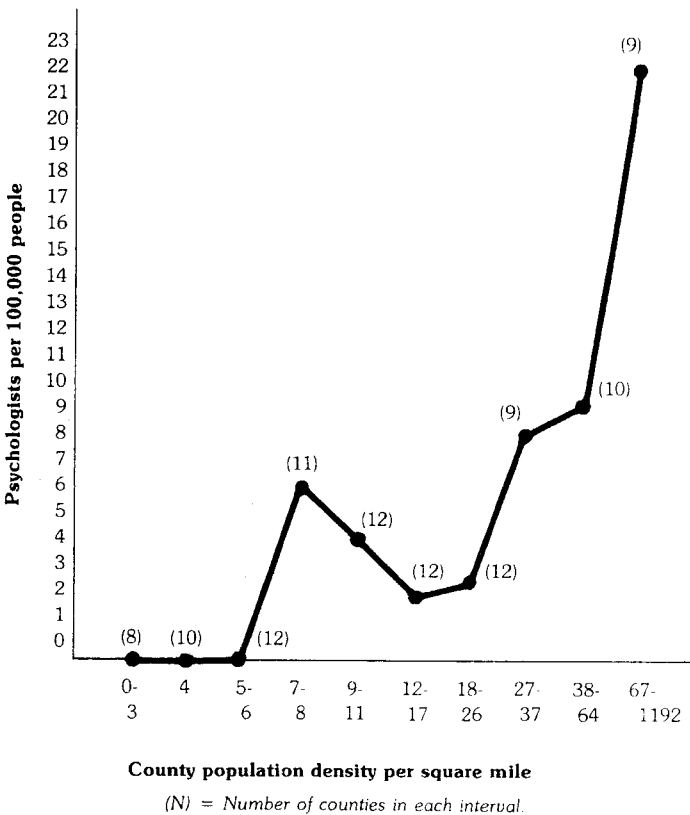


Figure 1. Distribution of Kansas psychologists per 100,000 people as a function of county population density.

As in the Keller et al. (1980) study, the majority of counties with no psychologists are concentrated in counties with fewer than 100 persons per square mile. In addition, the majority of counties in Kansas do not have a registered psychologist, with the percentage of counties lacking such a psychologist actually higher in this state than in the northeastern United States (86% versus 57%). Seventy-two percent of the Kansas counties contained neither a registered nor certified psychologist. The above results suggest a pattern in Kansas similar to that in the northeastern United States.

The second part of the study involved a more intensive survey of all active psychologists in a 20-county rural area of the state to determine the actual distribution of psychologists providing services.

Identified was a total of 40 psychologists who were involved primarily in the delivery of psychological services. An additional 15 psychologists were involved primarily in nonservice related occupations such as administration and teaching. The number of psychologists providing direct services in each county is listed in Table 1. Table 1 represents the distribution of the 40 psychologists who provide direct services to the 20-county area; the number of psychologists listed in Table 1 totals more than 40 because some psychologists provide service to more than one county. For the 20 counties, the Kendall's *tau* correlation coefficient is .50 ($p < .01$) between population density and the number of psychologists providing direct services per 100,000 persons. This result is similar to the results for both the statewide data and for the northeastern United States. Master's level psychologists outnumbered Ph.D. practitioners by a three-to-one margin, and as indicated in Table 1, provide the greatest portion of mental health services in the catchment area.

Table 1

Number of Psychologists Providing Direct Services in Each County			
County	PhD	MS	Total
Cheyenne	0	1	1
Decatur	1	2	3
Ellis	4	12	16
Gove	0	2	2
Graham	1	1	2
Logan	0	1	1
Ness	0	1	1
Norton	1	2	3

(Table 1 continued on page 8)

Table 1 - Continued

Phillips	3	4	7
Osborne	1	2	3
Rawlins	0	1	1
Rooks	0	1	1
Rush	0	2	2
Russell	0	2	2
Sheridan	0	2	2
Sherman	1	1	2
Smith	0	2	2
Thomas	0	1	1
Trego	0	1	1
Wallace	0	1	1
Total	12	42	54

Discussion

The data indicate that when all psychologists are counted in a rural 20-county area, their distribution is similar to that found for certified psychologists for the state as a whole and for registered psychologists in the northeastern United States. In other words, even in this low density region with a maximum of 28 persons per square mile, master's and doctoral level psychologists combined tend to provide services to a greater degree in more densely populated counties. However, this is only a moderate relationship and suggests that factors other than population density influence the availability of psychological services. In this rural catchment area, for example, one county of medium density attracted a relatively high number of psychologists due to the presence of two state-supported inpatient treatment facilities.

The most interesting finding may be that none of the low density rural counties surveyed lack availability of a psychologist. This can be compared to the Keller et al. (1980) finding that 78% of low density counties did not have a registered psychologist. More than half of the counties in this catchment area have two or more psychologists providing services.

Only two psychologists in the catchment area, or 5% of the total, were listed in the *Register*. Thus, conclusions based on registered psychologists only would sorely underestimate the actual number of counties being served. Psychologists in rural areas often travel outside county boundary lines to provide services. Therefore, counties in which services are provided may be a more meaningful measure of distribution of psychological services than work address listings of registered or licensed psychologists.

If the pattern of findings in this study is present in other areas of the country, and when master's level psychologists are taken into account, the *underserved* nature of rural areas in regard to psychological services may be questioned. Moreover, the additional level of service to rural areas by other mental health providers such as clinical social workers, psychiatric nurses, and other care-givers who provide counseling or diagnostic service needs to be specified. While questions of type or quality of psychological services are not addressed in this study, the present findings suggest that the widely cited maldistribution of psychological services may be exaggerated and an artifact of using only nationally registered psychologists.

Given the finding that the majority of psychological service providers in this rural area held terminal master's degrees, there would appear to be a need for specific training in rural mental health at the master's level. However, our impression is that such training is not widespread. The authors are aware of only two NIMH-supported master's programs in rural mental health — one in Kansas and one in Pennsylvania. One therefore may question if rural practitioners are being adequately trained to meet the unique psychological needs of rural areas. Further research examining the number and characteristics of those delivering mental health services in both urban and rural areas is needed for a better understanding of those differences that may exist.

References

- American Psychological Association. *Directory of the American Psychological Association*. Washington, D.C.: Author, 1981.
- Behavioral Sciences Regulatory Board. *Certified psychologists: State of Kansas*. Topeka, KS: Author, 1980.
- Council for the National Register of Health Service Providers in Psychology. *National register of health service providers in psychology*. Washington, D.C.: Author, 1978.
- Flax, J. W., Wagenfeld, M. O., Ivens, R. E., & Weiss, R. J. *Mental health and rural America: An overview and annotated bibliography*. Rockville, MD: National Institute of Mental Health, 1979.
- Keller, P. A., Zimbelman, K. K., Murray, J. D., & Feil, R. N. Geographic distribution of psychologists in the northeastern United States. *Journal of Rural Community Psychology*, 1980, 1, 18-24.
- National Institute of Mental Health. *The mental health of rural America*. Washington, D.C.: U.S. Government Printing Office, 1973.
- Nie, H. H., Hull, C. H., Jenkins, J. C., Steinbrenner, K., & Bent, D. H. *Statistical package for the social sciences*. New York: McGraw Hill, 1975.
- President's Commission on Mental Health. *Report to the President from the President's commission on mental health*. Washington, D.C.: U.S. Government Printing Office, 1978.
- Richards, J. M., Jr. & Gottfredson, G. D. Geographic distribution of U. S. psychologists: A human ecological analysis. *American Psychologist*, 1978, 33, 1-9.
- Weinberg, R. B. Employment of master's-level psychologists. *Journal of Clinical Psychology*, 1979, 35, 687-688.