PERCEPTIONS OF THE DESIRED ATTRIBUTES OF PRACTICING PHYSICIANS AS DETERMINED BY RURAL AND URBAN PHYSICIANS

by

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Submitted to the Department of Administration, Foundations and Higher Education and the Faculty of the Graduate School of the University of Kansas in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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ACKNOWLEDGEMENTS

It is with deep personal appreciation that I thank each of the members of the Advisory Committee for their patience and understanding during the completion of this work. Despite their many responsibilities, I was made to feel as the most important student they had during this endeavor.

To Bill Holloway, my major advisor and friend, I extend my most sincere thanks for the many hours of advice and counsel, but most of all for his challenging and soul-searching motivations on more than one occasion when I planned to terminate the project. His persistent provoking gave me the strength to endure.

To Dr. Cramer Reed, I express my appreciation for his willingness to permit this research to be conducted and most particularly, for instilling in me a profound desire to maintain a high degree of professional self-direction in my life; only he knows the importance of this contribution.

And to my wife, Betty, goes my deepest thanks and everlasting love for her devotion, encouragement, friendship, advice and, yes continual harassment of

me to complete this paper before the age of retirement. I now look forward with sincere delight to reciprocity.

And to future students, may this research be of some value to you as it occupies its rightful place in the halls of learning.

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CHAPTER I

INTRODUCTION

Medical schools in the United States graduate more than 12,000 physicians each year.[1] After completion of the three or four years of undergraduate medical education leading to the M.D. degree, nearly all graduates enter one of scores of specialty residency training programs sponsored by medical schools or hospitals. The advanced graduate training provides physicians with the prerequisites necessary in most states for licensure to practice medicine.

Accreditation of medical schools and residency programs in hospitals by national accrediting agencies provides a means by which the maintenance of standards in medical education is accomplished. Agencies such as the Council on Teaching Hospitals (COTH), the Liaison Committee on Undergraduate Medical Education, both agencies of the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC),

[1] Directory of Approved Residency Programs, 1974-75, the American Medical Association, Washington, D.C., 1974.

conduct periodic visits to medical education programs and institutions to insure compliance with established standards.

Licensure to practice medicine is granted by state agencies which, in the main, require that physicians: (1) have received the M.D. degree from an accredited medical school; (2) have completed a minimum period of residency training in an approved program; and (3) have satisfactorily completed certain written proficiency examinations as prescribed by the licensing agency. Membership in medical specialty societies also requires additional evidence of the satisfactory completion of written examinations. Nearly one-half of the licensed physicians in the United States are members of the American Medical Society which requires documented evidence of the completion of in-service or post graduate medical education for continued membership.[2]

Throughout the continuum of medical education-undergraduate, graduate and post graduate, the emphasis is on obtaining evidence of a physician's knowledge of the vast body of cognitive scientific information. Much effort has been expended since the turn of the century in organizing, revising, adapting and measuring the cognitive components of medical school curricula,

[2] Journal of the American Medical Association, November 1975, p. 12.

residency program activities, specialty board examinations, and licensure examinations. Indeed, admission criteria of medical schools are so rigorous that student performance on the Medical College Admission Test (MCAT) and Grade Point Average are used as determinants for an applicant's eligibility for personal interview with admissions committees.[3]

Most evaluative procedures in effect in the medical education continuum stress the assessment of cognitive knowledge. The basic science curricula at most schools are largely dependent on written, often computerized standardized tests to assess student performance. The National Board of Medical Examiners serves as the national agency for many areas of medical education and produces standardized tests for use by faculty. Many medical schools utilize the National Board exams to determine a student's eligibility to progress from the basic science to the clinical portions of the curriculum.[4] Some schools require students to take and pass the National Board exams in order to be awarded the M.D. degree.[5]

[3] Personal conversation with the Dean of Admissions, University of Kansas School of Medicine, October, 1975.

[4] Report of the National Board of Medical Examiners-1975, Philadelphia: National Board, 1975, p. 3.

[5] Report of the National Board, p. 3.

Some have suggested in recent years that this preoccupation and dependency upon scholastic measures has resulted in medical schools producing graduates rather than preparing future physicians for the maintenance and improvement of adequate health care.[6] The National Board of Medical Examiners established the Committee on Goals and Priorities in 1971 to consider the matter of medical student evaluation. In its first published report in 1973, the Committee emphasized that continual evaluation of students was essential throughout the educational continuum and identified four areas requiring future research efforts:[7]

(1) Identification of performance characteristics necessary for the physician to discharge his responsibilities in providing patient care;

(2) Development of performance standards that define minimal acceptable performance in those essential characteristics;

(3) Creation and perfection of instruments that measure or predict essential characteristics of the physician; and

(4) Development of standards of performance of measuring instruments to assist groups in making valid predictive judgments about individuals.

[6] Phillip B. Price, et al, "Attitudes of a Good Practicing Physician," Journal of Medical Education, 46: March, 1971, p. 236.

[7] Evaluation in the Continuum of Medical Education, Philadelphia: National Board of Medical Examiners, 1973, p. 17.

The implications are profound. The state of the art at the time of the Committee report revealed an urgent need for scholarly research efforts. The Committee further stated:[8]

> . . . the major thrust to future research should be directed toward identifying knowledge, attitudes and skills that are required to perform at various stages of training and in varied medical careers and toward developing instruments that yield valid measurements of these characteristics.

Of significance is the Committee's reference to the attitudes of physicians. Never before had an agency of such stature in the medical field verbalized the importance of non-cognitive measures or characteristics.

Some research has been reported regarding the psycho-social aspects of medical education. Gough is credited with providing much insight in this regard.[9] His work related to a correlative issue concerning the relationship of non-cognitive characteristics to the process of the selection of students for medical

[8] Evaluation, p. 17.

[9] Gough, H. G., et al., "Admissions Procedures as Forecasters of Performance in Medical Training." Journal of the American Medical Association, 1963, 38, 983-98.

school. Shulman and Elstein also expressed a concern:[10]

> Specifically, it seems desirable to find measures which will predict or identify:
>
> 1. Level of observed clinical competence some years after graduation;
> 2. Career choice, specifically entry into high-priority fields which are currently undersupplied;
> 3. Degree of relating appropriately and effectively to patients.

The establishment of a set of agreed upon criteria of non-cognitive characteristics is an essential step. Once there is agreement as to what characteristics are desirable in practicing physicians, it may then be possible to determine measurement procedures and, further, predictive measures which can be utilized by medical educators.

The involvement of physician faculty in the establishment of instructional strategies, particularly those relating to professional or non-cognitive qualities is fundamental. A recent study by Price and

[10] Shulman, Lee and Arthur Elstein, "Strategies for Research on Personality Measures in Medical Education." In Personality Measurement in Medical Education, Washington, D.C., Association of American Medical Colleges, 1971, 191-213.

others was directed at such involvement.[11] Price's findings resulted in the establishment of a listing of physician qualities, both positive and negative, which serves as a model from which additional research should be considered. The present study concerns this issue. It utilizes the model identified by Price.

Statement of the Problem

The present study was undertaken as a response to concerns expressed by medical faculty of the Wichita Branch of the University of Kansas School of Medicine. Their concern regarded the lack of an evaluative strategy which could identify non-cognitive deficiencies in medical students. It was postulated that an analysis of those characteristics considered desirable by practicing physicians could lead to significant curricular revisions and development of a measure with which to assess such qualities in medical students.

As the research study evolved, it became apparent that two additional areas would be impacted upon during the conduct of the study. First, a survey of practicing physicians in both rural and urban areas might well reflect differences of response. Such data might

[11]Price, 229-37.

suggest why certain physicians prefer a particular kind of practice setting over others. A relationship might then be established with the kind of curricular goals within the medical school to encourage the establishment of practices in rural underserved areas of the state. Secondly, the study would produce data which could influence admission procedures by providing preliminary data with which to further develop predictive measures about student career choices. Such measures might prove useful and reliable in selecting students for medical school who possess a high probability of practicing in underserved rural areas of Kansas.

Purpose of the Study

The purpose of this study is to analyze the preferred physician attributes of two groups of practicing physicians. The specific hypotheses, stated in the null, are:

1. There will be no significant relationship between rural and urban physicians in their mean responses of attributes ranking on the Physician Attributes Survey (PAS);

2. There will be no significant relationship among several medical subspecialty groups in the urban sample concerning their mean responses of attributes ranking on the PAS;

3. There will be no relationship between the responses of Kansas physicians and the responses of the sample surveyed in the Price study concerning the ranking of physician attributes.

Summary of the Procedures

All clinical faculty of the Wichita Branch of The University of Kansas School of Medicine who are practicing physicians in Wichita were surveyed using an instrument which listed the physician attributes developed by Price and others. An equal number of rural physicians practicing in non-urban areas of Kansas were also surveyed with the instrument.

The data collected from the responses were compared by computing each group's mean on each statement according to a five-point Likert scale used on the instrument. The choices were among five equal intervals for each item. In addition, the data from the Wichita population were analyzed by medical specialty group in order to assess the differences among these sub-groups.

Limitations of the Study

Although the clinical faculty of the Wichita Branch are all members of the Medical Society of Sedgwick County, no inferences can be made concerning the Society itself. Nor can it be surmised that physicians practicing in other urban areas of the state of Kansas would respond as did the group from Wichita. The results and conclusions in this research

study are valid for those responding to the Physician Attributes Survey (PAS) and therefore limit the study to that extent.

Definition of Terms

For purposes of this study, the terms used are defined according to the following definitions:

American Medical Association (AMA) - the national professional organization of physicians. In addition to providing lobbyist support, the AMA sponsors and accredits numerous continuing education programs for its members. To maintain active membership, physicians must document the completion of at least 150 hours of approved continuing education each three years.

Association of American Medical Colleges (AAMC) - the body which consists of approximately 112 member institutions in the United States and Canada and is the accrediting agency for all private and public medical schools. Its relationship to the AMA through the Liaison Committee on Medical Education provides standards for accreditation and conducts on-site visits each 5 years to each institution.

Academic Medical Faculty - those physicians involved with a medical school on a full-time or

geographical full-time basis or who hold traditional academic faculty titles in a medical school. Responsibilities may include patient care, teaching, administration, research, or a combination thereof.

Basic Medical Sciences - those "pure" science courses which provide the fundamentals in the medical school curriculum. These include: Anatomy, Biochemistry, Microbiology, Physiology, Pathology, and Pharmacology at most medical schools.

Clinical Clerkship - a course in a medical school curriculum occurring after completion of the basic medical science courses. These clerkships relate directly to patient care, in which the student is referred to as a "clerk," and which may be from 1 to 30 weeks in length and occur in any medical specialty. In most medical schools certain clinical clerkships are obligatory, others are elective. Scheduled didactic discussions are often organized which complement limited patient care responsibilities for the student.

Clinical Medicine - that part of the medical school curriculum related to clinical clerkships. It also is distinguished from basic sciences and

research medicine and generally refers to a hospital-based medical practice.

Case Conference - sessions conducted with physician faculty and medical students in which selected patient cases are discussed in order to emphasize certain disease processes.

Didactic Session - a frequently used term in medical schools referring to seminar or small group lecture sessions conducted by physician faculty.

Graduate Medical Education - that part of training in medicine which concerns residency programs beyond the receipt of the M.D. degree. Residency programs may be sponsored by hospitals and medical schools and are offered in numerous medical specialties including: Family Medicine, General Surgery, Pediatrics, Plastic Surgery, Radiology, and others. Depending on the established requirements by specialty boards, residency programs may require from 3 to 8 years of training. Upon completion of a residency the physician is eligible for licensure in that given specialty and may take examinations offered by each particular specialty board in order to become "board certified."

Foreign Medical Graduate (FMG) - a physician of non-U.S. citizenship who has received the M.D. degree from a non-U.S. medical school.

Kansas Board of Healing Arts - the agency in Kansas which certifies and licenses physicians and others to practice medicine and surgery in this state. It also oversees the performance of so-called physician extenders, that is, physician assistants and nurse practitioners. Issues of ethics among physicians are brought to the Board for action. All states have an agency of similar scope and function.

Internship - no longer used in medical education, this refers to the first post-M.D. year of medical specialty training. Those physician trainees once known as interns are now referred to as first year (level one) residents.

Medical Specialties - the different areas of medicine. In contrast to "general practice," medical specialties require certification by a corresponding specialty board. The most recent specialty in medicine is that of "Family Medicine."

Medical College Admission Test (MCAT) - the qualifying examination required by all medical schools of

their applicants. This standardized test consists of several components, each reported as a separate score.

Liaison Committee on Medical Education - the accrediting agency of the AMA and the AAMC which is responsible for accreditation of all undergraduate medical institutions. The Liaison Committee on Graduate Medical Education serves a similar function with residency programs conducted by medical schools and hospitals.

National Board of Medical Examiners (NBME) - the national qualifying agency which develops and distributes standardized examinations for use by various levels of medical education. Part I exams concern the basic medical sciences; Part II measures clinical preparedness; Part III is used by state licensure agencies as a prerequisite to licensure as is the FLEX exam. Most medical schools require students to successfully pass the Board exams Parts I and II before awarding the M.D. degree.

Preceptorship - a course of study within the clinical component of medical education which requires the student to work directly under the supervision of

a practicing physician, generally in a rural community; this type of program, a requirement at the University of Kansas, usually is four weeks in length and occurs during the last few months of medical school; physician preceptors are most generally General or Family Practice specialists.

Primary Care Specialties - within the many sub-specialty areas of medical practice, certain specialties are considered as primary care if the physician serves as the primary provider of health care to the patient; it is generally agreed within the field that the specialties which are considered as primary care are: Family Practice, Obstetrics-Gynecology, Internal Medicine, and Pediatrics; all other specialties treat patients upon referral from other physicians.

Residency - the graduate level medical education programs in various medical specialties sponsored by medical schools or teaching hospitals.

Teaching Rounds - sessions held during undergraduate and graduate medical education programs in which physician faculty escort students and residents to several patients on hospital wards in order to provide for discussions regarding disease entities,

processes and patient management approaches; frequently, teaching rounds occur daily and students are expected to research the diseases and specific patients prior to the rounding activity.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this chapter is to survey the pertinent literature relating to this study. Few previous studies have focused upon the problem as defined in this research, however, certain relevant research has been accomplished which is important to review and consider.

Need for Research

Little evidence exists to indicate any serious behavioral research efforts in the field of medical education prior to the early 1900's. For the most part early documented research was conducted and reported by psychologists. Their concern was mainly the personal characteristics, aptitudes, and intellectual qualifications of medical students. Perhaps the most provocative report was that published by Flexner in 1910.[12]

In 1900, approximately 120 American medical schools

[12] Abraham Flexner, Medical Education in the United States and Canada. A Report to the Carnegie Commission for the Advancement of Teaching. (Boston: Updyke, 1910).

of varying quality existed without a central accrediting process or uniform means of evaluating graduates. Licensure was based upon examinations created by physicians whose authority rested within a loose and uncoordinated set of medical practice arts. Completion of medical school was considered sufficient educational preparation for engaging in any type of medical practice. Medical licensure, then as now, was unlimited in scope and time. Because formal clinical training and teaching was virtually non-existent, the student was required to apprentice himself to a physician in order to gain clinical experience prior to medical practice. Little education beyond graduation was in evidence.

Flexner, in conjunction with the American Medical Association (AMA) and the Carnegie Foundation for the Advancement of Teaching, conducted a review of medical education in the United States and Canada. Flexner's report, published in 1910, stressed the necessity of a scientific foundation for medical practice and the need for supervised clinical education in a hospital setting as a prerequisite for independent practice. In addition, the report recommended that medical education be vested within accredited universities with a scholarly pursuit of knowledge which would advance the educational process. As a result of Flexner's critical

findings, many universities began to accept the responsibility for medical education and many of the private and unaffiliated proprietary schools discontinued their programs. An additional result was that the AMA assumed the responsibility of accrediting undergraduate medical education. The results of such activities were that schools of medicine developed the basic science (biomedical) faculties and programs as well as the clinical teaching components of the basic curriculum.

Flexner's profound findings on the status of medical education at that point in time served as the foundation for much controversy and subsequent improvement in the field of medical education. The Flexnerian revolution is still in evidence in many parts of the profession.

It was not until the 1950's that medical educators and social scientists appeared to be developing an awareness of the importance of the learning environment of medical schools. During that time, social and behavioral scientists were apparently successful in investigating certain aspects of the medical school system. Such attempts included examining the quality of medical care delivery, the doctor/patient relationship, and the social and psychological interventions of illness. During that period funds from agencies within the federal government became available for the support of

biomedical research and training programs. As a by-product of the increased availability of funds, the quality of medical education improved significantly. As technological advances were incorporated into all facets of health care, highly sophisticated research endeavors provided additional insight into the diagnosis and therapy of disease processes. While these advances led to remarkable levels of sophistication in the quality of patient care, they also resulted in a fragmented approach to the care of individual patients and students.

Increasing attention is now being paid to medical school as a social structure and to its relationship to other social institutions.[13] In the 1970's there is significant interest in the entire process of physician development and the factors influencing that process: the selection or self-selection of applicants, the training process (medical school and residency training), career development and setting, the hospital and medical school as social institutions, and physician performance and quality of practice. Of particular interest to the researcher is the socialization process of the medical school environment. It is assumed that

[13] Sam Banks and E. A. Vastryan, "Humanistic Studies in Medical Education," J. Med. Ed., 48)Mar. 1973), 248-257.

the process of socialization is extremely influential in the professional development of the medical student. Socialization refers in this sense not only to the medical education process which transmits concepts, ideas, empirical knowledge, and methods of work, but also to the advertant and inadvertant shaping of attitudes, sentiments, and values regarding the professional work for which medical students are being prepared.

The socialization studies of the 1950's in medical education raised questions concerning the students' professional development. Studies comparing medical schools emphasized the socialization processes inherent within each. The particular questions which appear to be relevant are defined by a number of researchers in recent descriptive studies. Among the questions which Levine addressed included:[14]

1. What are the microdynamics of the student-faculty-patient interaction in the medical school environment?

2. How does role-model learning take place?

3. How are role models, both positive and negative, among the faculty identified?

4. What are the dynamics of the student-faculty-patient interaction that determine how socialization occurs?

[14] David M. Levine, et al, "Trends in Medical Education Research: Past, Present, and Future," J. Med. Ed., 49 (Feb. 1974), 129-136.

It is the influence of role models which is of concern in this study. A basic research question is what influences rural and urban physicians have upon the selection of practice locations of medical students.

The Process of Evaluation in Medical Schools

Directly related to the professionalization of medical students is the process by which their performance is evaluated. The role expectations identified by faculty are in themselves expressions of the values of faculty. Students quickly learn how to "play the role" as it were.

Evaluation, licensure, and subspeciality certification in the United States today constitute a complex system in which such agencies as the National Board of Medical Examiners, State Medical Boards, Specialty Boards, and the American Medical Association have interlocking roles external to, yet intimately related with, the educational system itself. In addition to these external agencies, educational institutions play a significant role in the on-going evaluation of their students and graduates. While the broad goal of evaluation is to assure the high qualifications of physicians to provide patient care, the specific purpose of that evaluation can best be viewed in terms of whom the evaluation process is intended to serve.

During undergraduate medical education, evaluation of learning has always been an integral part of the student-teacher dialogue in the classroom as well as at the bedside. Until recently, evaluation of learning has been relatively unstructured, providing only sporadic feedback and guidance to the individual student regarding his progress and efficiency. With the recognition of the need to understand and evaluate the learning process itself, the on-going assessment of learning is becoming a more frequently discussed question among medical educators.

Evaluation is an essential part of clinical education, for effective instruction requires accurate assessment of student performance. Recent attempts to reach satisfactory levels of evaluation have resulted in many medical schools defining areas of competence required in clinical medicine. Students must demonstrate specific clinical skills before faculty members in order to achieve satisfactory grades. These recent approaches to evaluation appear to be succeeding, since many residency programs require similar methods. The field is nearing the goal of defining the expectations and competencies of the "good" physician.

Physician Professional Qualities

Becker and others have provided significant research in their study concerning the medical student

culture.[15] They described the substantial effort expended by students toward adapting to the expectations of faculty members. Additional studies by sociologists and anthropologists were similarly concerned with the learning of the professional role. Tomich studied self-concept of students and concluded that the establishment of a professional identity does not occur in medical students until they begin to have direct contact with patients.[16]

Korman and others identify the faculty as the primary source of a "loss of humanitarianism" among students.[17] Faculty and students may perceive the role of the physician quite differently, as described by Korman:[18]

> The faculty defines acceptability as a medical student in terms of flattering to its own model, while the students endow the practicing patient-oriented physician with many desirable personal and social characteristics.

[15] Becker, M. S., et al. Boys in White: Student Culture in Medical Schools. Chicago: Univ. of Chicago Press, 1960.

[16] Tomich, J., "Home Care, A Technique for Generating Professional Identity," J. Med. Ed., 41 (1966), 202-208.

[17] Korman, M., et al, "Faculty and Student Perceptions of Medical Roles." J. Med. Ed., 39 (1964), 197-202.

[18] Korman, p. 199.

The profound effect of faculty upon students values is pronounced in medical schools and results in major decisions of students being greatly affected including specialty choice, location of practice and style of patient management.

A study by Price and others concerned the establishment of attributes of a "good" practicing physician. The basic focus was to determine what physician characteristics were most important in providing good patient care. The procedure employed was to survey a large number of practicing physicians (N=372) in Utah regarding what they considered to be the basic attributes of success in a physician.[19] The resultant list of 116 qualities was derived from a rank order survey of more than 1600 subjects. Of this number of qualities, 87 were positive qualities of behavior and 29 were negative or undesirable. The respondents ranked each item on a five-point scale of from "extreme importance" to "of no importance."[20]

The list of physician attributes developed from the Utah study depicts a model of the "ideal" physician as viewed by a segment of the population. This image serves as a criterion by which the field of medical

[19] Price, p. 230.

[20] Price, p. 232.

education might measure the responses of others. The relationship, if any, between the responses of such a survey on rural and urban physicians is a meaningful research area yet to be investigated.

Practice Location

The factors which influence physicians in the selection of a site for the establishment of a private practice have received considerable attention in the literature. A review of the pertinent findings is appropriate to this study, because such data may support the research questions presently under consideration.

The literature focusing on physician location decisions has increased since an analysis of 1950 medical school graduates conducted by Weiskotten.[21] There are only a small number of research efforts, however, concerning the policy making at state levels in relation to medical education and practice location.[22] Three types of research appear in the literature: urban-rural, intra-urban and state studies.

[21] Weiskotten, H. G., et al. "Trends in Medical Practice: An Analysis of the Distribution and Characteristics of Medical College Graduates, 1915-50." J. Med. Ed., 35: 1071-1095, 1960.

[22] Cantwell, J. R., et al. The Spatial Distribution of Physicians: A Literature Review. Chicago: Center for Health Services Research and Development, American Medical Association, May, 1975.

Findings from certain of these areas are germane to the present study.

The state studies concern interstate variations in physician-population ratios. Fein and Weber found no significant correlation between the number of medical school graduates in a state and the number of physicians locating a practice there.[23] Yett and Sloan determined a higher rate of graduate retention in states which subsidized the medical students and residents of graduate programs.[24] In Kansas, for example, considerable state funding of graduate programs, particularly in primary care areas, has occurred since 1974. No data is available concerning the practice locations of graduates who received this subsidy.

Held found that all states except the Mountain and Pacific states exported more physicians than they imported.[25] In a survey of 1960 graduates from

[23] Fein, R. and G. I. Weber. Financing Medical Education: An Analysis of Alternative Policies and Mechanisms. New York: McGraw-Hill, 1971.

[24] Yett, D. E. and F. A. Sloan. "Migration Patterns of Recent Medical School Graduates. Inquiry, 11: 125-142, 1974.

[25] Held, P. J. The Migration of the 1955-1965 Graduates of American Medical Schools. Berkley: The University of California, Ford Foundation Program for Research in University Administration, 1973.

medical schools, Schwartz and Cantwell found a similar result.[26]

Medical educators have long believed that the use of the preceptorship would encourage medical students to choose a rural location for private practice. Steinwald and Steinwald found, however, that preceptorships had little influence on the selection of a practice site.[27] Other researchers agreed. In a recent study in Missouri, Elder and McCallister focused on the rural backgrounds of medical students as a key factor in the selection of rural areas for private practice. They examined the preferences of students at the first and last years of medical school.[28] Their findings were somewhat different from earlier studies (Bible, 1970; Hassinger, 1963; and Parker and Tuxhill, 1967). Elder and McCallister found that although the students' background was important in location choice, "the medical school experience definitely intervenes in this relationship."[29] Rural students tended

[26] Schwartz, L. E. and J. R. Cantwell. Weiskotten Survey, Class of 1960. J. Med. Ed., 51: 533-540, 1976.

[27] Steinwald, and C. Steinwald. "The Effects of Preceptorship and Rural Training Programs on Physicians' Practice Location. Medical Care, 13: 219-229, 1975.

[28] Elder, S. and S. McCallister. "The Choice of Rural Practice: A Longitudinal View." Presentation to the Sixth Annual Conference on Research in Medical Education, AAMC, 1977.

[29] Elder.

to prefer larger communities at the end of their medical school education. However, the researchers point out that the issue of specialty choice is a more pressing decision for students and may well be a major influence on location of practice. Indeed, students are pressured into selecting a residency program very early in the last year of medical school, prior to having much of an exposure to all medical specialties. This forced early decision, coupled with the limited demand for specialists in rural areas, strengthens the concern among medical educators that emphasis on the primary care specialties during medical school will significantly affect location of practice after completion of formal graduate training. Elder and McCallister conclude their study:[30]

> It is clear that few firm practice decisions are made by the end of four years of training at this state medical school. Thus, it is important to continue to follow these students until the time their decisions are firmly acted upon. However, the trends indicate at this time that rural background does relate to pro-rural practice attitudes but that the medical center as a tertiary care facility continues to foster an urbanizing, specializing influence.

[30]Elder.

A comprehensive study by Parker and Tuxhill examined the attitudes of physicians toward small community practice.[31] Their findings emphasized that no single factor can be isolated which adequately explains the cause-effect relationship to practice location. For example, rural respondents repeatedly expressed a desire to live in a small town as being a significant influence on their choide of practice location.[32] Parker and Tuxhill conclude.[33]

> The role of the medical educator is crucial in influencing the pattern of medical care, and it would seem most important for those in medical education to thoroughly understand the needs and resources of the communities outside their immediate medical center environment and to take these into consideration when they counsel prospective doctors.

The use of state funds to encourage graduates to remain in a given state, as discussed above, is an increasing phenomenon. Its success has yet to be proven. The migration of medical school graduates out of states with underserved areas is of grave concern to medical educators as well as state legislators and

[31] Parker, R. and T. Tuxhill. "The Attitudes of Physicians Toward Small Community Practice," J. Med. Ed., 42: 327-344, 1967.

[32] Parker, p. 331.

[33] Parker, p. 331.

small community leaders. The pressure to make early decisions about specialty choice by medical students often precedes and often dictates their preference for practice location. The background of students, the preferences of spouses, the resources of communities, including cultural as well as medical, have all been identified as research factors for investigative analysis.

The present study focuses on the attitudes of the future colleagues of today's medical students. Given the research findings of the studies discussed above, are there differences between rural and urban physicians (in terms of the preferred ideal) which ought to be recognized by medical school planners, legislators and communities themselves? It is the intent of this study to provide this data for further analysis and decision making.

CHAPTER III

PROCEDURES AND METHODS

The Design of the Study

It is the purpose of this study to investigate the relationships between urban and rural physicians responding to a survey concerning physician attributes. The research design parallels the correlational method as described by Borg and Gall.[34] The correlation between the responses of the two groups of physicians is reported using the Spearman Rank Order Correlation Coefficient described in more detail in this chapter.

Description of the Subjects

Two groups of practicing physicians were selected as subjects for this study. As of the time the research was conducted, 232 Wichita physicians comprised the clinical faculty of the Wichita Branch, the University of Kansas School of Medicine. All are practicing physicians who devote some portion of their time to the medical school instructional programs, including

[34] Borg, W. and M. Gall. Educational Research, An Introduction. New York: David McKay Co., Inc., 1974.

teaching, patient rounds, office experiences, and other duties. The group represented more than half the membership of the Medical Society of Sedgwick County at the time of the survey.

The rural sample of 232 physicians was randomly selected from the 1976 roster of the Kansas Medical Society. All physicians selected represented non-metropolitan areas of the state of Kansas and were either Family Practice or General Practice physicians. The names of all non-urban physicians were selected from the entire roster and 232 names were randomly selected from this group.

Procedures for Gathering Data

The Physician Attributes Survey (PAS) was mailed to all selected subjects with self-addressed, stamped return envelopes. The letter of transmittal requesting their cooperation was printed directly on the instrument cover. All questionnaires were coded in order to permit follow-up of those not responding within the requested time period. In addition, the coding permitted the identification of medical specialities within the urban group for later analysis. One follow-up postcard was sent to those not responding within two weeks from mailing.

Instrumentation

The Physician Attributes Survey (PAS) was developed by the researcher from the description of the measure used in the study by Price and others in their survey of Utah respondents.[35] The survey contains a total of 115 items with separate sections and rating scales for 86 positive and 29 negative attributes of physician performance.

The 86 positively-stated qualities are randomly listed on the instrument and were to be responded to according to a Likert-type scale varying from "of extreme importance" to "of no importance" in 5 uniform categories, valued from 5 to 1, respectively.

In addition to the positive items, a separate section of the instrument contained 29 negatively-stated attributes, randomly arranged. These items required a response which varied from "most undesirable" to "least undesirable" in 5 uniform categories, valued from 5 to 1 respectively.

The entire instrument was photographically reduced (included as Appendix A) in order to permit ease of mailing and handling. It did not appear to affect the responses. The survey instrument was constructed to permit respondents the opportunity

[35] Price, p. 318.

of listing any additional qualities of physician behavior which they felt were important but not listed on the instrument.

Research Design and Procedures

The design of the study is that of the correlation method as described by Borg and Gall.[36] Correlation coefficients cannot determine precise cause-and-effect relationships in the classical sense; however, correlation coefficients are appropriate measures of relationships between variables and may be used to identify possible causal factors which may later be tested in an experimental design.[37]

For each group of physicians studied, a mean was computed on each survey item. Both positive and negative items were ranked from highest mean to lowest mean. The Spearman Rank Order Correlation Coefficient was used in the statistical analysis. In addition, the ranked items from the present study were compared with those of the Price study. The responses submitted by several medical specialty groups within the urban sample were analyzed using a one-way analysis of variance procedure to determine any possible intra-group differences.

[36] Borg & Gall, p. 318.

[37] Borg & Gall, p. 318.

CHAPTER IV

FINDINGS OF THE STUDY

The purpose of this chapter is to report the findings of the research. Each hypothesis will be discussed with the data being analyzed through statistical computations using the Rank Order Correlation Coefficient.

The PAS was mailed to 464 physicians. Of the 232 urban physicians selected, 128 (55%) returned the instrument. Of the 232 rural physicians surveyed, 91 (39%) returned the questionnaire, for an overall return of 47.2%.

Responses of Rural and Urban Physicians

HYPOTHESIS 1: There will be no significant relationship between rural and urban physicians in their mean responses of attributes ranking on the Physician Attributes Survey.

The data from the survey are reported separately for positive and negative attributes listed on the PAS. Table 1 shows the rank order of positive survey items from the rural and urban respondents. The correlation analysis reveals a coefficient of 0.975 at the 0.01 level of significance. Thus, the null hypothesis is

TABLE 1

RANK ORDER OF POSITIVE ATTRIBUTES
BY URBAN AND RURAL PHYSICIANS

RANK	SURVEY ITEM NUMBER		RANK	SURVEY ITEM NUMBER	
	Urban	Rural		Urban	Rural
1	18	18	44	38	12
2	66	60	45	61	86
3	2	2	46	44	61
4	32	66	47	1	59
5	25	77	48	4	73
6	9	85	49	63	4
7	60	39	50	57	75
8	19	43	51	49	56
9	85	25	52	56	29
10	14	32	53	75	31
11	33	80	54	59	57
12	17	72	55	76	41
13	26	19	56	58	58
14	77	9	57	35	68
15	39	65	58	41	76
16	65	17	59	23	71
17	43	70	60	5	15
18	72	33	61	15	55
19	10	26	62	83	16
20	80	74	63	67	35
21	74	54	64	55	21
22	70	14	65	34	40
23	11	10	66	20	63
24	54	50	67	68	22
25	8	30	68	40	69
26	13	37	69	71	5
27	47	47	70	22	52
28	73	45	71	36	34
29	53	3	72	16	36
30	27	8	73	79	67
31	86	13	74	69	83
32	30	11	75	24	48
33	50	53	76	21	7
34	78	82	77	7	46
35	29	38	78	46	20
36	27	1	79	81	79
37	45	44	80	48	62
38	3	28	81	52	6
39	31	23	82	62	81
40	12	27	83	6	64
41	28	42	84	64	24
42	82	49	85	84	84
43	42	78	86	81	51

rejected in favor of the alternative which asserts that there is a strong relationship between the groups regarding the order of importance of the attributes. That is, both groups seem to feel that certain physician attributes are more desirable than others.

The negative attributes rank ordered by both groups are shown in Table 2. The rank order coefficient was computed to be 0.961 ($p < .01$). Thus, the null hypothesis is rejected in favor of the alternative which supports the belief that both groups agree regarding the rank ordering of negative physician attributes.

TABLE 2

RANK ORDER OF NEGATIVE ATTRIBUTES
BY URBAN AND RURAL PHYSICIANS

RANK	SURVEY ITEM NUMBER		RANK	SURVEY ITEM NUMBER	
	Urban	Rural		Urban	Rural
1	5	10	16	23	23
2	4	29	17	15	15
3	29	4	18	26	26
4	10	5	19	20	24
5	14	8	20	16	20
6	8	14	21	24	16
7	11	13	22	22	22
8	2	2	23	28	28
9	6	11	24	19	19
10	3	6	25	21	17
11	12	25	26	9	21
12	13	3	27	17	9
13	27	27	28	18	18
14	1	1	29	7	7
15	25	12			

Four categories of attributes from the composite list were identified for further analysis. Several colleagues from the Department of Psychiatry assisted in the categorization of the attributes into the following categories:

Category 1: Personal Attributes
Category 2: Interpersonal Attributes
Category 3: Professional Attributes
Category 4: Business/Civic Attributes

Table 3 lists both the positive and negative items which have been identified in each category.

Those items which were classified as personal were those which dealt with the individual directly. Such attributes as those relating to personal habits and behavior as an individual were of this type. Interpersonal qualities concerned relations with others. Performance as a professional physician comprised the third category. Those attributes relating to community service and the conduct of business practices were considered as Category 4 attributes.

Positive Attributes. Among the 10 items identified by both rural and urban doctors as "extremely important," five were Category 1 qualities. For example, item 18, a quality listed as a Personal attribute, was ranked highest by both groups. The rural sample mean on this item was 4.80, slightly higher than the urban group (4.75). Among the 10 most

TABLE 3

PAS SURVEY ITEMS ASSIGNED
BY CATEGORY

POSITIVELY STATED ITEMS

Personal (1)		Inter-Personal (2)		Professional (3)		Bus/Civic (4)
1	34	1	49	3	51	16
4	36	9	55	6	53	43
5	42	17	56	11	62	47
7	50	26	57	12	64	52
8	54	29	59	15	65	69
10	58	30	61	19	66	
13	60	35	71	20	67	
14	63	38	72	22	73	
18	68	39	74	24	76	
21	70	44	75	27	80	
23	77	45	78	28	81	
25		46	79	32	82	
31		48	83	37	84	
33			86	40	85	
				41		

NEGATIVELY STATED ITEMS

1	17	11	3	9
2	18	13	4	21
5	20	19	6	24
7	22	23	12	
8	25	26	14	
10	28	27		
15	29			
16				

important items, the urban respondents listed only one Interpersonal attribute, item 2. The rural group ranked 2 Interpersonal items among the ten most important. The urban group ranked 4 Professional qualities among the highest 10 whereas the rural group listed only 2.

The items listed by both groups as being of little or no importance showed certain differences. The urban group listed one Personal, 2 Interpersonal, 6 Professional, and one Business/civic attribute among the 10 lowest ranked items. The rural physicians listed 2 Interpersonal and 8 Professional attributes among the lowest qualities on the survey. Both groups ranked item 51, which concerns a physician's active contribution to the medical literature, as the least important attribute. Both groups also considered item 84, "is productive in research," as the next least important quality for physicians. Table 4 delineates the items of each category which each group ranked as the highest and lowest items of importance.

Negative Attributes. The negative attributes of the survey were also analyzed using the derived categories. Among the 10 most undesirable qualities, each group listed 5 Personal qualities. The urban physicians felt that a physician being a narcotic addict was the most undesirable attribute. The rural group

indicated that a physician being devious, dishonest and deceptive was most undesirable. The rural group listed 2 Interpersonal and 3 Professional qualities among the 10 most undesirable whereas urban physicians ranked one Interpersonal and 4 Professional qualities among the 10 most undesirable. Table 4 provides a summary of these data.

TABLE 4

THE 10 MOST UNDESIRABLE ATTRIBUTES RANKED BY BOTH GROUPS

RANK	URBAN	RURAL	CATEGORY*	
			Urban	Rural
1	5	10	1	1
2	4	29	3	1
3	29	4	1	3
4	10	5	1	1
5	14	8	3	1
6	8	14	1	3
7	11	13	2	2
8	2	2	1	1
9	6	11	3	2
10	3	6	3	3

*1 - Personal
2 - Interpersonal
3 - Professional
4 - Business/civic

The ten items which were viewed as least undesirable by the two groups reflected a similar pattern of response. Urban physicians listed 6 Personal, one Interpersonal, and 3 Business/civic attributes among

the ten. The rural respondents viewed item 7, "has experienced a temporary incapacitating emotional disturbance but has responded satisfactorily to treatment," as the least undesirable attribute. Item 18, "has an unhappy home life," was seen by both groups as the next least undesirable quality of physician performance. Table 5 delineates the data regarding the respondents' ranking of these least undesirable attributes.

TABLE 5

THE 10 LEAST UNDESIRABLE ATTRIBUTES RANKED BY BOTH GROUPS

RANK	URBAN	RURAL	CATEGORY*	
			Urban	Rural
20	16	20	1	1
21	24	16	4	1
22	22	22	1	1
23	28	28	1	1
24	19	19	2	2
25	21	17	4	1
26	9	21	4	4
27	17	9	1	4
28	18	18	1	1
29	7	7	1	1

*1 - Personal
2 - Interpersonal
3 - Professional
4 - Business/civic

Although there were slight differences in the rankings, both groups were closely related in their views. Both, for example, ranked item 18 (positive) as the quality of utmost importance to physician performance. When the data were analyzed using the derived categories, both groups placed nearly equal importance on Personal and Interpersonal attributes. Only slight differences were depicted concerning Category 3, Professional qualities. Wichita physicians tend to feel more strongly about the degree of importance of Professional attributes. For example, item 32 (positive) refers to the physician referring patients to specialists. The Wichita group considers this item to be more important than do the rural practitioners. This is not surprising when one considers the abundance of medical specialists within the urban group and the lack of specialists in the rural areas of the state.

The rural physicians tend to rank certain Personal characteristics as more important. For example, the rural group ranked item 77, "is emotionally stable," as fifth whereas the urban group ranked it fourteenth in importance.

Intra-group Responses in the Urban Group

HYPOTHESIS 2: There will be no significant differences among the responses

of several medical specialty groups in the urban sample concerning the ranking of attributes on the PAS.

Table 6 identifies the number and percentages of the specialty groups represented in the urban group responding to the survey instrument. The low response rate of certain specialties represent, nevertheless, a significant percent of the total surveyed with the PAS in most specialties.

TABLE 6

SPECIALTY GROUPS COMPRISING THE URBAN GROUP RESPONDING TO THE PAS INSTRUMENT

Specialty	N of Sample	% of Total	N Responding	% of Responses
Family Medicine	50	22	23	18
Internal Medicine	58	25	38	30
OB-GYN	25	11	11	8
Pediatrics	19	8	10	8
Psychiatry	16	7	8	6
Radiology	12	5	5	4
Surgery	40	17	29	23
Other	12	5	4	3
Totals	232	100	128	100

Positive Attributes

Table 7 delineates the rank ordering of the 15 most important attributes as identified by each specialty group. In order to subject the data to

statistical analysis to determine relationship between the specialty groups, the data were computed according to the categories of attributes developed by the author. Table 8 reflects the means of each subgroup in each of the four categories of attributes. An analysis of variance was computed on the data in order to determine significance between and among the physician specialty groups of the urban sample.

A one-way analysis of variance was applied to the item mean score for each subgroup. The difference between the groups was significant ($F=4.12$, $df=6/21$, $p<.01$). Post hoc analysis of all possible group combinations made by the Scheffe' test revealed several significant contrasts. Family Medicine specialists differed from OB-GYN and Psychiatrists at the .01 and .05 levels, respectively. Internal Medicine physicians differed from Pediatricians, Psychiatrists and Radiologists at the .01 level. OB-GYN specialists differed from Pediatricians, Psychiatrists, Radiologists, Surgeons and Family Medicine. Thus, OB-GYN ($M=4.02$) felt significantly stronger about the physician attributes than all other groups except Internists ($M=3.86$). Table 9 reflects the descriptive statistics of these data. Table 10 indicates the differences among groups.

TABLE 7

RANK ORDER OF THE FIFTEEN MOST IMPORTANT ATTRIBUTES BY URBAN PHYSICIAN SPECIALTY GROUPS

RANK	FAMILY MED	INTERNAL MED	OB-GYN	PEDIA-TRICS	PSYCHIATRY	RADIOLOGY	SURGERY	OTHER
1	18	18	18	2	18	2	18	2
2	60	66	25	66	66	9	25	18
3	2	25	14	18	74	12	66	19
4	9	2	60	19	85	13	2	32
5	32	32	54	32	9	18	9	60
6	17	9	13	1	14	26	10	25
7	25	14	33	25	26	32	32	9
8	39	60	50	26	32	33	85	77
9	66	65	77	30	33	60	19	26
10	19	33	31	3	60	66	77	33
11	26	85	70	8	72	14	8	42
12	43	19	4	33	80	17	11	66
13	74	72	10	35	10	28	30	70
14	77	17	58	65	17	29	80	72
15	14	26	8	73	45	74	60	4

TABLE 8

GROUP MEANS REPORTED BY SPECIALTY GROUPS IN POSITIVE ATTRIBUTE CATEGORIES

	ATTRIBUTE CATEGORY				
Specialty	Personal	Inter-Personal	Profes-sional	Business/civic	$\overline{X}$
Family Med.	3.92	3.84	3.56	3.69	3.75
Internal Med.	4.01	3.97	3.79	3.69	3.86
Obstetrics	4.12	4.05	3.85	4.07	4.02
Pediatrics	3.89	3.84	3.62	3.47	3.70
Psychiatry	3.70	3.69	3.45	3.34	3.54
Radiology	3.76	3.82	3.45	3.40	3.60
Surgery	3.93	3.81	3.68	3.60	3.75
Others	3.76	3.69	3.43	3.60	not computed
TOTAL GROUP	3.94	3.87	3.67	3.65	

TABLE 9

ANALYSIS OF VARIANCE FOR POSITIVE ITEMS

Source	df	MS	F
Specialty Groups	6	0.103	4.12**
Within	21	0.025	
Total	27		

TABLE 10

GROUP MEAN SCORES AND STANDARD DEVIATIONS OF SPECIALTY GROUPS ON THE POSITIVE ATTRIBUTES OF THE PHYSICIAN ATTRIBUTES SURVEY

Group	N	$\overline{X}$	sd
Family Medicine	23	3.75	.83
Internal Medicine	38	3.86	.65
OB-GYN	11	4.02	1.27
Pediatrics	10	3.70	1.28
Psychiatry	8	3.54	1.42
Radiology	5	3.60	1.90
Surgery	29	3.75	.73
Other	4	not computed	

Although the urban group, as a whole, agrees with the rural respondents concerning the importance of certain physician attributes, there are certain differences of opinion among the urban specialists. The

OB-GYN group rated all categories of attributes higher than other specialists. The results of the Scheffe' test clearly delineate these differences and suggest intriguing implications for further analysis.

Negative Attributes

The rank ordering of the 15 most undesirable attributes as identified by each specialty group is delineated in Table 11. As with the positive items, in order to subject the data to statistical analysis, the data were computed according to the categories of attributes. Table 12 reflects the means of each subgroup in each of the four categories of negative attributes. An analysis of variance was computed on the data in order to determine significance between and among the physician specialty groups of the urban sample.

A one-way analysis of variance was applied to the mean score of each subgroup of the negative items within the four categories. The difference between the groups was not significant (F=0.86, df-6/21). Thus, the null hypothesis is not rejected, indicating that it is unlikely that any difference exists between the specialty groups regarding the negative items of the survey. Table 13 reflects the descriptive statistics.

TABLE 11

RANK ORDER OF THE FIFTEEN MOST UNDESIRABLE ATTRIBUTES BY URBAN PHYSICIAN SPECIALTY GROUPS

RANK	FAMILY MED	INTERNAL MED	OB-GYN	PEDIA-TRICS	PSYCHIATRY	RADIOLOGY	SURGERY	OTHER
1	4	14	4	5	5	4	5	5
2	5	10	5	29	10	5	4	9
3	29	5	14	4	14	6	29	10
4	10	4	29	10	29	29	10	14
5	14	29	8	8	4	2	2	4
6	8	8	12	2	8	3	14	8
7	11	11	11	14	11	8	8	13
8	27	6	2	25	2	10	3	12
9	3	13	10	11	6	1	1	2
10	6	3	6	20	26	14	11	6
11	12	27	13	27	3	23	12	11
12	13	12	3	23	12	25	25	23
13	2	2	25	3	20	11	13	24
14	23	1	15	1	1	12	6	2
15	15	15	16	6	27	13	24	3

TABLE 12

GROUP MEANS REPORTED BY SPECIALTY GROUPS IN NEGATIVE ATTRIBUTE CATEGORIES OF THE PAS

	ATTRIBUTE CATEGORY				
Specialty	Personal	Inter-Personal	Profes-sional	Business/civic	$\bar{X}$
Family Med.	3.88	4.10	4.43	3.36	3.94
Internal Med.	3.98	4.14	4.52	3.62	4.06
Obstetrics	4.34	4.25	4.76	4.03	4.35
Pediatrics	4.09	4.07	4.30	3.89	4.09
Psychiatry	3.57	3.67	4.20	3.10	3.64
Radiology	3.64	3.70	4.32	3.53	3.80
Surgery	4.06	4.05	4.46	3.86	4.11
Others	3.61	3.77	4.16	3.22	not computed
TOTAL GROUP	3.96	4.05	4.45	3.63	

TABLE 13

ANALYSIS OF VARIANCE FOR NEGATIVE ITEMS

Source	df	MS	F
Specialty Groups	6	0.12	0.86 ns
Within	21	0.14	
Total	27		

The specialty groups of the urban sample show considerable differences of opinion regarding the items of the PAS which are stated in the positive. That is, they disagree to some extent regarding which physician attributes are most important. Those items stated negatively on the survey instrument, however, were found by the various specialty group members to be of similar undesirability, thus reflecting their general agreement on these attributes.

Kansas Physicians Compared With Utah Study Respondents

HYPOTHESIS 3: There will be no significant relationship between the responses of Kansas physicians and Utah respondents on ranking of attributes on the Physician Attributes Survey.

Since a significant relationship was determined between the responses of urban and rural Kansas physicians on the PAS, each group was compared to the responses from the Price study conducted in Utah. It should be recalled that Price included several non-physician groups within his population. It might be expected that little agreement would be found between the two studies on this basis, that is, geographical variation as well as the element of non-physician respondents might be expected to eliminate agreement for any number of reasons.

Tables 14 and 15 depict the rank ordered items from the Price study for positive and negative items respectively. Results of the correlation analysis revealed coefficients of 0.98 and 0.96, respectively ($p<.01$). Thus, the null hypothesis is rejected in favor of the alternative which asserts that a strong relationship exists between the responses of the Kansas urban group and the respondents to the Utah study. That is, both groups feel that certain physician attributes are more desirable or more undesirable than others.

Rural physicians compared to the Utah study show a similar relationship. Coefficients of 0.87 and 0.81 were computed for the positive and negative attribute lists, respectively. Thus, the null hypothesis is rejected. A strong relationship exists between the

TABLE 14

POSITIVE RANKED ITEMS BY RESPONDENTS TO THE UTAH STUDY

RANK	SURVEY ITEM NUMBER*	RANK	SURVEY ITEM NUMBER*
1	66	44	78
2	19	45	28
3	65	46	29
4	32	47	41
5	85	48	61
6	47	49	40
7	60	50	12
8	14	51	1
9	80	52	86
10	53	53	75
11	39	54	64
12	18	55	76
13	43	56	44
14	54	57	22
15	33	58	35
16	27	59	67
17	77	60	5
18	72	61	83
19	74	62	63
20	8	63	31
21	50	64	6
22	42	65	16
23	10	66	52
24	17	67	55
25	26	68	3
26	30	69	69
27	37	70	20
28	70	71	71
29	13	72	21
30	45	73	68
31	9	74	58
32	11	75	4
33	2	76	24
34	73	77	48
35	49	78	79
36	57	79	23
37	25	80	46
38	82	81	62
39	36	82	34
40	15	83	7
41	59	84	81
42	38	85	84
43	56	86	51

*according to the item numbering of this study

TABLE 15

NEGATIVE RANKED ITEMS BY RESPONDENTS
TO THE UTAH STUDY

RANK	SURVEY ITEM NUMBER
1	14
2	4
3	20
4	29
5	5
6	20
7	8
8	11
9	12
10	6
11	13
12	3
13	27
14	2
15	26
16	16
17	22
18	23
19	15
20	19
21	24
22	9
23	28
24	25
25	21
26	1
27	17
28	18

*according to the numbered items of this survey

the two groups regarding the importance of certain physician qualities.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this chapter is to present a summary of the study and to state certain conclusions. The implications for the field of medical education and the state of Kansas are presented and discussed.

Summary of the Study

The purpose of the study was to compare the responses of a sample of urban and rural physicians to the Physician Attributes Survey (PAS), designed by the author. The PAS, patterned after the list of attributes used in an earlier study in Utah by Price, presents 86 positive and 29 negative attributes. Respondents were to rate each attribute on a five point scale varying from "of extreme importance" to "of no importance" on positive items and from "most undesirable" to "least undesirable" on the negatively stated items. For post-analysis purposes, four categories of attributes: Personal, Interpersonal, Professional, and Business/civic were established.

Questionnaires were mailed to 464 physicians. Of the 232 urban physicians selected, 128 (55%) returned

the survey. Ninety-one of the 232 rural physicians returned the instrument for a response rate of 39%.

Means for each item were computed for each physician group. Items were then ranked for each of the two groups surveyed and again by urban medical specialty group. The rank order correlation coefficient was employed as an appropriate statistic for analysis.

There was strong agreement between the rural and urban physician groups regarding their views of the attributes. Rural physicians tend to rank personal and interpersonal items as slightly more important than their urban colleagues.

There were significant differences among the urban specialty groups in their views concerning the positive attributes on the PAS. The post-hoc analyses revealed differences among certain of these groups. For example, the OB-GYN specialists reflected higher means. It was also determined that Psychiatrists ranked items consistently lower than other groups.

The Kansas physicians' responses to the attributes survey show an agreement with the responses of those studied in the Utah study. This was somewhat surprising since the Utah study contained a large number of non-physicians.

Conclusions of the Study

Several conclusions may be drawn directly from the results of this research. First, in the state of Kansas, the sample of urban and rural physicians responding to the Physician Attributes Survey agree on the qualities which characterize a "good" practicing physician. Their location of practice does not appear to alter their overall view of physician attributes. Although subtle differences were noted in the data of the study, there is general agreement regarding the appropriate attitudes and behaviors necessary for the "good" physician and, consequently, for the "good" medical student.

Among the several specialty groups of the urban population, there are certain differences and agreements. Regarding the positive attributes of the PAS, considerable difference of opinion is noted. Since the OB-GYN subgroup consistently reflected higher means, it may be concluded that this group feels quite strongly about professionalism of physicians. The specialty groups reveal few differences of opinion regarding the negatively stated items of the PAS. It may be concluded, therefore, that most physicians, regardless of specialty, agree on the most undesirable characteristics of the physician.

Since the data reflect no apparent differences in desired attributes between rural and urban

physicians, it is unlikely that the influences of rural doctors upon medical students through such activities as the preceptorship will result in any significant migration of students into rural areas. Whatever influence a rural physician may have upon student career choice and practice location does not appear to be related directly to the views which the rural physician holds regarding good physician attributes. As earlier studies have indicated, other factors must be considered: background of student, specialty, preferences of spouse, place of graduate training, community resources, and the availability of medical support services and personnel. Whereas urban physicians overwhelmingly control the instructional activities of the School of Medicine, it would not appear to alter student choices were rural physicians to intervene at earlier points in the medical education continuum or with more direct control over the curriculum.

It is concluded as a result of the data derived from this study, that the faculty should begin the task of defining the expected and required attributes of its students. The results of this study have provided identity and prioritization of attributes agreed upon by both urban and rural physicians. This should be followed by research and development efforts designed to measure and improve such attributes and

their measures on a continual basis. Longitudinal investigations of its graduates must be undertaken in order to adequately assess the effectiveness of curricular changes. Whereas the cognitive knowledge to be learned by students is easily stated and measured with the latest of instructional paraphernalia , the qualities which relate to personal, interpersonal, and professional behavior of the practicing physician and student are least understood but nonetheless equally essential to the practitioner and must be addressed during the academic preparation of physicians. Hopefully, the results of this study have provided further evidence for the need for such research and development.

Implications

Many previous studies have attempted to isolate certain factors which influence the selection of rural areas for medical practice. Medical faculties have acknowledged their strong role in influencing student career and practice location choices. This study provides evidence that: (1) there exists an agreed-upon set of professional attributes which can serve as criteria for assessing student achievement of professionalism, and (2) there is little difference regarding the importance of such criteria between rural and urban physicians.

One direct implication is readily apparent for the medical school faculty: the attributes identified in the study can be utilized in the development of an evaluative strategy to assess student performance during clinical training. Since both rural and urban faculty agree, it is essential that both be included in such developmental activities.

The process of selection and admission policies regarding applicants can be re-examined due to the results and implications of this study. The judgments of the respondents to the survey identify the personal and interpersonal attributes which might serve as predictors of ultimate success of students in medical school and their subsequent practice location.

The study allows the researcher to conclude that the "good physician" model is similarly recognized by both urban and rural physicians in Kansas. It follows, then, that rural physicians are motivated by other factors in their decision to practice in such locations. How significant are these other factors to those who choose to locate in rural Kansas? Do Kansas physicians behave similarly to physicians of other studies in that they are influenced by such factors as spouse's preference for location, community resources, availability of allied health personnel and other medical specialists? What effects result from

sanctions imposed on students who decide not to locate their practice in underserved areas of the state? Will such restrictions as increased tuition actually reduce the number of graduates who remain in or return to Kansas?

These and other questions remain unanswered for Kansas. There is a need for extended research. There should be a commitment from legislators, medical educators, and health care providers, as well as from the public, for empirically conducted longitudinal research activities which will provide valid answers to priority questions concerning the maldistribution of physicians in Kansas. Only with data obtained through scientific inquiry can intelligent decisions be made for the well-being and health of our citizens.

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APPENDIX A

PHYSICIAN ATTRIBUTES SURVEY

THE UNIVERSITY OF KANSAS SCHOOL OF MEDICINE
WICHITA STATE UNIVERSITY BRANCH
FAIRMOUNT TOWERS, 2221 N. HILLSIDE • WICHITA, KANSAS 67219
AREA CODE 316 • 689-3144

OFFICE OF THE DEAN
WICHITA STATE BRANCH

October 20, 1975

Dear Colleague:

The fundamental objective of the Branch is to provide quality educational experiences for medical students. The product of these experiences will be highly professional physicians who possess the clinical skills essential to quality patient care.

The Executive Committee of the Branch is concerned about establishing appropriate objectives for the curriculum. In this regard, it has asked that we seek the valued input from the clinical faculty. The physician qualities which are considered essential for the Branch to emphasize must be identified. It is to this end that I extend to you a personal request to assist us by completing the enclosed questionnaire.

Please take a few minutes to help us by completing the "Physician Survey" and returning it in the stamped, self-addressed envelope by October 31, 1975. Results of the survey will be made available at the next general faculty meeting.

Your cooperation is essential to the Branch's efforts to achieve its mission. I am personally of the belief that your assistance in such matters typifies the sound support which the members of the faculty have toward medical education in Wichita.

A sincere thank you for your cooperation.

Cramer

D. Cramer Reed, M.D.
Vice Chancellor

DCR/bc

University of Kansas School of Medicine
at Wichita State University
2221 N. Hillside
Wichita, Kansas 67219

IMPORTANT
PHYSICIAN SURVEY

WSU BRANCH
PHYSICIAN ATTRIBUTES
SURVEY

INSTRUCTIONS:

Listed below are certain physician attributes arranged in random order. For each statement rate each physician quality in terms of its importance to superior physician performance. Please respond to each item by circling the number which best reflects your opinion.

		Of Extreme Importance				Of No Importance
1.	Has stamina; has capacity for long days of hard work.....	5	4	3	2	1
2.	Is considerate of others; is alert to patients' convenience and comfort; courteous, tactful.....	5	4	3	2	1
3.	Employs a friendly, kindly office staff.....	5	4	3	2	1
4.	Is professional in manner, dignified, businesslike.....	5	4	3	2	1
5.	Is an "intellectual" sort of person endowed with intellectual curiousity and interest.....	5	4	3	2	1
6.	Obtained excellent academic record in medical school.....	5	4	3	2	1
7.	Possesses qualities of leadership (organizing ability, administrative skills, diplomacy, etc.).....	5	4	3	2	1
8.	Is decisive; is able without undue delay to reach conclusions and act upon them.....	5	4	3	2	1
9.	Is able and willing to learn from others (colleagues, nurses, students, etc.).....	5	4	3	2	1
10.	Is equipped with an orderly mind; mentally efficient; logical.....	5	4	3	2	1
11.	Demonstrates irreproachable behaviour in regard to his handling of patients.....	5	4	3	2	1
12.	Finds medicine and its still unsolved problems an intellectual challenge.....	5	4	3	2	1
13.	Has foresight, the ability to anticipate problems.....	5	4	3	2	1
14.	Is adaptable; is able to adjust to new knowledge and changing conditions.....	5	4	3	2	1
15.	Has a well-equipped office, with needed diagnostic facilities present or available.....	5	4	3	2	1
16.	Uses good business methods, has frank discussion of fees with patients; uses systematic billing procedures.....	5	4	3	2	1

		Of Extreme Importance				Of No Importance
17.	Is willing to take needed time to listen to patients' problems sympathetically and helpfully.....	5	4	3	2	1
18.	Has intellectual honesty (incompatible with bluffing, cheating, assuming poses for ulterior purposes, trickery, claiming undue credit, assuming knowledge not really possessed, transferring blame unfairly, etc.) and forthrightness.....	5	4	3	2	1
19.	Has thorough up-to-date knowledge of his own field of medicine.....	5	4	3	2	1
20.	Has had prolonged high-grade hospital or equivalent post-graduate training.....	5	4	3	2	1
21.	Is cheerful, optimistic; has nice sense of humor.....	5	4	3	2	1
22.	Supports expanded educational programs for nurses, technicians, and other staff when these expansions seem indicated by medical advances and technological growth.....	5	4	3	2	1
23.	Has good standing and reputation as a citizen in his community.....	5	4	3	2	1
24.	Holds Specialty Board certification; (has completed advanced training and has passed the required examination which qualifies him to practice in a specific area of medicine).....	5	4	3	2	1
25.	Is of unquestionable integrity, high-principled (so that low, mean, dishonest, immoral, uncharitable, selfish courses of action seem foreign to his nature).....	5	4	3	2	1
26.	Establishes good doctor-patient relationships.....	5	4	3	2	1
27.	Keeps full and accurate clinical records.....	5	4	3	2	1
28.	Strives to educate and inform patients about treatment and good health practices; follows through by checking with patients later about the effectiveness of the information he offered.....	5	4	3	2	1
29.	In charging specific fees, he is sensitive to possible economic difficulties of his patients.....	5	4	3	2	1
30.	Is able to communicate well in everyday work and relationships (with patients, relatives, assistants, students, colleagues, the public, etc.).....	5	4	3	2	1
31.	Is a modest, essentially humble person (for all his knowledge and skills), is aware of his own limitations, is tolerant of opinions of others.....	5	4	3	2	1
32.	Readily refers patients when it is to their advantage to do so.....	5	4	3	2	1

		Of Extreme Importance				Of No Importance
33.	Is able to be his own teacher; to learn from books and journals, from meetings and informal discussions, from experience and his own mistakes, etc., thus adding continually to his own education.....	5	4	3	2	1
34.	Is imaginative; creative, having originality.....	5	4	3	2	1
35.	Is motivated primarily by idealism, compassion, service, altruism; is oriented more toward helping people than making income.....	5	4	3	2	1
36.	Is unusually intelligent; mentally quick; bright, keen....	5	4	3	2	1
37.	Is studious; attends appropriate medical meetings or refresher courses; keeps abreast of progress in medical knowledge and practice, especially in his own field.....	5	4	3	2	1
38.	Sees his staff (nurses, technicians, and clerical people) as teammates in giving the best health services to the public.....	5	4	3	2	1
39.	Inspires confidence in his patients.....	5	4	3	2	1
40.	Has ability to seek out, evaluate, analyze and interpret research, published, or clinical data.....	5	4	3	2	1
41.	Is motivated primarily by love and enthusiasm for medicine; is dedicated to his work.....	5	4	3	2	1
42.	Is conscientious; strives for perfection in his work.....	5	4	3	2	1
43.	Keeps completely honest records.....	5	4	3	2	1
44.	Has good working relations with colleagues.....	5	4	3	2	1
45.	Works effectively with patients in a doctor-patient team approach to combat illness and to promote better health.....	5	4	3	2	1
46.	Is able to train and/or instruct others effectively.....	5	4	3	2	1
47.	Is wise, thoughtful; is able to get at the heart of a problem; is able to separate important points from details.....	5	4	3	2	1
48.	Is motivated primarily by sheer liking for people.....	5	4	3	2	1
49.	Is an understanding sort of person.....	5	4	3	2	1
50.	Is a stable, calming influence in critical or stormy situations.....	5	4	3	2	1
51.	Is an active contributor to medical literature.....	5	4	3	2	1
52.	Runs a well-organized, efficient office.....	5	4	3	2	1

		Of Extreme Importance				Of No. Importance
53.	Is able to convert acquired information into working knowledge.....	5	4	3	2	1
54.	Is alert, observant.....	5	4	3	2	1
55.	Is highly rated as a physician by peers and colleagues.	5	4	3	2	1
56.	Is adaptable to all sorts of people; acceptable to them and at ease with them, irrespective of their economic status, social standing, race, amount of education, degree of culture, etc.....	5	4	3	2	1
57.	Is skilled in handling disgruntled, antagonistic, or emotionally upset people.....	5	4	3	2	1
58.	Is professional in manner, dignified, businesslike.....	5	4	3	2	1
59.	Works effectively with patient's family in giving complete medical care.....	5	4	3	2	1
60.	Is strict about honoring confidences; avoids and discourages gossip.....	5	4	3	2	1
61.	Is generally liked and respected by patients; patients tend to stay with him, and to refer their relations and friends to him.....	5	4	3	2	1
62.	Is a faithful member of appropriate medical organizations, participating in their meetings.....	5	4	3	2	1
63.	Is naturally energetic and enthusiastic.....	5	4	3	2	1
64.	Consults regularly with drug representatives in order to stay abreast of new drugs and medications.....	5	4	3	2	1
65.	Has knowledge and ability to study patients thoroughly, and reach sound conclusions regarding diagnosis, treatment, and related problems.....	5	4	3	2	1
66.	Has good clinical judgment (the ability to reach appropriate decisions regarding the care of patients).....	5	4	3	2	1
67.	Has a reputation of being a good diagnostician; is in demand as a consultant.....	5	4	3	2	1
68.	Has the attitude of a good responsible citizen, concerned for the welfare of his community.....	5	4	3	2	1
69.	His charges, in general, are in line with prevailing fee schedules.....	5	4	3	2	1
70.	Is capable of independent thinking; able to reach his own conclusions.....	5	4	3	2	1
71.	Has warm, outgoing, friendly personality.....	5	4	3	2	1

	Of Extreme Importance				Of No Importance
72. Has sustained genuine concern for patients during their illness and convalescence	5	4	3	2	1
73. Is available when needed, even at the cost of personal inconvenience	5	4	3	2	1
74. Has awareness of emotional and psychosomatic factors in dealing with patients and their diseases	5	4	3	2	1
75. Gets along well with assistants and employees	5	4	3	2	1
76. Is willing to encourage nurses and technicians to use their fullest abilities, even in some areas of patient treatment not previously open to them	5	4	3	2	1
77. Is emotionally stable	5	4	3	2	1
78. Is frank and open; takes patients into his confidence	5	4	3	2	1
79. Is highly rated by interns and residents as a person	5	4	3	2	1
80. Provides treatment appropriate to the condition of each of his patients, with (in general) satisfactory immediate and long-range results	5	4	3	2	1
81. Has a record of professional advancement (has attained advanced degrees, has received promotions within medical organizations, etc.)	5	4	3	2	1
82. Patients and their relatives are generally satisfied by the care provided by the physician	5	4	3	2	1
83. Is highly rated by interns and residents as a physician	5	4	3	2	1
84. Is productive in research	5	4	3	2	1
85. Habitually makes as thorough an examination of each patient as may be required for accurate diagnosis and proper treatment	5	4	3	2	1
86. Is charitable toward mistakes and failures of others; does not unjustly criticize others or their work	5	4	3	2	1

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Listed below are certain negative physician attributes arranged in random order. For each statement rate each physician quality in terms of its undesirability to physician performance. Please respond to each item by circling the number which best reflects your opinion.

	Most Undesirable				Least Undesirabl
1. Is motivated primarily by the advantages that come with a high income and social status	5	4	3	2	1

(OVER)

		Most Undesirable				Least Undesirable
2.	Is Lazy	5	4	3	2	1
3.	Is unavailable except during specified business hours, even for emergencies	5	4	3	2	1
4.	Is summoned frequently before monitoring committees for such things as malpractice, unnecessary surgery, excessive infection, morbidity or mortality rates, exorbitant fees, negligence of patients, etc.	5	4	3	2	1
5.	Is a narcotic addict	5	4	3	2	1
6.	Holds on to patients to undue degree; disinclined to suggest or seek consultation; apt to be offended if patients request consultations or a transfer to another doctor	5	4	3	2	1
7.	Has experienced a temporarily incapacitating emotional disturbance but has responded satisfactorily to treatment.	5	4	3	2	1
8.	Exhibits unprofessional, unethical conduct (any behavior that would bring the medical profession into disrepute)	5	4	3	2	1
9.	Has an unnecessarily large practice; is too busy to give due time to each patient	5	4	3	2	1
10.	Is devious, dishonest, deceptive	5	4	3	2	1
11.	Is immodest in handling of female patients	5	4	3	2	1
12.	Has not kept abreast of advances of medical knowledge	5	4	3	2	1
13.	Is rude, discourteous; inconsiderate of others	5	4	3	2	1
14.	Is negligent in handling of patients; uses slipshod methods (e.g., frequently makes diagnosis and prescribes antibiotics customarily without definitive diagnosis or sensitivity tests; examines patients in a cursory incomplete manner; excessive number of "exploratory operations without careful preoperative diagnosis; etc.)	5	4	3	2	1
15.	Evidences of deficient personal hygiene and untidiness	5	4	3	2	1
16.	Is indecisive; unsure of self, basically an insecure person	5	4	3	2	1
17.	Is motivated primarily by ambition; prominence, reputation, and the urge to excel	5	4	3	2	1
18.	Has an unhappy home life	5	4	3	2	1
19.	Is inclined to treat patients as "cases" rather than as individual persons	5	4	3	2	1

		Most Undesirable				Least Undesirable
20.	Is prone to jump to conclusions; to generalize from meager information; to make snap diagnoses.....	5	4	3	2	1
21.	Is overly aggressive and hard-nosed in collection of fees.....	5	4	3	2	1
22.	Is inefficient, disorganized.....	5	4	3	2	1
23.	Is not frank with patients, disinclined to divulge diagnosis or explain treatment or discuss fees with them.....	5	4	3	2	1
24.	Tends to overcharge; is out of line with prevailing fee schedule.....	5	4	3	2	1
25.	Has reputation of excessive social drinking.....	5	4	3	2	1
26.	Is not interested in, and does not want to be bothered with, patients' subjective difficulties and problems.....	5	4	3	2	1
27.	Is critical of other physicians behind their backs (whether for personal or professional reasons).....	5	4	3	2	1
28.	Is often late for appointments; customarily keeps many patients waiting.....	5	4	3	2	1
29.	Is a chronic alcoholic.....	5	4	3	2	1

NAME _____ (Optional)

Please fold and return in the envelope provided. Thank you.
Please return no later than October 31, 1975.