AN ANALYSIS OF THE EFFECT OF A PROGRAMMED INSTRUCTION
COURSE ABOUT CHIROPRACTIC ON THE KNOWLEDGE
AND ATTITUDES OF PROSPECTIVE HEALTH
EDUCATION TEACHERS AT THE
UNIVERSITY OF OREGON

by

WILLIAM TYLER JARVIS

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APPROVED:

Robert E. Kime, Ph.D.
VITA

NAME OF AUTHOR: William Tyler Jarvis

PLACE OF BIRTH: Takoma Park, Maryland

DATE OF BIRTH: October 19, 1935

UNDERGRADUATE AND GRADUATE SCHOOLS ATTENDED:

Union College, Lincoln, Nebraska 1955-1956
University of Minnesota, Duluth 1956-1961
Kent State University, Kent, Ohio 1965-1968
Loma Linda University, Loma Linda, CA
School of Public Health 1969-1971
University of Oregon, Eugene, Oregon 1971-

DEGREES AWARDED:

Bachelor of Science, 1961, University of Minnesota, Duluth.
Master of Arts, 1968, Kent State University, Kent, Ohio.

AREAS OF SPECIALIZATION:

Undergraduate: Major area - Health and Physical Education
Minor areas - Health Education
Social Studies

Graduate (MA): Major area - Health and Physical Education
Minor area - Sociology
(PhD): Major area - Health Education
Supporting - Sociology
Cognate - Physical Education

AREAS OF SPECIAL INTEREST:

Consumer health
Medical quackery
Teacher training
Physical conditioning programs (school and community)
Health behavior
PROFESSIONAL EXPERIENCE:

Teacher, Grades 5-8, Parkersburg Junior Academy, Parkersburg, West Virginia, 1961-1962

Physical Education Director, Parkersburg YMCA, Parkersburg, West Virginia, 1962

Teacher, Health and Physical Education, Mt. Vernon Academy, Mt. Vernon, Ohio, 1962-1968

Instructor, Physical Fitness for Adults and Gymnastics, YMCA, Mt. Vernon, Ohio, 1967-1968

Assistant Professor of Physical Education, (Half-time Health Education), Loma Linda University, Riverside, California, 1968-1971, (On leave-of-absence since August 28, 1971).

Doctoral Teaching Fellow, Department of Health Education, University of Oregon, Eugene, 1971-1973

Chairman, Subcommittee on Health, Physical Education and Driver Education, North American Curriculum Revision Committee, General Conference of Seventh-day Adventists, 1966-1969

Twice served as member for health and physical education of an evaluation team to accredit secondary schools for the Department of Education of the General Conference of Seventh-day Adventists

AWARDS AND HONORS:


Vice-President for Health Education, Inland Unit California Association for Health, Physical Education and Recreation, 1969-1970

Varsity athletic Letterman, track

PUBLICATIONS:


Flag Ball Rules-Illustrated 1972-74, South Lancaster, Mass.: SDA - SARC, Box 642.

PRESENTATIONS:

Address on "Medical Quackery" to School of Dentistry, Loma Linda University, in assembly, January 3, 1973.

Presentation on "Chiropractic Insights" at Eleventh Annual Trauma Day of the Orthopedic Section of Sacred Heart General Hospital, Eugene, Oregon, April 13, 1973.
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Dedicated to my wife

ADA

without whose assistance this achievement
would not have been possible
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CHAPTER I

INTRODUCTION

The healing art that is known as "chiropractic" had its beginnings in 1895. Daniel David Palmer, an Iowa grocer who had been a magnetic healer (a belief originated by Anton Mesmer (1734-1815) that the human hand possesses a power similar to that of a magnet which can cure disease) for nine years prior to that time, claims to have cured the deafness of a janitor named Harvey Lillard, who had reportedly been deaf for seventeen years. Palmer gives the following account of the incident:

Harvey Lillard ... had been so deaf for 17 years that he could not hear the racket of the wagon on the street ... I made inquiry as to the cause of his deafness and was informed that when he was exerting himself in a cramped, stooping position, he felt something give way in his back and immediately became deaf. An examination showed a vertebra racked from its normal position. I reasoned that if that vertebra was replaced, the man's hearing should be restored .... I racked it into position by using the spinous process as a lever and soon the man could hear as before ... (28)

As the result of this experience Palmer felt that he had at last discovered the singular cause of disease. He states:

One question was always uppermost in my mind in my search for the cause of disease. I desired to know why one person was ailing and his associate, eating at the same table, working in the same shop, at the same bench, was not. WHY? ... This question had worried thousands for centuries and was answered in September, 1895. (28)

Palmer named his newly discovered method of healing "chiropractic," a term which he derived from the Greek cheiro and praktikos, "done by hand." Before long, Palmer set up the Palmer School of Chiropractic
to teach others how to be chiropractors. The school, located in Davenport, Iowa, is still in operation and is now called the Palmer College of Chiropractic. It is the largest of ten chiropractic colleges in existence today (though more than 600 such schools have come and gone over the years), and refers to itself as the "Chiropractic Fountainhead."

That was the term Palmer used to describe himself when he wrote of his discovery; he said:

I am the originator, the Fountain Head of the essential principle that disease is the result of too much or not enough functionating (sic). I created the art of adjusting vertebrae, using the spino-sous and transverse processes as levers, and named the mental act of accumulating knowledge, the cumulative function, corresponding to the physical vegetative function--growth of intellectual and physical--together, with the science, art and philosophy--Chiropractic... It was I who combined the science and art and developed the principles thereof. I have answered the time-worn question--what is life? (28)

Though D. D. Palmer died penniless, chiropractic's promoters have built his idea into what is purported to be the second largest among the healing arts of the world (42). It is reported by the U.S. Public Health Service, based on estimates furnished by the American Chiropractic Association, that there are about 20,000 licensed chiropractors in the United States (40).

The success and good fortune of chiropractic is viewed by its adherents as proof of the legitimacy of Palmer's discovery and a benefit to mankind. However, medicine and the scientific community are not happy with chiropractic's success--claiming that its practice is cultism and quackery. The attitude of medicine and science is reflected in a statement by the Medical Society of the State of New York that "Chiropractic is no more scientifically valid than fortune-telling and astrology." (36)
And further, a statement by Milton Hepburn, M.D., chief medical examiner of the City of New York:

The teachers, research workers, and practitioners of medicine reject the so-called principle upon which chiropractic is based and correctly and bluntly label it a fraud and hoax on the human race. (36)

Chiropractic claims that the opposition of the medical and scientific establishment is motivated by prejudice, misunderstanding and professional bias. Weiant describes the conflict as a struggle between two professions in which "organized medicine seeks relentlessly to stifle the development and spread of the younger healing art, and chiropractic seeks to survive." (42)

It is not uncommon to hear laymen express the attitude that scientific and medical opposition to chiropractic is the result of self-interest or a manifestation of the "they persecuted Galileo" argument which makes reference to the many times during the past when men of science and the establishment ran into conflict and new discoveries were stifled. These arguments no doubt seem reasonable to many people because history is replete with many precedents, and they witness much that is similar in their daily lives in our competitive society.

A conflict such as exists between chiropractic and medical science could be ignored and permitted to run its inevitable course if it were in some area other than health care. However, because of the threat to human life and health which potentially is involved a more thoughtful response is called for. It appears as though society is not quite willing to take the word of medical science in the controversy because of possible self-interest and prejudice. Chiropractic's credibility
must also be questioned because of its obvious bias. It would appear that academia is best-qualified to review the facts and pass judgment on the validity of the various positions because of its commitment to the discovery of truth.

In undertaking a challenge of this nature, it is imperative that such a review be objective and that opportunity be extended for all sides to be heard. The right to know what your opponent is saying against you and the opportunity to present new evidence should also be maintained. By observing these rules of fairness it seems possible for the academic community to arrive at a conclusion that is credible and consistent with the responsibility of being an objective searcher for truth.

The members of the academic community most responsible for communicating health information to the public are those in health education. Health education includes not only those who receive degrees in the academic discipline which is known by that title, but essentially every health professional who presents health information to the public. Some degree of responsibility for the dissemination of the truth in matters of health extends to every college graduate because of the esteem which accompanies a college degree. Ideally then, whatever the result of the inquiry by the world of scholars is, it should be widely communicated and should serve as a force for recognition or as a force for change.

Statement of the Problem

The purpose of this study was to examine the effect of a
programmed instruction course about chiropractic on the knowledge of chiropractic as determined by an objective test instrument, and attitudes toward chiropractic as determined by: (1) an instrument utilizing Likert-type techniques to measure attitudes, and (2) an instrument permitting the respondent to rate his concept of the competency of a chiropractor to treat a variety of diseases in comparison with other health care practitioners on a group of college students preparing to become qualified for certification as health education teachers.

The purpose of the proposed research was to answer this question: What is the effect of becoming informed about chiropractic on: (1) the favorability of attitudes toward chiropractic generally; (2) the favorability toward the inclusion of chiropractic as a career choice in health careers teaching units; (3) the favorability toward the inclusion of information about chiropractic in consumer health education teaching units; and (4) the overall rating of a chiropractor's competency to treat a variety of diseases as determined by prospective health education teachers?

Hypotheses

The following null-hypotheses were tested on the data obtained at the posttest from two groups of randomly-divided prospective health education teachers, one serving as an experimental group by participating in a programmed instruction course about chiropractic, and the other as a control group by participating in all evaluative procedures, but not in the programmed instruction course:
1. There is no difference in knowledge about chiropractic between the experimental group and the control group.

2. There is no difference in favorability of general attitudes toward chiropractic between the experimental group and the control group.

3. There is no difference in favorability of attitudes toward the inclusion of chiropractic as a career choice in health careers teaching units between the experimental group and the control group.

4. There is no difference in favorability of attitudes toward the inclusion of information about chiropractic in consumer health education teaching units between the experimental group and the control group.

5. There is no difference in the overall rating of a chiropractor's competency to treat a variety of diseases between the experimental group and the control group.

Need for the Study

Educating people as to where they might turn for health care is an important part of consumer health education. While it is not the prerogative of a health educator to recommend any specific practitioner or mode of treatment, it is the responsibility of every health educator to be informed concerning the nature of the various kinds of health care available if not for their own sakes, at least for the sake of answering the inquiries of their students.

In America where health care is a commodity of the marketplace,
the law of caveat emptor (let the buyer beware) still prevails to a large extent. While allopathic medicine practiced by practitioners holding a Doctor of Medicine degree (M.D.) constitutes the largest deliverer of health care, there are a number of other practitioners competing for the health care consumer's attention who offer modes of treatment which vary from those of traditional medicine. Examples are: chiropractic, homeopathy, naturopathy and osteopathy. The degree of variance extends from very little, as is true in the case of osteopathy, to a totally opposite concept of treatment, as is true in the case of homeopathy.

This study was concerned with chiropractic, a healing art which presents itself, at most, as an all-inclusive alternative to traditional medicine, or at least, as a medical specialty alienated from medicine by misunderstanding and prejudice.

Chiropractic is the second-largest healing art in America. While medicine and osteopathy have grown closer together over the years, to the extent of total merger recently in the State of California, the same has not been true for medicine and chiropractic. Medicine remains at odds with chiropractic denouncing it as cultism and quackery with all of the inherent dangers thereof. Chiropractic, on the other hand, claims to be the victim of persecution by the medical trust represented by the American Medical Association.

There also exists within the chiropractic profession an ideological split as to what should constitute chiropractic theory and practice. Those who adhere strictly to manipulation of the spine as the only mode of treatment call themselves "straights," and those who include such
modalities as dietetics, vitamin supplementation, colonic irrigation, vibration, heat, etc., call themselves "mixers." The gulf between these two groups is wide and often bitter. Literature published by the two groups can be nearly as antagonistic or uncomplimentary as criticisms from outside of the profession. Observers of literature about chiropractic are thus exposed to at least three sources, all of which can be antagonistic toward one another.

Regardless of the motivation behind the considerable amount of material which has been published about the chiropractic controversy the questions that have been raised are important ones which deserve critical review by health educators so that the best interests of the public may be served.

**Delimitations**

The study was delimited by the nature of the population in the following ways:

1. The subjects were limited to students enrolled in two upper division health courses, HE 464-School Health Services, and HE 465-Health Instruction, winter term, 1973. This presented a number of problems; first, there was little incentive for the subjects to diligently pursue the programmed instruction course as there was no threatened punishment for poor performance on the posttest, nor was there any promises of reward. The study was thus dependent upon the subject's intrinsic desire to learn the material. Secondly, the study group was made up of persons with varying degrees of interest in the topic of chiropractic. And thirdly, the course represented a formidable amount of material to ask a
busy college student to undertake in addition to his regular studies without compensation.

2. The subjects have little or no classroom teaching experience, but were asked to express attitudes about factors that they might view differently after they have had teaching experience.

**Limitations**

The following limitations are concerned primarily with the scope of the instrument. They are:

1. Care should be exercised in drawing conclusions or making inferences regarding relationships which might exist between level of knowledge and attitude scores. Knowledge scores indicate a subject's familiarity with some aspects of chiropractic's history, professional organization, scientific and legal status, practice, theory, and preparation. There is little data available concerning how the amount or type of cognitive information that an individual possesses might affect a person's attitude toward chiropractic. One such item did exist, however, based on the following information:

   The study of public opinion showed that one of the most powerful, if not the most powerful, factors controlling the public's acceptance of and confidence in chiropractors and chiropractic is the amount of professional education which the public believes chiropractors receive.

   It is shown that the addition of just one year to the public's estimation of a chiropractor's training increases acceptance of chiropractic by 10%. If all of the public could be led to believe truthfully that chiropractors receive 5 years or more of post-high school education, then approximately 8 out of 10 people would be willing to accept chiropractors as "doctors." (1)

   This kind of information was not available on any other items on the knowledge test. In addition, the data on the item under
discussion precludes the public having knowledge of the quality of chiropractic education or the validity of its content. Therefore, one should not assume that a high or low score on the knowledge portion of the instrument will have a predictable influence on the attitude score.

2. Those limitations which are known to exist with any type of attitude measurement procedure, such as the complexity of attitudes and the subsequent difficulty of phrasing statements so that they measure what the designer wishes; the inability to know at what point on a continuum from unfavorable through neutral to favorable that one begins to include a respondent in the proportion of those holding a positive attitude; and, the questionable assumption that there is such a thing as a "true" attitude, which is also relatively stable. Oppenheim states, "the problem of validity (attitude) remains one of the most difficult in social research and one to which an adequate solution is not yet in sight." (26)

3. A limitation connected with the programmed instruction course concerns an inability to control the amount of effort subjects put into the course because of the provision of immediate feedback information throughout the guide booklet. While subjects were told that it was desirable for them to look up the references given in order to answer the questions presented in the frames, there was no way to insure that they would do so, and the purpose of the course was to expose the subject to the reference materials.

4. The five-point competency rating scale is probably biased in favor of competency because there is only one choice indicating no competency (1 - unqualified) and four indicating some degree of competency.
Definition of Terms

Academic community.—Those people who are connected with the officially recognized institutions of learning and the educational establishment, and their publications.

Mixer.—A chiropractor who uses modes of treatment which include dietary supplementation, colonic irrigation, heat, vibration, etc., in addition to spinal manipulation.

Scientific community.—Consisting of general scientific publications, e.g., Science, Scientific American, and the like, and the specific publications or private voluntary health organizations, e.g., American Cancer Society, Arthritis Foundation, etc. (16) Also included would be the people recognized for their competency by science at large.

Spinal manipulation.—Mechanical application of force directed at the boney segments of the spine. Chiropractors, orthopedists, and osteopaths all use forms of spinal manipulation, but the techniques employed differ somewhat.

Straight.—A chiropractor who practices only spinal manipulation for the correction of vertebral subluxations as a mode of treatment.

Subluxation.—The "subluxations' to which chiropractic refers are not the same as those defined in classical medical terms. (39:3)

Chiropractic’s own definition of this term is:

... either joint fixations or displacements slightly beyond the normal range of joint movement ... capable of provoking multiple, adverse, functional and structural changes not only in their immediate vicinity, but, by way of nervous influences, in remote tissues and organs of the body. (41:5)
CHAPTER II

REVIEW OF THE LITERATURE

Literature Related to Instrument Construction

Oppenheim (26) speaks of the difficulty inherent in any method of test construction for accurately measuring attitudes. A respondent may agree or disagree with an item because of some factor which is remote to the intended purpose of the statement. He states that one of the best ways to determine whether or not items are discriminating between positive and negative items is to test them on groups whose attitudes are known to be positive or negative.

The necessity of weighting items as to their degree of positivity or negativity is recognized by researchers in attitude measurement. Oppenheim (26:133) notes that Likert-type attitude scales permit the respondent to weight his own response by the provision of varying degrees of agreement or disagreement. Likert-type attitude scales have become widely used and are referred to by nearly all writers on the subject of attitude measurement.

Fishbein (14) presents Likert's recommendations for attitude scale production which are: (1) that items be statements of desired behavior rather than statements of fact; (2) that statements be clear, concise and straight-forward, avoiding double-negatives, ambiguity, and double-barreled statements; (3) that reactions be sought from the ends rather than the middle of the modal scale, but not necessarily extreme;
and, (4) that the items be fairly equal in number of positive and negative statements, and that they be distributed randomly.

**Literature Related to Programmed Instruction**

The effectiveness of programmed instruction in cognitive learning is well-established. Comparisons with conventional teaching techniques show varying results. Bockman (4) found that programmed instruction was just as effective as the traditional lecture-discussion method for teaching basic metallurgical concepts. Eshelman (12) found that conventional methods were superior to programmed instruction, but that programmed instruction also resulted in significant gains in knowledge.

A search of the literature listed in the Educational Resources Information Center (ERIC) from 1956 through November, 1972, revealed no studies on the effects of programmed instruction on changing attitudes. Sub-categories entitled "attitudes," "changing attitudes," and "programmed instruction" were searched. A search of Dissertation Abstracts was equally as fruitless.

**Literature Relating to Knowledge Affecting Attitudes**

Hockbaum (15) summarizes much of the work done by himself and others relating the effects of health knowledge on attitudes and behavior. In this respect, knowledge stands as only one of many powerful influences, e.g., parental example, peer pressure, social environment, etc., and, therefore, offers only limited hope insofar as affecting change is concerned. Owens (27) found that efforts directed at attitude change had to begin at a very early age to have a significant impact.
upon health behavior. This seems to be consistent with current educational thought. For these reasons, the hope of affecting much change in attitudes toward chiropractic by raising the knowledge level should not be very high, especially since such attitudes could be quite deeply held because one's belief in a healer is quite often a very personal thing. However, the prospects are not entirely pessimistic since Kleg (19) found that the teaching of cognitive knowledge about racial and social groups yielded mixed results which gave a little support to the hypothesis that increased knowledge about racial and social groups reduces negative attitudes between such groups. It is doubtful if attitudes toward chiropractic would be any more deeply held than attitudes regarding race, social class, caste, and religious and ethnic groups as was dealt with by Kleg.

Studies relating cognitive knowledge alone to attitudes are extremely rare. Most involve the application of a particular strategy in connection with the cognitive information.

**Literature Related Unfavorably to Chiropractic**

Recognizing the controversy that has surrounded chiropractic since its inception, the Haynes Foundation of Los Angeles asked the Stanford Research Institute to conduct a research project within the state of California on what constitutes chiropractic: (1) the use of chiropractic by Californians; (2) a survey of chiropractic practices and facilities; (3) a description of chiropractic diagnostic and therapeutic apparatus; and, (4) a study of chiropractic educational institutions. The results of the research, called the Stanford Study (38), are made
especially significant by the facts that California has more practicing chiropractors than any other state, both in absolute numbers and in numbers of chiropractors per 100,000 population, and that three of the fourteen chiropractic colleges then in existence were located in Los Angeles, California.

The Stanford Study received the cooperation of two of the colleges, and was able to obtain a great deal of statistical data on the third, which is now defunct. The study also received the cooperation of more than 500 chiropractors practicing throughout the state who answered numerous personal interview questions pertaining to their personal backgrounds and their practices. The colleges opened their files, their classrooms and their laboratories to the personnel conducting the study. The resultant 240-page publication represents the most objective and insightful view into chiropractic available. It has to be grouped with the "unfavorable" literature because its findings have been used extensively by those writing against chiropractic, and are not mentioned by any writer favoring chiropractic.

A scientific brief against chiropractic (39) was submitted in 1963 by the College of Physicians and Surgeons of the Province of Quebec to the Royal Commission on Chiropractic, which was appointed by the Quebec legislature. The report represents the most thorough scientific evaluation and analysis of chiropractic yet to appear in the literature. It reviews the significance of modern scientific discoveries and the importance of the integrity of science. It relates chiropractic's theory and systematically reviews its lack of definition, substantiation, and contradiction to known facts. It discusses
chiropractic terminology and provides data on chiropractic practice. Particularly valuable is the way in which the brief presents not only criticisms of chiropractic's errors and fallacies, in its estimation, but counter-information on what science holds to be true in each instance. For example, chiropractic claims that subluxations cause interference with nervous impulses which in turn leads to disease in various body organs due to change which occur in the nerve flow. The brief points out that paraplegics do not demonstrate this, nor have orthopedists observed any such results in their work. It further states just what does happen to a nervous impulse when it encounters an area of partial blockage. The impulse is transmitted more slowly in a zone of partial blockage, and resumes all its characteristics as soon as it reaches normal tissue.

The brief also goes into the value of manipulation as a mode of therapy discussing both its potential dangers and its possible benefits. However, it notes that even within this limited area where some scientific validity for chiropractic treatment might be found, the chiropractor has not contributed nor has his theory found a place.

The brief concludes by stating the following:

The College of Physicians and Surgeons of the Province of Quebec rejects chiropractic because:
(1) Chiropractic is a false theory;
(2) The education of chiropractors is below acceptable standards;
(3) Chiropractic is potentially dangerous.

The College can accept no part of the responsibility for Legal recognition of chiropractic in the Province of Quebec, neither before the people of the province nor before the tribunal of history.

The American Medical Association has been outspoken in its opposition to chiropractic and has conducted an on-going campaign
against it by keeping the scientific world apprised through the *Journal of the American Medical Association*, and the laymen through its popular health magazine, *Today's Health*.

Most of the feature articles which have appeared in *Today's Health* have been written by Ralph Lee Smith (33, 35, 36, 37). Smith is an independent science writer who is the past editor of the National Better Business Bureau publications, and the author of many articles on a variety of topics concerning health frauds. In 1969, Smith (34) also authored a popular book about chiropractic entitled, *At Your Own Risk: The Case Against Chiropractic*. Smith includes information in his book and articles that he has gleaned from the literature about chiropractic and reports of some of his own experiences with it. Smith includes data from the Stanford Study and the Quebec brief, which have already been mentioned, and from studies by the AMA Department of Investigation, the 1968 Report by the Department of Health, Education and Welfare, and some JAMA articles that will be mentioned, as well as numerous references impossible to include in this review of literature.

Smith's experiences include visits to chiropractic clinics located at two major chiropractic schools, Palmer (straight) and National (mixer), where he submitted himself for analysis and treatment for symptoms he and several cooperating medical doctors had invented after thoroughly examining him to be sure none of the conditions were actually present. The results of these investigations did not speak well of the chiropractor's ability to recognize common disease symptoms, or to consistently diagnose subluxations.

Another experience reported by Smith (33, 34:39-52) is an
account of his participation as "Dr. Lee Smith, D.C." at a success school for chiropractors conducted by a chiropractic supersalesman in Texas. Smith reports that he was taught the methods of how to build up one's practice through the use of some very questionable techniques aimed at the patient's vulnerabilities rather than a concern for the welfare of humanity generally associated with health care practitioners in western society. Examples include pushing the "LLL button" when you meet a new patient. "LLL" stands for "Lather Love Lavishly!" This is to disarm the patient who has developed sales resistance. The course was designed to make the chiropractor a "D.C.--Doctor of Chronics," rather than a doctor of acutes, this to dupe the patient into continued treatments. Much training was given in the psychological handling of people, e.g., eye-contact, voice culture, tact and diplomacy. The so-called "yet disease" was taught. It is used to give a false prognosis. If the patient complains of a pain in the left shoulder the chiropractors were trained to ask, "Has the pain started in your right shoulder yet?" To motivate balky patients such scare tactics as asking, "Do you feel there could be a tumor or perhaps cancer causing these nerves to act up?"

Smith (33:48) notes the popularity of the success school by reporting that six-thousand chiropractors and their assistants have attended one or more of the seminars. Several chiropractors confided that their practices had gone from rags to riches by following the techniques they had learned at the success school.

The most significant literature to appear in JAMA includes a study conducted by the Department of Investigation of the American Medical Association (10) in which they studied how rigidly chiropractic
schools were adhering to the profession's stated requirements for admission to chiropractic training. The study selected seven of the fifteen chiropractic schools in the United States at that time, with the purpose of determining the truth of the claims made by the chiropractic literature that "Today's prospective doctor of chiropractic cannot enter upon his professional training without having had basic general education through high school."

Letters of inquiry, all from fictitious persons having inadequate educational, academic and social backgrounds were sent to the schools selected. The letters were ill-prepared, each having poor construction and numerous spelling and punctuation errors. Each letter requested information and expressed a desire to become a chiropractor, hoping to enroll in the fall of 1963. All schools replied to these letters by forwarding applications, catalogues and other promotional literature. The study indicated that the actual admitting practices followed by five of the seven schools did not meet the professed standards set up by the two chiropractic accrediting organizations.

Another study by the AMA Department of Investigation (9) found that the educational backgrounds of the faculties of chiropractic schools were extremely poor and inadequate in the light of today's demands. They found that more than 50 per cent of the faculty members did not have recognized four-year degrees (the Doctor of Chiropractic degree is not a recognized degree), and that 23 of 126 recognized academic degrees listed by the faculties were not confirmed by the granting institutions claimed.

Included in the study is a statement by the former director of
education of the American Chiropractic Association who said:

Too many instructors (in chiropractic schools are) teaching the basic sciences without having had any advanced or graduate training in these sciences. Too many instructors (are) not trained or qualified as teachers or masters in their fields, resulting in slavish devotion to textbook teaching and instruction considerably below the level of post-college professional education. (9:1005)

In 1961 the American Medical Association and the Food and Drug Administration co-sponsored the first national congress on medical quackery. The second, third and fourth national congresses on medical quackery were subsequently held in 1963, 1966 and 1968 respectively. The latter two were co-sponsored by the AMA and the National Health Council.

At the first congress on quackery, chiropractic was referred to as quackery by Field (13:62-63). During the second congress, Milstead (22) reviewed quack medical devices. His report cited a number of chiropractors and chiropractic devices which have been seized by federal agencies as worthless and illegal. Reid (30) presented evidence of degrees which could be purchased with which a person could practice various healing arts including chiropractic. During the third Congress, considerable emphasis was given directly to chiropractic. Miner (23) reviewed the case of People v. Phillips which concerned a Los Angeles chiropractor who persuaded the parents of an eight-year old girl who had cancer of the eye to remove her from the hospital where she had been scheduled for surgery and submit her to treatments utilizing chiropractic methods. The little girl died as a result of this action, and the chiropractor was convicted of manslaughter.

Ballantine (2) defines quackery at some length and demonstrates why chiropractic merits the label. He notes that a quack does not have
to be criminally dishonest, but that he may be ignorant or deluded. Regardless of the motivation, education or mental stability of the quack, he does misrepresent his ability to diagnose and treat disease. As a result of this misrepresentation, he carried out fraudulent activities which are prejudicial to the health of the individuals consulting him and which are injurious to the public welfare.

Robillard (31) surveys chiropractic. As a Canadian, he presents a summary of the investigations that took place in the Province of Quebec, which includes the scientific brief reviewed earlier. He also includes the work of the Lacroix Commission which followed the brief cited previously. Judge Gerard Lacroix conducted an individual investigation which took him to the United States, England, France, Switzerland, Germany and Sweden. Robillard extensively reviews the work of Judge Lacroix who found many fallacies and weaknesses in chiropractic in his study. The outcomes of Judge Lacroix's study were still in the future at the time of Robillard's report.

Sabatier (32) presents a documentary of chiropractic literature that reviews chiropractic theory and practice from their own textbooks and other publications. Sabatier states that chiropractors have often accused their adversaries of quoting them out of context as to the significance of the subluxation as the cause of disease. He presents photographic evidence of chiropractic claims by means of a slide presentation of excerpts directly from chiropractic sources. An example of one of those excerpts is a quotation of B. J. Palmer's as follows:

Patient can come to the B. J. Palmer Chiropractic Clinic in Davenport, Iowa, and be deaf, dumb and blind—not telling or indicating anything—and we could and would locate the cause of whatever he had; adjust him, and send him home well. It is as simple as that.
This statement astounded and dumbfounded the medical profession. To them it is impossible. (32:110)

Sabatier also presents the treatment recommended for acute appendicitis by chiropractor Konstant Koski in 1953:

First, flush the large intestine. Second, vibrate the appendix area with a heavy vibrator, and third, palpate the lumbar spine very carefully and adjust the rotated lumbar vertebrae. (32:110)

A chiropractic textbook entitled *Rational Bacteriology* was reviewed which presents the chiropractic position against artificial immunization. The statement is made that artificial immunity is both worthless and injurious, and that typhoid, diphtheria, tetanus, rabies, and tuberculosis inoculations should be prohibited. As for what chiropractic offers in place of immunization is given by B. J. Palmer:

*We can do nothing for venereal disease," but we can drive it into vertebral subluxation and we are hell on subluxations.*

What has chiropractic done for leukemia?

Answer: *Answer 64 (the one above) applies here with the same effect. We are hell on subluxations.* (32:111)

Presumably, this formula also applies for the diseases ordinarily handled by immunization procedures.

It is because of statements like these concerning the power of healing chiropractors claim for the chiropractic adjustment (called the Basic Technique) that Field (13:63) recalls a standing offer (he cannot remember by whom) for any twelve chiropractors to participate in an experiment wherein six of them will be inoculated with the syphilis spirochete and the other six will be invited to adjust it out of them.

While the AMA is responsible for publishing much of the anti-chiropractic literature, Wilbur (43) points out that they are far from alone in their official condemnation of chiropractic. He names numerous
organizations from the scientific community, the business world, and other sectors of society who are on record as opposed to chiropractic. Some of the organizations he names are: The Department of Health, Education and Welfare of the federal government, the Health Insurance Benefits Advisory Council, the American Public Health Association, the AFL-CIO, the Consumer Federation of America, the National Council of Senior Citizens, the American Cancer Society, the American College of Radiology, the American Academy of Orthopaedic Surgeons, the Health Insurance Association of America, the National Association of Retarded Children and others. A pamphlet published by the AMA entitled, *What They Say About Chiropractic* presents the official statements these and other organizations have made against chiropractic.

What is probably the most damaging material yet to appear against chiropractic was presented by Cohen (6) in the form of a report to the Congress of the United States in 1968 entitled, *Independent Practitioners Under Medicare* (referred to as the HEW Report). That report was the result of a request by the 90th Congress in Public Law 90-248, Social Security Amendments of 1967, Section 141, in which the Secretary of Health, Education and Welfare was directed to make a study with respect to the need for covering various types of practitioners under Medicare. An ad hoc committee was appointed to study chiropractic to determine the need for its coverage under Medicare. The committee submitted the same kind of evidence that others have cited regarding chiropractic's unusual origin and lack of scientific validation. It presents chiropractic theory and practice as it is described by chiropractors in chiropractic literature. It presents data on various aspects of chiropractic which
point out serious deficiencies in training and education, both facility-wise and in regard to faculties. It reviews chiropractic's position of semi-acceptance in our society, and points to the accumulated evidence of the Stanford Study, the Canadian Studies, and others.

The conclusions of the HEW Report were as follows:

1. There is a body of basic knowledge related to health, disease, and health care. Chiropractic practitioners ignore or take exception to much of this knowledge despite the fact that they have not undertaken adequate scientific research.

2. There is no valid evidence that subluxation, if it exists, is a significant factor in disease processes. Therefore, the broad application to healthcare of a diagnostic procedure such as spinal analysis and a treatment procedure such as spinal adjustment is not justified.

3. The inadequacies of chiropractic education, coupled with a theory that de-emphasizes proven causative factors in disease processes, proven methods of treatment, and differential diagnosis, make it unlikely that a chiropractor can make an adequate diagnosis and know the appropriate treatment, and subsequently provide the indicated treatment or refer the patient. Lack of these capabilities in independent practitioners is undesirable because: appropriate treatment could be delayed or prevented entirely; appropriate treatment might be interrupted or stopped completely; the treatment offered could be contraindicated; all treatments have some risk involved with their administration, and inappropriate treatment exposes the patient to this risk unnecessarily.

4. Manipulation (including chiropractic manipulation) may be a valuable technique for relief of pain due to loss of mobility of joints. Research in this area is inadequate; therefore, it is suggested that research that is based upon the scientific method be undertaken with respect to manipulation. (6:51-52)

The recommendation made to the Congress by the HEW Report was as follows:

Chiropractic theory and practice are not based upon the body of basic knowledge related to health, disease, and health care that has been widely accepted by the scientific community. Moreover, irrespective of its theory, the scope and quality of chiropractic education does not prepare the practitioner to make an adequate diagnosis and provide appropriate treatment. Therefore, it is recommended that chiropractic service not be covered in the Medicare program. (6:52)

Despite this report, in late October, 1972, President Nixon
signed H.R. 1, the Social Security Bill, into law. This law extends Medicare coverage to chiropractic as of July 1, 1973. A letter from Jalbert (18) explains some of the details of the new law. It states that chiropractic services are not covered on the same basis as those of a physician or as chiropractic is presently covered under Medicaid, but are under much more limited restrictions. He says:

Beginning July 1, 1973, Medicare can pay for the services of licensed chiropractors, but only (1) if the chiropractors meet uniform minimum standards to be set by the Secretary; and only (2) with respect to manual manipulation of the spine; and only (3) if that manipulation is for correction of a subluxation; and still further, only (4) if that subluxation is verified by a satisfactory X-ray. (18)

Compliance with these requirements may cause chiropractors some problems as they have had some difficulty in the past of recognizing subluxations seen by fellow chiropractors on X-ray films. Smith (34: 36, 37:71) noted, when analyzed by the clinicians at Palmer College that subluxations were found at the ninth dorsal and fifth lumbar, while the clinicians at National College found a subluxation at the fifth dorsal. Even though the analyses were only a day apart, neither clinic found the subluxations of the other.

The National Association of Letter Carriers (8) put chiropractic to the test on the matter of recognizing each other’s diagnosed subluxations. At the invitation of the Director of the Health Benefits Plan of the Letter Carriers, representatives of both the American Chiropractic Association and the International Chiropractic Association met for the test, with the following results:

Our doctor (medical) presented 20 sets of X-rays that had been submitted by chiropractors. Each film was purported to show a subluxation; in several instances, four to six subluxations had been diagnosed in a single X-ray.
One after another, each film was placed in the view box. The chiropractic representatives, including a radiologist of their own selection, were invited to point out the subluxations. Not a single one was identified. Nor did the chiropractic representatives offer a solitary comment. (8)

One can only speculate as to the possible implications of these findings for chiropractic in the future.

**Literature Related Favorably to Chiropractic**

The majority of literature presenting chiropractic in a favorable light comes directly from chiropractic sources. There are a few exceptions, however, some of which are as follows:

Biedermann, a German medical doctor, has written a book which presents chiropractic's most positive potentialities as viewed from a medical doctor's position. He traces manipulation back into antiquity and speaks of Palmer as one who "launched chiropractic as a definite method and scientific healing art in 1895." (3:10) Biedermann says that traditional medicine condemns chiropractic unjustifiably, and that "intelligent physicians, however, have understood chiropractic and have made use of it." (3:13)

He states that a very difficult factor for medicine to accept is chiropractic diagnosis. He says that even though it is maintained by chiropractic's critics that chiropractors consider diagnosis as unnecessary today as they did sixty years ago that this is no longer the case. He presents evidence that chiropractic schools include 480 hours of physical diagnosis and 120 hours of laboratory diagnosis in their curricula. He admits that there is a group of chiropractors who practice what he describes as "HIO chiropractic" which pays no attention to the...
complaints of the patient or the clinical findings, and who consider diagnosis unnecessary. He says that B. J. Palmer is the intellectual leader of these chiropractors. Biedermann continues by saying that even if HIO chiropractors have good results, and he says that competent observers claim they do, their methods cannot be employed in the general study of disease.

Biedermann states that the medical doctor who uses chiropractic will surely include palpation of the spine in his diagnosis, but in very few cases will he limit himself to that. He continues to give credit to HIO chiropractic while warning of the dangers because of its attempt to be all-inclusive.

He discusses subluxation at length, in a descriptive manner, with an apparent bent toward justifying chiropractic's use of the term. In the process he refutes the concept of the Innate, which is central to HIO chiropractic. He presents the work of several German physicians who categorize and describe what they term "microtraumas," "the kinetic chain," "intervertebral disc involvements," and other concepts as explanations of subluxations and their role in disease as theorized by American chiropractors. Mediamt (41:10) makes reference to a group of German physicians called Die ärztliche Forschungs- und Arbeitsgemeinschaft für Chiropraktik, which literally translated means: "Medical Research and Work Group for Chiropractic." He says that this group consists of some 200 physicians.

Many of those outside of chiropractic who have praise for it do so because of the effectiveness of chiropractic care in many cases of trauma. Some data relating the effectiveness of this care is available.
In 1960, the Florida Industrial Commission conducted a study comparing chiropractic care and medical care with regard to: (1) average treatment costs; (2) worktime losses; and, (3) services rendered. The study covered 19,666 cases and was monitored by the First Research Corporation, a nationally recognized, independent research organization. The cost of the average case was as follows:

<table>
<thead>
<tr>
<th></th>
<th>Chiropractor</th>
<th>Medical Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total treatment costs</td>
<td>$51</td>
<td>$65</td>
</tr>
<tr>
<td>Compensation costs</td>
<td>9</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>$60</td>
<td>$102</td>
</tr>
<tr>
<td>Average worktime lost</td>
<td>3 days</td>
<td>9 days</td>
</tr>
</tbody>
</table>


Additional data on the effectiveness of chiropractic care includes patient satisfaction. Hunter and Roebuck (17) present the following table which shows how subjects rated various health care practitioners for their effectiveness in treating disease:

**TABLE 1**

**RESPONDENTS' RATINGS OF THE EFFECTIVENESS OF FIVE TYPES OF HEALERS**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Medical doctor</th>
<th>Chiropractor</th>
<th>Osteopath</th>
<th>Naturopath</th>
<th>Homoeopath</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>N 90</td>
<td>25</td>
<td>14</td>
<td>....</td>
<td>1</td>
</tr>
<tr>
<td>%</td>
<td>86.5</td>
<td>24.1</td>
<td>13.4</td>
<td>....</td>
<td>0.9</td>
</tr>
<tr>
<td>Sometimes effective</td>
<td>N 12</td>
<td>31</td>
<td>18</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>%</td>
<td>11.5</td>
<td>29.8</td>
<td>17.3</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Ineffective harmful</td>
<td>N 2</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>%</td>
<td>1.9</td>
<td>13.4</td>
<td>13.4</td>
<td>13.4</td>
<td>6.7</td>
</tr>
<tr>
<td>No opinion</td>
<td>N ...</td>
<td>34</td>
<td>58</td>
<td>87</td>
<td>93</td>
</tr>
<tr>
<td>%</td>
<td>...</td>
<td>32.6</td>
<td>55.7</td>
<td>83.6</td>
<td>89.4</td>
</tr>
</tbody>
</table>

A report of a study conducted in the mid-fifties which appears in a recent issue of the *New England Journal of Chiropractic* (1) states the following in regard to patient satisfaction with chiropractic care:

Only 70% of chiropractic patients are satisfied with the results they get from chiropractors; 26% are definitely dissatisfied; and 4% give qualified answers. Again, the satisfaction level is high and that 70% of the patients who are satisfied are the ones who are doing more than any other element to help chiropractic. But a 26 to 30% level of dissatisfaction is too high and can be very damaging. (1:11)

As was noted previously, Weiant (42) claims that organized medicine is seeking to stifle the development and spread of chiropractic as a part of the "struggle" between the two professions. Rayack (29) lends support to this claim by stating that:

There is enough evidence to strongly suggest that the American Medical Association may ••• be less interested in propagating the truth than in destroying the medical profession's most substantial competition--the nation's 25,000 chiropractors. (29:256)

On this matter, Weiant says:

No evidence has been presented that physicians are less busy in localities where chiropractors are numerous than in localities where they are few or nonexistent. On the contrary, the common complaint is that doctors are overworked, that we need many more of them, and that medical schools are unable to cope with the crisis. Were it not for false pride and lack of understanding of the true nature of chiropractic, they might be expected to feel some small measure of gratitude that there are others ready and willing to absorb a portion of their burden. (41:15)

In his publication, *Medicine and Chiropractic*, Weiant tried to meet medicine halfway, apparently in hopes of arriving at some kind of a working relationship between the two groups. Trying to look at the situation from medicine's point of view he writes:

The chiropractor should put himself in the position of the physician confronted with chiropractic in the early days of that specialty ••• their theories are outlandish; their reported successes obviously preposterous •••. Undoubtedly the diagnoses were mistaken. The illnesses were either psychological, or they
were conditions which in time would disappear without any treatment. These healers were imposters, quacks, cultists.

But as time goes on, the matter is not so easily dismissed. Chiropractors and their patients increase in number. States pass laws giving the new healing art status. (41:3-4)

Weiant points to a group within chiropractic, as did Biedermann, who represent something of a problem. In reference to this group, he states:

Some still cling to their metaphysics, a crude dualism which they refer to as "the philosophy of chiropractic," and which they regard as a bridge linking the materialism of Christian Science with the materialism of medicine. They defend themselves with the fervor of martyrs and the contagious enthusiasm of evangelists. No new theory, no fresh fact can long disturb their peace of mind. Either it can be incorporated into the established conceptual framework, or it is error. Failures never daunt them; they can be rationalized: The technic was incorrectly or inadequately applied. These are the extremists. They do not speak the language of science; with them medicine can hold no converse .... (41:4)

Weiant (41:5) says that there is a second group which is far larger than the one he refers to that is much more representative of chiropractic today. He says that this second group does not regard chiropractic as special revelation, nor do they hold it to be a panacea. Weiant then goes on to outline what he feels to be the scientific basis for chiropractic. However, in regard to chiropractic's theory he writes the following:

Ask any critic such questions as the following: Have you ever studied a chiropractic textbook? ... observed the chiropractic examination of a patient? ... received a chiropractic adjustment? ... been present when any patient was adjusted? ... followed the progress of chiropractic patients? ... read the German literature on the subject? ... tried to give a chiropractic adjustment? ... dissected an intervertebral foramen? ... Further questioning will reveal that what he has been criticizing is neither the actual scientific foundations of chiropractic nor its performance, but the theory. What he does not realize is that the leaders of chiropractic thought agree wholeheartedly that much of this criticism is valid. (Italics ours.) (41:11)
In admitting to the lack of validation for chiropractic's theory, Weiant expresses a willingness to conduct research on the problems surrounding chiropractic theory.

Weiant's (42) later publication on the subject of medicine and chiropractic reveals that he has given up hope of reconciliation of the differences between the two professions. He presents what he feels is medicine's new strategy for eliminating chiropractic. This is to: (1) increase the auxiliary field of physiotherapy; (2) declare that chiropractic is part of physiotherapy and can only be administered by medical prescription; and, (3) repeal chiropractic licensing laws thus ridding medicine of the competitive thorn in its side. He warns that medical doctors are not competent in this field and medical schools are not capable of training these specialties, nor will they be in the foreseeable future.

Because of the devastating influence of the HEW Report of 1968, chiropractic responded with a special "White Paper," (5) which was jointly published by the American Chiropractic Association, the International Chiropractic Association, and the Council of State Chiropractic Examining Boards, Inc.

The "White Paper" called the HEW Report a "fixed" report because there are no chiropractors represented on the ad hoc committee that investigated chiropractic. They claim that the report did not fulfill its duties which were to investigate the need for covering independent practitioners under Medicare and the cost of doing so. The "White Paper" states that such issues as chiropractic education, philosophy, theory and competence to diagnose disease were all "false issues," and...
that the "true issues" were: (1) the need for chiropractic which is
attested to by the fact that people go to chiropractors, and (2) the
costs of chiropractic care which they contend are lower than those of
medicine because chiropractic doesn't use hospitalization, expensive
prescription drugs, and the like. Plus, they offer evidence of the fact
that chiropractic care costs less than medical care by reporting data
from the British Columbia Government Employees' Medical Service which
shows that the average office visit to a medical doctor costs $4.38
while an average office visit to a chiropractor costs only $3.81. They
point to the evidence previously cited by the Florida Industrial
Commission to prove chiropractic's effectiveness. They also cite the
record of 528 cases cared for by the chiropractic college clinics for
which they present the following data:

<table>
<thead>
<tr>
<th>Cases</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>223</td>
<td>Discharged (no residual symptoms)</td>
</tr>
<tr>
<td>11</td>
<td>Discharged under special conditions (no residual symptoms)</td>
</tr>
<tr>
<td>99</td>
<td>Improved (still under treatment)</td>
</tr>
<tr>
<td>5</td>
<td>Not improved</td>
</tr>
<tr>
<td>103</td>
<td>Patient failed to return</td>
</tr>
<tr>
<td>87</td>
<td>No progress report filed</td>
</tr>
</tbody>
</table>

The average recovery time for 223 of the discharged cases was 29.69
days. (5:15)

The "White Paper" also makes a point of "states' rights and the
freedom of choice." The states' rights issue is the traditional question
regarding the federal government's right to superecede state authority.
In this case, since states license chiropractors, they should determine
whether or not they are recognized by Medicare. The second issue, that
of freedom of choice, is commonly referred to in the literature as the
issue of "health freedom." This term is used to refer to the right of
an individual to choose whatever type of health care he wishes without
Legislative interference. This concept is widespread in the chiropractic literature, especially that which is aimed at the public. Kuch (20) and Mitchell (24) present the issue of "health freedom: as a basic human right of great importance.

What is probably the most popular book about chiropractic for public consumption was written by Dintenfass (11), who is director of the Medicaid Program for the City of New York. Dintenfass presents the case for chiropractic using the basic arguments which are generally voiced throughout the profession. While his book is representative of the "mixers" point-of-view, it is conservative enough that most "straights" would find little that would be objectionable in it. It includes manipulation as a mode of treatment from antiquity, and attempts to link chiropractic with Hippocrates. Dintenfass gives a similar account of chiropractic's beginnings as is found elsewhere. He presents a very positive picture of chiropractic and avoids reference to some of the questionable practices chiropractors have been known to have been involved in over the years, e.g., the Drown case, the Spears Chiropractic Hospital and its guaranteed cancer cures, and others.

Dintenfass offers some scientific hypotheses in an effort to establish some scientific validity for chiropractic. While they are purely conjecture, he does try to show how chiropractic could possibly tie into some modern concepts such as cybernetics. The main thrust of the book is to try to convince the reader that chiropractic has something to offer him as a patient.

Dintenfass speaks to many of the criticisms of chiropractic and attempts to present a defense for them. This is largely done by argument
rather than data to support his views. For example, on chiropractic
education he says, "No factor in education is more vital than a faculty
of competent, stimulating teachers who are masters of their individual
fields." (11:121) But, he offers no evidence that this is the case in
chiropractic schools. It would seem advisable for him to do so in light
of the rather large amount of material that has been published by chiro-
practic's critics indicating deficiencies of that nature in chiropractic
education. On the subject of research he states:

   Research for progress is most important in any profession; it is
   particularly significant in the field of chiropractic ... . Chiro-
   practic has not had the opportunities offered to other professions.

   ... the necessary funds can come only from government sources
   or private foundations, neither of which have so far demonstrated
   any genuine interest. (11:129)

   The foregoing statement is particularly interesting because it
appears in Dintenfass' book which carries 1966 through 1970 copyright
dates, and the following statement by Nordstrom (25), a chiropractic
writer, referring to the year 1971 stating:

   There is a request before the National Institutes of Health ... for a grant of $155,000 ... . This is the first request for
   federal research funds ever submitted for chiropractic-related
   research. (25:11) (Italics ours)

   Perhaps Dintenfass, or the chiropractic profession in general,
has been unaware of the procedures to be followed in obtaining research
allocations prior to 1971. The evidence seems to indicate a lack of
effort on behalf of chiropractic rather than a lack of interest by
others.
CHAPTER III

METHODS AND PROCEDURES

Before the study could be carried out, the following steps were necessary: (1) an instrument had to be developed to measure knowledge and attitudes about chiropractic; (2) the programmed instruction course about chiropractic had to be developed; and (3) materials representing all sides in the chiropractic controversy which were to accompany the programmed instruction course had to be procured.

Development of the Instrument

The instrument used in the study was developed in conjunction with nine chiropractors and three medical doctors who are known to possess considerable knowledge about chiropractic.

The nine chiropractors represent the wide range of views characteristic to their profession. Three of the nine classify themselves as "straights," and the other six classify themselves as "mixers." Eight of the nine are in private practice in the Eugene-Springfield area, and the ninth is Dean of the Faculty of Western States Chiropractic College in Portland, Oregon. One of the chiropractors is a woman. Two of the medical doctors have been involved with chiropractic to the extent that they engaged local chiropractors in a public debate two years prior to this study. The third is a noted arthritis specialist who has many opportunities to contact persons who are, or have been, under chiropractic care.
In working with the nine chiropractors and three medical doctors who provided input and served as experts on the items included on all portions of the instrument, the Delphi Technique (7) was utilized. In the Delphi Technique each person is contacted individually and asked for his input. Revisions are made of the instrument, labeled and circulated among the various individuals until consensus was achieved. This technique is recommended in order to avoid problems of dominance that often emerge in committee work due to processes of group dynamics relating to such factors as personalities and status.

The instrument consisted of four parts. Part one asked for personal data on the respondent, and his personal background with regard to chiropractic health care. The respondent was asked to appraise his current knowledge level of chiropractic on a five-point scale; answer whether or not he had ever been treated by a chiropractor, and if so, how many times; if he has personal knowledge of anyone close to him who has been treated by a chiropractor, and if so, what relationship exists between him and the person treated; how he would rate chiropractic care based upon his current knowledge and experience with the following choices provided: excellent, good, fair, and poor; and if he would like to know more about chiropractic.

Part two was to measure knowledge about chiropractic. It consisted of fifty-six items which were statements concerning chiropractic theory, history, practice, status, professional organization, education and training. Provision was made for interpreting the information in each item as either "true," "false," or "unknown." "Unknown" was included to reduce guessing. Subjects were informed that knowledge scores would be
calculated on the basis of right answers minus wrong answers with no penalty assessed against a choice of "unknown" as a further incentive not to guess at answers.

The validity of the knowledge portion of the instrument was established by analyzing each item by the nine chiropractors and three medical doctors who served as experts for the development of the instrument. Also, each item was incorporated as a learning objective in the programmed learning course.

The reliability of the knowledge portion of the instrument was tested by giving the instrument to a group known to be similar to the population of the study and then calculating a Pearson $r$ coefficient utilizing the split-halves technique of odd-numbered compared with even-numbered items. A Pearson $r$ of .90 was obtained which was sufficient to establish reliability.

Part three measured the favorability of attitudes toward chiropractic generally, and attitudes toward the inclusion of information about chiropractic in consumer health education teaching units, and chiropractic as a career choice in health career teaching units. This portion of the instrument utilized a modified Likert-scale. This was a six-point scale with no zero designation or neutral choice. The scaling techniques used was such that a higher score indicated a more favorable attitude toward chiropractic or the behavior in question. The values which were assigned to the attitude statements are shown in Figure 1.

The items on the attitude portion were developed with the help of the chiropractors and medical doctors using Likert's guidelines for attitude scale statements, which are: (1) that items be statements of
Figure 1--Values Assigned to Attitude Statements

**Statements favorable to chiropractic**

<table>
<thead>
<tr>
<th>Scale value</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a. very strongly disagree</td>
</tr>
<tr>
<td>2</td>
<td>b. strongly disagree</td>
</tr>
<tr>
<td>3</td>
<td>c. disagree</td>
</tr>
<tr>
<td>4</td>
<td>d. agree</td>
</tr>
<tr>
<td>5</td>
<td>e. strongly agree</td>
</tr>
<tr>
<td>6</td>
<td>f. very strongly agree</td>
</tr>
</tbody>
</table>

**Statements unfavorable to chiropractic**

<table>
<thead>
<tr>
<th>Scale value</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a. very strongly disagree</td>
</tr>
<tr>
<td>2</td>
<td>b. strongly disagree</td>
</tr>
<tr>
<td>3</td>
<td>c. disagree</td>
</tr>
<tr>
<td>4</td>
<td>d. agree</td>
</tr>
<tr>
<td>5</td>
<td>e. strongly agree</td>
</tr>
<tr>
<td>6</td>
<td>f. very strongly agree</td>
</tr>
</tbody>
</table>

desired behavior rather than statements of fact; (2) that statements be
clear, concise and straightforward, avoiding double-negatives, ambiguity
and double-barreled statements; (3) that reactions be sought from the
ends rather than the middle of the modal scale, but not necessarily
extreme; and (4) that the items be fairly equal in number of positive
and negative statements, and that they be distributed randomly. (14)

The reliability of the attitude portion of the instrument was
tested by a test-retest procedure on a group of 27 undergraduate health
education students. A Pearson \( r \) coefficient of .92 was obtained which
was sufficient to establish reliability.
Validity of the attitude scale was established by administering the instrument to two groups whose attitudes can be expected to reflect fairly high degrees of favorability and unfavorability. Oppenheim (26) states this is a desirable way to establish the validity of an attitude measuring device. The group upon whom the attitude scale was tested whose attitudes were expected to be quite favorable to chiropractic was the freshman class of Western States Chiropractic College in Portland, Oregon. (Complete results of the test instrument by the chiropractic students are presented in Appendix A for the sake of comparison.) The group whose scores were expected to reflect unfavorability toward chiropractic were persons enrolled in a graduate course in Progress in Disease Control (HE 506). This group was largely constituted of registered nurses, health education graduate students, and other health professionals. A visual analysis of the scores of these groups placed comparatively on a frequency chart showed very definite differences.

Thirty items originally appeared on the attitude scale (Appendix B). All items were placed on a chart and analyzed to determine which ones discriminated between the high and low scores. As a result of this procedure, seven items were dropped from the attitude scale. Of the remaining twenty-three, twenty-two were discriminators. The twenty-third was a statement concerning the inclusion of information about chiropractic in consumer health education teaching units. This item was retained as it is one of the attributes the instrument was to measure. Of the remaining twenty-two items, eleven were statements favorable to chiropractic and eleven were statements unfavorable. This was consistent with Likert's recommendation that the items be fairly equal in
number of positive and negative statements.

Part four of the instrument was designed to reflect attitudes toward chiropractic. It was entitled "Rating Chiropractic Competency." It was to measure the respondent's feelings about the competency of a chiropractor to treat a variety of diseases. Twenty-one diseases were selected which represent a wide variety of conditions or symptoms all of which have been treated by chiropractors or can be relieved by chiropractic according to some chiropractic source. The respondent was to rate the competency of chiropractors, M.D. generalists, M.D. specialists, and osteopaths each on a scale from one to five. Each integer on the scale was defined as representative of a level of qualification to treat the disease or symptom as follows:

1 Unqualified
2 Somewhat qualified
3 Qualified
4 Well qualified
5 Most qualified

The competency rating portion of the instrument was tested for reliability on forty-six students enrolled in Introduction to Public Health (HE 364) at the University of Oregon during fall term, 1972. The students were given two slightly differing versions of the same instrument. On the first version they were asked to rate only chiropractors and the scale was slightly elaborated by further definitions of what was meant by the terms. "Unqualified," was defined as "would not use or recommend under any circumstances." "Somewhat qualified," was defined as "would use or recommend if no other care were available." "Qualified,"
was defined as "equally as qualified as M.D. in general practice."

"Well qualified," was defined as "superior to M.D. generalist, but below M.D. specialist." And, "most qualified," was defined as "superior to all other kinds of practitioners." The second version was the one adopted for the study (Appendix C). The two versions were given forty-eight hours apart. A Pearson $r$ coefficient of .89 was obtained. Inter-viewing the group revealed that they would have been even more consistent except that the definition accompanying "somewhat qualified," meant to them that if no other care were available they might go to anyone for help, including a chiropractor. For this reason and the fact that rating the other practitioners might give a better picture of perceived comparisons the second form was adopted.

The validity of the competency rating scale was tested by comparing the overall competency ratings given each type of health care practitioner by the freshman chiropractic students with the health students and health professionals used to validate the attitude scale. Because feelings about the competency of a particular practitioner to treat a variety of diseases are actually expressions of attitudes, Oppenheim's (26) recommendations apply equally as well here. Table 2 shows the results of the overall competency ratings by the students in the introduction to public health class compared to those of the freshman chiropractic students.

A copy of the instrument can be found in Appendix C.

Development of the Programmed Instruction Course

The programmed instruction course used in this study was developed
<table>
<thead>
<tr>
<th>Practitioners</th>
<th>Freshman Chiropractic Students</th>
<th>Introduction to Public Health Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiropractor</td>
<td>3.440</td>
<td>1.380</td>
</tr>
<tr>
<td>M.D. Generalist</td>
<td>2.246</td>
<td>3.421</td>
</tr>
<tr>
<td>M.D. Specialist</td>
<td>2.962</td>
<td>4.449</td>
</tr>
<tr>
<td>Osteopath</td>
<td>2.820</td>
<td>2.140</td>
</tr>
</tbody>
</table>

A COMPARISON OF OVERALL COMPETENCY RATINGS OF FOUR HEALTH CARE PRACTITIONERS BY VALIDATING GROUPS

in conjunction with a smaller group of experts selected from the larger group who participated in the development of the instrument. The smaller group was selected on the basis of the following criteria: (1) their productivity during the development of the instrument; (2) their representation of the factions involved in the chiropractic controversy; and, (3) their willingness to engage in an undertaking of this magnitude. Those selected were: one chiropractor who classifies himself as a "straight" was selected, and two chiropractors who classify themselves as "mixers," and two medical doctors were selected.

The following steps were followed in the development of the programmed instruction course. First, the significant materials which were to be supplied with the course were assembled and systematically scrutinized for the pertinent factors concerning chiropractic and the chiropractic controversy. Second, a rough-draft was constructed to establish the form that the course was to follow. Issues to be covered were...
Identified and dialogue was carried out with the experts from medicine and chiropractic. Next, a form of the programmed instruction course was printed and distributed to the experts, again using the Delphi Technique (7), for their editing, evaluation and approval. Finally, after receiving approval from each person assisting in the development of the programmed instruction course booklet, a final version was printed (Appendix E). Satisfaction with the final product was indicated by each person representing all of the factions involved. This was indicative of the achievement of a degree of objectivity which was a major goal in the development of the course.

There were three other major goals for the programmed instruction course. (1) To expose the student to the main issues of the chiropractic controversy as presented by the major factions involved. This was done by including a quantity of original materials for the student to study in conjunction with the programmed instruction course. (2) To inform the student about chiropractic's history, development, status, practice, professional organization, education and training. This was done by sectioning the course into divisions which dealt with these facts. And, (3) to cause the student to form opinions about the issues surrounding the chiropractic controversy. This was done by including a number of places in the programmed instruction booklet which called for the subject's opinion on a question, and provided a place for their response.

Materials Supplied With The Course

Materials used for reference were supplied in two forms: (1)
pamphlets, books, reprints of articles, and miscellaneous literature were provided in two separate packets, one pro-chiropractic and the other anti-chiropractic; (2) numerous excerpts from pertinent literature that could not be supplied in quantity were included in an appendix in the back of the programmed instruction booklet.

The pro-chiropractic materials were obtained from three sources. A request for materials directed to the American Chiropractic Association, the national professional organization for "mixers," was forwarded to the Oregon Association of Chiropractic Physicians, the state organization for "mixers," who graciously complied. Another request was sent to the International Chiropractic Association, the national professional organization for "straights," for certain specified materials. They complied readily, but not with a complete supply of all items requested.

The third source for pro-chiropractic materials was the Life Foundation of Austell, Georgia. The Life Foundation is a private chiropractic promotional agency which dynamically promotes the "straight" or HIO chiropractic philosophy. Some materials were purchased from them, namely, the Si-Nel pamphlets, Health for Life, and "X-Ray: Menace or Miracle?" A complete listing of all materials supplied in the packets can be found in Appendix D.

The anti-chiropractic materials were supplied upon request by the Department of Investigation of the American Medical Association.

Selection of the Population

The subjects in this study were members of the School Health Services (HE 465) and Health Instruction (HE 464) courses at the
University of Oregon, winter term, 1973. A total of forty-two subjects were available. During the third week of the term the subjects were given a pretest with the instrument. The instruments had been numbered before being handed out in the classrooms. The instruments were handed out in a random fashion to the subjects who were not arranged in any particular seating order. The subjects were later divided into two groups of twenty-five experimental subjects and seventeen control subjects. Randomization was achieved by assigning subjects by their test numbers to the experimental group using a table of random numbers. After twenty-five experimentals had been selected all others were assigned to the control group.

**Study Design**

Figure 2 shows the overall design of the study:

![Figure 2--Schematic of Study Design](image)

\[
\begin{align*}
R & \quad 01 & \quad X & \quad 02 & \text{ (Experimental group)} \\
R & \quad 03 & \quad 04 & \text{ (Control group)}
\end{align*}
\]

R = randomization of the groups; 
01 = pretest of the experimental group; 
02 = posttest of the experimental group; 
X = the treatment (the programmed instruction course); 
03 = pretest of the control group; 
04 = posttest of the control group.

The instrument used in the study appears in Appendix C. Calculations were made on the responses made by the subjects on the instruments as follows:

Personal data obtained from page one of the instrument were
tallied to provide information on the nature of the test groups in the study. None of these data were treated statistically. The tallies are presented on Table 3 for inspection.

Knowledge scores were calculated by awarding one-point for each correct answer minus one-point for each incorrect answer. If the subject marked the item "unknown," no points were awarded or deducted. There were fifty-six items making that number the highest potential score.

The general attitude score was obtained by assigning values to the respondent's indicated degree of agreement or disagreement with each statement in items one through twenty-two. Item twenty-three was not used in the calculation of the general attitude score. Values were assigned in accordance with the scale given in Figure 1. Items 1, 3, 4, 5, 8, 9, 11, 13, 17, 21, and 22 were statements unfavorable to chiropractic, while items 2, 6, 7, 10, 12, 14, 15, 16, 18, 19, and 20 were statements favorable to chiropractic. The higher the score was the more favorability toward chiropractic was indicated. The highest possible score would be 132 points.

The attitude toward the inclusion of chiropractic as a health career choice in a health careers teaching unit was determined by how the subject responded to item number two on the attitude portion of the instrument. This item was determined to be a favorable statement about chiropractic, therefore, values of from one to six were assigned to responses "a" through "f" respectively. This means that scores of three or less indicate an unfavorable attitude toward the inclusion of chiropractic as a career choice in a health careers teaching unit, while
<table>
<thead>
<tr>
<th>DATA</th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>TALLY BY PER CENT* OF PERSONAL DATA ON EXPERIMENTAL AND CONTROL GROUPS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=25</td>
<td>N=17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EXPERIMENTAL %</td>
<td>CONTROL %</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEX:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>52.00</td>
<td>52.94</td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>48.00</td>
<td>47.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLASS:</td>
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</tr>
<tr>
<td>Junior</td>
<td>16.00</td>
<td>47.06</td>
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</tr>
<tr>
<td>Senior</td>
<td>64.00</td>
<td>41.17</td>
<td></td>
</tr>
<tr>
<td>Graduate</td>
<td>20.00</td>
<td>11.77</td>
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<tr>
<td>AGE: (mean)*</td>
<td>24.05</td>
<td>23.87</td>
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<td>MAJOR:</td>
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<tr>
<td>Health</td>
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<td>41.17</td>
<td></td>
</tr>
<tr>
<td>Physical Education</td>
<td>40.00</td>
<td>52.94</td>
<td></td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>4.00</td>
<td>5.89</td>
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<td></td>
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</tr>
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<tr>
<td>Biology</td>
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<td>5.89</td>
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</tr>
<tr>
<td>Elementary Education</td>
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<td>0</td>
<td></td>
</tr>
<tr>
<td>Dance</td>
<td>0</td>
<td>5.89</td>
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<td>Health</td>
<td>36.00</td>
<td>41.17</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>17.00</td>
<td>0</td>
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<td></td>
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</tr>
<tr>
<td>SELF-RATED KNOWLEDGE</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ABOUT CHIROPRACTIC:</td>
<td>None</td>
<td>0</td>
<td>17.66</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>48.00</td>
<td>41.17</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>40.00</td>
<td>41.17</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>4.00</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Very High</td>
<td>4.00</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PERSONAL KNOWLEDGE</td>
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<td></td>
</tr>
<tr>
<td>OF SOMEONE TREATED:</td>
<td>Yes</td>
<td>60.00</td>
<td>52.94</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>40.00</td>
<td>47.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TREATED BY CHIROP'R:</td>
<td>Yes</td>
<td>12.00</td>
<td>17.65</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>88.00</td>
<td>82.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF TIMES:</td>
<td>1-2 times</td>
<td>100.00</td>
<td>66.67</td>
</tr>
<tr>
<td></td>
<td>3-6 times</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>More than 6 times</td>
<td>0</td>
<td>33.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RELATIONSHIP:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend</td>
<td>33.00</td>
<td>77.77</td>
<td></td>
</tr>
<tr>
<td>Immediate Family</td>
<td>26.00</td>
<td>33.33</td>
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</tr>
<tr>
<td>Relative</td>
<td>53.00</td>
<td>11.11</td>
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</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>11.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURRENT RATING OF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHIROPRACTIC CARE:</td>
<td>Excellent</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>8.00</td>
<td>6.25</td>
</tr>
<tr>
<td></td>
<td>Fair</td>
<td>56.00</td>
<td>62.50</td>
</tr>
<tr>
<td></td>
<td>Poor</td>
<td>36.00</td>
<td>31.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIKE TO KNOW MORE:</td>
<td>Yes</td>
<td>96.00</td>
<td>94.11</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>4.00</td>
<td>5.89</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>
scores above three begin to indicate favorability toward such an inclusion.

The attitude toward the inclusion of information about chiropractic in consumer health education teaching units was determined by how the subject marked item number twenty-three. This item was determined to be a non-discriminator as to general attitudes toward chiropractic, thus, it was not used to indicate anything other than favorability toward inclusion of information about chiropractic in a consumer health course. There was no indication given in the item as to whether the information was to be favorable or unfavorable. Items that did so-specified were dropped from the instrument during its development because they were found to be non-discriminators. Values from one to six were assigned to responses "a" through "f" respectively. This means that scores of three or less indicate an unfavorable attitude toward the inclusion of information about chiropractic theory and practice in consumer health education teaching units, while score above three indicate degrees of favorability toward such an inclusion.

Overall competency ratings (OCR) were determined for each of the four types of health care practitioners by totaling the values assigned each disease under that practitioner's column, and dividing by the number of diseases rated. This indicated an average OCR for each type of health care practitioner as rated by each subject individually. In addition, the OCR of each practitioner to treat each of the twenty-one different disease conditions or symptoms as rated by each of the test groups were also calculated and appear on Tables 4, 5, 6, and 7. For the sake of
TABLE 4

AVERAGE COMPETENCY RATINGS OF CHIROPRACTORS AND THREE OTHER HEALTH
CARE PRACTITIONERS TO TREAT TWENTY-ONE SPECIFIC DISEASES BY CONTR­
ROL GROUP ON THE PRETEST USING THE FOLLOWING RATING SCALE:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Chiropractor</th>
<th>Medical GP</th>
<th>Doctor Specialist</th>
<th>Osteopath</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ruptured Disc</td>
<td>2.058</td>
<td>2.941</td>
<td>4.705</td>
<td>3.294</td>
</tr>
<tr>
<td>2. Heart Disease</td>
<td>1.000</td>
<td>3.176</td>
<td>4.941</td>
<td>2.176</td>
</tr>
<tr>
<td>3. Asthma</td>
<td>1.176</td>
<td>3.529</td>
<td>4.764</td>
<td>2.058</td>
</tr>
<tr>
<td>5. Diabetes</td>
<td>1.058</td>
<td>3.588</td>
<td>4.941</td>
<td>2.117</td>
</tr>
<tr>
<td>7. Strain in Back</td>
<td>2.823</td>
<td>3.235</td>
<td>4.470</td>
<td>3.235</td>
</tr>
<tr>
<td>8. Epilepsy</td>
<td>1.117</td>
<td>3.294</td>
<td>4.588</td>
<td>2.235</td>
</tr>
<tr>
<td>10. Acne</td>
<td>1.062</td>
<td>3.529</td>
<td>4.823</td>
<td>2.058</td>
</tr>
<tr>
<td>13. Arthritis</td>
<td>1.882</td>
<td>3.117</td>
<td>4.823</td>
<td>3.000</td>
</tr>
<tr>
<td>17. Chronic Back Pain</td>
<td>2.705</td>
<td>3.058</td>
<td>4.705</td>
<td>3.294</td>
</tr>
<tr>
<td>20. Mental Disorders</td>
<td>1.176</td>
<td>2.647</td>
<td>4.761</td>
<td>1.875</td>
</tr>
<tr>
<td>21. Appendicitis</td>
<td>1.117</td>
<td>4.000</td>
<td>4.761</td>
<td>2.000</td>
</tr>
</tbody>
</table>
TABLE 5

AVERAGE COMPETENCY RATINGS OF CHIROPRACTORS AND THREE OTHER HEALTH CARE PRACTITIONERS TO TREAT TWENTY-ONE SPECIFIC DISEASES BY EXPERIMENTAL GROUP ON THE PRETEST USING THE FOLLOWING RATING SCALE:

1. unqualified 3. qualified
2. somewhat qualified 4. well qualified
5. most qualified

<table>
<thead>
<tr>
<th>Disease</th>
<th>Chiropractor</th>
<th>Medical GP</th>
<th>Doctor Specialist</th>
<th>Osteopath</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ruptured Disc</td>
<td>1.880</td>
<td>2.833</td>
<td>4.640</td>
<td>3.400</td>
</tr>
<tr>
<td>2. Heart Disease</td>
<td>1.160</td>
<td>3.000</td>
<td>4.840</td>
<td>1.840</td>
</tr>
<tr>
<td>3. Asthma</td>
<td>1.320</td>
<td>3.560</td>
<td>4.600</td>
<td>2.040</td>
</tr>
<tr>
<td>5. Diabetes</td>
<td>1.200</td>
<td>3.320</td>
<td>4.800</td>
<td>1.800</td>
</tr>
<tr>
<td>6. Gonorrhea</td>
<td>1.280</td>
<td>3.800</td>
<td>4.600</td>
<td>2.120</td>
</tr>
<tr>
<td>7. Strain in Back</td>
<td>2.560</td>
<td>3.360</td>
<td>4.720</td>
<td>3.080</td>
</tr>
<tr>
<td>8. Epilepsy</td>
<td>1.200</td>
<td>3.375</td>
<td>4.652</td>
<td>1.916</td>
</tr>
<tr>
<td>9. Migraine Headache</td>
<td>1.680</td>
<td>3.480</td>
<td>4.541</td>
<td>2.000</td>
</tr>
<tr>
<td>10. Acne</td>
<td>1.360</td>
<td>3.840</td>
<td>4.680</td>
<td>2.000</td>
</tr>
<tr>
<td>11. Whiplash</td>
<td>2.120</td>
<td>3.240</td>
<td>4.720</td>
<td>2.960</td>
</tr>
<tr>
<td>12. Ulcers</td>
<td>1.280</td>
<td>3.440</td>
<td>4.760</td>
<td>1.920</td>
</tr>
<tr>
<td>17. Chronic Back Pain</td>
<td>2.400</td>
<td>3.160</td>
<td>4.640</td>
<td>3.120</td>
</tr>
<tr>
<td>20. Mental disorders</td>
<td>1.200</td>
<td>2.600</td>
<td>4.520</td>
<td>1.560</td>
</tr>
</tbody>
</table>
### TABLE 6

AVERAGE COMPETENCY RATINGS OF CHIROPRACTORS AND THREE OTHER HEALTH CARE PRACTITIONERS TO TREAT A VARIETY OF DISEASES BY THE CONTROL GROUP ON THE POSTTEST USING THE FOLLOWING RATING SCALE:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Chiropractor</th>
<th>Medical GP</th>
<th>Doctor Specialist</th>
<th>Osteopath</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ruptured Disc</td>
<td>1.764</td>
<td>2.882</td>
<td>4.812</td>
<td>3.058</td>
</tr>
<tr>
<td>2. Heart Disease</td>
<td>1.000</td>
<td>3.176</td>
<td>4.941</td>
<td>2.000</td>
</tr>
<tr>
<td>3. Asthma</td>
<td>1.117</td>
<td>3.470</td>
<td>4.705</td>
<td>2.117</td>
</tr>
<tr>
<td>5. Diabetes</td>
<td>1.000</td>
<td>3.647</td>
<td>4.647</td>
<td>2.176</td>
</tr>
<tr>
<td>7. Strain in Back</td>
<td>2.764</td>
<td>3.000</td>
<td>4.647</td>
<td>3.294</td>
</tr>
<tr>
<td>8. Epilepsy</td>
<td>1.235</td>
<td>3.235</td>
<td>4.705</td>
<td>2.235</td>
</tr>
<tr>
<td>10. Acne</td>
<td>1.235</td>
<td>3.647</td>
<td>4.588</td>
<td>2.294</td>
</tr>
<tr>
<td>12. Ulcers</td>
<td>1.294</td>
<td>3.470</td>
<td>4.529</td>
<td>2.294</td>
</tr>
<tr>
<td>17. Chronic Back Pain</td>
<td>2.529</td>
<td>2.941</td>
<td>4.529</td>
<td>3.470</td>
</tr>
<tr>
<td>20. Mental Disorders</td>
<td>1.117</td>
<td>2.647</td>
<td>4.529</td>
<td>1.823</td>
</tr>
<tr>
<td>21. Appendicitis</td>
<td>1.117</td>
<td>3.764</td>
<td>4.588</td>
<td>2.000</td>
</tr>
<tr>
<td>Disease</td>
<td>Chiropractor</td>
<td>Medical GP</td>
<td>Doctor Specialist</td>
<td>Osteopath</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>2. Heart Disease</td>
<td>1.040</td>
<td>3.000</td>
<td>4.720</td>
<td>1.880</td>
</tr>
<tr>
<td>3. Asthma</td>
<td>1.200</td>
<td>3.560</td>
<td>4.600</td>
<td>1.880</td>
</tr>
<tr>
<td>4. Cancer</td>
<td>1.120</td>
<td>3.200</td>
<td>4.800</td>
<td>1.920</td>
</tr>
<tr>
<td>6. Gonorrhea</td>
<td>1.080</td>
<td>3.960</td>
<td>4.360</td>
<td>1.840</td>
</tr>
<tr>
<td>7. Strain in. Back</td>
<td>2.560</td>
<td>3.320</td>
<td>4.600</td>
<td>2.880</td>
</tr>
<tr>
<td>8. Epilepsy</td>
<td>1.120</td>
<td>3.440</td>
<td>4.680</td>
<td>1.840</td>
</tr>
<tr>
<td>10. Acne</td>
<td>1.160</td>
<td>3.920</td>
<td>4.600</td>
<td>1.960</td>
</tr>
<tr>
<td>11. Whiplash</td>
<td>2.080</td>
<td>3.400</td>
<td>4.640</td>
<td>2.840</td>
</tr>
<tr>
<td>12. Ulcers</td>
<td>1.120</td>
<td>3.560</td>
<td>4.600</td>
<td>1.960</td>
</tr>
<tr>
<td>14. Allergies</td>
<td>1.120</td>
<td>3.440</td>
<td>4.560</td>
<td>1.880</td>
</tr>
<tr>
<td>15. Kidney Disease</td>
<td>1.120</td>
<td>3.291</td>
<td>4.800</td>
<td>1.800</td>
</tr>
<tr>
<td>16. Sciatica</td>
<td>1.880</td>
<td>3.440</td>
<td>4.600</td>
<td>2.280</td>
</tr>
<tr>
<td>17. Chronic Back Pain</td>
<td>2.280</td>
<td>3.320</td>
<td>4.680</td>
<td>2.960</td>
</tr>
<tr>
<td>20. Mental Disorders</td>
<td>1.200</td>
<td>3.200</td>
<td>4.520</td>
<td>1.800</td>
</tr>
<tr>
<td>21. Appendicitis</td>
<td>1.120</td>
<td>3.840</td>
<td>4.680</td>
<td>1.840</td>
</tr>
</tbody>
</table>
comparison, the OCR of each practitioner to treat each of the various
disease conditions or symptoms as rated by the freshmen chiropractic
students is shown on Table 8.
### Table 8

Average Competency Ratings of Chiropractors and Three Other Health Care Practitioners to Treat Twenty-One Specific Diseases by the Freshman Chiropractic Class of Western States Chiropractic College

Using the following rating scale:

- 1 - unqualified
- 2 - somewhat qualified
- 3 - qualified
- 4 - well qualified
- 5 - most qualified

<table>
<thead>
<tr>
<th>Disease</th>
<th>Chiropractor</th>
<th>Medical GP</th>
<th>Doctor Specialist</th>
<th>Osteopath</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ruptured Disc</td>
<td>3.281</td>
<td>1.741</td>
<td>3.290</td>
<td>3.161</td>
</tr>
<tr>
<td>2. Heart Disease</td>
<td>3.096</td>
<td>2.419</td>
<td>3.677</td>
<td>2.354</td>
</tr>
<tr>
<td>3. Asthma</td>
<td>3.625</td>
<td>2.562</td>
<td>2.968</td>
<td>2.812</td>
</tr>
<tr>
<td>5. Diabetes</td>
<td>3.468</td>
<td>2.625</td>
<td>3.062</td>
<td>2.812</td>
</tr>
<tr>
<td>6. Gonorrhea</td>
<td>2.125</td>
<td>3.062</td>
<td>3.375</td>
<td>2.718</td>
</tr>
<tr>
<td>7. Strain in Back</td>
<td>4.718</td>
<td>1.806</td>
<td>2.225</td>
<td>3.548</td>
</tr>
<tr>
<td>8. Epilepsy</td>
<td>3.125</td>
<td>2.193</td>
<td>2.806</td>
<td>2.580</td>
</tr>
<tr>
<td>10. Acne</td>
<td>3.375</td>
<td>2.437</td>
<td>3.062</td>
<td>2.718</td>
</tr>
<tr>
<td>12. Ulcers</td>
<td>3.562</td>
<td>2.468</td>
<td>3.093</td>
<td>2.906</td>
</tr>
<tr>
<td>13. Arthritis</td>
<td>3.812</td>
<td>2.250</td>
<td>2.656</td>
<td>2.968</td>
</tr>
<tr>
<td>15. Kidney Disease</td>
<td>3.062</td>
<td>2.343</td>
<td>3.468</td>
<td>2.483</td>
</tr>
<tr>
<td>16. Sciatica</td>
<td>3.966</td>
<td>2.166</td>
<td>2.800</td>
<td>3.100</td>
</tr>
<tr>
<td>17. Chronic Back Pain</td>
<td>4.592</td>
<td>1.687</td>
<td>2.437</td>
<td>3.250</td>
</tr>
<tr>
<td>20. Mental Disorders</td>
<td>2.718</td>
<td>1.968</td>
<td>3.093</td>
<td>2.129</td>
</tr>
<tr>
<td>21. Appendicitis</td>
<td>2.218</td>
<td>2.709</td>
<td>3.656</td>
<td>2.500</td>
</tr>
</tbody>
</table>
CHAPTER IV

ANALYSIS OF DATA

Personal data obtained on the first page of the instrument were not treated statistically. The purpose of gathering that information was to give insight into the nature of the test groups. It was found that the test groups were quite similar in most characteristics. Sex distribution, mean-age, major in college, whether or not the subject had ever been treated by a chiropractor, personal knowledge of someone who has been treated by a chiropractor, current rating of chiropractic care and the desire to know more about chiropractic differed very little.

The distribution of class standing at the relationship to those the subject knew who had been treated by a chiropractor differed the most.

A tally by per cent of the data obtained on page one of the instrument appears in Table 3, page 47.

The remaining data were analyzed by a one-way analysis of variance and tested for significance at the .05 level. All of the subjects who participated in the pretest also completed the posttest. The data obtained from these tests were coded on tabulating cards and processed at the computer center at the University of Oregon. The comparisons between the various scores of the test groups on the variables and the changes which occurred during the study are reported on Table 9.

The data concerning the statistical validity of each of the five null-hypotheses produced the following results:
TABLE 9

COMPARISONS OF THE CHANGES IN SCORES OF THE TEST GROUPS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th>X1</th>
<th>S.D.1</th>
<th>X2</th>
<th>S.D.2</th>
<th>X Diff.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G</td>
<td>11.647</td>
<td>8.054</td>
<td>12.765</td>
<td>7.207</td>
<td>1.118</td>
<td>0.182</td>
</tr>
<tr>
<td>General Attitude</td>
<td>E</td>
<td>66.240</td>
<td>13.470</td>
<td>60.120</td>
<td>13.182</td>
<td>-6.120</td>
<td>2.636</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>65.706</td>
<td>12.348</td>
<td>63.786</td>
<td>13.128</td>
<td>2.000</td>
<td>0.209</td>
</tr>
<tr>
<td>Attitude Toward Inclusion of Chiropractic as Health Career</td>
<td>E</td>
<td>3.280</td>
<td>1.137</td>
<td>3.480</td>
<td>1.262</td>
<td>0.200</td>
<td>0.346</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>3.765</td>
<td>1.251</td>
<td>3.529</td>
<td>1.125</td>
<td>-0.236</td>
<td>0.333</td>
</tr>
<tr>
<td>Attitude Toward Including Chiropractic Information in Consumer Health Units</td>
<td>E</td>
<td>4.480</td>
<td>1.122</td>
<td>4.640</td>
<td>0.995</td>
<td>0.160</td>
<td>0.284</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>5.176</td>
<td>0.728</td>
<td>4.824</td>
<td>1.334</td>
<td>-0.352</td>
<td>0.917</td>
</tr>
<tr>
<td>Overall Competency Rating of Chiropractor to Treat Diseases</td>
<td>E</td>
<td>1.512</td>
<td>0.535</td>
<td>1.409</td>
<td>0.467</td>
<td>-0.103</td>
<td>0.524</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>1.545</td>
<td>0.388</td>
<td>1.490</td>
<td>0.337</td>
<td>-0.055</td>
<td>0.193</td>
</tr>
<tr>
<td>Overall Competency Rating of MD Generalist to Treat Diseases</td>
<td>E</td>
<td>3.330</td>
<td>0.419</td>
<td>3.473</td>
<td>0.484</td>
<td>0.143</td>
<td>1.235</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>3.294</td>
<td>0.377</td>
<td>3.302</td>
<td>0.394</td>
<td>0.008</td>
<td>0.003</td>
</tr>
<tr>
<td>Overall Competency Rating of MD Specialist to Treat Diseases</td>
<td>E</td>
<td>4.674</td>
<td>0.544</td>
<td>4.634</td>
<td>0.426</td>
<td>-0.040</td>
<td>0.082</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>4.762</td>
<td>0.270</td>
<td>4.658</td>
<td>0.430</td>
<td>-0.104</td>
<td>0.705</td>
</tr>
<tr>
<td>Overall Competency Rating of Osteopath to Treat Diseases</td>
<td>E</td>
<td>2.232</td>
<td>0.714</td>
<td>2.162</td>
<td>0.846</td>
<td>-0.070</td>
<td>0.104</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>2.359</td>
<td>0.720</td>
<td>2.484</td>
<td>0.763</td>
<td>0.125</td>
<td>0.227</td>
</tr>
</tbody>
</table>

a>F-Ratio significant at the .05 level.
Effect of the Programmed Instruction Course on Knowledge

Even though no attempt was made to match the control group and the experimental group, it was found that they did not differ significantly in their knowledge about chiropractic at the time of the pretest. A nonsignificant F ratio of 0.002 was found to exist between the means of their knowledge scores.

The mean knowledge score of the experimental group increased 18.280 points. This increase resulted in an F ratio of 31.154. An F ratio of 4.04 was needed for significance at the .05 level which demonstrated a significant increase in knowledge about chiropractic.

The increase in knowledge of the control group was 1.118 points which yielded an F ratio of 0.182. This increase was not significant. It was also found that while the knowledge means between the two groups had not differed significantly at the pretest, they now differed at the posttest to the degree of an F ratio of 23.901 which was statistically significant at the .01 level.

The strength of the relationship between participation in the programmed instruction course and the increase in knowledge was tested by the omega squared procedure (\(\omega^2\)). A strength of .376 was obtained. This result indicates that 37 per cent of the change in knowledge can be attributed to the programmed instruction course.

Examination of the nature of the relationship yielded a best estimate of the population mean to be 30.040 with a 95 per cent confidence interval of 24.464 to 35.616.

On the basis of these results the first null-hypothesis was rejected.
Effect of the Programmed Instruction Course on the General Attitude Toward Chiropractic

As was found in the case of the knowledge score, the experimental group and the control group did not differ significantly in their attitude scores either. The difference between the means of the two groups at the pretest yielded an F ratio of only 0.017 which was not statistically significant.

Both groups tended downward, in the direction of unfavorability, during the study. The control group's general attitude mean dropped 2.000 points, an F ratio of 0.209, and the experimental group's general attitude mean dropped 6.120 points for an F ratio of 2.636. Neither of the F ratios were statistically significant, though the experimental group mean tended to be lowered more than that of the control group.

A strength test was applied using omega squared which yielded a strength of .032. This demonstration of low strength was consistent with the failure to find the existence of a relationship between having taken the programmed instruction course and a significant change in the favorability of general attitude toward chiropractic.

Due to the fact that there was no significant difference found the best estimate of the attitude mean of the population is 61.913, the average of the means of the two groups.

On the basis of these results the second null-hypothesis was not rejected.

Effect of the Programmed Instruction Course on the Attitude Toward the Inclusion of Chiropractic as a Career Choice in a Health Careers Teaching Unit
An $F$ ratio of the difference between the means of the experimental group's pretest and posttest failed to show the existence of a relationship between having taken the programmed instruction course and a subject's attitude toward the inclusion of chiropractic as a health career choice in a health careers teaching unit. An $F$ ratio of 4.04 was needed, while an $F$ ratio of only 0.346 was obtained. As a result of these findings, the third null-hypothesis was not rejected, and no further statistical tests were executed on this item.

**Effect of the Programmed Instruction Course on the Attitude Toward the Inclusion of Information About Chiropractic in Consumer Health Education Teaching Units**

An $F$ ratio of 4.04 was needed to establish the existence of a relationship between having taken the programmed instruction course and a change in favorability toward the inclusion of chiropractic information in a consumer health education teaching unit. An $F$ ratio of 0.284 was obtained which failed to demonstrate significance at the .05 level. As a result of these findings, the fourth null-hypothesis was not rejected, and no further statistical computations were made.

**Effect of the Programmed Instruction Course on the Overall Rating of a Chiropractor's Competency to Treat a Variety of Diseases**

An $F$ ratio of 4.04 was required to establish the existence of a relationship between having taken the programmed instruction course and a significant change in the overall competency rating of a chiropractor to treat a variety of diseases. An $F$ ratio of 0.524 was obtained which was not sufficient to indicate significance. As a result of these findings the fifth null-hypothesis was not rejected.
No significant changes in the overall competency ratings of either of the other three types of health care practitioners, i.e., MD generalist, MD specialist, and osteopath, were found to occur among the experimental groups or control groups.

Tables 4, 5, 6, and 7 contain the competency ratings of each of the four health care practitioners by disease. These data were not tested for significance, and are presented primarily for inspection.

Evaluations of the Programmed Instruction Course by Subjects in the Experimental Group

It was considered desirable to obtain feedback from the experimental group concerning various aspects of their experience with the programmed instruction course. It was felt that such information would be of value in revision or future utilization of the course. Feedback was obtained in two ways: first, a questionnaire (Appendix F) was given to the experimental group subjects upon which they were to report information and observations they had been asked to be aware of at the beginning of the study, and second, private personal interviews were held with eight subjects selected from the group for a variety of reasons to determine if: (a) their expressed feelings of changes in favorability toward chiropractic matched the results indicated by the testing instrument, and (b) what factors were responsible for any such change in their opinion.

The questionnaire showed that twenty-one of the twenty-five subjects completed the programmed instruction booklet, and four did not. Thirteen of the subjects followed the procedure of examining the references given in the frames in order to answer the questions, as the
course instructions indicated. Six subjects indicated that they paid little attention to the reference materials, and simply went through the instruction booklet finding the correct answers on the following page. Three subjects stated that they had gone beyond just looking up the references necessary to answer the questions, and read many of the materials provided out of personal interest. Three subjects did not fill out the questionnaire.

The experimental group indicated that they had spent an average total of 8.52 hours working on the programmed instruction course.

Responses to the question, "what suggestions do you have to improve the course?" were varied. Generally, the response was quite positive toward the course and its construction. The most common complaints centered around the sheer size of the course and trying to fit it into their already overcrowded schedule. Several noted that the volume of materials presented the biggest problem and the suggestion was made that some sort of labeling device be instituted to facilitate locating references cited. Several indicated that they would like to have been able to interact with an instructor as they progressed through the course. The fact that the course caused some conflict with mid-terms was expressed by several subjects. The general feelings were that the materials were interesting and the topic was one of concern, however circumstances were less than ideal to allow the participants to pursue the course as intensely as they wished.

Eight subjects were interviewed and were chosen for a variety of reasons. Most of them were selected because they had demonstrated marked changes in their general attitude toward chiropractic. One was selected
because of having expressed a definite interest in pursuing chiropractic as a career prior to having taken the programmed instruction course.

Two basic questions were asked all interviewees: (1) Do you feel that your personal attitude toward chiropractic has gone up, down, or remained about the same as a result of having taken the course? And, (2) what facts did you learn from the course that you feel were most responsible for the change? Or, if the subject felt there was no change in attitude, they were told of the differences in their pretest/posttest scores, and asked if they could account for the changes. The results of the interviews were as follows:

Subject #1:
Female, 21 years old; major: community health.
Pretest scores: knowledge = 4, attitude = 74.
Posttest scores: knowledge = 38, attitude = 50.
Answer to question number one: The subject stated that she felt that her attitude toward chiropractic had definitely become more negative. She said that she had previously felt rather unfavorable toward chiropractic, and now had some knowledge to support her feelings.

Answer to question number two: The subject named the use of questionable techniques by chiropractic "success" schools which teach chiropractors how to increase their practices by "lathering love lavishly," and other means of psychological manipulation. She also mentioned the potential danger in misapplied spinal "adjustments" by chiropractors, the lack of scientific verification of chiropractic theory, the absence of research by chiropractors, and the lack of qualification of chiropractic school faculties as reasons for her lower attitude toward chiropractic.

Subject #2:
Female, 21 years old; major: health-pre-nursing.
Pretest scores: Knowledge = 24, attitude = 46.
Posttest scores: Knowledge = 40, attitude = 52.
Answer to question number one: The subject stated that she felt that her attitude toward chiropractic had remained pretty much the same as before having taken the course. She noted that her mother was a physical therapist and that she felt her attitudes toward chiropractic were extremely negative as a result.

Answer to question number two: (After having been told that her attitude score had gone up somewhat, but that it did reflect a negative orientation toward chiropractic). The subject stated that the fact that chiropractic was now talking about doing research and
seemed to be admitting their need for improving chiropractic education could have accounted for a slight improvement in her attitude, but that it was still pretty low.

**Subject #3:**
Female, 36 years old; major: health education.
Pretest scores: Knowledge = 13, attitude = 41.
Posttest scores: Knowledge = 49, attitude = 57.

Answer to question number one: The subject stated that she felt that her attitude toward chiropractic had gone down as a result of having taken the course. She said that her attitude had been negative anyway, but now was really low.

Answer to question number two: The subject stated that the pro-chiropractic materials were most influential in reducing her attitudes. She specifically mentioned the pamphlet entitled, "X-Ray: Menace or Miracle," as "turning her off." She also said that the rejection of chiropractic by the AMA affected her, and that the idea that chiropractors were functioning as primary deliverers of health care was appalling to her.

**Subject #4:**
Male, 22 years old; major: physical therapy.
Pretest scores: Knowledge = -1, attitude = 66.
Posttest scores: Knowledge = 5, attitude = 82.

(Note: This subject was one of four who indicated that he did not finish the course. He was chosen to interview because he was the only person in the experimental group who was located above the mean and demonstrated a substantial increase in attitude toward chiropractic, a combination which might indicate a more positive attitude toward chiropractic as a result of having taken the course.)

Answer to question number one: The subject stated that he felt that he would be more willing to give chiropractic a try as a method of treatment for himself as a result of having taken the course.

Answer to question number two: The subject stated that some of the points made by the pro-chiropractic literature were convincing, but could not recall any specifics, even when pressed a bit.

**Subject #5:**
Female, 36 years old; major: health education.
Pretest scores: Knowledge = 13, attitude = 41.
Posttest scores: Knowledge = 49, attitude = 57.

Answer to question number one: The subject felt that her attitudes may have moved downward, but couldn't be sure because she felt that her attitudes were already pretty low.

Answer to question number two: The subject stated that the inadequacies in chiropractic education, the fallacy of chiropractic theory, and the lack of control over the licensing of chiropractors were responsible for any reduction in attitude which might have been indicated.
Subject #6:
Male, 21 years old; major: physical education, minor: health education.
Pretest scores: Knowledge = 2, attitudes = 88.
Posttest scores: Knowledge = 11, attitudes = 84.
NOTE: This subject was chosen to interview because of having expressed a serious interest in becoming a chiropractor prior to the study.)
Answer to question number one: The subject stated that his attitude might have gone up a bit, but was very uncertain about it because he felt that he had been unable to give the course the attention he had wanted to because of a very busy program. He requested that he be given the materials and a course booklet so that he could go over the course again during the spring recess and give it the study he desired. The request was granted, and no further questions were asked.

Subject #7:
Male, 21 years old; major: physical education, minor: health education.
Pretest scores: Knowledge = 21, attitudes = 81.
Posttest scores: Knowledge = 41, attitudes = 59.
Answer to question number one: The subject stated that he felt his attitude went down as a result of having taken the course.
Answer to question number two: The subject stated that the dangers associated with chiropractic treatment, the use of chiropractic by insurance companies because it was cheaper, the super-salesman "bunko" type techniques used by the chiropractic "success" schools, and the high incomes of many chiropractors who used these techniques were most responsible for the lowering of his attitude.

Subject #8:
Male, age not given; major: physical education, minor: health education.
Pretest scores: Knowledge = 3, attitude = 81.
Posttest scores: Knowledge = 31, attitude = 59.
Answer to question number one: The subject stated that he didn't feel that his attitude toward chiropractic had changed very much as a result of having taken the course. He stated that he felt that he had had a negative orientation toward chiropractic all along. When told that his pretest score had been considerably above the mean for the group as a whole, he stated that he had done a rather superficial job of answering on the pretest, but that his responses on the posttest were done with much more conviction.
Answer to question number two: The subject stated that he thought that chiropractic was a sales profession and not a true health care profession. He said that he felt that the chiropractic education program was especially poor, and that he was shocked to learn that many insurance companies would reimburse for chiropractic services.
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary and Conclusions

The purpose of the study was to determine the effect a programmed instruction course about chiropractic would have on the knowledge and attitudes of prospective health education teachers at the University of Oregon. A test instrument was devised and a programmed instruction course was developed which was used in conjunction with a selected assortment of materials for and against chiropractic. The programmed instruction course was given to 25 prospective health education teachers enrolled in two different upper division health classes at the University of Oregon during the winter term, 1973. A group of 17 similar subjects also enrolled in these classes were randomly separated to serve as a control.

Five null-hypotheses were tested by a one-way analysis of variance at the .05 level of significance. They were:

1. There is no difference in knowledge about chiropractic between the experimental group and the control group.

2. There is no difference in favorability of general attitudes toward chiropractic between the experimental group and the control group.

3. There is no difference in favorability of attitudes toward the inclusion of chiropractic as a career choice in health
careers teaching units between the experimental group and the control group.

4. There is no difference in favorability of attitudes toward the inclusion of information about chiropractic in consumer health education teaching units between the experimental group and the control group.

5. There is no difference in the overall rating of a chiropractor's competency to treat a variety of diseases between the experimental group and the control group.

The first page of the test instrument was designed to gather personal data on the subjects including their previous knowledge of and personal experience with chiropractic, and their desire to know more on the topic. It was found that considerable interest did exist among the subjects to learn more about chiropractic. This and other data obtained on the first page of the instrument were not treated statistically but were gathered to provide greater insight about the test groups.

The first null-hypothesis was rejected on the basis that a significant difference in knowledge about chiropractic did exist between the experimental group and the control group at the time of the posttest. No such difference existed at the pretest.

The general attitude of the subjects toward chiropractic was found to be negative previous to the study. Neither test group demonstrated significant changes in their general attitude toward chiropractic, but the experimental group tended to become more negative than the control group. The second null-hypothesis was not rejected on the basis of these findings.
None of the remaining null-hypotheses were rejected as a result of the data obtained in the study.

Recommendations

The instrument devised for the study appeared to function well for its intended purposes, and could undoubtedly be used for future studies of this nature with only minor revisions. These revisions would be mainly to update factual information on the knowledge portion, or perhaps identify some new issue which might be used to discriminate about a particular attitude.

Prospective health education teachers at the University of Oregon seem to be very interested in knowing more about chiropractic. Despite their indicated interest in the topic, their knowledge level appears to be rather low. Findings seem to suggest that more needs to be done to fulfill this interest. A programmed instruction course, such as the one used in this study, can be an effective means of providing information about chiropractic.

Considering the data obtained from testing groups whose attitudes were known in advance to be favorable or unfavorable toward chiropractic, i.e., the Western States Chiropractic College freshmen and the group of health professionals and graduate health students, the data obtained from this study, and the information gathered from the poststudy interviews, support is given to the belief that there is little relationship between knowledge alone and attitudes. The findings support the belief that attitudes held by an individual are the result of a variety of complex factors of which knowledge is but one.
Interviews of subjects who demonstrated the greatest changes in their scores indicate that a positive or negative predisposition may be the most important factor in determining the direction in which their attitude scores moved. The possibility of some regression effect must also be recognized in these scores.

Because of the conditions under which the study was conducted, it might be reasonable to expect an even greater improvement in knowledge mean scores among groups volunteering to take the programmed instruction course, or in groups who have higher motivation or fewer study conflicts competing for their time and energy. It would be possible to accomplish this by offering the programmed instruction booklet and its materials as a correspondence course for in-service training of health educators. Another possibility is its utilization in a summer school class or workshop on consumer health, medical quackery or health careers. If the programmed instruction course were to be utilized in any of these ways, it would be desirable to determine its effects on the variables dealt with in this study.

Future studies should be undertaken to determine the effects of different strategies on attitudes toward chiropractic. For example, it would be desirable to know what the effects would be of being exposed exclusively to materials which are pro-chiropractic or anti-chiropractic as compared to an exposure to both types as was done in this study. The effectiveness of the programmed instruction booklet itself should be tested by comparing changes which occur between groups exposed to the reference materials only and those given the same materials plus the programmed instruction booklet.
The chiropractic controversy shows no evidence of abating in the foreseeable future. Therefore, the need for health educators to be informed on this topic will probably continue. It is very likely that the need could even increase. One reason for this might be due to the specifications of the new law covering certain limited chiropractic services under Medicare. The public is apt to question why it is that only some services are covered which could result in some open debate. Also, the stipulations requiring chiropractors to submit satisfactory X-ray films with Medicare claims could eventually lead to a test of validity similar to the one carried out by the National Association of Letter Carriers. The inability of chiropractors in the past to be able to verify each other's X-ray diagnoses of spinal subluxations could result in a public confrontation of some magnitude.

Another reason why health educators might be expected to be better informed in the future about chiropractic is the increased emphasis in consumerism in our society. Health care is a major consumer item in America, and the trend toward greater involvement in the marketplace by the academic community is well-established. It would, therefore, seem imperative that every health educator become informed on this topic.

In order for health education to rightly represent the academic community and properly serve the best interests of the public, it must maintain a posture of unalignment with any vested-interest, objectivity in its evaluation of the issues, and an open-mindedness toward new developments in the chiropractic controversy. As a member of the academic community health education's first responsibility is the search for truth, its obligation is to humanity, and its final judge will be history.
### APPENDIX A

#### TABLE 10. A COMPARISON OF THE MEAN SCORES OF THE STUDY GROUPS WITH THOSE OF WESTERN STATES CHIROPRACTIC COLLEGE FRESHMEN

<table>
<thead>
<tr>
<th>Test Group</th>
<th>Knowledge score</th>
<th>Attitude Scores</th>
<th>Overall Competency Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>As Health</td>
<td>Inclusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General</td>
<td>Career</td>
</tr>
<tr>
<td>Freshmen Chiropractic Students</td>
<td>29.750</td>
<td>104.656</td>
<td>5.313</td>
</tr>
<tr>
<td>Experimentals Posttest</td>
<td>30.040</td>
<td>60.120</td>
<td>3.430</td>
</tr>
<tr>
<td>Controls Pretest</td>
<td>11.647</td>
<td>65.706</td>
<td>3.765</td>
</tr>
</tbody>
</table>

*A higher score indicates a more favorable attitude toward.*
APPENDIX B

Original 30-Item Attitude Scale

INSTRUCTIONS: Below you will find a list of statements about chiropractic. Please indicate the degree to which you agree or disagree with each statement by circling the letter in accordance with the following scale:

a. agree b. strongly agree c. very strongly agree
d. disagree e. strongly disagree f. very strongly disagree

1. Chiropractors should be unlimited by law as to the types of treatment they may give.

2. State licensing boards for chiropractic should be made up of chiropractors only.

3. Chiropractic should be permitted to function as an all-inclusive therapeutic alternative to the medical profession.

4. Chiropractic should be completely eliminated by law.

5. Chiropractic colleges should be subject to the same controls as schools of medicine.

6. Chiropractors should be limited by law to the treatment of musculo-skeletal conditions.

7. Chiropractors should be required by law to carry malpractice insurance.

8. Chiropractors should be permitted to treat only patients on referral from a medical doctor.

9. State licensure of chiropractic should be under the control of persons other than chiropractors.

10. Chiropractic, medicine and osteopathy should compete openly, without legal interference, thus permitting the health care consumer to be the judge of the services he will choose.

11. Chiropractors should be limited by law as to the types of treatment they may render.

12. Health education should teach people to choose chiropractic services for certain conditions.
13. Chiropractic services should be covered by tax-supported health care programs such as Medicare, Medicaid, etc.

14. Chiropractic colleges that cannot qualify for affiliation with an accredited university should be closed.

15. Consumer health education teaching units should include information on chiropractic theory and practice.

16. Chiropractic should be included as a choice students might elect to pursue in a health careers teaching unit.

17. HEW should outline the limits of chiropractic practice with compliance required by law.

18. Chiropractors should be given hospital privileges equal to those granted an M.D.

19. Chiropractic colleges should receive direct financial assistance from the state.

20. Health educators should inform people of any inadequacies they find in chiropractic.

21. Students should be told that chiropractic is a questionable healing art.

22. Materials promoting chiropractic in a very favorable way should be made available to students.

23. The state should control by some inspection procedure the kinds of diseases chiropractors are treating.

24. All health insurance policies should recognize the right of the policy holder to choose chiropractic care if he so desires.

25. The four-year Doctor of Chiropractic degree should be regarded as being equal to the four-year Doctor of Medicine degree.

26. Anti-chiropractic materials should be made available to students.

27. Chiropractors should be denied the use of the title "doctor".
28. The granting of licenses by the state to chiropractors to treat disease should be discontinued.

29. Chiropractors should be prohibited from using X-ray equipment.

30. The federal government should finance chiropractic research proportionate to what it does for medical research.
APPENDIX C

INSTRUMENT
PERSONAL DATA

Name_________________________________________ Sex: M____ F____

Class: Junior____ Senior____ Graduate____ Age:____

Major________________________________ Minor________________________

1. How would you rate your knowledge about chiropractic?
   1_________ 2_________ 3_________ 4_________ 5_________
   None  low  medium  high  very high

2. Have you ever been treated by a chiropractor? Yes____ No____
   If yes, how many times?
   1-2 times____; 3-6 times____; more than 6 times____

3. Do you have personal knowledge of anyone who has been treated by a
   chiropractor? Yes____ No____
   What relationship exists between you and the person?
   Friend____; Immediate family member____; Relative____
   Other________________________

4. How would you rate chiropractic care based on your current knowledge
   and experience?
   Excellent____; Good____; Fair____; Poor____

5. Would you like to be better informed about chiropractic?
   Yes____ No____
APPENDIX C—Continued

INSTRUCTIONS

Indicate your knowledge of the statements by circling either true, false or unknown. Wrong answers will be deducted from the correct answers to determine your score. Unknowns are not counted against you.

TRUE/FALSE/UNKNOWN

1. T F U Chiropractic theory has gained full acceptance by the scientific community at large.

2. T F U The agencies that accredit chiropractic educational institutions are recognized by the three major bodies that accredit higher education in America.

3. T F U Chiropractic treatment does not involve the use of prescription drugs or major surgery.

4. T F U Some chiropractic services qualify for payment under Medicare.

5. T F U Hospital training is part of present-day chiropractic education.

6. T F U The American Chiropractic Association is the exclusive spokesman for the chiropractic profession within the United States.

7. T F U Chiropractic deals only with diseases M.D.'s and osteopaths normally do not treat.

8. T F U Chiropractic is fully recognized and endorsed by the American Medical Association.

9. T F U Chiropractors are the only health care practitioners who utilize spinal manipulation as a mode of treatment.

10. T F U Chiropractic is a branch of the healing arts very similar to physical therapy in that it deals only with musculo-skeletal disorders.

11. T F U Chiropractic training is recognized by the scientific community as adequate to prepare the chiropractor to diagnose disease about as well as other medical practitioners.

12. T F U Chiropractic accepts the theory that germs are the primary causal factor in infectious diseases.

13. T F U Chiropractic theory does not include any factors that conflict with that of medicine.
14. **T** FU Chiropractors favor the use of immunization.

15. **T** FU The American Medical Association recommends that their member doctors refer patients to chiropractors when the symptoms indicate.

16. **T** FU It normally takes four years of professional training to acquire a Doctor of Chiropractic degree.

17. **T** FU Chiropractic's original theory concerning the amount of disease caused by spinal subluxation is still uniformly held by chiropractors today.

18. **T** FU Chiropractic theory limits chiropractors to the treatment of the back and neck only.

19. **T** FU In states where chiropractic students and medical students take the same basic science exams, chiropractic students generally perform as well as do the medical students.

20. **T** FU Chiropractic recognizes that spinal manipulation applied to certain disease conditions can be harmful.

21. **T** FU The faculties of chiropractic colleges are as highly qualified by degree and training as are the faculties of medical schools.

22. **T** FU Chiropractors do not treat infectious diseases.

23. **T** FU The theory of chiropractic held by "straights" is concerned with releasing the vital nerve energy life force throughout the body.

24. **T** FU In many states, chiropractors enjoy virtually the same hospital privileges as do M.D.'s.

25. **T** FU Chiropractic services qualify for indemnification under most State Workmen's Compensation Acts.

26. **T** FU Chiropractic education and training are considered by HEW to be on a par with that of medicine.

27. **T** FU Doctor of Naturopathy, a degree held by many chiropractors in addition to their Doctor of Chiropractic degrees, is a fully recognized medical specialty.

28. **T** FU The current status of chiropractic as a healing art indicates that the chiropractic profession and the medical profession will eventually merge.

29. **T** FU Teachers of such scientific specialties as radiology, pathology, chemistry, anatomy, physiology, and so forth are generally as well-qualified by academic degree in chiropractic schools as are similar teachers in medical schools.
30. **T F U** Chiropractors are licensed to practice obstetrics in the state of Oregon.

31. **T F U** Chiropractic services are included by a large number of insurance companies.

32. **T F U** Chiropractic's use of X-ray has been lauded by observers in the other healing arts as a major scientific advancement in their practice and a benefit to their patients.

33. **T F U** The Arthritis Foundation recognizes and recommends chiropractic treatment for arthritis.

34. **T F U** The U.S. Employees Compensation Bureau recognizes and reimburses chiropractic practitioners for their services.

35. **T F U** The International Chiropractic Association is the exclusive spokesman for chiropractic internationally.

36. **T F U** A major reason why chiropractic isn't widely understood is the lack of emphasis chiropractors have placed on business promotional techniques and public relations through the years.

37. **T F U** State licensure of chiropractic is given as recognition of the validity of chiropractic theory and practice.

38. **T F U** Chiropractic research is recognized by the scientific community at large to be of comparable quality with that of medicine or other scientific research.

39. **T F U** Chiropractic schools use the same basic science textbooks as do medical schools.

40. **T F U** Chiropractors are licensed to practice in nearly all states.

41. **T F U** Chiropractic is a growing profession.

42. **T F U** Several chiropractic colleges are affiliated with regionally accredited liberal arts colleges and universities as are schools of medicine, dentistry, etc.

43. **T F U** Chiropractic is practiced outside of the United States.

44. **T F U** The terms "straight" and "mixer" in chiropractic have reference to the two major types of spinal adjustment utilized by all chiropractors.

45. **T F U** Oregon is the only state in the United States that licenses chiropractors to perform minor surgery.

46. **T F U** Chiropractic as a profession has been in existence about as long as medicine.
47. TFU Chiropractors qualify for commissions in the armed forces of the United States.

48. TFU Chiropractic care is generally less expensive than medical care.

49. TFU The term "chiropractic" is a composite of Greek words meaning "done by hand."

50. TFU The chiropractic profession originated the use of joint manipulation as a procedure of treatment.

51. TFU Almost all chiropractors use X-ray in their practices.

52. TFU The largest chiropractic college in America is National College of Chiropractic in Chicago.

53. TFU The American Chiropractic Association code of ethics forbids advertising by its members.

54. TFU Chiropractic is the second largest healing art in America.

55. TFU There are more chiropractic schools today than at any other time in history.
APPENDIX C—continued

INSTRUCTIONS

Below you will find a list of statements about chiropractic. Please indicate the degree to which you agree or disagree with each statement by circling the letter in accordance with the following scale:

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>very strongly disagree</td>
<td>strongly disagree</td>
<td>disagree</td>
<td>agree</td>
<td>strongly agree</td>
<td>VERY strongly agree</td>
</tr>
</tbody>
</table>

1. Chiropractors should be limited by law to the treatment of musculo-skeletal conditions.

2. Chiropractic should be included as a choice students might elect to pursue in a health careers teaching unit.

3. Chiropractors should be permitted to treat only patients on referral from a medical doctor.

4. The state should control by some inspection procedure the kinds of diseases chiropractors are treating.

5. Chiropractors should be denied the use of the title "doctor".

6. Chiropractic colleges should receive direct financial assistance from the state.

7. Chiropractors should be given hospital privileges equal to those granted an M.D.

8. Students should be told that chiropractic is a questionable healing art.

9. Chiropractic colleges that cannot qualify for affiliation with an accredited university should be closed.

10. Health education should teach people to choose chiropractic services for certain conditions.

11. State licensure of chiropractic should be under the control of persons other than chiropractors.

12. Chiropractic services should be covered by tax-supported health care programs such as Medicare, Medicaid, etc.
13. Chiropractors should be prohibited from using X-ray equipment.

14. All health insurance policies should recognize the right of the policy holder to choose chiropractic care if he so desires.

15. Materials promoting chiropractic in a very favorable way should be made available to students.

16. Chiropractic should be permitted to function as an all-inclusive therapeutic alternative to the medical profession.

17. The granting of licenses by the state to chiropractors to treat disease should be discontinued.

18. The federal government should finance chiropractic research proportionate to what it does for medical research.

19. Chiropractic, medicine and osteopathy should compete openly, without legal interference, thus permitting the health care consumer to be the judge of the services he will choose.

20. The four-year Doctor of Chiropractic degree should be regarded as being equal to the four-year Doctor of Medicine degree.

21. Chiropractors should be limited by law as to the types of treatment they may render.

22. HEW should outline the limits of chiropractic practice with compliance required by law.

23. Consumer health education teaching units should include information on chiropractic theory and practice.
APPENDIX C—continued

RATING CHIROPRACTIC COMPETENCY

INSTRUCTIONS: Using the rating scale shown below, indicate your present opinion concerning the competency of chiropractors and other practitioners to treat the diseases listed.

RATING SCALE:

1. Unqualified
2. Somewhat qualified
3. Qualified
4. Well qualified
5. Most qualified

<table>
<thead>
<tr>
<th>DISEASES</th>
<th>Chiropractor</th>
<th>MD Generalist</th>
<th>MD Specialist*</th>
<th>MD Osteopath</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ruptured disc</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Heart disease</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. Asthma</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. Cancer</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. Diabetes</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. Gonorrhea</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. Strain in back</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. Epilepsy</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. Migraine headache</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10. Acne</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>11. Whiplash</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>12. Ulcers</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>13. Arthritis</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>14. Allergies</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>15. Kidney disease</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>16. Sciatica</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>17. Chronic back pain</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>18. High blood pressure</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>19. Chest pains</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>20. Mental disorders</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>21. Appendicitis</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

*In the particular field, orthopedist, cardiologist, internist, etc.
APPENDIX D

CHECKLIST OF MATERIALS IN ANTI-CHIROPRACTIC PACKET

8. "Ex-chiropractors Enter Training as MD's Assistants," American Medical News, November 15, 1971;
15. "Special Report: Admission to Schools of Chiropractic" (actual title of article is "Requirements For Admission to Schools of Chiropractic") JAMA, 190:8 763-4+, November 23, 1964.

NOTICE:

To protect yourself from questions involving missing materials, you should check to be sure this packet contains all of the materials contained on this list. You should notify us immediately if something is missing. Please be sure all materials are returned following the study. Thank you for your cooperation.
APPENDIX D–continued

CHECKLIST OF MATERIALS
IN PRO-CHIROPRACTIC PACKET

8. The following health pamphlets by the Si-Nel Publishing Company:
   "Avoid Heart Fatigue"
   "Censored"
   "Chest Pains"
   "Correct Asthma"
   "High Blood Pressure"
   "Protect Your Kidneys"
   "Relief From Arthritis"
   "Ruptured Disc"
   "Why? Do Diseases of the Blood Respond to Chiropractic Care?"
11. What You Should Know About Natural Childbirth. A pamphlet issued by Western States Chiropractic College, (author: Donald E. Nichols, D.C.
12. "X-Ray: Menace or Miracle?" A pamphlet by Si-Nel Publishing Co.

NOTICE:

To protect yourself from questions involving missing materials, you should check to be sure this packet contains all of the materials contained on this list. You should notify us immediately if something is missing. Please be sure all materials are returned following the study. Thank you for your cooperation.
APPENDIX E

A Programmed Instruction Course About

CHIROPRACTIC

PREPARED BY

WILLIAM T. JARVIS
DEPARTMENT OF HEALTH EDUCATION
UNIVERSITY OF OREGON
1973
A PROGRAMMED INSTRUCTION COURSE ABOUT CHIROPRACTIC

Prepared by

William T. Jarvis
Department of Health Education
University of Oregon
1973
This is a self-instructional course about the healing art of chiropractic. It covers the aspects of chiropractic that are of concern to the scientific community, including its "discovery", its theory of the cause of disease, its basic mode of treatment, chiropractic education and training, its status legally and scientifically, its possible future, and how health education possibly ought to relate to it.

You have been provided with a packet of the significant materials about chiropractic; some of them have been prepared by chiropractors and those favorable to chiropractic; others represent the case against chiropractic.

It is the purpose of this programmed instructional course to guide you through these materials emphasizing the important basic issues in the chiropractic controversy.

This programmed instructional course should enable you to become well-informed and well-read on this subject in a relatively short period of time.
TABLE OF CONTENTS

Reference Abbreviations Used in Reference Frames  i
Symbols Used in Answering  ii
Instructions to the Student  iii
Part I. History of Chiropractic  1
Part II. Chiropractic Theory  5
Part III. Chiropractic Practice  17
Part IV. Chiropractic Education  28
Part V. Recognition of Chiropractic  34
Part VI. Chiropractic Research  42
Part VII. Chiropractic and the Federal Government  45
Part VIII. Chiropractic and the Hospital  57
Part IX. Chiropractic’s Future  60
Part X. Chiropractic in the Health Education Class  67
Appendix A. Selected References  70
Appendix B. Bibliography  78
### Abbreviated references and symbols will be used in the reference frames because of the space limitations.

Following are the abbreviated forms and what they represent:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answers Pamphlet</td>
<td>The yellow-red pamphlet, &quot;Answer to Your Questions About Chiropractic.&quot;</td>
</tr>
<tr>
<td>Appendix A, Item 0</td>
<td>The section in the back of this booklet starting on page 68; items are numbered.</td>
</tr>
<tr>
<td>Biedermann, p.0</td>
<td>Booklet by Freimut Biedermann, M.D., Fundamentals of Chiropractic from the Standpoint of a Medical Doctor. Translated from German by L.C.J. Iekeler, D.C.</td>
</tr>
<tr>
<td>Dintenfass, p.0</td>
<td>Chiropractic: A Modern Way to Health, a paperback book widely used in this course.</td>
</tr>
<tr>
<td>Health for Life</td>
<td>Vol. 4, No. 2, of this publication is provided. References may be to pages or to designated articles.</td>
</tr>
<tr>
<td>Ibid.</td>
<td>Refer to the same reference source cited in the previous frame.</td>
</tr>
<tr>
<td>Smith, AYOR, p.0</td>
<td>At Your Own Risk: The Case Against Chiropractic, a paperback book by Ralph Lee Smith, widely used in this course.</td>
</tr>
</tbody>
</table>

**NOTE:** other articles by Smith from Today's Health are also cited. Be sure you are following the correct reference.

---

**Other references given are not abbreviated.**
REFERENCE ABBREVIATIONS, CONTINUED.

Si-Nel Pamphlet(s)  Several pamphlets obtained from the Life Foundation, a chiropractic promotional organization representing "straight" ideology, are provided. They may be referred to collectively or singly.


Weiant, WMRTAC, p.0  What Medicine Really Thinks About Chiropractic, a more recent book by the same.

SYMBOLS USED IN ANSWERING:

ANSWERS  The correct answers to the questions are found by turning back the next page as you progress through the booklet.

P.1 | P.2
--- | ---
1 4  Frames 1 and 4 are identified here.

a)  In frame 1 both choices a) and c) are correct.

c)  In frame 4 the correct response is false.

2  In frame 2 you are not required to respond, NR means "no response".

NR  5  In frame 5 there is no correct response, but your opinion is called for.

3  In frame 3 the correct response is true.

T  P.
INSTRUCTIONS TO THE STUDENT

In a programmed instruction course, the information is broken down into small units called "frames", each of which requires you to make an active response to the material presented. After you have responded, you may compare the answer you wrote with the correct response.

In order to maximize your learning, you should go to the reference given in the reference frame and look up the information under discussion. This will enable you to become familiar with the contents of these very significant articles and publications about chiropractic which represent the select literature on the subject. An appendix which begins on page 68 contains excerpts from other materials not contained in the materials packets that will document many of the responses. Here is a sample frame:

<table>
<thead>
<tr>
<th>1</th>
</tr>
</thead>
</table>

A frame is made up of:

- a) a question or statement only.
- b) a single question or statement and a single correct response.
- c) a single question or statement and ONE OR MORE correct responses.

REFERENCES to be used in answering are printed in this frame.

Turn page back for answer to this sample question.

In taking a programmed instruction course, it is essential that you do what each frame asks. If the frame asks for your OPINION on something, you should thoughtfully respond and write in the space provided.

You should look at the correct response only after you have made your response. It should not be necessary to refer back to previous frames unless specifically directed to do so.
### PART I. HISTORY OF CHIROPRACTIC

#### DISCOVERY OF CHIROPRACTIC

Accounts of the discovery of chiropractic do not differ in detail by its proponents or its critics. The acceptance of its legitimacy is questioned by its critics.

The following sequence of frames deals with the account of the discovery of chiropractic as viewed by those who believe in chiropractic and by those who do not.

#### 2

**Who was the "discoverer" of chiropractic?**

- **a)** Anton Mesmer
- **b)** William Simms
- **c)** Daniel D. Palmer
- **d)** Willard Carver

#### 3

**How was the alleged discovery made?**

- **a)** a man who had been deaf for seventeen years was immediately cured by the movement of a displaced vertebra.
- **b)** a miracle similar to those described in the Bible occurred and it was learned how to repeat it.
- **c)** a chemical solution was accidently poured into a container of acid which caused an immediately recognizable positive reaction on a heretofore incurable disease.
4

On what grounds has the discovery of chiropractic been questioned?

a) the poor laboratory conditions  
b) location of the auditory nerve  
c) the unlikelihood of miracles

Dintenfass, p.37  
Smith, AYOR, p.3

5

What evidence is offered to support the validity of the discovery?

a) the reported replication of the event in Denmark.  
b) an anatomical explanation of how it possibly could have occurred.  
c) none at all

Dintenfass, p.37-8

6

JOINT MANIPULATION IN ANCIENT CULTURES

Those who believe in chiropractic point to the use of manipulation, "bone-setting", etc., by ancient cultures as evidence of its established practical value.

Opponents would point out the limitations of the science of ancient cultures and the great amount of error in their systems.

The next sequence of frames deals with these aspects of chiropractic history.

7

Place a mark (x) by the ancient cultures that have been reported to have used manipulation as part of their healing art.

a) China  
b) Babylon  
c) Egypt  
d) Greece  
e) Hebrew  
f) Hindu  
g) Aztec  
h) Caldean  
i) Persian  

Dintenfass, p.29
Chiropractic historians trace spinal bone displacement as a causal factor in disease back to Hippocrates, "Father of Healing".  

<table>
<thead>
<tr>
<th>true</th>
<th>false</th>
</tr>
</thead>
</table>

What did the Hippocratic school regard as the nature of disease?  

- nerve impairment  
- imbalance of the four humors  
- demonic possession

Were all of the theories of Hippocrates regarding the nature of disease and the proper methods of treatment accurate in the light of modern science?  

<table>
<thead>
<tr>
<th>yes</th>
<th>no</th>
</tr>
</thead>
</table>

The term "chiropractic" means:  

- setter of bones  
- done by hand  
- cheerful hearts heal

---

Turn page back for answers to pages 2 and 3.
### Answers

#### Question 13
What three men are called the "trinity of giants" in chiropractic history?

- a) D.D. Palmer
- b) Harvey Smith
- c) Willard Carver
- d) Anton Mermer
- e) B.J. Palmer
- f) H. Lillard

Dientenfass, p.140

#### Question 14
Who was B.J. Palmer?

- a) the son of D.D. Palmer
- b) the "Developer of Chiropractic"
- c) the first licensed chiropractor

Ibid. p.137

#### Question 15
B.J. Palmer was...

- a) well educated in science
- b) largely self-educated
- c) a very capable man

Dientenfass, p.137-9

#### Question 16
What are your impressions of B.J. Palmer after having read the accounts given of him by Dientenfass and Smith?

NR

YOUR OPINION PLEASE:

Smith, *AYOR*, p.3-13

#### Question 17
What is Willard Carver known for?

- a) adding other modes of treatment to chiropractic.
- b) founding the "mixer" approach in chiropractic.
- c) establishing an emphasis on good posture in chiropractic.

Dientenfass, p.83

Appendix A, Item 3
18

In what field was Willard Carver's professional training and background?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>law</td>
</tr>
<tr>
<td>b)</td>
<td>medicine</td>
</tr>
<tr>
<td>c)</td>
<td>science</td>
</tr>
</tbody>
</table>

Smith, AYOR, p.59
Dintenfass, p.139

19

What was the name of the first chiropractic college?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>National Chiropractic College</td>
</tr>
<tr>
<td>b)</td>
<td>Palmer school of Chiropractic</td>
</tr>
<tr>
<td>c)</td>
<td>Carver College</td>
</tr>
</tbody>
</table>

Smith, AYOR, p.8
Dintenfass, p.138

20

The first state to pass a law regulating the practice of chiropractic by licensure was:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Iowa</td>
</tr>
<tr>
<td>b)</td>
<td>Minnesota</td>
</tr>
<tr>
<td>c)</td>
<td>Kansas</td>
</tr>
<tr>
<td>d)</td>
<td>Oregon</td>
</tr>
</tbody>
</table>

Dintenfass, p.142

PART II. CHIROPRACTIC THEORY

21

THE SUBLUXATION

The concept of vertebral subluxation is central and unique to chiropractic theory. While the subluxation concept is universal within chiropractic, the degree of importance placed upon it varies to some extent.

The next sequence of frames describes the subluxation and its role in chiropractic theory.

- 5 - Turn page back for answers to pages 4 and 5.
<table>
<thead>
<tr>
<th>P.4</th>
<th>P.5</th>
<th>97</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>
|     | Does the term "subluxation" have exactly the same meaning in medicine as it does in chiropractic? | Quebec Brief, p.3  
Biedermann, p.27-8 |
|     | a) yes      | no |
|     | 23  |    |
|     | What is meant be the term "subluxation" in chiropractic? | Smith, AYOR, p.4  
Dintenfass, p.63-4  
HEW Report, p.23  
Answers pamphlet, p.3  
Weiant, M&C, p.5 |
|     | a) _"under and unseen"_  
b) _partial displacement of a vertebra_  
c) _a fixation of the joint within its normal range of movement, usually at the extremity of this range._  
d) _a neurothliptic dyskinetic spondylosis._ |
|     | 24  |    |
|     | According to chiropractic theory, how does a subluxation cause disease? | Dintenfass, p.64-5  
Smith, AYOR, p.4  
Health for Life, p.  
ICA Reprint, p.10 |
|     | a) _by interference with nerve function_  
b) _by interference with the circulatory system_  
c) _as a bacterial medium_ |
|     | 25  |    |
|     | What percentage of disease is caused by spinal subluxations according to Palmer's original theory? | Smith, AYOR, p.4 |
|     | a) 50%  
b) 75%  
c) 95%  
d) all (100%) |
| 26 | Do all chiropractors today state that subluxations are the exclusive cause of disease? | "White Paper", p.11
Dintenfass, p.65
Smith, AYOR, p.21 |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>yes</strong>  <strong>no</strong></td>
<td></td>
</tr>
</tbody>
</table>
| 27 | Do chiropractors recognize germs as a causal factor in infectious diseases? | Smith, AYOR, p.80
HEW Report, p.33
Answers Pamphlet, p.12 |
|    | **yes**  **no**                                                  |                         |
| 28 | If forced to choose, which factor does chiropractic consider to be of greater importance in the causation of infectious diseases? | HEW Report, p.25;33
Smith, AYOR, p.80 |
|    | a) germs                                                        |                         |
|    | b) subluxations                                                 |                         |
| 29 | Does chiropractic generally favor the practice of immunization?  | Smith, AYOR, p.82-3
Health for Life, p.4
"Miss Washington..." |
|    | **yes**  **no**                                                  |                         |
| 30 | What does chiropractic offer in place of immunization to protect against infectious diseases? | Health for Life, Ibid. |
|    | a) a normally functioning spine.                                |                         |
|    | b) nutritional supplementation                                  |                         |
|    | c) water treatments                                             |                         |
### 31
**What is the major purpose of chiropractic care?**

- **a)** to free the nervous system of interference with its normal function, thus removing a basic cause of disease.
- **b)** diagnosing specific diseases in specific organs.
- **c)** to aid the "Innate Intelligence" in its sending out and receiving messages in a correct manner.

**Dintenfass, p.40;55**  
**Answers Pamphlet, p.3**

### 32
**What is meant by the term "Innate Intelligence" in chiropractic?**

- **a)** the force that commands the body's vital functions.
- **b)** the soul, spirit or spark of life.
- **c)** an individual's IQ

**Dintenfass, p.40**  
**HEW Report, p.23**

### 33
**THE SCOPE OF CHIROPRACTIC THEORY**

It would be incorrect to state that all chiropractors individually believe chiropractic treatment to be the preferred one in as wide a scope as will be indicated in the next sequence of frames. However, the evidence is clear that chiropractors collectively treat a very wide range of diseases.

### 34
**What diseases does chiropractic theory claim can occur as the result of interference with nerve flow?**

- **a)** arteriosclerosis  
- **b)** appendicitis  
- **c)** coronary occlusion  
- **d)** tonsillitis  
- **e)** thyroid conditions  
- **f)** mental disorders  
- **g)** kidney disease  
- **h)** migraine headache  
- **i)** chronic back pain  
- **j)** hypertension

- **k)** arthritis  
- **l)** asthma  
- **m)** gonorrhea  
- **n)** acne  
- **o)** diabetes  
- **p)** allergies  
- **q)** mumps  
- **r)** epilepsy  
- **s)** sciatica  
- **t)** cancer

**Dintenfass, p.97; 104-10;115**  
**HEW Report, p.25-8; 35**  
**Health for Life, p.4**  
**Si-Nel Pamphlets**  
**Answers Pamphlet, p.7;12**
<table>
<thead>
<tr>
<th>35</th>
<th>Are these claims accepted by the medical profession?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>yes</strong>     <strong>no</strong> cafe</td>
</tr>
<tr>
<td></td>
<td>Quebec Brief, p.10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>36</th>
<th>What evidence is offered by chiropractors that they are successfully treating such a wide variety of diseases?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>a)</strong> none at all</td>
</tr>
<tr>
<td></td>
<td><strong>b)</strong> results of a survey of chiropractors made by the American Chiropractic Association.</td>
</tr>
<tr>
<td></td>
<td><strong>c)</strong> chiropractic reports of clinical cases.</td>
</tr>
<tr>
<td></td>
<td><strong>d)</strong> personal testimonials of patients.</td>
</tr>
<tr>
<td></td>
<td>HEW Report, p.25-6</td>
</tr>
<tr>
<td></td>
<td>Dintenfass, p.90-8</td>
</tr>
<tr>
<td></td>
<td>Health for Life, p.1-7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>37</th>
<th>Do chiropractors believe in the use of personal testimonials to promote chiropractic?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>yes</strong>     <strong>no</strong></td>
</tr>
<tr>
<td></td>
<td>Smith, AYOR p.123-5</td>
</tr>
<tr>
<td></td>
<td>Health for Life, Ibid.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>38</th>
<th>On what grounds is the validity of a personal testimonial challenged?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>a)</strong> the competency of a patient to accurately judge the value of any therapeutic treatment.</td>
</tr>
<tr>
<td></td>
<td><strong>b)</strong> the susceptibility of people to suggestion and persuasion.</td>
</tr>
<tr>
<td></td>
<td><strong>c)</strong> the phenomenon of spontaneous remission in many diseases.</td>
</tr>
<tr>
<td></td>
<td><strong>d)</strong> the factor that most diseases are self-limiting due to the healing power of the body.</td>
</tr>
<tr>
<td></td>
<td><strong>e)</strong> it is not possible to tell whether or not the claims are authentic.</td>
</tr>
<tr>
<td></td>
<td><strong>f)</strong> the question of the accuracy of the original diagnosis.</td>
</tr>
<tr>
<td></td>
<td>Smith, AYOR p.124-8</td>
</tr>
</tbody>
</table>
YOUR OPINION PLEASE:

How much credence should be placed on a personal testimonial by a patient who testifies of a cure of a disease that is generally thought of as not curable by either a chiropractor or a medical doctor?

a) no

b) believe the medical doctor's patient, but not the chiropractor's

c) believe the chiropractor's patient but not the M.D.'s.

c) be suspicious of either.

CHALLENGES TO CHIROPRACTIC THEORY

It has already been pointed out that the medical profession, which represents the scientific community at large, does not accept chiropractic's theory that there is a cause-effect relationship between interference with nerve flow and the diseases chiropractors claim can result.

The next sequence of frames will deal specifically with criticisms of chiropractic theory. References will be made to the "Scientific Brief Against Chiropractic" prepared for the Province of Quebec in 1963 and reported in The New Physician in September, 1966. This reference is chosen because it represents the most complete scientific criticism of chiropractic available in a single article.

What reasons does the Quebec Brief give for not accepting chiropractic theory?

a) the lack of verification by research outside of the field of chiropractic.

b) the lack of research within the chiropractic field.

c) the failure of chiropractic to define qualitatively or quantitatively what is meant by the perturbation of a nerve impulse.

d) the lack of experimental proof of a causative relationship between disturbances of nervous flow and the development of illnesses.

Quebec Brief, p.2

Smith, AYOR, p.147-8
What evidence does the brief offer to refute chiropractic's claim that the nervous system is of primary importance in combating disease?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a)</strong></td>
<td>people with paralysis are not afflicted with illnesses as a result of their impaired nerve flow.</td>
</tr>
<tr>
<td><strong>b)</strong></td>
<td>Orthopedists observe no improvement of disease conditions as the result of the removal of vertebral obstructions.</td>
</tr>
<tr>
<td><strong>c)</strong></td>
<td>an explanation of the disease conditions known to respond well to spinal manipulation.</td>
</tr>
<tr>
<td><strong>d)</strong></td>
<td>the function of intracellular mechanisms on the molecular level which operate independent of the nervous system.</td>
</tr>
</tbody>
</table>

What does the brief state happens to a nervous impulse when it encounters a zone of partial blockage?

<p>| | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>a)</strong></td>
<td>it is transmitted more slowly as it passes through the zone.</td>
</tr>
<tr>
<td><strong>b)</strong></td>
<td>it resumes all its characteristics as soon as it reaches normal nerve tissue.</td>
</tr>
<tr>
<td><strong>c)</strong></td>
<td>it becomes impaired and remains so for the remainder of its course.</td>
</tr>
</tbody>
</table>

According to the brief, what changes can be measured in a nerve impulse by modern technology?

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<table>
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<tbody>
<tr>
<td><strong>a)</strong></td>
<td>number</td>
</tr>
<tr>
<td><strong>b)</strong></td>
<td>amplitude</td>
</tr>
<tr>
<td><strong>c)</strong></td>
<td>frequency</td>
</tr>
<tr>
<td><strong>d)</strong></td>
<td>wave pattern</td>
</tr>
<tr>
<td><strong>e)</strong></td>
<td>degree</td>
</tr>
<tr>
<td><strong>f)</strong></td>
<td>speed of propagation</td>
</tr>
</tbody>
</table>

---

Turn page back for answers to pages 10 and 11.
<table>
<thead>
<tr>
<th>P.10</th>
<th>P.11</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>42</td>
</tr>
<tr>
<td>40</td>
<td>NR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>45</th>
<th>Has chiropractic identified any of these characteristics of a nervous impulse as relating to a specific disease?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>b)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>c)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>d)</td>
<td>_ yes _ no</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>46</th>
<th>Does chiropractic admit that its theory is not totally verified by the scientific method?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>b)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>c)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>d)</td>
<td>_ yes _ no</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>47</th>
<th>Does chiropractic claim that its theory has been established to a degree by scientific principles?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>b)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>c)</td>
<td>_ yes _ no</td>
</tr>
<tr>
<td>d)</td>
<td>_ yes _ no</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>48</th>
<th>What evidence does chiropractic offer as scientific validation of its principles?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>_ the relationship between structure and function in any organism.</td>
</tr>
<tr>
<td>b)</td>
<td>_ the accepted concept of homeostasis and its possible connection with chiropractic theory.</td>
</tr>
<tr>
<td>c)</td>
<td>_ the operation of the feedback mechanisms and their possible connection with chiropractic theory.</td>
</tr>
<tr>
<td>d)</td>
<td>_ the importance of the central nervous system to normal body control.</td>
</tr>
<tr>
<td>e)</td>
<td>_ the function of the autonomic nervous system and its possible connection with chiropractic theory.</td>
</tr>
<tr>
<td>f)</td>
<td>_ the role of the autonomic nervous system in maintaining homeostasis.</td>
</tr>
</tbody>
</table>

Ibid. p.2

"White Paper", p.8-9

Weiant, M&C, p.11;12

Weiant, M&C, p.12

Dintenfass, p.51-2

Dintenfass, p.42-55
49

What evidence of verification by persons outside of chiropractic is offered as support?

a) Dr. Ussher, M.D. and his paper "The Viscero-Epinal Syndrome."
b) the work of a group of German physicians called Die ärztliche Forschungsund Arbeitsgemeinschaft fur Chiropraktik.*
c) statements by several M.D.'s acknowledging the value of chiropractic treatment.

Dintenfass, p.80-1; 160-7.
Weiant, M&C. p.10
Biedermann's book

*NOTE: See also Appendix A, Item 22

50

According to the Quebec brief, who must chiropractic convince of the validity of its theory to make all of its troubles vanish?

a) the general public
b) the American Medical Association
c) the Scientific world
d) the world of scholars

Quebec Brief, p.2
Smith, AYOR. p.148

51

THE DIFFERENCES WITHIN CHIROPRACTIC

Important ideological differences exist within the chiropractic profession. The next sequence of frames deals with those differences.

52

A single theory of chiropractic is uniformly held throughout the profession today.

true false

Smith, AYOR. p.28-9
What does the term "straight" mean in chiropractic?

- a) the belief that the spine should have no curvatures.
- b) the devotion of attention largely or exclusively to the spine as the cause of disease.

What does the term "mixer" mean in chiropractic?

- a) a dynamic action of the spinal column resembling a mixing action.
- b) the inclusion of therapeutic techniques in addition to spinal manipulation.

Which of the following best describes the relationship that exists between the "straights" and the "mixers" in chiropractic?

- a) friendly and cordial
- b) cooperative
- c) divisive and antagonistic

It is important that one understand that the variation in chiropractic theory and practice cannot be adequately described by the simple dichotomizing of "straights" and "mixers". The descriptive continuum shown below is much more representative.

<table>
<thead>
<tr>
<th>STRAIGHTS</th>
<th>MIXERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radical conservative</td>
<td>moderate</td>
</tr>
<tr>
<td>Religious</td>
<td>liberal</td>
</tr>
<tr>
<td>57</td>
<td>The description by Weiant of those in chiropractic who still cling to what they refer to as &quot;the philosophy of chiropractic&quot; applies to which group on the continuum?</td>
</tr>
<tr>
<td>----</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>a)</td>
<td>radical religious straights</td>
</tr>
<tr>
<td>b)</td>
<td>conservative straights</td>
</tr>
<tr>
<td>c)</td>
<td>moderate mixers</td>
</tr>
<tr>
<td>d)</td>
<td>liberal mixers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>58</th>
<th>There are two national chiropractic organizations, one for the &quot;straights&quot; and one for the &quot;mixers&quot;. Identify which represents each group by assigning S and M to the proper organization.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>American Chiropractic Association</td>
</tr>
<tr>
<td>b)</td>
<td>International Chiropractic Association</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>59</th>
<th>What do &quot;straights&quot; give as their major reason for tenaciously holding to their position?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>a dedication to the memory of D.D. Palmer.</td>
</tr>
<tr>
<td>b)</td>
<td>a fear that mixing will eventually result in chiropractic losing its uniqueness.</td>
</tr>
<tr>
<td>c)</td>
<td>a disbelief in any other type of treatment for disease besides spinal manipulation.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>60</th>
<th>Which of the two national organizations for chiropractic is the largest?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>American Chiropractic Ass'n</td>
</tr>
<tr>
<td>b)</td>
<td>International Chiropractic Ass'n</td>
</tr>
</tbody>
</table>
### 61

What reason does Ralph Lee Smith give for the failure of the "straights" and the "mixers" to be able to patch up their differences?

- **a)** the refusal of certain personalities in leadership to relinquish power.
- **b)** the inability to resolve the differences by recourse to science.
- **c)** geographical inconveniences that would result.

*Smith, Ibid. p.19*

### 62

What reasons do "mixers" state for remaining separate?

- **a)** they do not identify chiropractic with any particular philosophy.
- **b)** they are willing to accept new scientific data.
- **c)** they do not dream of a day when chiropractic shall have displaced medicine.

*Weiand, Ibid. p.5*

### 63

A degree held by many "mixers" in addition to Doctor of Chiropractic is:

- **a)** Doctor of Osteopathy
- **b)** Doctor of Naturopathy
- **c)** Doctor of Chiropody

*Appendix A, item 4*

*See also: Western States Chiropractic College Bulletin, p.29-30.*

### 64

Doctor of Naturopathy is a fully recognized scientific degree.

- **true**
- **false**

*Smith, Ibid. p.76*
Which of the following statements best describes the philosophy of Naturopathy?

a) _ drugs are nature's most powerful forces and therefore constitute the most powerful natural cure.

b) _ nature's forces of air, light, water, heat, massage, vibration, electricity, and dietetics should be employed as treatments rather than drugs or surgery.

c) _ health and disease are both equally natural conditions.

PART III. CHIROPRACTIC PRACTICE

66

SOME QUESTIONABLE ASPECTS OF CHIROPRACTIC PRACTICE

Because of the wide variance of chiropractic ideologies represented by the continuum in frame 56, further compounded by individual competence and morality, private chiropractic practices are extremely heterogeneous.

The next sequence of frames deals with some of the questionable aspects of chiropractic practice. Some of these practices are widespread in chiropractic, others are limited to only a few individual practitioners.

67

What criticisms have been levelled at chiropractic practice by outside observers?

a) _ chiropractic's past contains many cases of blatant medical quackery.

b) _ some of chiropractic's luminaries and educators have been proven frauds.

c) _ chiropractic has not instituted a strict uniform code of ethics with the self-policing necessary to protect the public.

d) _ the highly questionable nature of many chiropractic promotional techniques.

Smith, AYOR, Prologue p.vii-xi; 60;chapter 4

Turn page back for answers to pages 16 and 17.
How do responsible leaders of chiropractic respond to these charges?

a) they deny them
b) they totally ignore them
c) they admit to them, but point to a larger group of more responsible chiropractors which has come to exert a controlling influence over the profession.

Weiant, M&C, p.4-5
Dintenfass, p.136

CHIROPRACTIC'S USE OF DIAGNOSTIC MACHINES AND DEVICES

A significant earmark of modern medical quackery that has been noted by every writer on the subject is the employment of machines and devices which are supposed to "scientifically" locate, diagnose or cure disease. Observers question chiropractic's rather extensive background of using devices which have been found to be worthless by federal investigators.

The next sequence of frames deals with some of these devices.

The Los Angeles chiropractor and chiropractic educator who became well-known through the use of phony gadgetry for the diagnosing and treating of disease was:

a) Ruth B. Drown
b) Marvin Phillips
c) Harriet C. Larson

Smith, AYOR, p.53-61

Machines used in chiropractic that have been seized by federal agents as fraudulent devices are:

a) Neurocalometer
b) Sonus Film-O-Sonic 105
c) Micro-Dynameter
d) Visual Nerve Tracing Instrument
e) Detoxacolon
f) Radioclast

Ibid. p.62-7
110

To what extent are diagnostic machines used by chiropractors today?

a) extensively  
b) to some degree  
c) not at all

Appendix A, Item 6
Stanford Study

The Stanford study revealed that chiropractic practitioners use some 57 different types of diagnostic and therapeutic equipment. Most of these are the same ones used by other types of health care practitioners. Several are not.

What is the most commonly used device used by chiropractors which is unique to chiropractic?

a) x-ray  
b) diathermy  
c) neurocalometer  
d) ultrasound

What were the findings of the Stanford study group who tested the Neurocalometer?

a) it is a machine which measures differences in skin temperature.  
b) the machine was incapable of measuring anything.  
c) the readings obtained could be greatly influenced by the technique used in holding the thermocouples against the body.  
d) it is just a simple skin galvanometer.  
e) the device properly handled could measure temperature differences within 0.1°C accuracy, but that the interpretation and significance of the findings were beyond the scope of their report.

Appendix A, Item 23
Stanford Study
What is the attitude of chiropractic leadership today concerning the government seizures of the machines listed in frame 71?

a) __ they make no statement on the subject.
b) __ they feel it was government harassment.
c) __ they say that it represents another area that chiropractic is working to control in order to gain acceptance by the scientific community.

CHIROPRACTIC PROMOTION AND ADVERTISING

According to Eric Jameson, the author of *The Natural History of Quackery*, "It is the principle of self-advertisement that really defines quackery". The origin of the term quackery is derived from "quacksalver". "Quack", means to boast and "salver", means to cure--literally to boast of a cure.

Other writers on the subject of quackery state that in the art and science of healing the legitimate practitioners have concentrated on the scientific aspects of disease and the quacks have concentrated on the art, i.e. the handling of the patient psychologically, the selling of himself as a healer, etc.

Critics accuse chiropractic of indulging in these practices which have always been primary indicators for quackery. The next sequence of frames examines some of these charges.

Who is James W. Parker?

a) __ a chiropractor
b) __ a supersalesman
c) __ a person who runs a school that teaches other chiropractors how to succeed by developing the art of handling patients.

d) __
e) __

Smith, *AYOR* chapter four.
### 78

What are some specific psychological techniques that Parker teaches which are designed to cause the patient to submit to treatment, according to Ralph Lee Smith's report?

- a) lather love lavishly
- b) offering money-back guarantees
- c) the "yet" disease gimmick
- d) suggest possibility of tumor
- e) make no charge for first consultation.

**Smith, AYOR p.42-5**

(a more extensive report of this situation can be found in Today's health, June 1968, "A Golden Touch for Chiropractors").

### 79

What promotional techniques are included in the Parker School of Professional Success?

- a) how to advertise for patients
- b) how to avoid paying taxes
- c) telephone techniques
- d) building up the practice by digging for chronicity.
- e) patient management techniques that utilize the power of suggestion.

**Smith, AYOR p.39-50**

### 80

What does Williams say is the answer to the skyrocketing costs of medical care?

- a) socialized medicine
- b) free enterprise for professional men.
- c) health practitioners should advertise.

**Williams, "Ethical Codes vs Health Freedom." Health for Life, p.2.**

### 81

Does the American Chiropractic Association endorse advertising as an ethical practice for its members?

- yes
- no

**Appendix A, Item 8**

ACA code of ethics, Part 2, art.I, sec.3
**What is the ICA position on advertising by an individual chiropractor?**

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</thead>
<tbody>
<tr>
<td>a)</td>
<td>they do not permit it</td>
</tr>
<tr>
<td>b)</td>
<td>they recommend it</td>
</tr>
<tr>
<td>c)</td>
<td>they neither condemn nor condemn it which leaves it up to the individual chiropractor.</td>
</tr>
</tbody>
</table>

**CHIROPRACTIC'S USE OF X-RAY**

The Department of Health, Education and Welfare has published numerous materials concerning the possible hazards of radiatic exposure due to the use of x-ray machines. They recommend that all possible precautions be taken to reduce patient exposure, especially with regard to pregnancy and gonadal areas.

Chiropractic has been criticized for its practice of using a full body x-ray which increases gonadal and total exposure from 10 to 1000 times greater than that of a regular chest x-ray according to some sources.

**Very few chiropractors use x-ray, and all of them are "mixers".**

<table>
<thead>
<tr>
<th></th>
<th>true</th>
<th>false</th>
</tr>
</thead>
</table>

**How does chiropractic respond to the criticism of their use of the full body x-ray?**

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>a)</td>
<td>some deny the danger of x-ray exposure.</td>
</tr>
<tr>
<td>b)</td>
<td>they are discontinuing it</td>
</tr>
<tr>
<td>c)</td>
<td>they limit its use to a very small percentage of their patients</td>
</tr>
<tr>
<td>d)</td>
<td>they are working on safer techniques.</td>
</tr>
<tr>
<td>no</td>
<td></td>
</tr>
</tbody>
</table>
What are recognized as potential dangers of x-ray exposure by HEW?

a) possible damage to a developing fetus
b) possible damage to gonads
c) possible undesirable genetic mutations

Did the study by J.W. Howe, D.C. with Levine and Rolofson of the Public Health Service Bureau of Radiological Health determine that some commonly used chiropractic x-ray techniques give excess radiation exposure?

yes __ no

What safety precautions are recommended by HEW for protection against possible hazards of x-ray exposure?

a) the use of gonadal shields
b) the use of beam restrictors
c) the use of filters

CHIROPRACTIC ADJUSTMENT

Manipulation is utilized as a treatment procedure by a number of health care practitioners besides chiropractors. Examples are osteopaths, physical therapists, and orthopedists. The exact nature of the manipulative techniques vary in accordance with the desired purpose of the manipulation. The chiropractic adjustment is described by chiropractic sources as "...a carefully planned and skillfully executed thrust with the hands to restore mobility to the joints and to allow the vertebra to assume its normal position."

Certain questions have been raised concerning the actual adjustment itself. The next sequence of frames examines some of those questions.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>What criticisms have been directed at spinal manipulation as a method of treatment?</td>
</tr>
<tr>
<td>a)</td>
<td>None by any practitioner who ever utilizes it.</td>
</tr>
<tr>
<td>b)</td>
<td>It has only limited use in the overall treatment of human disability and disease.</td>
</tr>
<tr>
<td>c)</td>
<td>Manipulation of the spinal cord is potentially dangerous in certain conditions.</td>
</tr>
<tr>
<td>d)</td>
<td>Manipulation of the neck is particularly hazardous.</td>
</tr>
<tr>
<td>91</td>
<td>Does chiropractic recognize any danger in connection with spinal adjustment?</td>
</tr>
<tr>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>What specific diseases are mentioned in the references for which manipulation could be extremely hazardous?</td>
</tr>
<tr>
<td>a)</td>
<td>Ruptured disc</td>
</tr>
<tr>
<td>b)</td>
<td>Muscular backache</td>
</tr>
<tr>
<td>c)</td>
<td>Infectious lesion of the spine</td>
</tr>
<tr>
<td>d)</td>
<td>Tumor of the spine</td>
</tr>
<tr>
<td>e)</td>
<td>Localized stiffness of the spine</td>
</tr>
<tr>
<td>93</td>
<td>In the cases documented by Ralph Lee Smith, where spinal manipulations resulted in death, the cause of the fatal injury was due to:</td>
</tr>
<tr>
<td>a)</td>
<td>Manipulation of a diseased spine</td>
</tr>
<tr>
<td>b)</td>
<td>A failure to render proper treatment to an unrecognized condition which resulted in death, rather than any factor related to the manipulation itself.</td>
</tr>
<tr>
<td>c)</td>
<td>Injury inflicted on the spinal meninges and the cerebral cortex by the manipulation itself.</td>
</tr>
</tbody>
</table>
A three-year study by an orthopedist in private practice found that 172 of his patients had received chiropractic treatment. How many of them were injured by the chiropractic treatment?

- none (0.0%)
- six (3.5%)
- twelve (7.0%)
- seventeen (10.0%)

Do the treatments rendered by medical doctors ever result in harm to their patients?

- yes
- no

What term is used to describe a disease which results from medical treatment?

- prognostic disease
- assymptomatic disease
- iatrogenic disease
- diagnostic disease

What does some of the data show concerning patient's satisfaction with chiropractic treatment?

The Roebuck-Hunter study found:
- Chiropractors: ____% effective;
- % ineffective or harmful.
- Medical Doctors: ____% effective;
- ____% ineffective or harmful.

The chiropractic survey found:
- ____% of patients are satisfied;
- ____% "definitely dissatisfied".
YOUR OPINION PLEASE

Recognizing that all health practitioners make errors of practice which result in problems or tragedy, should chiropractic's errors be criticized any more severely than those of regular medicine's?

b) yes

c) no

Please explain briefly why you answered as you did:


yes

CHIROPRACTIC AND DIAGNOSIS

There seems to be no question as to the value of manipulation as a mode of treatment for certain conditions. There also is agreement that spinal manipulation can be harmful for some conditions. The harm might come either directly or indirectly. For example: direct injury may be done to the joint, soft tissue, spinal cord, nerve, vascular tissue, basilar arterial flow in the neck region under certain conditions, bony injury, fracture or dislocation, especially in the presence of infection, malignancy or osteoporosis.

Indirect injury can result by omission. That would be where manipulation cannot benefit the condition and only postpones the proper treatment.

The most important question to be asked on this wise is whether or not chiropractic education and training adequately prepares a chiropractor to readily diagnose conditions which chiropractic treatment would cause direct or indirect harm to the patient.

The next sequence of frames deals with questions that have been raised concerning chiropractic diagnosis and "analysis".
What approach to diagnosis is described by the ACA-ICA vocational guidance manual entitled, *Opportunities in a Chiropractic Career*, as quoted in the HEW Report?

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>a)</td>
<td>for the chiropractor, diagnosis does not constitute what it does for a medical doctor.</td>
</tr>
<tr>
<td>b)</td>
<td>spinal analysis must first determine whether or not disease in a certain organ exists.</td>
</tr>
<tr>
<td>c)</td>
<td>disturbances of the nervous system are among the most important factors of disease etiology.</td>
</tr>
<tr>
<td>d)</td>
<td>spinal analysis alone is all that is needed to make a correct diagnosis.</td>
</tr>
</tbody>
</table>

Which does chiropractic consider to be of greater importance in the determination of disease?

<p>| | |</p>
<table>
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<tbody>
<tr>
<td>a)</td>
<td>diagnosis</td>
</tr>
<tr>
<td>b)</td>
<td>analysis</td>
</tr>
</tbody>
</table>

What conclusion did the HEW Report reach concerning the ability of chiropractors to perform adequate diagnoses of diseases?

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>a)</td>
<td>they concluded that chiropractors compared favorably to M.D. general practitioners.</td>
</tr>
<tr>
<td>b)</td>
<td>they concluded that chiropractors were less qualified than medical doctors, but adequate to do their job.</td>
</tr>
<tr>
<td>c)</td>
<td>they did not believe the scope and quality of chiropractic education to be sufficient to prepare the practitioner to make an adequate diagnosis.</td>
</tr>
</tbody>
</table>
How does chiropractic respond to the questions raised concerning the ability of a chiropractor to adequately diagnose diseases?

- **a)** They say diagnosis isn't necessary in chiropractic care.
- **b)** They point out that diagnosis is a part of chiropractic education.
- **c)** They say that chiropractors do more than simply diagnose by also making a chiropractic "analysis".

### PART IV. CHIROPRACTIC EDUCATION

#### QUALITY OF CHIROPRACTIC EDUCATION

Central to the issue of chiropractors' ability to adequately diagnose disease is the quality of chiropractic education and training. The next sequence of frames deals with factors concerning that phase of chiropractic.

#### How many chiropractic colleges are there in the United States?

- **a)** 12
- **b)** 20
- **c)** 27
- **d)** 41

#### How are chiropractic educational institutions financed?

- **a)** Privately
- **b)** By federal funding
- **c)** By state funding locally
- **d)** By philanthropic foundations
The largest chiropractic college is:

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<tbody>
<tr>
<td>a)</td>
<td>National College of Chiropractic</td>
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<td>b)</td>
<td>Cleveland Chiropractic College</td>
</tr>
<tr>
<td>c)</td>
<td>Palmer College of Chiropractic</td>
</tr>
<tr>
<td>d)</td>
<td>Lincoln Chiropractic College</td>
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</table>

HEW Report, p.36

All chiropractic colleges offer a four-year course which leads to the Doctor of Chiropractic degree.

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<tr>
<td></td>
<td>true</td>
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<tr>
<td></td>
<td>false</td>
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</table>

HEW Report, p.36

Place a mark(X) by the subjects listed below that are taught in chiropractic colleges that are also taught in medical colleges.

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<tbody>
<tr>
<td>a)</td>
<td>anatomy</td>
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<td>b)</td>
<td>biochemistry</td>
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<td>c)</td>
<td>physiology</td>
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<td>d)</td>
<td>microbiology</td>
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<td>e)</td>
<td>pathology</td>
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<td>f)</td>
<td>public health</td>
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<td>g)</td>
<td>obstetrics</td>
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<td>h)</td>
<td>psychiatry</td>
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<td>i)</td>
<td>radiology</td>
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<td>j)</td>
<td>surgery</td>
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<td>k)</td>
<td>pediatrics</td>
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<tr>
<td>l)</td>
<td>pharmacology</td>
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</table>

"White Paper", p.7

Dintenfass, p.124-7

What kinds of textbooks are used in the coursework at chiropractic colleges?

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<tbody>
<tr>
<td>a)</td>
<td>exclusively chiropractic texts</td>
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<tr>
<td>b)</td>
<td>standard medical textbooks</td>
</tr>
<tr>
<td>c)</td>
<td>chiropractic textbooks</td>
</tr>
</tbody>
</table>

HEW Report, p.37-8

Turn page back for answers to pages 28 and 29.
If the chiropractic curriculum is much like that of medicine, and many of the same textbooks are used in chiropractic coursework, what reasons are there for considering chiropractic education and training inadequate?

- a) the quality of chiropractic students is low due to the admission requirements of colleges.
- b) the qualification of chiropractic faculties is generally quite poor.
- c) chiropractic college facilities are substandard and inadequate.
- d) the achievement of chiropractic graduate is poor when compared to medical graduates.

Does chiropractic recognize the importance of a faculty of competent, stimulating teachers who are masters in their individual fields?

- yes
- no

Have chiropractic colleges fulfilled the requirements for selection of chiropractic faculties as outlined by the Council of Education of the ACA as outlined by Dr. Dintenfass?

- yes
- no

What year was the Council of Education of the American Chiropractic Association formed?

- 1928
- 1935
- 1947
What deficiencies are noted in chiropractic school faculties?

a) __ very few hold recognized academic degrees of any kind.

b) __ persons appear to be teaching in areas that demand high academic qualifications without the credentials necessary.

c) __ some teachers that do have degrees do not have them in scientific fields, but are teaching highly technical scientific subjects.

d) __ some degrees listed by those on the faculties cannot be confirmed as being authentic.

What facilities are listed by Dintenfass as required by chiropractic colleges?

a) _ laboratories  
b) _ hospital units  
c) _ libraries  
d) _ general clinics  
e) _ classroom demonstration aids

Did the chiropractic colleges studied by the Stanford Research Institute comply with the standards referred to by Dintenfass of the chiropractic Council of Education?

__ yes __ no

Even though the laboratory facilities of the Colleges studied by the Stanford group were substandard, they showed evidence of extensive use.

__ true __ false
Many chiropractic colleges require an applicant to have at least two-years of work in an accredited liberal arts college before acceptance into the chiropractic training program.

- true    - false

When was the two-year college requirement for admission to chiropractic training first instituted?

- May, 1925
- April, 1939
- August, 1950
- September, 1968

Because of the above date, is it likely that the majority of chiropractors currently in practice have had to fulfill that requirement?

- yes    - no

How strictly were the published requirements of needing a high school diploma adhered to in the summer of 1963 when the Department of Investigation of the A.M.A. undertook its study to determine the requirements for admission to schools of chiropractic?

- very strictly by all schools.
- most schools followed the guidelines of the ACA and ICA.
- A minority of schools followed the stated guidelines of the ACA and ICA.
123

Which of the following were used to describe the four categories Carlova believed chiropractic students could be placed in?

a) the misled  

b) the curious  
c) the disciples  
d) the snake-oil pitchmen  
e) the desperate  
f) the dedicated  
g) the studious

124

In the survey made in five of the 26 states requiring chiropractic students to pass the same basic science examinations as medical students, how did the chiropractic students perform when compared to the medical students?

a) better  
b) about as well  
c) a little poorer  
d) extremely badly

125

The fairness of comparing chiropractic with medicine has been questioned by some chiropractors. What reasons are given in the HEW Report for judging chiropractic education by the same standards as schools of medicine and osteopathy?

a) because the title "doctor" is bestowed upon completion of the course work.  
b) because of the evidence of the use of regular medical textbooks and the listing of the same basic sciences as the other healing arts indicates that chiropractic students are being trained to function as primary sources of patient care.

Carlova, "I Visited A Chiropractic College," Medical Economics, July 22, 1968, p.4-5  
Carlova, Ibid. p.6  
Smith, AYOR, p.73  
HEW Report, p.38

Turn page back for answers to pages 32 and 33.
A comparison of the libraries of chiropractic schools with those of medical schools revealed which of the following?

a) chiropractic libraries were as well supplied in number of books and periodicals.

b) chiropractic libraries were not as well supplied quantitatively, but they were found to be of very high quality.

c) chiropractic libraries were extremely deficient and considered inadequate for a quality professional preparation program.

Is chiropractic doing anything to improve the quality of chiropractic education?

_ yes _ no

PART V. RECOGNITION OF CHIROPRACTIC

OFFICIAL AMBIVALENCE TOWARD CHIROPRACTIC

The term "recognition" has many different meanings ranging from simple acknowledgement to complete endorsement. When studying the recognition extended to chiropractic by various agencies, one must always discriminate between the many uses of the term as the ambivalence toward chiropractic is most apparent when viewing it from the perspective of recognition. The next sequence of frames deals with the enigma of chiropractic recognition throughout American officialdom.

Do any of the three recognized educational bodies that accredit schools of higher education recognize any chiropractic college?

_ yes _ no
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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</thead>
<tbody>
<tr>
<td>How is the classification &quot;spurious&quot; defined by the U.S. Office of Education?</td>
<td>Appendix A, Ibid.</td>
</tr>
<tr>
<td>All chiropractic colleges list some sort of accreditation. If none of them are recognized by either of the three recognized accrediting bodies, who accredits them?</td>
<td>HEW Report, p.81-2 Appendix A, Item 21</td>
</tr>
<tr>
<td>Does any recognized accrediting agency recognize any chiropractic school anywhere in the United States?</td>
<td>Appendix A, Item 14 letter from NY</td>
</tr>
<tr>
<td>Page</td>
<td>Question</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
</tr>
</tbody>
</table>
| 34   | How many of the fifty states license chiropractic practitioners? | a) 21  
      b) 30  
      c) 48  
      d) 50 |
| 35   | State licensure of chiropractic constitutes recognition of chiropractic theory. | c) true  
      d) false |
|      | The main purpose of state licensure is for: | a) tax revenue source  
      b) recognition of validity by state.  
      c) regulation of practice  
      d) protection of the public |
|      | Which of the following are chiropractors licensed to perform in Oregon? | a) obstetrics  
      b) minor surgery  
      c) prescribe drugs  
      d) physiotherapy  
      e) treatment of auto accident injuries |
|      | Oregon is unique in that it is the only state which permits chiropractors to perform: | a) minor surgery  
      b) obstetrics  
      c) physiotherapy |
139
Has state licensure of chiropractic served to regulate its practices and thus protect the public as originally intended?

<table>
<thead>
<tr>
<th>yes</th>
<th>no</th>
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</table>

Appendix A, Item 15 from Report of the Health Manpower Commission, p.360

140
What does the 1967 Health Manpower Report recommend be done in regard with the basic assumption of the licensure of chiropractic?

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
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</thead>
<tbody>
<tr>
<td>it should remain unchanged</td>
<td>it should be reexamined</td>
<td>it should be eliminated</td>
</tr>
</tbody>
</table>

Appendix A, Ibid.

141
What reasons did the College of Physicians and Surgeons of the Province of Quebec give for refusing to endorse the licensure of chiropractic in that province in 1963.

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>a feeling of responsibility to protect the people of Quebec.</td>
<td>a fear of the judgement before the tribunal of history.</td>
<td>no reason was given, just vague references to the absence of an established need for more practitioners in Quebec.</td>
</tr>
</tbody>
</table>

Quebec Brief, p.10

142
YOUR OPINION PLEASE:

What do you believe should be done about chiropractic licensure?

-----------------------------------
- 37 -
Turn page back for answers to pages 36 and 37.
Place a mark (X) by the organizations which recognize chiropractic in the following list:

1. GI Bill of Rights
2. U.S. Immigrations Service
5. U.S. Employees Compensation Bureau.
6. The armed forces by giving commissions as to medical doctors.
7. Internal Revenue Service
8. Many state Medicaid Programs

Have the organizations above who recognize chiropractic done so on the basis of having judged chiropractic theory to be valid?

- Yes
- No

The number of private insurance companies that recognize chiropractic for indemnification is about:

- 50
- 100
- 300
- 600

Why have so many insurance companies recognized chiropractic care?

- They accept chiropractic's theory of disease causation.
- Chiropractic care is considerably less expensive than medical care, which costs them less money.
- There is less time lost from work with chiropractic care.
147

<table>
<thead>
<tr>
<th>Why is chiropractic care less expensive than medical care?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) ___ chiropractic care doesn't involve hospitalization.</td>
</tr>
<tr>
<td>b) ___ chiropractors charge less for an office call and other services.</td>
</tr>
<tr>
<td>c) ___ chiropractic doesn't involve the prescribing of expensive drugs.</td>
</tr>
</tbody>
</table>

"White Paper", p.13-15

148

YOUR OPINION PLEASE

Would you say that the ability of chiropractic to perform well enough to qualify for indemnification by over 600 private insurance companies is evidence of the effectiveness of chiropractic care?

___ yes  ___ no

Why? ____________________________________________________________

149

The American Medical Association gives full recognition to chiropractic as a legitimate healing art.

___ true  ___ false

Dintenfass, chapter 17

150

The American Medical Association permits their members to openly refer patients to chiropractors when they feel their conditions might be helped by manipulation.

___ true  ___ false

Appendix A, Item 16

Turn page back for answers to pages 38 and 39.
Chiropractors openly refer patients to medical doctors.

a) true  
b) false

d) c)  

What reasons does the A.M.A. give for not permitting the referral of patients to chiropractors by their members?

a) it is the position of the A.M.A. that chiropractic is an unscientific cult, and its code of ethics prohibits all voluntary associated activities with cultists.

b) the A.M.A. only permits its members to refer patients to other A.M.A. members and chiropractors aren't permitted to join.

The A.M.A.'s "honorable" intentions have been questioned by persons outside of the health field as to the motivation behind their constant attack on chiropractic.

a) true  
b) false

d)  

What reason does Rayack give as the possible real motivation behind the A.M.A.'s attacks on chiropractic?

a) the competition of 25,000 chiropractors with medicine.

b) the refusal of chiropractic to merge with the A.M.A.

c) the refusal of chiropractors to recognize the A.M.A. as the primary spokesman for health care in America.
<table>
<thead>
<tr>
<th>155</th>
<th>What does Weiant say regarding the possible complaint that chiropractors constitute a significant form of financial competition to medical doctors?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>the is evidence that in areas where there are many chiropractic practitioners medical doctors are not as busy.</td>
</tr>
<tr>
<td>b)</td>
<td>in areas where there are many chiropractic practitioners, doctors are busier than ordinary.</td>
</tr>
<tr>
<td>c)</td>
<td>there is no evidence presented that physicians are less busy in localities where chiropractors are numerous.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>156</th>
<th>What reasons does Williams give for the A.M.A. opposition to chiropractic?</th>
</tr>
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<tbody>
<tr>
<td>a)</td>
<td>financial competition as Rayack suggests.</td>
</tr>
<tr>
<td>b)</td>
<td>refusal of chiropractic to merge with the A.M.A.</td>
</tr>
<tr>
<td>c)</td>
<td>A.M.A.'s thirst for power over all doctors.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>157</th>
<th>Is the A.M.A. the only health organization to officially oppose chiropractic?</th>
</tr>
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<tbody>
<tr>
<td>yes</td>
<td>no</td>
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<tr>
<th>158</th>
<th>Have any of these organizations issued public statements condemning chiropractic?</th>
</tr>
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<tr>
<td>yes</td>
<td>no</td>
</tr>
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</table>

| 132 | Turn page back for answers to pages 40 and 41. |
151

Place a mark (X) by the organizations in the listed presented below which have made official statements condemning chiropractic.

a) Dept. of Health, Education and Welfare.
b) National Advisory Commission on Health Manpower.
c) American Public Health Association
d) American School Health Association
e) AFL-CIO
f) Consumer Federation of America
g) National Council of Senior Citizens
h) American Cancer Society
i) American Rheumatism Association
j) American College of Sports Medicine.
k) American College of Radiology
l) American Association of Letter-Carriers

153

What test of performance were chiropractic representatives unable to pass which resulted in the action taken by the National Association of Letter Carriers to delete chiropractic from their medical plan?

a) The inability to detect subluxation, which had been analyzed as existing on x-rays taken by other chiropractors.
b) The failure to successfully treat several "test" cases.
c) The inability to keep chiropractic care within the financial scope of the association's resources.

157

PART VI. CHIROPRACTIC RESEARCH

Deely, copy form p.53A of report by the National Association of Letter Carriers.
# CHIROPRACTIC RESEARCH

In a era of rapidly increasing knowledge such as has characterized the twentieth century the importance of research has become well established. Criticisms of chiropractic's failure to establish its theory scientifically have been noted previously in the Quebec brief.

The next sequence of frames deals with the subject of research in chiropractic.

## 162

Does chiropractic recognize the importance of research?  

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>no</th>
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Dintenfass, p.129

## 163

Has chiropractic research compared well with the other healing arts?  

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>no</th>
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</table>

Dintenfass, p.129

HEW Report, p.41

## 164

What reasons are offered for chiropractic's lack of attention to research?  

|   | insufficient financial resources.  
|---|---|
| b) | lack of interest by the government in chiropractic research.  
| c) | a general disbelief among chiropractors in the value of scientific research.  
| d) | a lack of qualification to do research among chiropractic faculties.  

Dintenfass, p.129

HEW Report, p.41

Turn page back for answers to pages 42 and 43.
<table>
<thead>
<tr>
<th>P.42</th>
<th>P.43</th>
<th>165</th>
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Has any significant scientific information resulted from chiropractic research?

- yes
- no

Dintenfass, p.129-30

Who has contributed what is described by Dintenfass as "probably the most outstanding recent work performed by an individual in the profession"?

- Dr. Earl Rich, D.C.
- Dr. F.W. Illi, D.C.
- Dr. D.D. Palmer, D.C.
- Dr. George Campbell, D.C.

Dintenfass, p.129-30

What is the nature of the research mentioned above?

- the establishment of a cause-effect relationship between vertebral subluxations and specific diseases.
- x-ray analysis of the human spine in motion and in various positions.
- measurement of the effect of structural changes on nerve transmission.

Dintenfass, p.130

Has any research been submitted by chiropractic that demonstrates a specific cause-effect relationship between a vertebral subluxation and a particular disease as hypothesized by chiropractic theory?

- yes
- no

Quebec Brief, p.2
CHIROPRACTIC AND THE 1968 HEW REPORT

The report to congress entitled, "Independent Practitioners Under Medicare", by the Department of Health, Education and Welfare represents what has probably been the most damaging inquiry ever conducted into chiropractic. Because of its importance, chiropractic responded with its "White Paper". You have become familiar with both of these as you have progressed through this programmed study guide.

The next sequence of frames deals with the report itself and some of the issues chiropractic has raised about it.

170

What did the HEW Report conclude about chiropractic and the body of basic knowledge relating to health, disease and health care that has been widely accepted by the scientific community?

a) chiropractic theory and practice are not based upon this body of basic knowledge.
b) chiropractic operates well within this body of basic knowledge.
c) chiropractic practitioners ignore or take exception to much of this knowledge despite the fact they have not undertaken adequate scientific research.

171

Because of the lack of valid evidence establishing a cause-effect relationship between subluxation (if it exists) and disease, what did the report conclude about chiropractic's spinal analysis and adjustment?

a) they might be worthwhile under certain circumstances.
b) because many people seem to benefit from these procedures, they should be continued.
c) their use is not justified.

HEW Report, p. 51
What further reasons did the HEW report give for questioning the value of chiropractic care?

- the relative financial costs for chiropractic care compared with medical care.
- the inadequacies of chiropractic education to prepare a chiropractor to make adequate diagnosis and know the appropriate treatment.
- the failure of chiropractic to use drugs in its treatments.

What did the report state concerning manipulation as a treatment procedure?

- research in this area is inadequate.
- manipulation is of no value in the treatment of any known disease condition.
- chiropractic manipulation is of no value, but other forms may be.

Was chiropractic care recommended for inclusion by the 1968 HEW Report?

- yes
- no

What complaints have been voiced by the chiropractic profession about the 1966 HEW Report?

- they say it was a "fixed" report.
- the report dealt with "false issues" rather than the ones Congress had specified in law.
- the report ignores or misstates the facts.

"White Paper", p.5-
On what basis does chiropractic state that the HEW Report was "fixed"?

a) someone altered the initial reports contents before it was presented to Congress.
b) the committees appointed to do the report had an overwhelming built-in professional and institutional bias.
c) no chiropractic representatives were included on the committees.

What issues does chiropractic state were the "false issues" the HEW Report dealt with?

a) chiropractic education
b) chiropractic's close connection with medical quackery over the years.
c) chiropractic philosophy
d) chiropractic diagnosis
e) chiropractic's failure to establish a cause-effect relationship between subluxations and specific diseases through research.
f) the danger of manipulation in certain disease conditions.
g) chiropractic's theory of the cause of disease.

In their attempt to establish the quality of chiropractic education what criterion is offered?

a) a comparison of the performance of the product of chiropractic education with that of medicine's.
b) an analysis of chiropractic education prepared by an independent group of researchers.
c) a quantitative comparison of the hours spent in certain courses by medical and chiropractic students.
What does this type of a comparison fail to take into account?

a) the quality of students being taught since more intelligent students learn faster.

b) the quality of instruction being given since chiropractic faculties have been found to often be deficient in qualification.

c) the quality of facilities and equipment at the various schools since chiropractic schools are known to be substandard in comparison to the medical schools.

d) the nature of the information being transmitted within the school since chiropractic theory is felt to be erroneous by the scientific community at large.

What issue does chiropractic take with the H&W Report concerning chiropractic "philosophy"?

a) quotations are out of context.

b) quotations confuse the hypothesis for chiropractic with clinical findings.

c) the hypothesis stated by the report as chiropractic are not those of chiropractic at all.

Does chiropractic admit that the hypotheses that are found under the heading of "Chiropractic Principles or Philosophy" in chiropractic literature are the same as those cited by the H&W Report?

a) yes

b) no

c) c)
182

Does chiropractic attempt to make a case for the validity of chiropractic hypotheses in this White Paper?

_ yes _ no

Ibid. p.8

183

The White Paper complains that while the HEW Report attacks chiropractic's concern with subluxations, it admits that specialists in physical medicine and rehabilitation agree that subluxations exist.

What justification is offered for this situation?

a) __ none 

b) __ the "subluxations" of chiropractic terminology are not the same as those of classical medical terms.

c) __ no connection is made between subluxations and diseases by those specialists mentioned as is done in chiropractic theory.

Ibid. p.9

Cuebec Brief, p.3

Biedermann, p.27-8

184

Since chiropractic makes no attempt to establish its hypothesis in the defense set forth in this section of the White Paper, upon what premise does it attempt to establish its validity?

a) __ the meeting of the patients needs clinically by chiropractic care.

b) __ the statement that Congress wanted to know about needs and costs and whether chiropractic care is a valid health service for the elderly, rather than a review of chiropractic's hypothesis.

"White Paper," p.9

Turn page back for answers to pages 48 and 49.
Do you feel that the committees that assembled the 1968 HEW Report overstepped their bounds when they went into the hypothesis underlying chiropractic in their attempt to establish whether or not chiropractic is a valid health service for the elderly?

- yes
- no

Please explain briefly why you answered as you did:

The third so-called "false-issue" of the White Paper concerns diagnosis. Because this issue has been dealt with to some degree previously, let us deal only with certain main points made here.

What evidence does chiropractic offer as "objective indications of the substantiability" of the adequacy of chiropractic training in diagnosis?

- the amount of time spent in classwork.
- the proportion of the required textbooks that deal with diagnosis.
- several practical demonstrations of performance documented by independent testing agencies.

What evidence is offered as to the qualifications of a chiropractor to perform in the highly critical area of diagnosis?

- recognition by the scientific community at large.
- recognition by the other healing arts
- only chiropractic's own word on the matter.
188

The fourth and final so-called "false issue" dealt with by the White Paper states that the H&W Report claims that chiropractic regards subluxation as the sole cause of disease. Is this statement accurate?

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
</table>

Ibid. p.11

189

What exactly does the H&W Report state that chiropractors believe in regard to subluxation and disease?

<table>
<thead>
<tr>
<th></th>
<th>&quot;subluxation is the sole cause of disease.&quot;</th>
<th>&quot;subluxation is the most significant causal factor in disease.&quot;</th>
<th>&quot;subluxation is a minor contributing factor only in disease.&quot;</th>
<th>&quot;subluxation plays a negligible role in the causation of disease.&quot;</th>
</tr>
</thead>
</table>

HEW Report, p.25

190

Is the H&W statement referred to in the foregoing frame accurate and consistent with chiropractic literature on the matter?

<table>
<thead>
<tr>
<th></th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
</table>

Review frames 23&24

ICA Reprint, p.12

191

What are the "true issues" identified by chiropractic's White Paper?

<table>
<thead>
<tr>
<th></th>
<th>the need for chiropractic.</th>
<th>the cost of chiropractic under medicare.</th>
<th>the effectiveness of chiropractic services.</th>
<th>states rights and freedom of choice.</th>
</tr>
</thead>
</table>

"White Paper," p.11-17

Turn page back for answers to pages 50 and 51.
<table>
<thead>
<tr>
<th>P.50</th>
<th>P.51</th>
<th>185</th>
<th>188</th>
<th>189</th>
<th>186</th>
<th>190</th>
<th>192</th>
<th>193</th>
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<td>187</td>
<td>191</td>
<td>194</td>
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<td>185</td>
<td>188</td>
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</table>

**What does chiropractic cite as evidence of the need for chiropractic?**

- a) the demand for such services by the American people.
- b) the recognition of chiropractic services by a number of federal agencies.
- c) the recognition of chiropractic services by state governments.
- d) the recognition of chiropractic services by several private and commercial programs.

**According to data available from the U.S. Public Health Service, what percent of the civilian non-institutional population consulted a chiropractor in the 1963-5 time period?**

- a) less than one-percent.
- b) 2.3%
- c) 6.8%
- d) over ten-percent

**According to the same source as cited in frame 193, what percentage of elderly patients in the California medicaid program availed themselves of chiropractic care?**

- a) 2.7%
- b) 4.4%
- c) 5.5%
- d) 7.8%

**Does chiropractic claim to be able to offer the elderly any type of care that is superior to that of traditional care?**

- yes
- no
196
What particular type of conditions does chiropractic cite as problems of the elderly that they can offer aid to.

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>a)</td>
<td>heart diseases</td>
</tr>
<tr>
<td>b)</td>
<td>malignant neoplasms</td>
</tr>
<tr>
<td>c)</td>
<td>diabetes mellitus</td>
</tr>
<tr>
<td>d)</td>
<td>musculo-skeletal impairment</td>
</tr>
</tbody>
</table>

197
Does the American Rheumatism Association section of the Arthritis Foundation recognize chiropractic care as effective or valuable in the diseases that they are concerned with as a voluntary health organization?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>yes</td>
<td>no</td>
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</tbody>
</table>

198
What evidence is offered that chiropractic has effective care to render to those suffering from musculo-skeletal impairment.

<p>| | |</p>
<table>
<thead>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>a)</td>
<td>the fact that many people utilize chiropractic care for these problems.</td>
</tr>
<tr>
<td>b)</td>
<td>research conducted by recognized independent sources.</td>
</tr>
<tr>
<td>c)</td>
<td>chiropractic's own word on the matter.</td>
</tr>
<tr>
<td>d)</td>
<td>indemnification by insurance companies, workmen's compensation, etc.</td>
</tr>
</tbody>
</table>

199
Does chiropractic believe that the addition of chiropractic services would increase the costs of the Medicare program?

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>yes</td>
<td>no</td>
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<tr>
<td>Page</td>
<td>Question</td>
</tr>
<tr>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>192</td>
<td>What evidence does chiropractic offer to support this belief?</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>193</td>
<td>The third so-called &quot;true issue&quot; concerned chiropractic's effectiveness. What evidence is offered to substantiate chiropractic claims of effectiveness?</td>
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<tr>
<td>195</td>
<td>What two issues are raised under so-called &quot;True Issue No. 4&quot;?</td>
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</tbody>
</table>
Do either of these issues have anything to do with the value or efficacy of chiropractic care, the scientific validation of chiropractic theory, or any issue involving the welfare of the patient?

_ yes _ no

What is the nature of these issues?

a) __ scientific  
b) __ moral  
c) __ political

THE ISSUE OF HEALTH FREEDOM

The law of caveat emptor is called the law of the marketplace. Its interpretation is, "let the buyer beware". It is based on the concept that both the buyer and the seller have equal expertise about the product being traded. The art of horse-trading represents the most classical traditional example.

The issue of how great a role government should play in consumer affairs is essential to the entire free enterprise concept. The extent to which free enterprise and freedom of choice should be carried in health services is central to the health freedom issue.

The next sequence of frames asks for your opinion on several questions which are important to the question of health freedom.

Since medicare money is taken from the people in the form of Social Security taxes, shouldn't the taxpayers have a right to spend that health care money as they would spend their own if it hadn't been taken by the government in the first place?

_ yes _ no
Because some people who also pay taxes utilize Christian Science astrology, faith healing, phrenology, or feeling the soles of one's feet as forms of health services, should these also come under the umbrella of health freedom and be covered by Medicare?

a) [ ] yes  [ ] no

b) no

c) [ ] yes  [ ] no

Where does one draw the line between the various types of services that should be covered by Medicare or other tax-supported programs?

a) [ ] there should be no limitations placed upon which services are covered.

b) [ ] any person who is licensed by the state to deliver any kind of health services should be covered. (Examples: audiologists, occupational therapists, clinical psychologists, social workers, naturopaths, chiropractors, optometrists, corrective therapists, etc.)

c) [ ] only persons delivering health services that are recognized as representative of scientifically valid procedure

On October 30, 1972, President Nixon signed into law a bill, H.R.1, which included coverage for certain chiropractic services under Medicare. On what date will this coverage begin?

a) [ ] January 1, 1973

b) [ ] April 15, 1973

c) [ ] July 1, 1973

Are all chiropractic services covered under the provisions of the new law?

a) [ ] yes  [ ] no

b) no

c) [ ] yes  [ ] no

Appendix A, Item 18

Letter from HEW Office of Public Affairs

Ibid.
212

What chiropractic services are covered under the new law?

a) all services performed by a licensed chiropractor.

b) manual manipulation of the spine.

c) only manual manipulation of the spine to correct a subluxation that is verified by a satisfactory x-ray.

Ibid.

PART VIII. CHIROPRACTIC AND THE HOSPITAL

213

CHIROPRACTIC AND HOSPITAL PRIVILEGES

An issue that has been raised on the local level in some areas concerns the right of a chiropractor and his patients to utilize publicly-owned or tax-supported hospital facilities. The reasons chiropractors give for wanting to use hospital facilities are for access to certain modes of therapy and the ability to closely supervise a patient under treatment.

Medical doctors refuse to work in a hospital which grants privileges to chiropractors because it is a violation of medical ethics to voluntarily associate with cultists. Webster defines a cultist as "one who has a devoted attachment to a principle, which seems to apply to chiropractic.

An important function of the hospital for medicine is that it serves as an open arena where a practitioner must perform before the critical eyes of his peers. It has been pointed out that it is nearly impossible to monitor the activities of any practitioner in the seclusion of his private office practice. There are those who believe that permitting chiropractors to use the hospitals would serve as a means of detecting incompetent practitioners. Critics believe it would simply serve as another apparent stamp of approval on chiropractic which would seem to further legitimize a scientifically invalid system of care.

214

YOUR OPINION PLEASE

Do you think chiropractors should be given hospital privileges?

_ yes  _ no
Is hospital training part of present-day chiropractic education?

- yes
- no

For what reason is it not included?

- a) chiropractors don't want to use hospitals
- b) chiropractors are not permitted to use these facilities

Are there now, or have there ever been any chiropractic hospitals?

- yes
- no

What is the name of the chiropractic hospital visited and reported on by Ralph Lee Smith?

- Palmer Memorial Hospital
- Carver Sanitarium and Hospital
- Spears Chiropractic Hospital

where is the hospital identified in frame 218 located?

- Davenport, Iowa
- Denver, Colorado
- Kansas City, Kansas
- Los Angeles, California
### 220

According to publications of the Spears Chiropractic Hospital the cause of cerebral palsy is:

- a) brain injury
- b) subluxations
- c) bony structure of abnormally shaped skulls pressing on tender brain tissue.

---

### 221

How does the Spears research on the cause of cerebral palsy compare to what is known about the condition at the United Cerebral Palsy Research and Educational Foundation.

- a) it is in complete harmony with it.
- b) the Foundation denies that it has any validity.
- c) it is similar, but varies a little in detail.

---

### 222

What disease did the Spears Chiropractic Hospital make its biggest name on?

- a) cancer
- b) arthritis
- c) cerebral palsy
- d) heart disease

---

### 223

Has the Spears treatment for cancer established any credibility in the scientific community?

- yes
- no

---

Turn page back for answers to pages 58 and 59.
### Question 224
What did the state of Colorado do to stop the cancer treatments at the Spears Chiropractic Hospital?

- a) **no** they passed a law prohibiting chiropractors from treating cancer.
- b) **yes** they closed the hospital.
- c) **no** they put on a public information campaign warning the people away from the hospital.

*Ibid. p.96*

### Question 225
What was the latest field the Spears Chiropractic Hospital was opening up according to Ralph Lee Smith’s report?

- a) **no** arthritis cures
- b) **yes** weight reduction clinics
- c) **no** mental and emotional illness
- d) **yes** diseases of the aged


### PART IX.

#### CHIROPRACTIC’S FUTURE

With the ever increasing participation of government in the health care delivery system coupled with a growing consumer awareness, more and more public inquiry into chiropractic can be expected. It appears as if the scientific age has caught up with chiropractic. The question seems to be, can chiropractic catch up with the scientific age?

As for what the future holds for chiropractic one can only try to guess, but no such guesses will be attempted here. The next sequence of frames deals with a variety of factors relating to chiropractic’s possible future.

### Question 227
Is any effort being made by chiropractic to validate itself scientifically?

- **no**

*ICA Reprint, p.11*
Will the increased research into the value of manipulation as a mode of treatment called for by the conclusions of the HEW Report be a boon to chiropractic?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>HEW Report, p.52</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>yes, for a certainty</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>perhaps, but not necessarily</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>no, not likely</td>
<td></td>
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</tbody>
</table>

The reason for the conjecture in frame 228 is due to the findings of Dr. Livingstone of Canada who has written quite a bit on the subject of manipulation as a mode of treatment.

While fully recognizing and even promoting manipulation as a mode of therapy, what does Dr. Livingston conclude about chiropractic treatment?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Appendix A, Item 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>b)</td>
<td>he cites several case histories of injury as the result of chiropractic manipulation.</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>he says complications would be avoided by reasonable manipulative care in wiser hands than those of a chiropractor.</td>
<td></td>
</tr>
</tbody>
</table>

The entire thrust of Weiant's booklet, Medicine and Chiropractic, is toward the resolution of the problems between chiropractic and medicine.

Which of the following statements best summarize Weiant's hopeful solution?

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Weiant, M&amp;C</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Chiropractic must work to displace traditional medicine eventually.</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Chiropractic must continue to exist as an all-inclusive alternative side by side with medicine.</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>Chiropractic must establish its place within the scientific community performing its scientifically validated treatments in full cooperation with the medical fraternity.</td>
<td></td>
</tr>
<tr>
<td>P.60</td>
<td>P.61</td>
<td></td>
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<tr>
<td>224</td>
<td>228</td>
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</tbody>
</table>

According to Weiant in his more recent publication, what response has his hopeful solution referred to in frame 230 received from organized medicine?

<p>| | |</p>
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<tbody>
<tr>
<td>a)</td>
<td>it has been taken under advisement by the AMA.</td>
</tr>
<tr>
<td>b)</td>
<td>it has fallen on deaf ears.</td>
</tr>
<tr>
<td>c)</td>
<td>it has been well-received by most medical doctors.</td>
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</table>

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<tr>
<th>229</th>
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231

| 224  | 228  |

Does Weiant seem to hold out hope that medicine will accept chiropractic on the terms he hoped for in *Medicine and Chiropractic* eventually?

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<tbody>
<tr>
<td>yes</td>
<td>no</td>
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<table>
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</table>

What does Weiant see as the future of chiropractic if what he describes as the "new strategy for America" becomes successful?

<p>| | |</p>
<table>
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</thead>
<tbody>
<tr>
<td>a)</td>
<td>chiropractors will be denied licensure.</td>
</tr>
<tr>
<td>b)</td>
<td>physiotherapy will be expanded as fast as possible to fill chiropractic's place.</td>
</tr>
<tr>
<td>c)</td>
<td>chiropractic will be merged with medicine and chiropractors will work as equals with medical doctors.</td>
</tr>
<tr>
<td>d)</td>
<td>manipulation will only be performed by medical prescription.</td>
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</table>

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<th>227</th>
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</table>

yes

| c) |

---

*Ibid. p.15-16*
**234**

What ethical violations does Weiant say would result if medicine takes manipulation from chiropractors and utilizes it as one of its modes of therapy?

- a) deprivation of an entire profession of its livelihood.
- b) deprivation of chiropractic of 70 years of exhaustive study, diagnostic inventiveness, technical skill and painstaking clinical research.
- c) it would breach medical ethics on the point of association with cultists.

---

**235**

What does Weiant consider would be the most grievous aspect if medical doctors attempt to perform manipulation as a mode of treatment?

- a) they would probably stop using many drugs and other useful therapies.
- b) they would endanger the unsuspecting public by trying to perform manipulation without proper skill and training.
- c) chiropractic as a profession would disappear.

---

**236**

Does Weiant feel that physiotherapists could competently perform the manipulation now performed by chiropractors?

- yes
- no

---

**237**

Does Weiant offer any evidence of the danger of manipulation performed by medical doctors?

- yes
- no
### How does the International Chiropractic Association view the role of the chiropractor in the final section of their reprint from the *International Review of Chiropractic*, entitled, "Questions and Answers Regarding Chiropractic"?

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<tbody>
<tr>
<td>a)</td>
<td>chiropractic is an all-inclusive alternative to medicine which should exist side by side with, but in opposition to medicine.</td>
<td>Reference cited, p.13</td>
</tr>
<tr>
<td>b)</td>
<td>the model presented desires to place chiropractic within the scientific community, but parallel with medicine, not below it.</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>chiropractic is confined to the spine and its immediate articulations as the dentist is to the mouth; (according to chiropractic's hypothesis of subluxations and disease this could include a wide variety of diseases...which is precisely where chiropractic is currently!)</td>
<td></td>
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</table>

### According to data from HEW on health manpower, is chiropractic a growing profession?

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<tbody>
<tr>
<td>a)</td>
<td>yes, and very rapidly</td>
<td>Appendix A, Item 20</td>
</tr>
<tr>
<td>b)</td>
<td>no, it is losing steadily</td>
<td></td>
</tr>
<tr>
<td>c)</td>
<td>yes, it is apparently registering a slow but steady increase in the actual number of practitioners.</td>
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</tbody>
</table>

### Is chiropractic making any effort to recruit students for chiropractic careers?

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<tbody>
<tr>
<td>no</td>
<td></td>
<td></td>
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<tr>
<td>yes</td>
<td>no</td>
<td>Carlova, &quot;I Visited A Chiropractic College,&quot; Medical Economics, p.2</td>
</tr>
</tbody>
</table>

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**- 64 -**
| 241 | Is there a demand for chiropractic Practitioners in the health care marketplace?  
|     | _yes   _ no  | Dintenfass, p.128 |
| 242 | Where does chiropractic rank in total numbers of practitioners compared to all types of health care?  
|     | a) fourth  
|     | b) third  
|     | c) second  | Weiant, WMRTAC, p.7 |
| 243 | How does Dr. J. A. Sabatier Jr., Chairman of the H.K.K. Committee on Quackery describe the situation of chiropractic?  
|     | a) as a political problem, not a scientific problem.  
|     | b) as a moral issue, not a legal one.  
|     | c) as a scientific problem.  
| 244 | Who does Ralph Lee Smith say the blame belongs to for permitting chiropractic to achieve "...its status as the only legally recognized and licensed medical superstition in the United States"?  
|     | a) the academic community  
|     | b) the public's apathy  
|     | c) organized medicine's monopoly.  
|     | d) the legislatures  | Smith, AYOR, p.157-158 |

Turn page back for answers to pages 64 and 65.
<table>
<thead>
<tr>
<th>Page</th>
<th>241</th>
<th>242</th>
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<th>246</th>
<th>247</th>
</tr>
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<tbody>
<tr>
<td>238</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
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<td>241</td>
<td></td>
<td></td>
<td></td>
<td>Why do legislatures vote in favor of chiropractic so often if the A.M.A. is as powerful as critics say, and chiropractic is so small?</td>
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<tr>
<td></td>
<td></td>
<td>a)</td>
<td>chiropractic's strong and well-staffed lobbists.</td>
<td></td>
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</tr>
<tr>
<td>242</td>
<td>b)</td>
<td>chiropractic's strong voter support.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>c)</td>
<td>apparent corruption is involved.</td>
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</tr>
<tr>
<td>243</td>
<td></td>
<td></td>
<td>Yes</td>
<td>What does Smith say is the correct way to deal with treatment methods which cannot or will not submit to the judgement of scientific research?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a)</td>
<td>limit their use</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>b)</td>
<td>prohibit the by law</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>c)</td>
<td>control their use by some sort of government inspection</td>
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<td>239</td>
<td></td>
<td></td>
<td></td>
<td>Which of the following does Smith recommend be done with chiropractic?</td>
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<tr>
<td>244</td>
<td>a)</td>
<td>chiropractors should be immediately prohibited from further use of x-ray</td>
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<tr>
<td></td>
<td>b)</td>
<td>an inspector should be appointed in each state to control the kinds of diseases chiropractors treat.</td>
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<td></td>
<td>c)</td>
<td>each state should create an orderly program for withdrawing all chiropractic licenses.</td>
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<tr>
<td></td>
<td>d)</td>
<td>state licensure of chiropractic should be placed under control of persons other than chiropractors.</td>
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<td></td>
<td>e)</td>
<td>a chiropractor's &quot;GI Bill&quot;--for the reschooling and retraining in any other field they might wish to enter should be instituted.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>240</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>247</td>
<td></td>
<td></td>
<td></td>
<td>Ibid. p.165</td>
<td></td>
<td></td>
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<tr>
<td>246</td>
<td></td>
<td></td>
<td></td>
<td>Ibid.</td>
<td></td>
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<tr>
<td>243</td>
<td></td>
<td></td>
<td></td>
<td>Ibid. p.166</td>
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<td></td>
</tr>
</tbody>
</table>
What solution did chiropractors Fisher, Crogdale and Shimer employ after having personally acknowledged chiropractic's shortcomings and its "gloomy" future?

- They went into physical therapy
- They went into training in the field of physical rehabilitation
- They entered training as M.D.'s Assistants

Why do some people object to chiropractic's use of the title "doctor"?

- They don't feel a chiropractic education involves enough total years to merit the title.
- They feel that the public is apt to place too much confidence in anyone who is legally granted a title of that status.
- A state's "doctor's" license permits its holder too much unregulated freedom of action, which constitutes a public danger in the hands of a chiropractor.

CHIROPRACTIC IN HEALTH EDUCATION CLASSES

Until recently, health textbooks haven't contained any information on chiropractic. Even now, only a few do and the information they contain is quite limited. This may be because of the reason that some persons who believe rather strongly in chiropractic (or who are strongly anti-establishment and choose to side with anything that the A.M.A. is against) often react or are offended by any statements which question its validity. It is becoming increasingly apparent that health educators are going to have to be at least well enough informed about chiropractic to answer questions concerning it in the classroom.

Studies show that the primary group of family and close friends is most often the source of information about different types of healers. The professional group consisting of doctors, pharmacists, teachers, etc., is second. The health teacher faces...
A great responsibility in the giving of health information, because in many cases the health teacher represents the only well-informed person a student may ever be exposed to regarding matters of health and health care.

The final sequence of frames deals with some of the factors concerning teaching about chiropractic in the classroom. There will be no references of answers provided in this last sequence because it is your opinion that is sought in all of them.

Do you believe consumer health teaching units should include substantial information about chiropractic?
- yes
- no

Would you include chiropractic as a desirable career choice if you were teaching a unit on health careers?
- yes
- no

What approach should a health educator take when presenting information on chiropractic?
- unfavorable, since the bulk of the data is negative toward chiropractic.
- favorable, to avoid offending anyone who might strongly believe in chiropractic.
- be as objective as possible, well-supplied with information and not highly opinionated.

Would you be reluctant to teach about chiropractic because it might cause controversy in the classroom?
- yes
- no

There are no more answers beyond this point.
With whom should health education align itself in the chiropractic controversy?

a) __ with the A.M.A. because it not only is the recognized spokesman for scientific medicine, but a great deal of the information dispensed by health educators comes either directly or indirectly from that source.

b) __ with the law of the land. If the state licenses chiropractic a health educator should present it as a legitimate alternative health care system emphasizing its legal recognition and favorable assets.

c) __ with the people and their right to freely choose any type of health care they wish. Health education should take a strong stand for the concept of health freedom.

d) __ with the scientific method and its objective search for truth. As representatives of the scholarly world, health education must place the search for truth above all other considerations and report the facts they observe. They should align themselves with NO ONE!

What price would health education have to pay if it should align itself with any organization rather than fulfill its role as representative of the academic community and stand for the scientific method and its objective search for truth?

a) __ it would lose credibility by grouping itself with any organization which could be accused of having a vested interest.

b) __ if it gives up its objectivity, it is apt not to be aware of new information or significant changes that are occurring in the status quo.

c) __ it would give up its right to arbitrate issues as an interested but unbiased third party.

Do you feel that as a result of having taken this programmed learning course you now intend to keep up with changes in the chiropractic situation?

__ yes ___ no
SELECTED REFERENCES


"...the Hippocratic...school...treatment was centered upon assisting the patient...against the disease, which was regarded as an imbalance of the four humors."


"...most Greek physicians, unlike their contemporaries in some other nations, were not priests, but craftsmen. Thus were combined empirical knowledge of craftsmen and speculative theories of philosophers.

Best known of these pseudoscientific principles was the humoral theory. The human body was thought to consist basically of four humors: blood, yellow bile, black bile, and phlegm. In a state of health these four humors were balanced. Unbalance in their proportion resulted in disease, and nature made efforts to restore this balance by throwing off matter. It was the physician's job to assist nature in these efforts."

NOTE: This is the theory that led to blood-letting and other errors that made life in the hands of the ancient physicians a rather precarious matter at times.


"Hippocrates knew little of anatomy or physiology, and he possessed neither clinical thermometer nor stethoscope.... But although he had no scientific apparatus, he had scientific method, and his writings were full of sound observation and logical reasoning."


"The two approaches to chiropractic have continued to this day. Adherents to the Palmer approach are called "straights" and followers of Carver are called "mixers". Feuding between the two groups has often been bitter. Chiropractic colleges in the United States align themselves with one of the two schools of thought, and the two groups even have separate associations."

Out of fifteen listed faculty members, nine have both the Doctor of Naturopathic degree and the Doctor of Chiropractic.


"NATUROPATHS
Naturopathy is a school of healing employing a combination of nature's forces such as air, light, water, vibration, heat, electricity, dietetics, and massage. It does not include the use of drugs, surgery, and x-ray or radiation (except for diagnostic purposes). Many naturopaths are former chiropractors and use chiropractic treatment.

The National Association of Naturopathic Physicians (170 members) is composed of naturopaths, naturopath-chiropractors and chiropractors."


"Other than the type of x-ray machine common to the healing arts in general, the most commonly used device is the neurocrometer, which was found in the offices of some 12 percent of the chiropractors surveyed. Eight percent of the chiropractors used inhalation apparatus. An analysis was made of...the ozone generator. Still another device in frequent use is the radionic machine, which was found in more than 4 percent of the offices surveyed."

NOTE: The conclusions of the test of the Radionic machine by the Stanford group stated: "The machine is incapable of detecting or measuring radiation. In fact, it can detect no physical phenomenon of any kind." (p.74)


Mr. Levine is public health advisor, Division of Medical Radiation Exposure, Bureau of Radiological Health, Public Health Service, Rockville, Maryland 20852.
Dr. Howe is radiological health consultant to the American Chiropractic Association, Tallmadge, Ohio 44278.
Mr. Rolofson is health physicist, Division of Biological Effects, Bureau of Radiological Health, Public Health Service.

"Radiographic exposures to various organs of a simulated patient were determined for 31 techniques of spinal radiography used by doctors of chiropractic...It is clear that some of the commonly used techniques...do give excess radiation factors as well as excessive film density which yields less than optimum film quality. There is considerable need for further studies and efforts toward obtaining optimum quality radiographs with less patient exposure. This report is followed by practical suggestions on techniques to reduce exposure."
8. "Duties of Chiropractors to the Profession and to Each Other."


"The individual chiropractic physician, or doctor of chiropractic, or chiropractor, shall refrain from personal advertising in order to extend the sphere of respect, recognition and integrity of the profession. Personal advertising is defined as that which in substance deals with the particular abilities, features, or accomplishments of the individual. At no time will a doctor of chiropractic make known his superiority over that of another, verbal or written—this act shall be considered as a violation of this Code. An ACA member shall never employ a professional agent. Direct mail public relations to the patient shall contain material of education about chiropractic. At no time will mailed material be flamboyant or showy, make promise of cure, free examination or consultation, special technics or methods, or imply superiority in any manner. Further, the material must not castigate other health sciences or make claims that cannot be substantiated by laboratory and diagnostic procedures. The material should never contain statements of any kind that might be construed as false or misleading."


A. WHY BE CONCERNED ABOUT RADIATION EXPOSURE GENERALLY?

1. Possible genetic effects:
   Sound theoretical considerations suggest that even small amounts of radiation exposure to the gonads can adversely affect the genetic inheritance of future generations. This has led to the widely accepted principle that no amount of gonadal exposure is so small as to be dismissed as harmless.

2. Possible effects on the patient:
   Although no significant somatic change has been demonstrated in adults as a result of the low doses incurred in diagnostic radiology, there is laboratory evidence that even these levels of radiation may affect some cells; however, several epidemiological studies suggest that special consideration must be given to the relatively high radiosensitivity of the fetus in utero, particularly during the early phases of gestation.

NOTE: Recommendations in the guide intended to minimize the radiation hazards to the patient include the following:

- Filters; to filter out useless rays from the tube.
- Beam Restrictors; to limit the beam to just what will fall on the film.
- Gonadal Shields; to shield the gonads of patients who
are potentially procreative when the gonads cannot be excluded by collimation. Gonadal shields are not used when their presence would obscure important areas or otherwise interfere with the examination.


"The purpose of this paper is to record the frequency of injury associated with spinal manipulation in cases seen during 3 years of a general medical practice."

SUMMARY
Spinal manipulation is a common procedure in North America. Injury associated with spinal manipulation appears more frequent than the present North American medical literature suggests. Six hundred seventy-six patients with pains, possibly of spinal origin, were examined in 3 years. One hundred seventy-two of these had visited a chiropractor at some time, and 12 of these received an injury. Injury from manipulation may also occur from medical or paramedical personnel. Injury could be avoided if those practicing spinal manipulation were adequately trained.


TABLE 2. RESPONDENTS' RATINGS OF THE EFFECTIVENESS OF FIVE TYPES OF HEALERS

<table>
<thead>
<tr>
<th>Rating</th>
<th>Medical doctor</th>
<th>Chiropractor</th>
<th>Osteopath</th>
<th>Naturopath</th>
<th>Homeopath</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td>N 90</td>
<td>25</td>
<td>14</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% 86.5</td>
<td>24.1</td>
<td>13.4</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Sometimes effective</td>
<td>N 12</td>
<td>31</td>
<td>18</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% 11.5</td>
<td>29.8</td>
<td>17.3</td>
<td>2.8</td>
<td>2.8</td>
</tr>
<tr>
<td>Ineffective harmful</td>
<td>N 2</td>
<td>4</td>
<td>14</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% 1.9</td>
<td>13.4</td>
<td>13.4</td>
<td>13.4</td>
<td>6.7</td>
</tr>
<tr>
<td>No opinion</td>
<td>N ---</td>
<td>34</td>
<td>58</td>
<td>87</td>
<td>93</td>
</tr>
<tr>
<td>no knowledge</td>
<td>% ---</td>
<td>32.6</td>
<td>55.7</td>
<td>83.6</td>
<td>89.4</td>
</tr>
</tbody>
</table>


"Only 70% of chiropractic patients are satisfied with the results they get from chiropractors; 26% are definitely dissatisfied; and 4% give qualified answers.... a 26 to 30% level of dissatisfaction is too high and can be very damaging. The stud-
ies show that the attitudes of these dissatisfied patients are the most adverse to chiropractic. They could do a lot of damage, and something should be done toward reducing their percentage in relation to the total number.


"For the purpose of this study, a definition of "spurious" degrees was obtained from the Office of Education of the US Department of Health, Education, and Welfare. In "Academic Degrees," a publication of that Department, more than 2,400 academic degrees are listed. The Doctor of Chiropractic (DC) degree is listed under the heading "spurious." A "spurious" degree is defined by the Office of Education as one purporting to be a legitimate degree, duplicating those given by legitimate institutions, but granted by "diploma mills," or a degree not granted or offered by a legitimate institution, but unique to the granting institution."

14. Letter from The University of the State of New York, The State Education Department, State Board for Chiropractic, Philip R. Johnson, Acting Executive Secretary, Dated November 20, 1972.

"Under New York State professional licensing laws which are administered by the Board of Regents and the State Education Department, only graduates of approved educational programs may be admitted to the examination. Wherever national accrediting bodies for a given profession exist and are recognized by the National Commission on Accreditation, we automatically accept the schools they approve. Since chiropractic accrediting bodies are not so recognized, we can conduct our own accrediting process. This is the action which we took in relation to the National College of Chiropractic in Lombard, Illinois. Thus, that school is approved for purposes of admission of its graduates to the professional licensing examination in chiropractic in New York State."


"Medical authorities unanimously agree that chiropractic has no validity. The cult's theories have never been supported by objective evidence, and they have been thoroughly refuted by medical science. Besides considerable economic consequences, the dangers inherent in this healing cult are two-fold. First, chiropractic treatment frequently delays proper and effective medical care until it is too late. Second, chiropractic treatment often produces actual physical damage to patients. Ideally, therefore, the statutes should be repealed to remove the cult's shield of legitimacy....The basic assumption of licensure of chiropractors—that licensure facilitates regulation—should be reexamined."

"A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

1. **STANDARDS, USEFULNESS, NON-SECTARIANISM**

....A sectarian or cultist as applied to medicine is one who alleges to follow or in his practice follows a dogma, tenet or principle based on the authority of its promulgator to the exclusion of demonstration and scientific experience. All voluntary associated activities with cultists are unethical."


"Although the A.M.A. has made considerable concessions to the osteopathic profession in recent years, there does not seem to be any prospect for a similar modification in its attitude toward chiropractic as a "dangerous cult." Only recently (October 1966), the A.M.A. sponsored a day and a half National Congress on Medical Quackery; although the congress covered such topics as health food fads, obesity treatment, fluoridation, and cancer quackery, fully one-third of the time was devoted to an "educational session on chiropractic."

While I am not prepared to evaluate the scientific case made by organized medicine against chiropractic, there is enough evidence to strongly suggest that the A.M.A. may in this area of its activities be less interested in propagating the truth than in destroying the medical profession's most substantial competition—the nation's 25,000 chiropractors. The basic question at issue is whether chiropractors are performing a useful social service in the provision of health care; legislative and widespread public acceptance indicate that they are."

18. **Excerpt from a letter to Robert O. Beatty, Assistant Secretary for Public Affairs, Department of Health, Education and Welfare, from Russell R. Jalbert of the Social Security Administration dated November 15, 1972.**

"Some professional groups seem to believe that H.R.1 as enacted provides for Medicare coverage of the services of chiropractors on the same basis as payment is made for the services of physicians or as covered under Medicaid up till now. Others are under the impression that what was enacted was the Senate Finance Committee provision.

Actually, what came out of the Conference Committee and was enacted was much more limited. Beginning July 1, 1973, Medicare can pay for the services of licensed chiropractors, but only (1) if the chiropractors meet uniform minimum standards to be set by the Secretary; and only (2) with respect to manual manipulation of the spine; and then only (3) if that manipulation is for correction of a subluxation; and still further, only (4) if that subluxation is verified by a satisfactory x-ray."

"The link between quackery and manipulation has repelled physicians. J. McM. Mennell (1966) has noted: "They associate manipulation with cultism and religious nuts, when, in fact, it offers them another dimension of diagnosis and treatment."... The anatomical concept and rationale behind manipulation are uncertain.

CAN SPINAL MANIPULATION CAUSE HARM?
In the United States, over 25,000 manipulators of varying abilities are each manipulating a minimum of 10 patients daily. There are few reported injuries to show for possibly 75,000,000 yearly manipulations. Complications arise chiefly from the following causes: (i) vascular—the cerebellar syndrome; (ii) bony—especially from carcinoma, tuberculosis, osteoporosis, fracture or dislocation; (iii) disc fragments; (iv) spinal cord tumours; (v) miscellaneous. These complications are aided by improper diagnosis or incorrect technique applied by untrained persons (Hirschfield, 1965).... Among my last 280 consecutive patients...51 stated that they had visited a chiropractor...Four of these 51 had some injury from chiropractic treatment.

Case 22.—A man, aged 31 years, with sciatica from a lumbar disc syndrome, suffered two weeks of severe back pain after a chiropractor has stood on a stool and jumped on his back with both knees.

Case 170.—A young alcoholic visited five chiropractors in eight days for irrelevant treatment. His back pain increased with this treatment.

Case 189.—A woman, aged 45 years, with a cervical disc syndrome confirmed by x-ray examination, had lost consciousness after chiropractic neck "adjustment" 15 years previously, and required three days of hospital treatment.

Case 240.—Rough treatment caused a fracture of the body of the third lumbar vertebra in a man, aged 82 years.

While it is likely that this injury rate is higher than usual, it suggests that many chiropractic injuries are unreported in the medical literature. The great majority of these complications would be avoided by reasonable manipulative care in wiser hands."


"About 20,000 chiropractors were licensed at the end of 1970 in the United States according to estimates provided by the American Chiropractic Association. This represents a slight increase over estimates made for previous years... Perhaps 15,000 to 17,000 of these chiropractors are actively engaged in practice. The 1950 and 1960 Censuses of Population reported 13,091 and 14,360 chiropractors, respectively, in the civilian labor force."
21. At the time of the publication of the 1968 HEW Report, either the American Chiropractic Association or the International Chiropractic Association accredited the various chiropractic colleges. As of 1970 the American Chiropractic Association discontinued accreditation turning the authority over to The Council on Chiropractic Education. The Council on Chiropractic Education is not recognized by the U.S. Office of Education of HEW, or any of the other major educational bodies who accredit higher education in the United States, but this recent change is an important part of chiropractic’s current attempt to gain such official recognition by these agencies. Standards for accreditation by the council are published in the following:


"Weiant* says: "Foreign medical literature of the last 10 years, especially in Germany, is replete with references to chiropractic—contributions to its theory, reports of clinical trials, and enthusiastic appraisals of its usefulness." The facts, according to a recent letter from the secretary of the German Medical Association, are as follows: "We may express that there are physicians here which make use among other therapeutic methods of a certain manual therapy of the vertebral column and the extremities. Those methods are also taught in special courses for doctors (not chiropractors). Those physicians—most of them are specialists for orthopaedy—use such methods besides other methods of curing. They are by no means comparable with an American "chiropractor." In the United States, doctors of physical medicine and other physicians utilize manipulative therapy in their practice, but this does not mean that they are practicing chiropractic or using chiropractic procedures. Manipulative maneuvers are not and never have been synonymous with chiropractic."


"THE PALM I. NEUROCALOMETER

...It is intended to be used for diagnostic rather than therapeutic purposes.

Conclusion

The instrument tested was well made and operated on sound physical principles. It could measure the temperature difference of the skin at the two thermocouple locations to within 0.1°C, provided that equal pressures and contact areas were used. Faulty technique could result in erroneous readings. The interpretation and significance of the measured temperature differences are beyond the scope of this report."
APPENDIX B

BIBLIOGRAPHY

1. "A Call to Arms", JAMA, : 959, August 16, 1971


To correct pagination.
1. Did you get completely through the programmed instruction booklet?
   YES   NO

2. Which of the following best describes your approach to the course and its materials?
   a. You paid little attention to the reference materials, but went through the programmed instruction booklet.
   b. You looked-up most or all of the references in order to answer the questions.
   c. You looked-up the references (as in "b" above), and read quite a lot of material beyond what was required to just answer the questions.

3. Approximately how much total time did you spend on the course and the materials?

4. What suggestions do you have to improve the course?

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
REFERENCES CITED


